

# Highway 243 Osceola Bridge Project

## Environmental Assessment/Environmental Assessment Worksheet

November 2024

MnDOT SP 1311-06 and WisDOT Project ID 8417-00-76



# ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL ASSESSMENT WORKSHEET

**Trunk Highway (Hwy) 243**

**Minnesota State Project (SP) 1311-06 and Wisconsin Project ID 8417-00-76**

**Project Name: Hwy 243 Osceola Bridge Project**

**From Minnesota Highway 95 (MN-95) in Minnesota to Wisconsin Highway 35 (WIS-35) in Wisconsin**

**City(ies): Franconia Township, Minnesota and Village of Osceola, Wisconsin**

**County(ies): Chisago in Minnesota, Polk in Wisconsin**

**Section(s), Township(s), Range(s): Sec. 27, 28, Twp. 33, R 19**

**Submitted pursuant to [42 U.S.C. 4332](#), MN Statutes Chapter [116D](#), and WI Statute [1.11](#)**

**By the**

**U.S. Department of Transportation Federal Highway Administration and**

**Minnesota Department of Transportation (MnDOT)**

**for**

Replacement of the Hwy 243 Bridge over the St. Croix National Scenic Riverway (MnDOT Bridge No. 6347, Wisconsin DOT (WisDOT) Bridge No. B-48-224) connecting Franconia Township, Minnesota to the Village of Osceola, Wisconsin. Reconstruction of an approximately 0.5-mile segment of Hwy 243 and construction of a stormwater pond.

**Contacts:**

<b>FHWA:</b>	Joe Campbell Bridge Engineer Minnesota Division 180 East Fifth Street, Suite 930 St. Paul, MN 55101 (651) 291-6121
<b>MnDOT:</b>	Dmitry Tomasevich East Area Project Manager Metro District 1500 County Road B2 W Roseville, MN 55113 (651) 245-4406
<b>WisDOT:</b>	Marc Bowker Northwest Region Project Manager 718 W Clairemont Avenue Eau Claire, WI 54701 (715) 635-4975

Recommended for approval by:

**Sheila Kauppi** Digitally signed by Sheila Kauppi  
Date: 2024.11.14 12:42:51 -06'00'

MnDOT District Engineer

Date

*Gerald M. Mentzel*

11/14/2024

WisDOT Region Director

Date

Approved by:

**Marni Karnowski** Digitally signed by Marni Karnowski  
Date: 2024.11.14 16:16:56 -06'00'

MnDOT Chief Environmental Officer

Date

*BARRY PAGE*

11/14/2024

WisDOT Bureau of Technical Services Director

Date

Approved by:

*William R. Loehr*  
FHWA

Digitally signed by WILLIAM R  
LOHR  
Date: 2024.11.18 08:15:11 -06'00'

FHWA Project Development Engineer

Date

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Figure 0-1. State Location Map

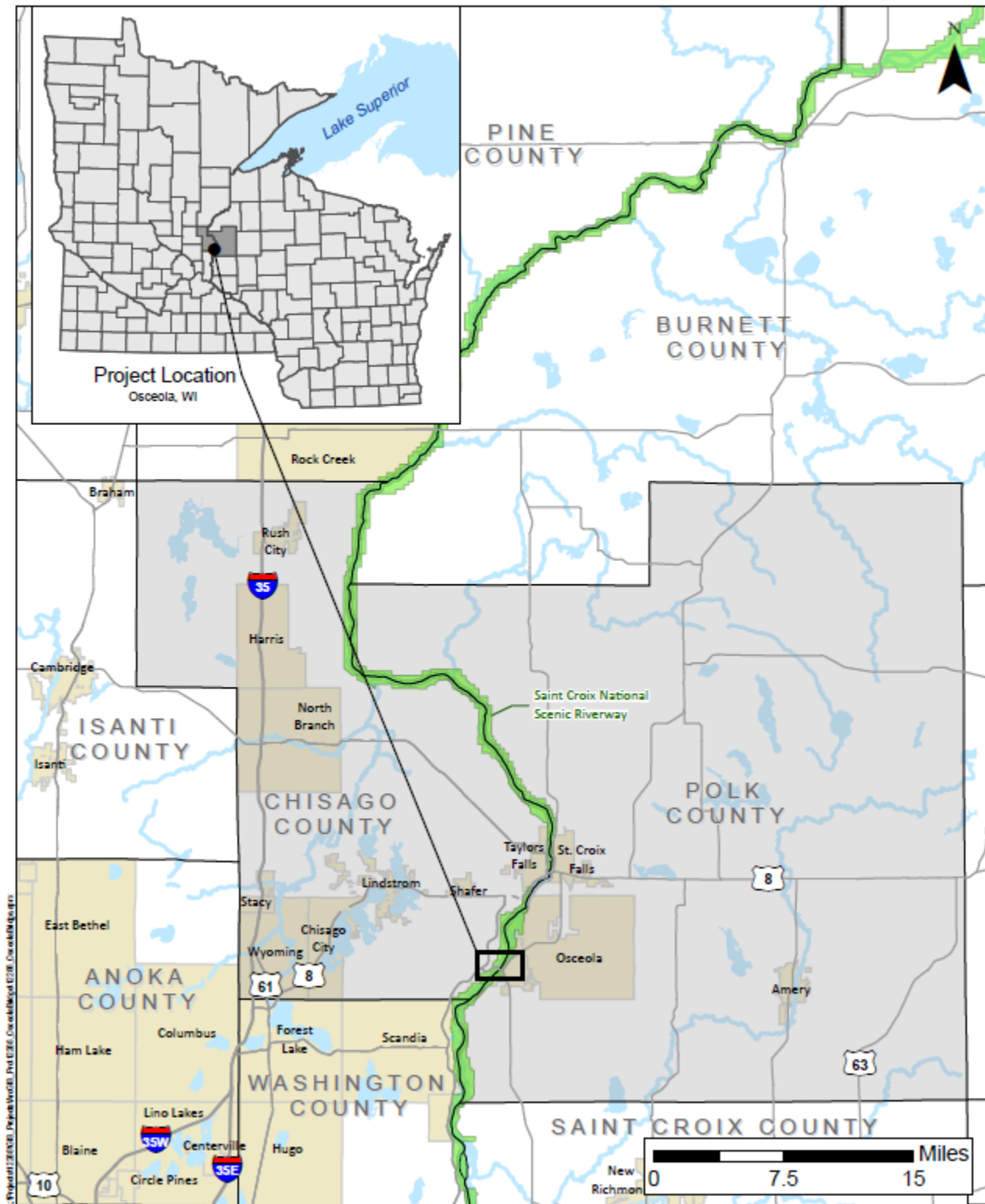
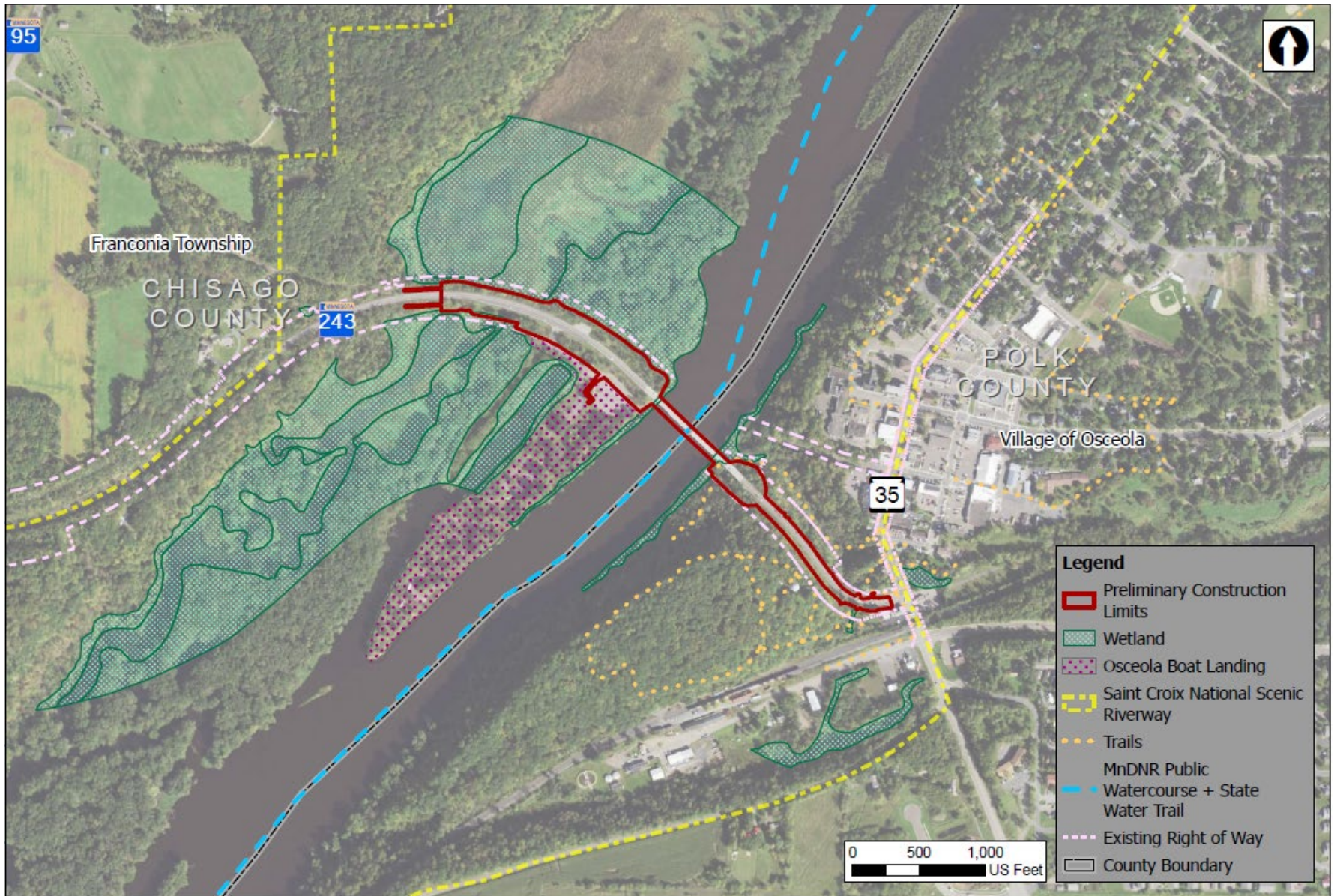




Figure 0-2. Project Location Map



## Table of Contents

<b>ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL ASSESSMENT WORKSHEET .....</b>	<b>II</b>
TABLE OF CONTENTS .....	VI
LIST OF TABLES .....	IX
LIST OF FIGURES .....	IX
LIST OF APPENDICES .....	X
LIST OF ACRONYMS .....	XI
<b>EXECUTIVE SUMMARY .....</b>	<b>XIII</b>
PROJECT BACKGROUND .....	XIII
DOCUMENT PURPOSE .....	XIII
PROJECT PURPOSE AND NEED .....	XIII
ALTERNATIVES .....	XIV
PREFERRED ALTERNATIVE .....	XV
ENVIRONMENTAL COMMITMENTS .....	XVI
OPPORTUNITIES FOR PUBLIC COMMENT .....	XVI
<b>1. REPORT PURPOSE .....</b>	<b>1</b>
<b>2. PURPOSE AND NEED FOR PROJECT .....</b>	<b>2</b>
2.1 PRIMARY NEED: BRIDGE CONDITION .....	2
2.2 SECONDARY NEED: WALKABILITY/BIKEABILITY .....	5
2.3 ADDITIONAL CONSIDERATIONS .....	8
2.3.1 Maintenance of Traffic During Construction .....	8
2.3.2 Osceola Landing .....	8
2.3.3 Stormwater Management .....	10
2.3.4 Regulatory Requirements .....	10
2.3.5 Ecological Connectivity .....	12
<b>3. ALTERNATIVES .....</b>	<b>15</b>
3.1 ALTERNATIVES CONSIDERED BUT REJECTED .....	16
3.1.1 Build Concept A: Rehabilitate existing bridge. Replace deck and superstructure. Re-use existing piers .....	16
3.1.2 Build Concept F: New Hwy 243 Bridge on new alignment between MN-95 and WIS-35 .....	17
3.1.3 Build Concept E: New Hwy 243 Bridge along 2 <sup>nd</sup> Avenue alignment in WI .....	17
3.1.4 Build Concept G: Tunnel crossing under St. Croix River along existing Hwy 243 alignment .....	17
3.1.5 Build Alternative C: New Hwy 243 Bridge on north side of existing structure .....	18
3.1.6 Build Alternative D: New Hwy 243 Bridge on south side of existing structure .....	19
3.2 ALTERNATIVES UNDER CONSIDERATION, INCLUDING THE “NO BUILD” ALTERNATIVE .....	20
3.2.1 No Build Alternative .....	20
3.2.2 Build Alternative B: New Hwy 243 Bridge on existing alignment .....	20
3.3 BENEFIT COST ANALYSIS .....	21
3.4 BRIDGE TYPE STUDY .....	21

<b>4.</b>	<b>SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS .....</b>	<b>24</b>
4.1	ENVIRONMENTAL ASSESSMENT WORKSHEET .....	24
4.1.1	<i>Project Title</i> .....	24
4.1.2	<i>Proposer</i> .....	24
4.1.3	<i>Responsible Governmental Unit (RGU)</i> .....	25
4.1.4	<i>Reason for EAW Preparation</i> .....	25
4.1.5	<i>Project Location</i> .....	25
4.1.6	<i>Project Description</i> .....	27
4.1.7	<i>Climate Adaptation and Resilience</i> .....	31
4.1.8	<i>Cover Types</i> .....	38
4.1.9	<i>Permits and Approvals Required</i> .....	42
4.1.10	<i>Land Use</i> .....	44
4.1.11	<i>Geology, Soils, and Topography/Land Forms</i> .....	49
4.1.12	<i>Water Resources</i> .....	53
4.1.13	<i>Contamination/Hazardous Materials and Wastes</i> .....	71
4.1.14	<i>Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)</i> .....	75
4.1.15	<i>Historic Properties</i> .....	94
4.1.16	<i>Visual</i> .....	98
4.1.17	<i>Air</i> .....	104
4.1.18	<i>Greenhouse Gas (GHG) Emissions/Carbon Footprint</i> .....	111
4.1.19	<i>Noise</i> .....	114
4.1.20	<i>Transportation</i> .....	117
4.1.21	<i>Cumulative Potential Effects</i> .....	120
4.1.22	<i>Other Potential Environmental Effects</i> .....	126
4.1.23	<i>RGU CERTIFICATION</i> .....	127
4.2	ADDITIONAL FEDERAL ISSUES .....	128
4.2.1	<i>Social Impacts</i> .....	128
4.2.2	<i>Considerations Relating to Pedestrians and Bicyclists</i> .....	130
4.2.3	<i>Environmental Justice</i> .....	130
4.2.4	<i>Economics</i> .....	133
4.2.5	<i>Relocation</i> .....	133
4.2.6	<i>Right of Way</i> .....	133
4.2.7	<i>Section 4(f) of the USDOT Act of 1966</i> .....	133
4.2.8	<i>Section 6(f)/Land and Water Conservation Fund Act</i> .....	141
4.2.9	<i>Noise</i> .....	141
4.2.10	<i>Farmland Protection Policy Act</i> .....	141
4.2.11	<i>Section 7 of the Endangered Species Act</i> .....	142
4.2.12	<i>Section 106 of the National Historic Preservation Act</i> .....	142
4.2.13	<i>Section 7(a) of the National Wild and Scenic Rivers Act</i> .....	142
<b>5.</b>	<b>PUBLIC AND AGENCY INVOLVEMENT (AND PERMITS/APPROVALS) .....</b>	<b>144</b>
5.1	INFORMATIONAL PROCESS.....	144
5.1.1	<i>Public Engagement</i> .....	144
5.1.2	<i>Project Management Team</i> .....	147

5.1.3 Agency Coordination .....	147
5.2 SUMMARY OF EARLY COORDINATION COMMENTS .....	149
5.2.1 Minnesota.....	149
5.2.2 Wisconsin.....	150
5.3 PUBLIC COMMENT PERIOD AND PUBLIC HEARING .....	150
5.4 REPORT DISTRIBUTION.....	151
5.5 PROCESS BEYOND THE HEARING.....	151



## List of Tables

Table 2-1. History of the Hwy 243 Bridge.....	3
Table 2-2. Section 4(f) Properties within or near the Project Area.....	11
Table 3-1. Overall Assessment of Alternatives in the Bridge Type Study .....	22
Table 4-1. Project Magnitude .....	30
Table 4-2. Climate Considerations and Adaptations .....	35
Table 4-3. Cover Types .....	38
Table 4-4. Green Infrastructure.....	39
Table 4-5. Tree Removal.....	39
Table 4-6. Permits and Approvals.....	42
Table 4-7. Soil Types within the Project Area.....	50
Table 4-8. Wells within the Project Area.....	58
Table 4-9. Estimated Impervious Surface Changes with the Project .....	61
Table 4-10. Causeway Alternatives Analysis .....	63
Table 4-11. Summary of Visual Impacts .....	101
Table 4-12. MnDOT Greenhouse Gas Analysis Summary.....	113
Table 4-13. Typical Construction Equipment Noise Levels at 50 Feet .....	115
Table 4-14. Daily Traffic Volumes (Existing and Forecasted) .....	119
Table 4-15. Hwy 243 Peak Hour Traffic Volumes .....	120
Table 4-16. Project Related Environmental Effects and Geographic Extent.....	121
Table 4-17. Reasonably Foreseeable Projects Near the Project Area and Detour Route .....	125
Table 5-1. Public Engagement Activities .....	146
Table 5-2. Cooperating and Participating Agencies .....	148
Table 5-3. Hwy 243 Osceola Bridge Project Concurrence Points .....	148

## List of Figures

Figure 0-1. State Location Map .....	iv
Figure 0-2. Project Location Map .....	v
Figure 2-1. Hwy 243 Bridge Over the St. Croix River .....	2
Figure 2-2. Underside of Hwy 243 Bridge Deck and Steel Truss .....	4
Figure 2-3. Pedestrian and Bicycle Origins/Destinations, NPS Osceola Landing and Village of Osceola .....	7
Figure 2-4. Hwy 243 Detour Routes to US Hwy 8 and Hwy 36.....	9
Figure 2-5. St. Croix National Scenic Riverway .....	14
Figure 3-1. Hwy 243 Osceola Bridge Project Alternatives Evaluation Process.....	16
Figure 4-1. United States Geological Survey Topographical Map .....	26
Figure 4-2. Existing Cover Types.....	41
Figure 4-3. Soil Types.....	52
Figure 4-4. Water Resources .....	54
Figure 4-5. FEMA Floodplain FIRMette .....	57
Figure 4-6. Wells within or near the Project Area.....	59
Figure 4-7. Area of Visual Effect and Visual Landscape Units .....	100

Figure 4-8. FHWA Projected National MSAT Emission Trends 2020-260 For Vehicles Operating On Roadways Using EPA’s MOVES3 Model..... 107  
Figure 4-9. Section 4(f) Resources within the Project Area..... 135

## List of Appendices

APPENDIX A (Figures)

APPENDIX B (Purpose & Need)

APPENDIX C (Alternatives)

APPENDIX D (Bridge Type Study)

APPENDIX E (Constructability Report)

APPENDIX F (Environmental Management Plan)

APPENDIX G (Wetland Assessment & Two-Part Finding)

APPENDIX H (Floodplain Assessment)

APPENDIX I (Contaminated Properties)

APPENDIX J (Agency Correspondence)

APPENDIX K (Biological Assessment)

APPENDIX L (Visual Impact Assessment)

APPENDIX M (Environmental Justice Analysis)

APPENDIX N (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies)

APPENDIX O (Benefit-Cost Analysis Memo)

APPENDIX P (NPS Section 7(a) Correspondence)

## List of Acronyms

Abbreviation	Definition	Abbreviation	Definition
AADT	Average Annual Daily Traffic	LRFD	Load and Resistance Factor Design
ABM	Activity Based Model	LTS	Level of Traffic Stress
ACS	American Community Survey	MDH	Minnesota Department of Health
ADA	Americans with Disabilities Act	MEPA	Minnesota Environmental Policy Act
ADT	Average Daily Traffic	MEQB	Minnesota Environmental Quality Boards
AG	Agricultural	MIAC	Minnesota Indian Affairs Council
AMMs	Avoidance and Minimization Measures	MMLOS	Multimodal Level of Service
APE	Area of Potential Effect	MnDNR	Minnesota Department of Natural Resources
AVE	Area of Visual Effect	MnDOT	Minnesota Department of Transportation
B-1	General Commercial	MOVES	Motor Vehicle Emissions Simulator
BCA	Benefit-Cost Analysis	MPCA	Minnesota Pollution Control Agency
BFE	Base Flood Elevation	MSAT	Mobile Source Air Toxic
bgs	below ground surface	NBI	National Bridge Inventory
BMP	Best Management Practice	NEPA	National Environmental Policy Act
BORIS	Bridge Office Replacement and Improvement System	NHIS	Natural Heritage Information System
BPI	Bridge Planning Index	NPDES	National Pollution Discharge Elimination System
CAA	Clean Air Act	NPS	National Park Service
CBD	Commercial Business District	NRCS	Natural Resources Conservation Service
CD	Conservancy	NRHP	National Register of Historic Places
CFR	Code of Federal Regulations	NWSRA	National Wild and Scenic Rivers Act
cfs	cubic feet per second	ODOT	Oregon Department of Transportation
CO	Carbon Monoxide	ORVs	Outstandingly Remarkable Values
CRT	Cultural Resources Team	OSA	Office of the State Archaeologist
CRU	Cultural Resources Unit	OWJ	Officials with Jurisdiction
CSS	Context Sensitive Solutions	PCBs	Polychlorinated biphenyls
EA	Environmental Assessment	PIP	Public Involvement Plan
EAW	Environmental Assessment Worksheet	PMT	Project Management Team
EIS	Environmental Impact Statement	PR	Park and Recreation
EJ	Environmental Justice	RAP	Response Action Plan
EMP	Environmental Management Plan	RCP	Representative Concentration Pathway
EPA	Environmental Protection Agency	RGU	Responsible Governmental Unit

Abbreviation	Definition	Abbreviation	Definition
ERDB	Ecosystems Research and Development Bureau	R-U	Urban Single-Family
ERR	Endangered Resources Review	SEE	Social, Economic, and Environmental
ESA	Environmental Site Assessment	SHPO	State Historic Preservation Office
FAA	Federal Aviation Administration	SP	State Project
FEMA	Federal Emergency Management Agency	SSTS	Subsurface Sewage Treatment Systems
FHWA	Federal Hwy Administration	SWPPP	Stormwater Pollution Prevention Plan
FIRM	Flood Insurance Rate Maps	TPDP	Transportation Project Development Process
FIS	Flood Insurance Studies	TSS	Total Suspended Solids
FONSI	Finding of No Significant Impact	USACE	U.S. Army Corps of Engineers
FPPA	Farmland Protection Policy Act	USCG	U.S. Coast Guard
GHG	Greenhouse Gas	USFWS	U.S. Fish and Wildlife Service
HCM	Hwy Capacity Manual	USGS	U.S. Geological Survey
HHS	Department of Health and Human Services	VIA	Visual Impact Assessment
Hwy	Trunk Highway	VMT	Vehicle Miles Traveled
I-1	Light Industrial	vpd	vehicles per day
IPaC	Information for Planning and Consultation	VQAC	Visual Quality Advisory Committee
LA	License Agreement	VQM	Visual Quality Manual
LAC	Local Advisory Committee	WCA	Wetland Conservation Act
LWCF	Land and Water Conservation Fund	WisDNR	Wisconsin Department of Natural Resources
LO	Lower St. Croix Overlay	WisDOT	Wisconsin Department of Transportation
LOS	Level of Service	WPDES	Wisconsin Pollution Discharge Elimination System



## EXECUTIVE SUMMARY

### Project Background

The Minnesota Department of Transportation (MnDOT), in cooperation with the Wisconsin Department of Transportation (WisDOT), intends to address the condition of the Osceola Bridge (MnDOT Bridge No. 6347 and WisDOT Bridge No. B-48-224), which carries Hwy 243 over the St. Croix National Scenic Riverway, a unit of the National Park System and component of the National Wild and Scenic River System, between Franconia township in Minnesota to the Village of Osceola in Wisconsin. The Hwy 243 Osceola Bridge Project includes replacing the existing bridge with a new bridge, reconstructing 0.5 miles of Hwy 243, and constructing a sidepath on the north side of the highway, herein referred to as a shared-use path (pedestrian, bicycle, and Americans with Disabilities Act (ADA) improvements).<sup>1</sup> MnDOT will act as the lead agency for the development, design, and construction of the Hwy 243 Osceola Bridge Project. WisDOT will operate and maintain the Hwy 243 Bridge following construction. The Federal Hwy Administration (FHWA) is the lead federal agency responsible for approval of the National Environmental Policy Act (NEPA) process and documentation for this project.

MnDOT and WisDOT are working cooperatively on the planning, design, and decision-making for this project as they currently do for the inspection and maintenance of the existing structure. All studies and reports completed for the bridge are coordinated between both agencies. Both DOTs include the Hwy 243 Bridge in their respective plans for major bridge improvements starting in 2026. MnDOT and WisDOT operate under a 50/50 cost-share agreement for all WI/MN border bridges.

### Document Purpose

This Environmental Assessment (EA) provides information which includes:

- Need for the proposed project
- Alternatives considered
- Environmental impacts and associated mitigation
- Agency coordination and public involvement

This EA was prepared as part of the NEPA process and state environmental review, Minnesota Environmental Policy Act (MEPA), process to fulfill requirements of 42 USC § 4332, Minnesota Statutes Chapter 116D, and Wisconsin Environmental Policy Act (WEPA) Wisconsin Statutes 1.11.

### Project Purpose and Need

MnDOT, in cooperation with WisDOT and FHWA, identified the following transportation problems or deficiencies which justify the need for the Hwy 243 Osceola Bridge Project. The needs have been categorized as

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<sup>1</sup> Shared-use path is a term that is interchangeable with the structures term “sidepath,” which was used during the alternatives analysis for this project. Sidepath was used in previous documentation because of its use in the MnDOT LRFD Bridge Design Manual. Sidepaths are shared-use paths parallel to the roadway that are physically separated from motor vehicle traffic.

primary and secondary needs, as defined below.

- **Primary needs** include the most significant transportation problems in the project area. *Bridge condition* was identified as the one primary need for the project. The existing bridge is in poor condition and has deteriorating elements that need attention.
- **Secondary needs** are other transportation problems that may be able to be addressed at the same time as primary needs. *Walkability/bikeability* was a secondary need identified for the project because the Hwy 243 Bridge is located between two pedestrian and bicycle generators, multimodal level of service is poor for bicyclists, and level of traffic stress is high for both pedestrians and bicyclists.
- **Additional considerations** are other desirable project elements or effects that are not central to the purpose and need but are nonetheless important considerations to identifying a Preferred Alternative. The following subjects were identified as additional considerations which helped guide project development and the alternatives evaluation process for the project:
  - Maintenance of traffic during construction
  - Osceola Landing (NPS owned)
  - Stormwater management
  - Regulatory requirements
  - Ecological connectivity

## Alternatives

The project has completed the alternatives development, screening, and evaluation process. The objective of this process was to identify Build Alternatives to progress for further evaluation, and to reach a Preferred Alternative to move forward into the EA. The process involved numerous steps, including a high-level concept development and screening, followed by an increasingly more detailed evaluation of alternatives. Public and agency input was solicited at several points during this process. The process began with purpose and need development which underwent review and approval, then proceeded with defining evaluation criteria and performance measures. These are based on project needs and additional considerations, as well as social, economic, and environmental (SEE) criteria. The SEE categories included as evaluation criteria were those that had the potential to be differentiators for screening concepts/alternatives. The selected SEE categories provided a basis for understanding potential impacts and an opportunity for modification of alternatives. Performance measures were developed for each evaluation criteria. While the evaluation criteria categories remained constant, the performance measures were refined as the project developed and existing environmental data was gathered.

The alternatives evaluation included a multi-step process. A range of potential concepts was developed in the first step, including the No Build Alternative to serve as the basis of comparison. The project team initially studied the following seven concepts:

- No Build Alternative
- Build Concept A – Rehabilitation
- Build Concept B – Existing Alignment
- Build Concept C – North Alignment
- Build Concept D – South Alignment

- Build Concept E – 2<sup>nd</sup> Avenue Alignment
- Build Concept F – New Alignment
- Build Concept G – Tunnel Alignment

Several of the concepts were rejected from further study due to poor performance across one or more evaluation criteria. Following this initial concept screening and evaluation process, MnDOT and WisDOT advanced three Build Alternatives for further evaluation, as well as a No Build Alternative to serve as a basis for comparison. The Build Alternatives identify both the bridge's horizontal and vertical alignment, in addition to the location of a shared-use path. The Level 1 evaluation screened concepts, which were then refined into alternatives for subsequent screenings after Level 1. The following alternatives were studied in Step 2 and Step 3 of the alternatives evaluation process:

- No Build Alternative
- Build Alternative B – Existing Alignment
- Build Alternative C – North Alignment
- Build Alternative D – South Alignment

Step 2 included an initial evaluation of the three build alternatives. The outcome of Step 2 indicated that there was not adequate information to justify eliminating an alternative from further study. Therefore, all three build alternatives were carried forward and developed to a more refined level of detail in Step 3. The outcome of Step 3 was the identification of a preferred alternative for the project.

## Preferred Alternative

FHWA, MnDOT, and WisDOT are collectively recommending one alternative in the EA to advance for further design, engineering, and construction. The key differences in the seven Build Concepts studied during the NEPA process are the bridge alignment over the St. Croix River, potential impacts to the outstandingly remarkable values (ORVs) of the St. Croix National Scenic Riverway (“the Riverway”) and other SEE impacts, constructability, and maintenance of traffic. A brief summary of alternatives analysis is provided below.

- The rehabilitation alternative (Build Concept A) is not recommended for further consideration because an engineering analysis of the existing piers determined that there is not adequate capacity in the existing piers to support a new bridge deck and superstructure.
- Build Concept F would create a new highway corridor in the St. Croix National Scenic Riverway. This new highway corridor and crossing of the St. Croix River has a high likelihood of adverse effects to the ORVs unique to the Riverway.
- Build Concept E was dismissed from further consideration because of changes in traffic patterns in the Village of Osceola and anticipated impacts to the Osceola Commercial Historic District.
- Build Concept G (the tunnel alignment) was dismissed for several reasons; the tunnel concept represented the highest magnitude of asset to manage and would require more costly repairs in its lifespan compared to a bridge, pedestrian or bicycle accommodations would not be feasible within the tunnel, and tunnels have greater operational requirements compared to bridges.

- Build Alternatives B, C, and D were retained for consideration in a third step of the alternatives screening and evaluation. Design refinements occurred at this stage, such as the alignments, typical sections, shared-use path design options, stormwater basin location, and rock slope investigation.
- Build Alternative B results in the longest crossing closure time, but also results in the shortest overall duration of construction; requires one river access for bridge construction, minimizing in-water impacts compared to the off-alignment alternatives.
- Build Alternative C and Build Alternative D require two river accesses for bridge construction; minimizes potential impacts to the surrounding natural environment relative to Build Alternative C and Build Alternative D; river navigation is maintained during construction with all three build alternatives; however, Build Alternative C and Build Alternative D require one additional construction season for in-water work to remove the existing Hwy 243 Bridge; lastly, Build Alternative B avoids right of way acquisition.

The existing alignment alternative is likely to result in the least amount of overall adverse impacts to the surrounding environment and community. Therefore, MnDOT, WisDOT, and FHWA are recommending that Build Alternative B (existing alignment) be advanced into detail design and engineering. Additional details regarding the alternatives analysis can be found in **Chapter 3 - ALTERNATIVES** and **APPENDIX C (Alternatives)**.

## Environmental Commitments

All avoidance, minimization, and mitigation measures, also known as environmental commitments, are documented in this project's Environmental Management Plan, which can be found in **APPENDIX F** (Environmental Management Plan).

## Opportunities for Public Comment

Comments from the public and agencies affected by this project are requested during the public comment period described on the transmittal letter distributing this EA/EAW. Copies of this document have been sent to agencies, local government units, libraries, and others per Minnesota Rules, part 4410.1500 and Chapter 6 of the WisDOT Facilities Development Manual. The notice of availability will be published in the EQB Monitor, and noticed through a press release to the local Franconia Township and Village of Osceola area paper(s), and on the project website: <https://www.dot.state.mn.us/metro/projects/hwy243osceola/>.

A public hearing will be held on December 10, 2024, which is after the EA/EAW has been distributed to the public and to the required and interested federal, state, and local agencies and Native American Tribes for their review.

Comments on the EA will be accepted from November 26, 2024 through December 26, 2024 and may be submitted through email, mail, or in person at the public hearing.



# 1. REPORT PURPOSE

This EA provides background information including:

- need for the proposed project
- alternatives considered
- environmental impacts and mitigation
- agency coordination and public involvement

This EA was prepared as a part of the NEPA process and state environmental review process to fulfill requirements of 42 USC 4332, Minnesota Statute 116D, and Wisconsin Statute 1.11.

At the federal level, the EA is used to provide sufficient environmental documentation to determine the need for an Environmental Impact Statement (EIS) or that a Finding of No Significant Impact (FONSI) is appropriate. FHWA is the lead federal agency responsible for approval of the NEPA process and documentation for this project. MnDOT will act as the lead agency for the development, design, and construction of the Hwy 243 Bridge, per the border bridge cooperative agreement with WisDOT. The environmental processes and requirements will be followed for the respective state in which the project falls.

At the Minnesota state level, this document also serves as an Environmental Assessment Worksheet (EAW). The EAW is used to provide sufficient environmental documentation to determine the need for a state EIS or that a Negative Declaration is appropriate. Minnesota Rules, part 4410.1300 allows the EA to take the place of the EAW form, provided that the EA addresses each of the environmental effects identified in the EAW form. This EA includes each of the environmental effects identified in the EAW form. MnDOT is the proposer and Responsible Governmental Unit (RGU) for this project. Preparation of an EAW for this project is considered discretionary under Minnesota Rules, part 4410.

At the Wisconsin state level, this document also fulfills the requirements of the Wisconsin Environmental Policy Act (WEPA) under Wisconsin Statutes, Section 1.11.

This document is made available for public review and comment in accordance with the requirements of 23 Code of Federal Regulations (CFR) 771.119 (d) and Minnesota Rules 4410.1500 through 4410.1600. A public hearing will be held during the public review and comment period.

## 2. PURPOSE AND NEED FOR PROJECT

MnDOT, in coordination with WisDOT and FHWA, identified the following transportation problems or deficiencies which justify the need for the Hwy 243 Osceola Bridge Project. The needs have been classified as primary or secondary as defined below. The Hwy 243 Bridge over the St Croix River (MnDOT Bridge No. 6347 and WisDOT Bridge No. B-48-224) has existing concerns.

### 2.1 Primary Need: Bridge Condition

The Hwy 243 Bridge over the St. Croix River (MnDOT Bridge No. 6347 and WisDOT Bridge No. B-48-224) was built in 1953 and is a five-span, fracture critical, deck truss structure (see **Figure 2-1**). The Hwy 243 Bridge extends from the Wisconsin bluff to the Minnesota bluff above the St. Croix River on a three percent grade. The Hwy 243 Bridge deck is 34.2 feet wide. There are two lanes on the bridge: one 12-foot-wide eastbound Hwy 243 lane and one 12-foot-wide westbound Hwy 243 lane. The bridge includes 3.6-foot-wide outside shoulders in each direction. The Hwy 243 Bridge is load posted at 40 tons and currently carries approximately 5,600 vehicles per day (vpd). The posted speed limit is 45 mph on the Minnesota side of the St. Croix River and transitions to 35 mph on the Wisconsin side of the river. **Table 2-1** summarizes the history of construction and maintenance of the Hwy 243 Osceola Bridge.

**Figure 2-1. Hwy 243 Bridge Over the St. Croix River**



**Table 2-1. History of the Hwy 243 Bridge**

Year	Construction/Repair Project	Summary of Work
1953	Bridge construction	Built a five-span, fracture critical, deck truss structure
1980	Reconstruction	Reconstructed bridge elements
1985	Maintenance	Trusses were painted
2010	Rehabilitation	Reconstructed; isolated areas of deck removed and reconstructed; expansion joint reconstructed; installed a chip seal overlay; new railings to accommodate bicyclists; replaced bridge deck drains; and repaired concrete surface of the abutments and piers
2017	Deck repairs	Removed and reconstructed deck areas, sealed deck cracks, and replaced the deck chip seal with an ultrathin bonded wearing course

MnDOT Metro District, the MnDOT Bridge Office, and WisDOT have identified the Hwy 243 Bridge over the St. Croix River as having deteriorated elements that need attention. **Figure 2-2.** Underside of Hwy 243 Bridge Deck and Steel Truss depicts some of the deficiencies of the Hwy 243 Bridge. An inspection of the Hwy 243 Bridge completed in April 2024 and noted the following conditions:

- **Deck:** The Hwy 243 Bridge was closed in 2017 due to the appearance of a large hole in the bridge deck. In 2019, it was noted that the underside of the deck has extensive deterioration including leaching, rust staining, delamination, and spalls with rusting rebar. There are scattered areas of delamination and spalling along the underside of the copings.
- **Truss Members:** The truss bottom chord has scattered minor pitting in the top surfaces. The top surfaces of the bottom chord members have pigeon debris, paint failure, and surface corrosion with scattered areas of flaking rust. The truss was last painted in 1985. The top chord has surface rust and flaking rust at the span ends at the abutments and piers. There are some isolated areas of corrosion below deck leaching cracks. In 2019, inspectors found some bowing/bulging in a vertical member on the south truss and in the north truss in Span 4.
- **Truss Gusset Plates:** The truss gusset plates have scattered areas of bubbling paint and surface corrosion. The bottom chord connections have a buildup of debris and moisture, causing corrosion. The top chord connections at the piers have staining and corrosion. The bottom chord gusset plates and connection plates have pack rust along the edges which are causing the plates to bow. Some bottom chord gusset plates have flaking rust with pitting along the top edge of the bottom chord. There are some gusset plates with pitting up to ¼-inch deep.
- **Steel Floor Beams:** The lower floor beams have extensive pitting on the flanges and web throughout and have scattered areas of paint failure, surface corrosion, and flaking rust.

- **Steel Lateral Bracing:** The lower lateral bracing has scattered areas of surface corrosion, flaking rust (minor pitting/section loss), and pack rust. The vertical sway bracing has scattered areas of surface corrosion and flaking rust. The lower transverse struts have scattered areas of surface corrosion and flaking rust.
- **Concrete Piers:** The pier columns have some areas of scale, with isolated rust stains and minor spalls. The concrete web walls have minor cracking, areas of repair patches, and isolated rust stains. Concrete columns on Pier 2 exhibit spalling with exposed rebar.
- **Bearings:** Most of the expansion bearings have “settled” into their masonry/bearing plates due to corrosion. Two expansion bearings have not moved since 2013 (the rocker bearings should move with temperature induced expansion/contraction of the bridge).

Figure 2-2. Underside of Hwy 243 Bridge Deck and Steel Truss



The National Bridge Inventory (NBI) ratings describe the general overall condition of the structure on a scale of 0 (failed condition, bridge is closed) to 9 (excellent, or “new” condition). The NBI rating reported the Hwy 243 Bridge at a four (4). This is a poor condition rating. The NBI rating reported the Hwy 243 Bridge superstructure at a five (5) and the substructure at a six (6), which are fair and satisfactory condition ratings, respectively. On average, a bridge deck with a NBI rating of four will reach a failed condition within 10 years without on-going



maintenance and repairs. A bridge superstructure with a NBI rating of five will reach a poor condition within 10 to 30 years without on-going maintenance and repairs.

MnDOT's Bridge Planning Index (BPI) as provided by the Bridge Office Replacement and Improvement System (BORIS) tool ranks the Hwy 243 Bridge as the number six (6) priority out of all the bridges in the MnDOT Metro District. There are 1,203 bridges in the BORIS tool for MnDOT Metro District. The BORIS tool helps preparation for bridge investment projects by forecasting future work types, costs, and schedules for a 20-year planning horizon.

## 2.2 Secondary Need: Walkability/Bikeability

The Hwy 243 Bridge is the only facility in the area that allows pedestrians, cyclists, and other non-motorized traffic to cross the St. Croix River. The Hwy 243 Bridge has 3.6-foot-wide shoulders on both sides of the structure; this width does not meet MnDOT standards for pedestrian use. Section 2.1.2 in the MnDOT Load and Resistance Factor Design (LRFD) Bridge Design Manual specifies a minimum shared-use path width of 10 feet for new vehicular bridges. The existing average daily traffic volume on the Hwy 243 Bridge is 5,600 vpd with increases in traffic volumes during the summer months. The posted speed limit on Hwy 243 transitions from 45 mph in Minnesota to 35 mph in Wisconsin. **Figure 2-3.** Pedestrian and Bicycle Origins/Destinations, NPS Osceola Landing and Village of Osceola illustrates pedestrian and bicycle origins and destinations in and around the Village of Osceola, the Osceola Landing, and the Hwy 243 Bridge.

On average, 12 cyclists using the Strava application cross the St. Croix River on the Hwy 243 Bridge daily with an increase in the number of users during the summer months. The Hwy 243 Bridge connects two pedestrian and bicycle generators, the Village of Osceola, and Osceola Landing. The Village of Osceola (on the east side of the St. Croix River) is a destination for tourists visiting the St. Croix National Scenic Riverway and offers many recreational resources, businesses, and restaurants. Osceola Landing (on the west side of the St. Croix River) provides motorized and non-motorized access to the St. Croix River and includes a recreational day-use area for picnicking, walking, and fishing. The Osceola Landing is the busiest landing maintained and operated by the National Park Service (NPS) on the St. Croix River.

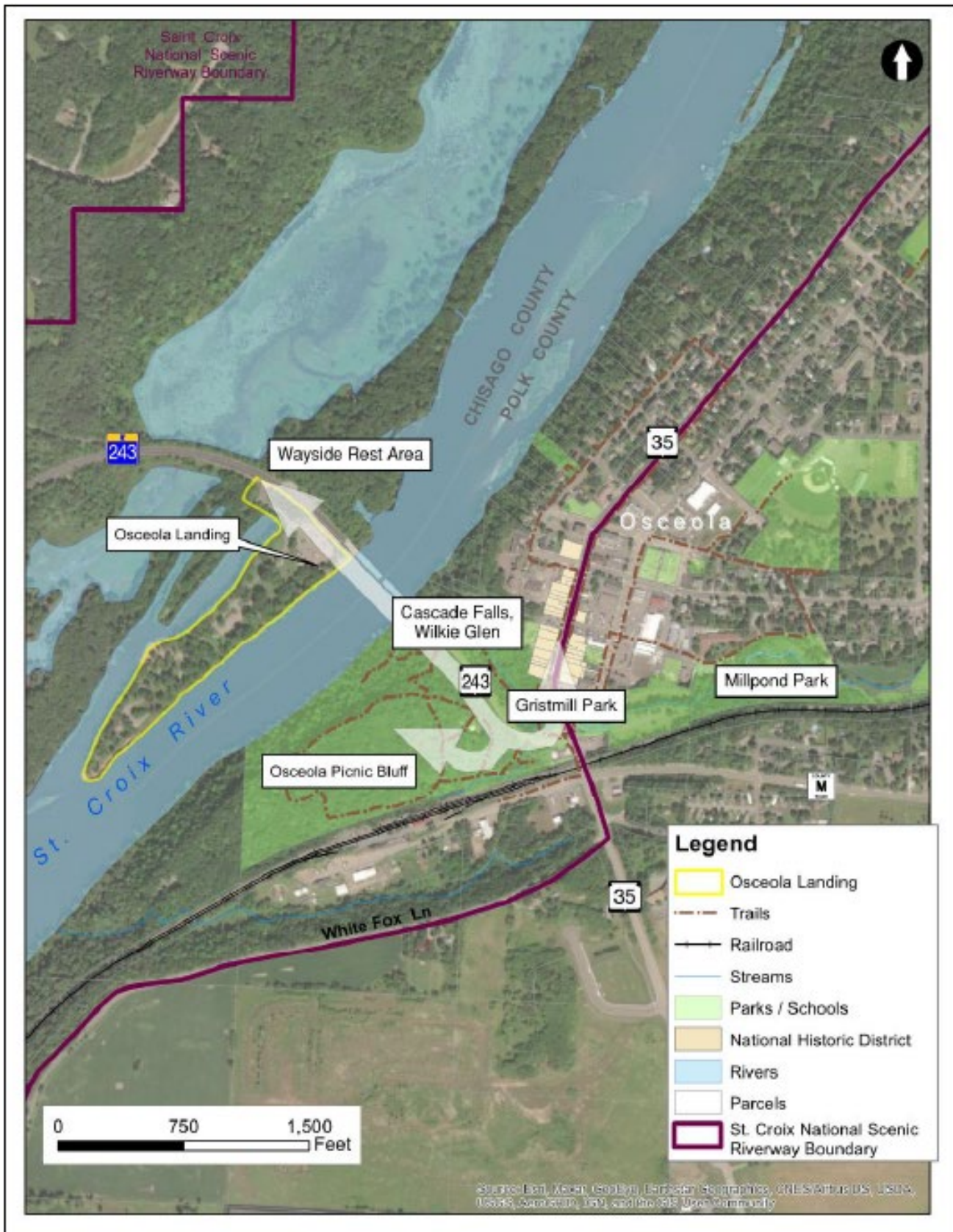
The mobility performance of existing pedestrian and bicycle facilities in the Hwy 243 corridor, including the Hwy 243 Osceola Bridge, was evaluated utilizing the pedestrian and bicycle multimodal level of service (MMLOS) for segments as developed by Oregon Department of Transportation (ODOT). This methodology is used to create the Hwy Capacity Manual (HCM) Pedestrian and Bicycle Level of Service (LOS) on segments. Pedestrian LOS on segments is estimated from four variables: actual sidewalk width, directional hourly traffic volume, number of through traffic lanes per direction, and posted speed limit. Bicycle LOS on segments is estimated from the following four variables: number of through traffic lanes per direction, presence of bike lane or paved shoulder, posted speed limit, and unsignalized conflicts. LOS scores are based on user perceptions and graded from best (LOS A) to worst (LOS F) and were grouped into LOS ranges. The results represent the probability that a user will pick a given LOS or range of LOS.

The MMLOS for Hwy 243 was supplemented with a pedestrian and bicycle level of traffic stress (LTS) analysis as developed by ODOT. The pedestrian LTS methodology classifies roadways based on the level of pressure or strain experienced by pedestrians. Pedestrian LTS for segments is estimated from a number of variables,

including: sidewalk condition and width; buffer type and width; number of lanes and posted speeds; lighting presence; and general land use. The pedestrian LTS methodology is intended for use in urban areas; however, it can be used in rural areas where facilities exist. Pedestrian LTS uses four levels of traffic stress classifications, with LTS 1 representing the lowest stress condition and LTS 4 representing the highest stress condition. The bicycle LTS methodology divides roadway segments into categories based on the effects of traffic-based stress on bicycle riders. The measure of traffic stress quantifies perceived safety and comfort based on proximity to vehicles, considering both space and vehicle speed. The methodology for application to rural environments considers paved shoulder width, traffic volumes, and speeds (e.g., less than or greater than 45 mph). Bicycle LTS uses four levels of traffic stress classifications, with LTS 1 representing the lowest level of stress and LTS 4 representing the highest level of stress.

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Figure 2-3. Pedestrian and Bicycle Origins/Destinations, NPS Osceola Landing and Village of Osceola



Note: the wayside rest area is owned by MnDOT.

The Hwy 243 segment was defined as between the Osceola Landing and Hwy 243/WIS-35 intersection. Hwy 243 performs at LOS C-E for pedestrians and LOS F for bicycles according to the MMLOS analysis. Regarding the LTS analysis, the Hwy 243 segment performs at pedestrian LTS 4 and bicycle LTS 4. The high pedestrian LTS is because there is no separate sidewalk and the narrow shoulders create an uncomfortable condition for pedestrians. The high bicycle LTS is because the narrow shoulders and proximity to vehicular traffic at posted speeds of 45 mph on the Hwy 243 Osceola Bridge is suitable for highly confident bicyclists; however, it is not a comfortable condition for most bicyclists (e.g., bicyclists with low tolerance for traffic stress, recreational bicyclists).

## 2.3 Additional Considerations

Additional considerations are elements that are not central to the purpose and need of the project but are important criteria for evaluating build alternatives. The additional considerations identified for this project include:

- Maintenance of traffic during construction
- Osceola Landing
- Stormwater management
- Regulatory requirements
- Ecological connectivity

### 2.3.1 Maintenance of Traffic During Construction

Maintenance of traffic during construction includes vehicle mobility, as well as St. Croix River navigation and access. Maintaining the reasonable continuity of vehicular traffic during construction will be critical given the Hwy 243 Bridge function in the region's transportation system. The closest St. Croix River crossing is at US Hwy 8 between Taylors Falls, Minnesota and St. Croix Falls, Wisconsin. The detour length for a round-trip between Hwy 243 and US Hwy 8 is approximately 18 miles, and the drive time is approximately 30 minutes. **Figure 2-4.** Hwy 243 Detour to US Hwy 8 in St. Croix Falls and Taylors Falls illustrates the detour route from Osceola to St. Croix Falls/Taylors Falls, and back south to the Hwy 243 and MN-95 intersection. Emergency service providers in the Village of Osceola will respond to incidents in Minnesota, including at the Osceola Landing, depending on the incident, availability of emergency service responders, and response times. Emergency service providers from Chisago County, the Village of Osceola, and Polk County will use the Osceola Landing to access the St. Croix River to respond to incidents on the Riverway. Additional information regarding maintenance of traffic during construction can be found in Section 4.1.20 Transportation.

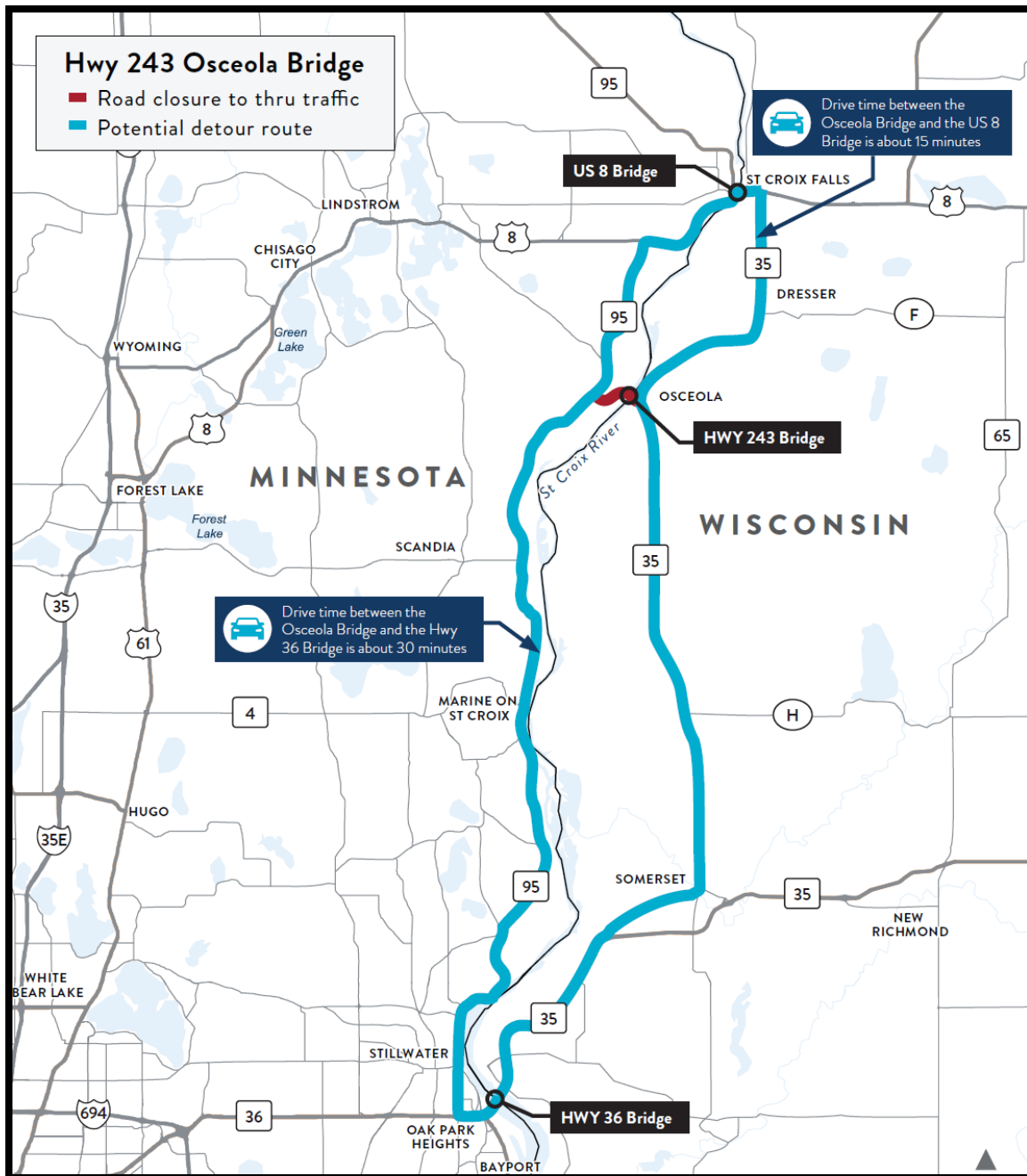
### 2.3.2 Osceola Landing

The Osceola Landing access to Hwy 243 is approximately 600 feet west of the Hwy 243 Bridge. The Osceola Landing is the busiest landing is owned and operated by the NPS on the St. Croix National Scenic River, with the greatest use during the summer months. The Osceola Landing includes two side-by-side launches used by motorized and non-motorized watercraft (boats, canoes, kayaks). Osceola Landing users include vehicles with trailers and private outfitters with shuttle services. There is a right-turn lane on eastbound Hwy 243 to the

Osceola Landing; however, there is no left turn lane on westbound Hwy 243 at the Osceola Landing access. This project provides the opportunity to improve vehicular access from Hwy 243 to the Osceola Landing.

The NPS is planning improvements for the Osceola Landing. The purpose of these improvements is to increase safety, improve operations for commercial use, and enhance the overall visitor experience. The Osceola Landing improvements are anticipated to be implemented in two phases. The first phase was completed in 2023. The second phase will be constructed following Hwy 243 Bridge construction. This project provides the opportunity to coordinate Osceola Landing improvements with Hwy 243 Bridge construction.

Figure 2-4. Hwy 243 Detour Routes to US Hwy 8 and Hwy 36





### 2.3.3 Stormwater Management

The existing Hwy 243 bridge deck includes catch basins connected to pipes that convey stormwater runoff directly to the St. Croix River. Roadway contaminants (e.g., gasoline, oil, salt, etc.) or accidental spills of materials also drain directly to the St. Croix River. The St. Croix River exhibits outstanding water quality and is identified as an “outstanding resource water” by Minnesota and Wisconsin. The water quality of the St. Croix River also is an important criterion for its inclusion in the National Park Service Wild and Scenic Rivers System. The stretch of the St. Croix River from the Taylors Falls Dam to Lake St. Croix, including the Hwy 243 crossing, is impaired for mercury, nutrients, and polychlorinated biphenyls (PCBs) in fish tissue.

Hwy 243 on the west side of the St. Croix River in Minnesota includes curb and gutter and catch basins along the edge of the roadway. These features, along with storm sewer and culverts, convey stormwater runoff from Hwy 243 to receiving waters. An existing culvert is on the south side of Hwy 243 between the Osceola Landing access and the Hwy 243 Bridge. This culvert conveys stormwater from Hwy 243, under the Osceola Landing driveway, to the St. Croix River. The end of this culvert is outside of MnDOT trunk highway right of way.

This project provides the opportunity to improve stormwater management from the Hwy 243 Bridge prior to discharge to the St. Croix River and to bring existing stormwater management features into compliance with NPS and MnDOT right of way requirements.

### 2.3.4 Regulatory Requirements

The planning and development process for the Hwy 243 Osceola Bridge Project must consider several federal and state regulatory requirements. These are summarized below.

#### 2.3.5.1 Historic Resources

The Osceola Commercial Historic District is in downtown Osceola along North Cascade Street (WIS-35), northeast of the Hwy 243 Bridge over the St. Croix River. The Osceola Commercial Historic District is listed on the National Register of Historic Places (NRHP) and encompasses the central business district of the Village of Osceola. The Osceola Commercial Historic District is along two blocks of North Cascade Street and includes 23 buildings (17 contributing and 6 non-contributing).

#### 2.3.5.2 Section 4(f) Properties

Section 4(f) provides protections for publicly owned parks, trails, recreational areas, and wildlife and waterfowl refuges, and historic properties determined eligible or listed on the NRHP. **Table 2-2.** Section 4(f) Properties within or near the Project Area lists Section 4(f) properties in the study area and their Official with Jurisdiction (OWJ).

**Table 2-2. Section 4(f) Properties within or near the Project Area**

Section 4(f) Resource	Official With Jurisdiction
St. Croix National Scenic Riverway (includes Osceola Landing, part of the National Park System and component of the Wild and Scenic Rivers System)	NPS

Section 4(f) Resource	Official With Jurisdiction
St. Croix State Water Trail	MnDNR
Cascade Falls and Wilke Glen Conservancy/Open Space (includes Falls Bluff Trail Loop system)	Village of Osceola
Gristmill Park	Village of Osceola
Millpond Park	Village of Osceola
Osceola Picnic Bluff (includes Simenstad and Eagle Bluff Trails)	Village of Osceola
Osceola Commercial Historic District	Wisconsin State Historic Preservation Office (SHPO)

### 2.3.5.3 Protected Species

The St. Croix River is home to more than 40 native freshwater mussels, including many state and federally-listed threatened and endangered mussels. Federally listed mussel species anticipated to occur in the project area include Higgins eye pearlymussel (*Lampsilis higginsii*), snuffbox (*Epioblasma triquetra*), spectaclecase (*Cumberlandia monodonta*), and winged mapleleaf (*Quadrula fragosa*). Additionally, the proposed federally endangered salamander mussel (*Simpsonia ambigua*) and proposed Critical Habitat occur in this reach of the St. Croix River. Freshwater mussels play an important role in maintaining water quality in the St. Croix River by filtering water and aquatic nutrients.<sup>2</sup> Surveys completed by the Minnesota Department of Natural Resources (MnDNR) and Macalester College indicate that state and federally-listed mussels inhabit the St. Croix River in the vicinity of the Hwy 243 Bridge. The St. Croix River also provides habitat for several Minnesota and Wisconsin state-listed fish species.

The project is within the range of the northern long-eared bat (*Myotis septentrionalis*), a federally-endangered species and the tri-colored bat (*Perimyotis subflaus*), a federally proposed-endangered species. Other non-listed bats in the study area include the big brown bat (*Eptesicus fuscus*), little brown bat (*Myotis lucifugus*), and hoary bat (*Lasiurus cinereus*). All three of these bat species are state-listed as threatened in Wisconsin. The little brown bat (*Myotis lucifugus*) and hoary bat (*Lasiurus cinereus*) are included in the U.S. Fish & Wildlife Service (USFWS) work plan for evaluation for potential protection under the Endangered Species Act. Bats and evidence of bats are present on the Hwy 243 Bridge. Previous bridge inspections have noted bat guano on top of all piers and on both abutments. Bats have been observed in the strip seal deck joints at all four bridge piers. A documented bat hibernaculum is also present in the study area.

### 2.3.5.4 St. Croix River Navigation

The US Coast Guard (USCG) has jurisdiction over structures spanning the St. Croix River. The General Bridge Act of 1946 requires the location and plans for bridges over navigable waters of the United States to be approved by the Commandant of the USCG prior to the start of construction. A USCG Section 9 permit will be required for this project. USCG has stated that any Hwy 243 crossing of the St. Croix River must meet or exceed the vertical

<sup>2</sup> US Department of Interior. National Park Service. September 2017. *Foundation Document. St. Croix National Scenic Riverway*. Minnesota and Wisconsin available at <https://www.nps.gov/sacn/learn/management/foundation-document.htm#SACN>.

and horizontal clearances provided by the existing Hwy 243 Bridge. See USCG correspondence in **APPENDIX J** (Agency Correspondence).

### 2.3.5.5 St. Croix National Scenic Riverway

The St. Croix National Scenic Riverway is a unit of the National Park System administered by the NPS and a component of the Wild and Scenic Rivers System. In 1968, the U.S. Congress established the St. Croix National Scenic Riverway, including the Namekagon River, as one of eight rivers protected under the National Wild and Scenic Rivers Act (NWSRA). The Lower St. Croix National Scenic Riverway was added in 1972. The purpose statement from the NPS Foundation Document, St. Croix National Scenic Riverway identifies the important values of the St. Croix National Scenic Riverway:<sup>1</sup>

*The values for which the Riverway has been designated as a wild and scenic river include its free-flowing character, exceptional water quality, and the aquatic, riparian, recreational, cultural/historic, geologic, scenic, and aesthetic values present in the rivers.*

The St. Croix and Namekagon rivers total 255 miles from their headwaters in northwest Wisconsin downstream to the confluence with the Mississippi River in Prescott, Wisconsin. The NPS management of the St. Croix National Scenic Riverway extends 230 miles from the headwaters of the St. Croix and Namekagon rivers to near the Boom Site north of Stillwater, Minnesota. The remaining 25 miles of the St. Croix River are part of the national wild and scenic rivers system and are managed by the States of Minnesota and Wisconsin. **Figure 2-5.** St. Croix National Scenic Riverway on the following page, from the NPS Foundation Document, St. Croix National Scenic Riverway, illustrates the St. Croix National Scenic Riverway and the location of the Hwy 243 Bridge. The NPS Foundations Document defines 11 river segments along the St. Croix National Scenic River. This project is in Segment 8: St. Croix Falls to Osceola Landing and Segment 9: Osceola to Marine on St. Croix.

Section 7(a) of the NWSRA provides national wild and scenic rivers with permanent protection from federally-licensed or assisted dams, diversions, channelization or other water resources projects that would have a direct and adverse effect on its free-flowing condition, water quality, or ORVs. Bridge projects, including the Hwy 243 Osceola Bridge Project, are considered a water resources project under the NWSRA.

The NPS retains the responsibility for Section 7(a) determinations. Federal-aid funds and federal permits will be required for the Hwy 243 Osceola Bridge Project. This project is subject to review by NPS and must be evaluated in accordance with Section 7(a) of the National Wild and Scenic Rivers Act. The Section 7(a) evaluation for this project will include an analysis of free-flowing conditions, water quality, and the six ORVs present at the Hwy 243 Bridge crossing location (aquatic, cultural, recreation, riparian, scenic/aesthetic, and geology).

### 2.3.5 Ecological Connectivity

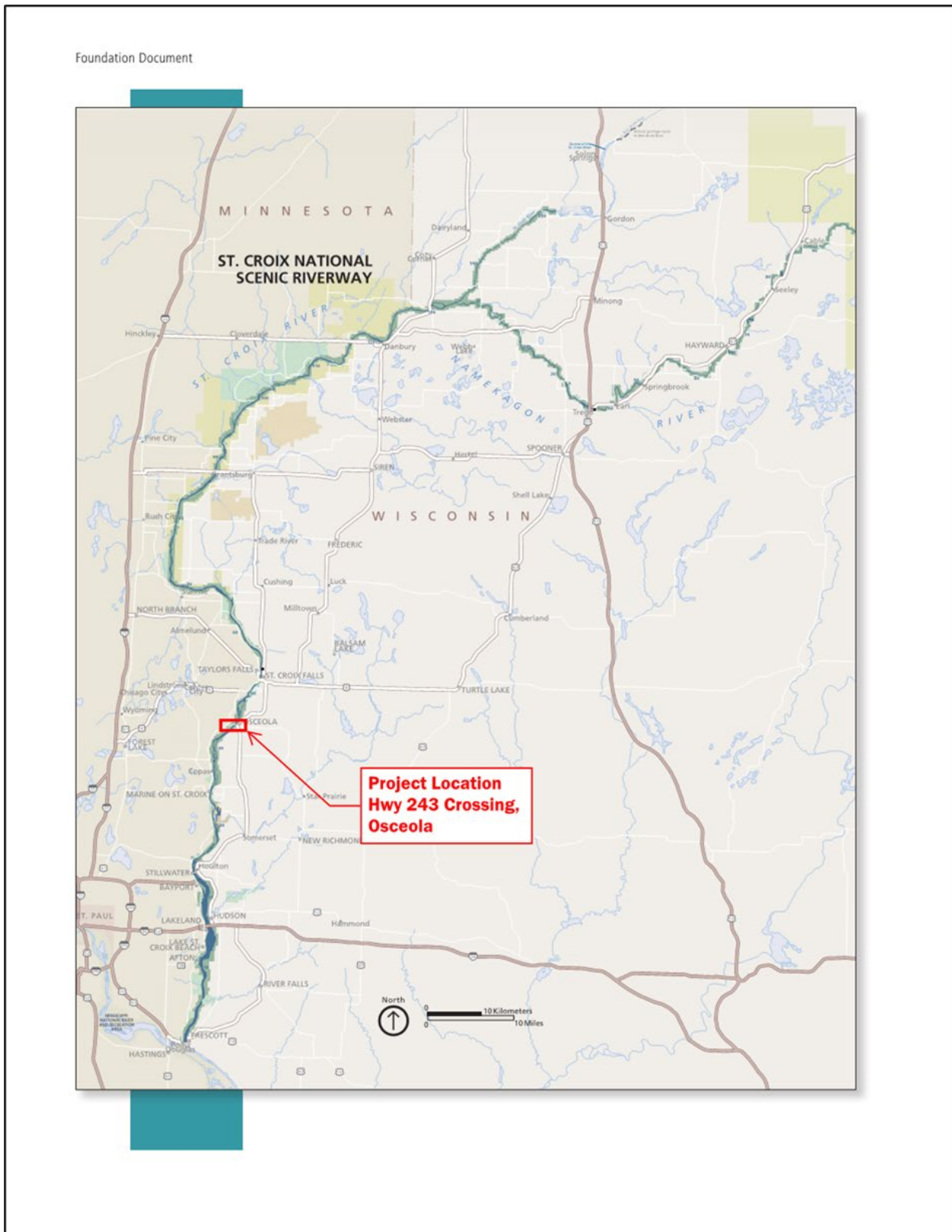
The Hwy 243 corridor is adjacent to large areas along the St. Croix River identified by the Minnesota DNR as sites of biodiversity significance. These areas are ranked in the “outstanding” category for their high-quality vegetative composition. Outstanding sites of biodiversity significance contain occurrences of rare species, rare native plant communities, and represent large, ecologically intact/functional landscapes.

The Hwy 243 (existing) causeway bisects these sites of biodiversity significance and the St. Croix River floodplain. Floodplain forests and backwater, shallow marshes are located along the Minnesota shoreline of the St. Croix River to the north and south of the Hwy 243 causeway. The Hwy 243 causeway blocks old channels and restricts flood flow between the backwater, shallow marshes. The Hwy 243 causeway may also be impeding north-south wildlife movement through the St. Croix River valley. Wildlife must cross over Hwy 243 or find their way under the Hwy 243 Bridge along the Minnesota shoreline through the Osceola Landing site.

This project provides the opportunity to improve ecological connectivity for rare species (e.g., turtles) and other wildlife species and to re-establish flood flow between backwater shallow marshes along the Hwy 243 corridor.

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Figure 2-5. St. Croix National Scenic Riverway



Source: US Department of Interior. National Park Service. September 2017. Foundation Document. St. Croix National Scenic Riverway. Minnesota and Wisconsin available at <https://www.nps.gov/sacn/learn/management/foundation-document.htm#SACN>.



### 3. ALTERNATIVES

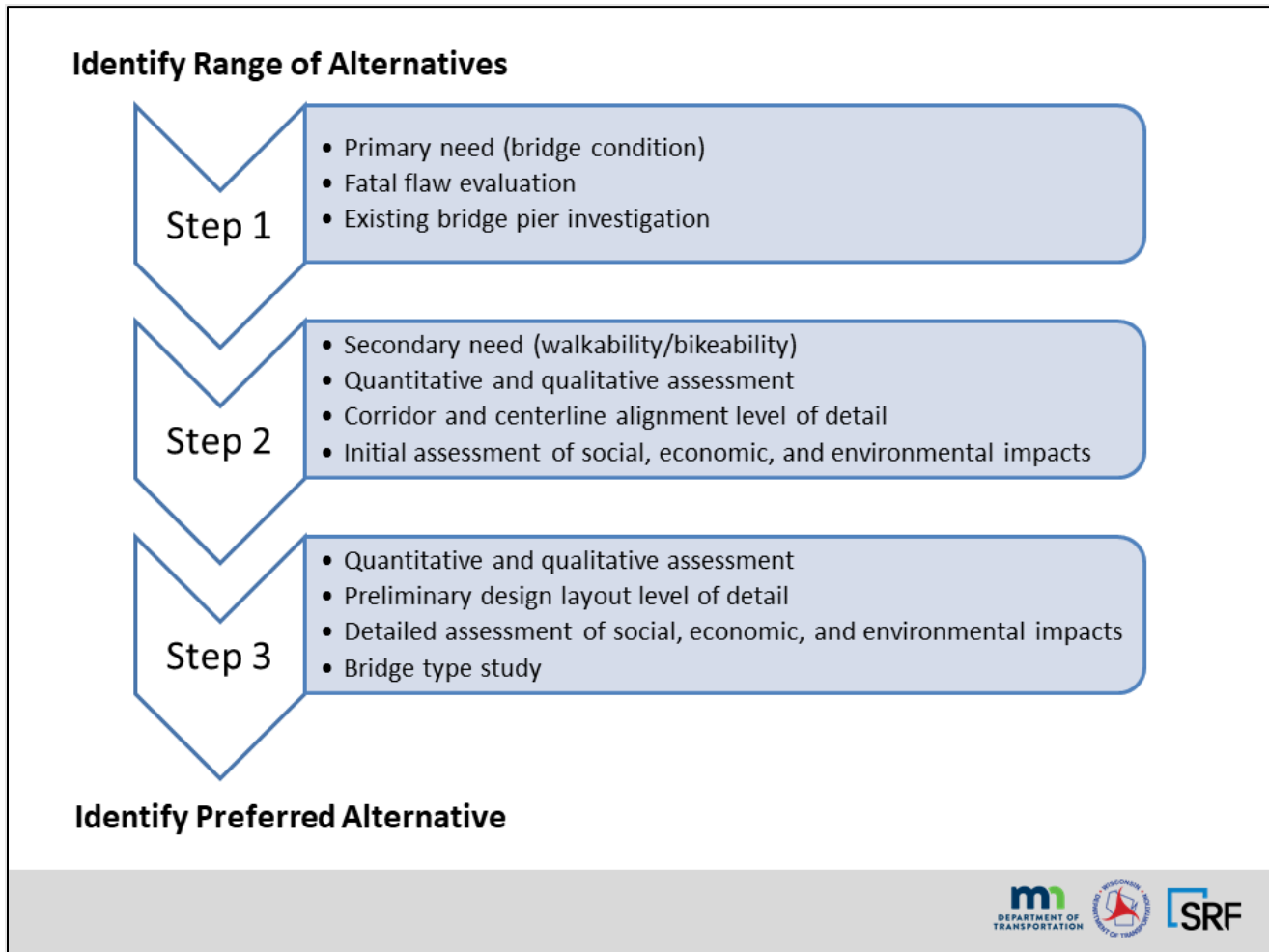
An alternatives evaluation process and evaluation criteria have been identified for the Hwy 243 Osceola Bridge Project. This process and evaluation criteria were documented in a report that was provided for Cooperating and Participating Agency review. This report was also published on the project webpage for a 15-day public review period. **APPENDIX C** includes the *Hwy 243 Osceola Bridge Project Alternatives Evaluation Criteria Report* (June 2021), including detailed evaluation matrices.

The alternatives evaluation for the Hwy 243 Osceola Bridge Project will use a three-step process. This process begins with identifying a reasonable range of build concepts, including a no build alternative. Each step includes a progressively greater level of design detail and quantitative and qualitative environmental analysis. The outcome of the third step is the identification of a Preferred Alternative for the Hwy 243 Osceola Bridge Project. The alternatives evaluation process is summarized below.

1. **Step 1:** Do the alternatives address the primary need for the Hwy 243 Osceola Bridge Project (i.e., the problems that led to the initiation of the project)? “Fatal flaw” assessment of alternatives. Fatal flaws include an un-mitigable environmental impact (e.g., the complete loss of a high-quality, significant environmental resource that cannot be replaced), is not fiscally attainable, or is not constructable.
2. **Step 2:** Do the alternatives address the secondary needs for the Hwy 243 Osceola Bridge Project? Qualitative and quantitative assessment of other considerations and initial assessment of SEE impacts.
3. **Step 3:** Detailed quantitative and qualitative assessment of SEE impacts.

**Figure 3-1.** Hwy 243 Osceola Bridge Project Alternatives Evaluation Process on the following page illustrates the three-step alternatives evaluation process for the Hwy 243 Osceola Bridge Project. The following sections describe each step of the alternatives evaluation in more detail. The *Alternatives Evaluation Criteria Report* in **APPENDIX C** identifies the evaluation criteria, performance measures, and methodologies used in each step of the evaluation process.

Figure 3-1. Hwy 243 Osceola Bridge Project Alternatives Evaluation Process



### 3.1 Alternatives Considered but Rejected

#### 3.1.1 Build Concept A: Rehabilitate existing bridge. Replace deck and superstructure. Re-use existing piers.

Build Concept A is the rehabilitation concept. Build Concept A includes removal of the existing Hwy 243 Bridge deck and superstructure and replacement with a new deck and superstructure. The existing bridge piers would remain in place and be re-used with the rehabilitation concept.

**Step 1 Evaluation:** Build Concept A was dismissed from further consideration because it only partially addresses the primary bridge condition needs for this project. This build concept extends the service life of the bridge deck and superstructure, but does not improve the condition of the substructure. Additionally, this concept does not replace the bridge piers, meaning there would not be adequate capacity to support a new bridge deck and superstructure.

### 3.1.2 Build Concept F: New Hwy 243 Bridge on new alignment between MN-95 and WIS-35

Build Concept F includes constructing a new bridge crossing along an entirely new Hwy 243 alignment between MN-95 and WIS-35 outside of the Village of Osceola. The existing Hwy 243 Bridge and existing Hwy 243 approach roadways in Minnesota and Wisconsin would be removed.

**Step 1 Evaluation:** Build Concept F was dismissed from further consideration because it would create a new highway corridor in the St. Croix National Scenic Riverway and has a high likelihood of adverse effects to the Riverway's ORVs and would not be consistent with the Riverway's anti-degradation requirement. This concept would also likely harm other protected resources on both sides of the St. Croix River.

### 3.1.3 Build Concept E: New Hwy 243 Bridge along 2<sup>nd</sup> Avenue alignment in WI

Build Concept E includes constructing a new bridge crossing north of the existing Hwy 243 Bridge. The Concept E alignment follows the original Hwy 243 crossing alignment that was in place prior to construction of the existing Hwy 243 Bridge in the 1950's. The Concept E alignment follows the 2nd Avenue corridor along the Wisconsin bluff to WIS-35 in the Village of Osceola. The existing Hwy 243 Bridge would be removed.

**Step 1 Evaluation:** Build Concept E addresses the bridge condition need for this project as it includes completely removing the existing Hwy 243 Bridge and constructing a new structure. This construction would include the construction of a new bridge deck, superstructure, and substructure. This build concept has a 75-year plus service life. Build Concept is in proximity to the existing bridge and would be approximately 250 feet north of the existing Hwy 243 Bridge at the Wisconsin shoreline.

- **Step 1a:** However, this build concept was dismissed from further consideration because of changes in traffic patterns in the Village of Osceola and anticipated impacts to the Osceola Commercial Historic District.

### 3.1.4 Build Concept G: Tunnel crossing under St. Croix River along existing Hwy 243 alignment

Build Concept G includes constructing a tunnel under the St. Croix River along the existing Hwy 243 alignment from Minnesota to Wisconsin. The existing Hwy 243 Bridge and Hwy 243 approach roadway in Wisconsin would be removed. The Hwy 243 approach roadway in Minnesota would be maintained to provide access to the NPS Osceola Landing. Build Concept G includes two potential alignments in Wisconsin: one along WIS-35 and one along County Hwy M (County M). The total length of the tunnel concept (tunnel, tunnel portals, and approach roadways) is approximately 1.9 miles.

**Step 1 Evaluation:** Build Concept G addresses the bridge condition need for this project as it includes completely removing the existing Hwy 243 Bridge and constructing a new structure. This construction would include the construction of a new tunnel structure under the St. Croix River. Build Concept G would follow the existing Hwy 243 alignment.

- **Step 1a:** However, this build concept was dismissed from further consideration because more extensive maintenance is required for upkeep of the proposed tunnel's security and operations. Additionally,

pedestrians and cyclists would not be accommodated in the tunnel, meaning an additional asset such as a multi-use trail would have to be maintained to preserve walkability and bikeability across the St. Croix River.

### 3.1.5 Build Alternative C: New Hwy 243 Bridge on north side of existing structure

Build Alternative C includes constructing a new bridge parallel to the existing Hwy 243 Bridge. The Build Alternative C alignment is along the north side of the existing structure. The existing Hwy 243 Bridge would be removed.

**Step 1 Evaluation:** Build Concept C addresses the bridge condition need for this project as it includes completely removing the existing Hwy 243 Bridge and constructing a new structure. This construction would include the construction of a new bridge deck, superstructure, and substructure. This build concept has a 75-year plus service life. Build Concept C is in proximity to the existing bridge and would be parallel to the existing Hwy 243 bridge.

- **Step 1a:** Build Concept C would require minimal maintenance and operating demands between inspections because of its similarity to the current management requirements of the existing Hwy 243 Bridge. It would not impact the traffic flow in/around Osceola Landing and the Village of Osceola.

**Step 2 Evaluation:** Build Alternative C would have less impact to roadway traffic with the crossing being closed for approximately 9 to 10 months; however, bridge abutment constructability along steep grades at the Wisconsin bluff could result in additional roadway traffic disruption. This build alternative would likely expand the existing bluff cut and require construction of retaining walls along the north side of Hwy 243 to avoid impacts to the Osceola Creek (also known as Cascade Creek) and the Wilke Glen/Cascade Falls Trail. Build Alternative C addresses the secondary walkability/bikeability need for the project and has SEE impacts that are relatively similar with the other alternatives.

**Step 3 Evaluation:** Build Alternative C requires two river accesses for bridge construction, which would include retaining wall construction along the Hwy 243 approach at the St. Croix River shoreline. This build alternative also requires one additional construction season for in-water work to remove the existing Hwy 243 Bridge. This alternative is anticipated to result in minor property impacts.

Build Alternative C was eliminated from further consideration and will not be studied further. There is a higher likelihood that this alternative would adversely impact the surrounding environment compared to the other alternatives. Additionally, this build alternative has a greater construction duration, the greatest amount of bluff disturbance, and would have lower visual ranking due to the construction of a retaining wall. Build Alternative C also has greater impacts to wetlands, greater amount of tree clearing and ground disturbance, greater amount of river bottom disturbance and higher potential for impacts to protected species. This alternative also has greater permitting risks compared to the other alternatives.

### 3.1.6 Build Alternative D: New Hwy 243 Bridge on south side of existing structure

Build Alternative D includes constructing a new bridge crossing parallel to the existing Hwy 243 Bridge. The Build Alternative D alignment is along the south side of the existing structure. The existing Hwy 243 Bridge would be removed.

**Step 1 Evaluation:** Build Concept D addresses the bridge condition need for this project as it includes completely removing the existing Hwy 243 Bridge and constructing a new structure. This construction would include the construction of a new bridge deck, superstructure, and substructure. This build concept has a 75-year plus service life. Build Concept D is in proximity to the existing bridge and would be parallel to the existing Hwy 243 Bridge.

- **Step 1a:** Build Concept D would require minimal maintenance and operating demands between inspections because of its similarity to the current management requirements of the existing Hwy 243 Bridge. It would not impact the traffic flow in/around Osceola Landing and the Village of Osceola.

**Step 2 Evaluation:** Build Alternative D would have less impact to roadway traffic with the crossing being closed for approximately 9 to 10 months; however, bridge abutment constructability along steep grades at the Wisconsin bluff could result in additional roadway traffic disruption. This build alternative would likely expand the existing bluff cut and require construction of retaining walls along the north side of Hwy 243 to avoid impacts to the Osceola Creek and the Wilke Glen/Cascade Falls Trail. This build alternative would have the least amount of bluff volume impacts.

**Step 3 Evaluation:** Build Alternative D requires two river accesses for bridge construction, which would include retaining wall construction along the Hwy 243 approach at the St. Croix River shoreline. This build alternative also requires one additional construction season for in-water work to remove the existing Hwy 243 Bridge. This alternative is anticipated to result in minor property impacts.

Build Alternative D was eliminated from further consideration and will not be studied further. There is a higher likelihood that this alternative would adversely impact the surrounding environment compared to the other alternatives. Additionally, this build alternative has a greater construction duration, the greatest amount of disturbance to the South Bluff along the Wisconsin approach, and would have lower visual ranking due to the construction of a retaining wall. Build Alternative D also has greater impacts to wetlands, greater amount of tree clearing and ground disturbance, greater amount of river bottom disturbance and higher potential for impacts to protected species. This alternative also has greater permitting risks compared to the recommended build concept.<sup>3</sup>

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<sup>3</sup> Greater permitting risk was defined as the likelihood that a build alternative would not be authorized by regulatory agencies because of greater social and/or environmental impacts when compared to other alternatives.



## 3.2 Alternatives under Consideration, including the “No Build” Alternative

### 3.2.1 No Build Alternative

The No Build Alternative (or “do nothing” alternative) includes routine bridge maintenance activities on the existing Hwy 243 Bridge. The existing bridge deck, superstructure, and piers would be maintained. The No Build Alternative is included as required by NEPA. The No Build Alternative represents the baseline condition for the project and serves as the basis for comparing the social, economic, and environmental impacts of other alternatives.

**Step 1/1a/2/3 Evaluation:** The No Build Alternative does not address the primary bridge condition need for the project. It does not address the long-term condition needs of the project and only temporarily extends the service life of the Hwy 243 Bridge. The No Build Alternative is only considered further as it is required under NEPA since it provides the baseline condition against which other build alternatives are evaluated.

### 3.2.2 Build Alternative B: New Hwy 243 Bridge on existing alignment

Build Alternative B includes removing the existing Hwy 243 Bridge and constructing a new bridge and approach roadways along the existing alignment.

**Step 1 Evaluation:** Build Concept B addresses the bridge condition need for this project as it includes completely removing the existing Hwy 243 Bridge and constructing a new structure. This construction would include the construction of a new bridge deck, superstructure, and substructure. This build concept has a 75-year plus service life. Build Concept B follows the existing Hwy 243 alignment.

- **Step 1a:** Build Concept B would require minimal maintenance and operating demands between inspections because of its similarity to the current management requirements of the existing Hwy 243 Bridge. It would not impact the traffic flow in/around Osceola Landing and the Village of Osceola.

**Step 2 Evaluation:** Build Alternative B would have the largest impact to roadway traffic during construction, as it would be interrupted for the entire 21 to 24-month construction period. This build alternative has the least amount of bluff surface area impacts. Build Alternative B addresses the secondary walkability/bikeability needs for the project and has SEE impacts that are relatively similar to the other build concepts.

**Step 3 Evaluation:** Build Alternative B requires the longest crossing closure time, but has the shortest overall construction duration. This build alternative minimizes in-water impacts compared to the off-alignment alternatives because one river access is required for bridge construction compared to two. This build alternative also does not include a retaining wall at the shoreline. Build Alternative B minimizes the potential impacts to the surrounding natural environment compared to the other build concepts. Additionally, this build concept avoids right of way acquisition.

Build Alternative B was identified as the Preferred Alternative for the Hwy 243 Osceola Bridge Project. This alternative addresses the primary and secondary needs of the project. The Preferred Alternative addresses the primary bridge conditions need of the project. The Preferred Alternative includes construction of a new bridge

across the St. Croix River with a 75-year service life. The Preferred Alternative improves NBI condition ratings compared to the No Build Alternative and provides a reliable river crossing. The Preferred Alternative also addresses the secondary walkability/bikeability needs of the project. The Preferred Alternative includes a pedestrian and bicycle sidepath on the north side of Hwy 243 across the St. Croix River, connecting Osceola Landing to the Village of Osceola.

This build alternative additionally provides the opportunity to improve ecological and floodplain connectivity at the existing Minnesota causeway. Build Alternative B would minimize in-water impacts, impacts to the Wisconsin bluff, wetland impacts, protected species impacts, park impacts, visual impacts, and in-water construction. This alternative also would have the least amount of river bottom disturbance, the least amount of tree removal, and the least amount of ground disturbance. Build Alternative B would not require any relocations and the preliminary construction limits are within the existing right of way.

### 3.3 Benefit Cost Analysis

The objective of a benefit-cost analysis (BCA) is to bring all the direct effects of a transportation investment into a common measure (dollars), and to account for the fact that benefits accrue over an extended period while costs are incurred primarily in the initial years. The primary elements that can be monetized are travel time, changes in vehicle operating costs, vehicle crashes, capital costs, remaining capital value, and maintenance costs. The BCA can provide an indication of the economic desirability of an alternative, but decision-makers must weigh the results against other considerations, effects, and impacts of the project.

The BCA provides an indication of the economic desirability of a scenario, but results must be weighed by decision-makers along with the assessment of other effects and impacts. Projects are considered cost-effective if the benefit-cost ratio is at least 1.0. The larger the ratio number, the greater the benefits per unit cost. The BCA for the project was based on preliminary cost estimates for the prestressed girder bridge type. The benefit/cost ratio for the Hwy 243 Osceola Bridge Project was 11.69 compared to the No Build Alternative. The final BCA memorandum is in **APPENDIX O** (Benefit-Cost Analysis Memo).

### 3.4 Bridge Type Study

The main objective of a bridge type study is to evaluate bridge concepts suitable for a replacement bridge on the existing alignment and to provide a recommended bridge structure type. For purposes of this study, 'structure type' includes both material type used for the superstructure (e.g. steel, prestressed concrete, etc.), as well as the configuration/location of substructure elements. A secondary purpose of this study is to evaluate methods that could be employed to reduce the time the bridge is closed to traffic and/or minimize the duration of impacts within the river.

The selection of a recommended bridge type and configuration used a four-step process.

1. **Step 1** - Develop Evaluation Criteria: Evaluation criteria were developed to compare impacts (both positive and negative) that each alternative had to the project, stakeholders, and the environment. Criteria were initially proposed to the Project Management Team and refined based on input from stakeholders and regulatory agencies.

2. **Step 2** - Develop a List of Bridge Alternatives: A list of potential bridge types, including structure type, substructure layout, and existing element reuse were identified. The initial bridge types were screened and bridge types that were not practical for this river crossing location were dismissed from further evaluation. The remaining bridge types were carried forward for further evaluation in Step 3.
3. **Step 3** - Evaluate Alternatives: A general plan and profile was developed for remaining bridge types from Step 2, including identifying pier placement in the St. Croix River. Evaluation matrices describing the impacts for each bridge type were completed. Impact rankings (low, medium, high impacts) were identified for evaluation criteria.
4. **Step 4** - Provide a Recommended Bridge Type: The impacts of each bridge type were compared against one another, and a recommended bridge type was identified.

The study identified and evaluated eight bridge type alternatives. An overall assessment of each alternative can be found in **Table 3-1**. Overall Assessment of Alternatives in the Bridge Type Study. After review of the Bridge Type Study Matrix, coordination with stakeholders, and consultation with regulatory agencies (Federal Hwy Administration, National Parks Service, Minnesota and Wisconsin Departments of Natural Resources, etc.), Alternative B1, 4-span Prestressed Concrete Beams, was identified as the preferred alternative bridge type.

A copy of the Bridge Type Study can be found in [APPENDIX D \(Bridge Type Study\)](#).

**Table 3-1. Overall Assessment of Alternatives in the Bridge Type Study**

Alternative		Max Span Length(s)	# of Spans	# of Piers	Overall Assessment
A1	3-Span Steel Plate Girders	275-ft ±	3	2	<b>Moderate Impact:</b> Low constructability risk, no limitation to accelerated construction techniques, provides benefits to navigation clearances and hydraulics. Moderate impacts to schedule (girder lead time), environmental considerations, and future maintenance.
A1.1	3-Span Steel Plate Girders	260-ft ±	3	2	
A2	2-Span Steel Plate Girders	334-ft ±	2	1	<b>High Impact:</b> Deep superstructure with a pier centered in the river not desirable. High construction costs.
B1	4-Span Prestressed Concrete Beams	184-ft ±	4	3	<b>Recommended Alternative:</b> Prestressed concrete beams are the preferred structure type in MN & WI due to cost and ease of inspection/future maintenance. Low impacts to environmental considerations. Moves pier away from Osceola Creek. Moderate constructability risk due to heavy girders can be mitigated with larger cranes and additional temporary causeway on the WI riverbank during construction. Temporary causeway(s) will be removed before the end of construction.

Alternative		Max Span Length(s)	# of Spans	# of Piers	Overall Assessment
B2	5-Span Prestressed Concrete Beams	200-ft ±	5	4	<b>High Impact:</b> Requires 3 piers in the river with a pier closer to Osceola Creek. Moderate environmental impacts due to large girder depth and piers closer mussel habitat
B3	3-Span Prestressed Concrete Beams	223-ft ±	3	2	<b>Eliminated from Consideration:</b> Current hauling equipment does not have the capacity for delivering a prestressed beam >200-ft long.
C1	3-Span Continuous PT Spliced Conc.	260-ft ±	3	2	<b>High Impact:</b> Longest traffic closure with limited opportunities to accelerate construction. Highest cost of all alternatives. Moderate environmental impacts due to piers closer to riverbanks.
C2	3-Simple Span PT Spliced Conc.	223-ft ±	3	2	<b>Eliminated from Consideration:</b> No measurable benefits compared to continuous structure.

## 4. SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS

This section discusses the environmental impacts of the Preferred Alternative identified in the Alternatives section. It contains two sub-sections;

- State EAW
- Additional Federal Issues

The EAW is a standard format used in Minnesota for environmental review of projects meeting certain thresholds at Minnesota Rule 4410.4300. Federal environmental regulations not addressed on the EAW are addressed in separate sub-section.

*December 2022 version*

### 4.1 Environmental Assessment Worksheet

This most recent EAW form and guidance documents are available at the Environmental Quality Board's website at: <https://www.eqb.state.mn.us/>. The EAW form provides information about a project that may have the potential for significant environmental effects. Guidance documents provide additional detail and links to resources for completing the EAW form.

**Cumulative potential effects** can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 21.

**Note to reviewers:** Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

#### 4.1.1 Project Title

Hwy 243 Osceola Bridge Project (MnDOT State Project (SP) 1311-06, WisDOT Project ID 8417-00-76)

#### 4.1.2 Proposer

Minnesota Department of Transportation

Contact person: Dmitry Tomasevich

Title: MnDOT Project Manager

Address: 1500 County Road B2 W

City, State, ZIP: Roseville, MN 55113

Phone: (651) 245-4406

Fax: N/A

Email: [Dmitry.tomasevich@state.mn.us](mailto:Dmitry.tomasevich@state.mn.us)



### 4.1.3 Responsible Governmental Unit (RGU)

Minnesota Department of Transportation

Contact person: Dmitry Tomasevich

Title: MnDOT Project Manager

Address: 1500 County Road B2 W

City, State, ZIP: Roseville, MN 55113

Phone: (651) 245-4406

Fax: N/A

Email: [Dmitry.tomasevich@state.mn.us](mailto:Dmitry.tomasevich@state.mn.us)

### 4.1.4 Reason for EAW Preparation

Required:

EIS Scoping

Mandatory EAW

Discretionary:

Citizen petition

RGU discretion

Proposer initiated

If EAW or EIS is mandatory, give EQB rule category subpart number(s) and name(s): Not applicable.

### 4.1.5 Project Location

**Counties:** Chisago County, Minnesota and Polk County, Wisconsin

**City/Township:** Franconia Township, Minnesota and Village of Osceola, Wisconsin

**PLS Location (¼, ¼, Section, Township, Range):** T33N-R19W-S27 (NW, NW)

**Watershed (81 major watershed scale):** Lower St. Croix River - Stillwater

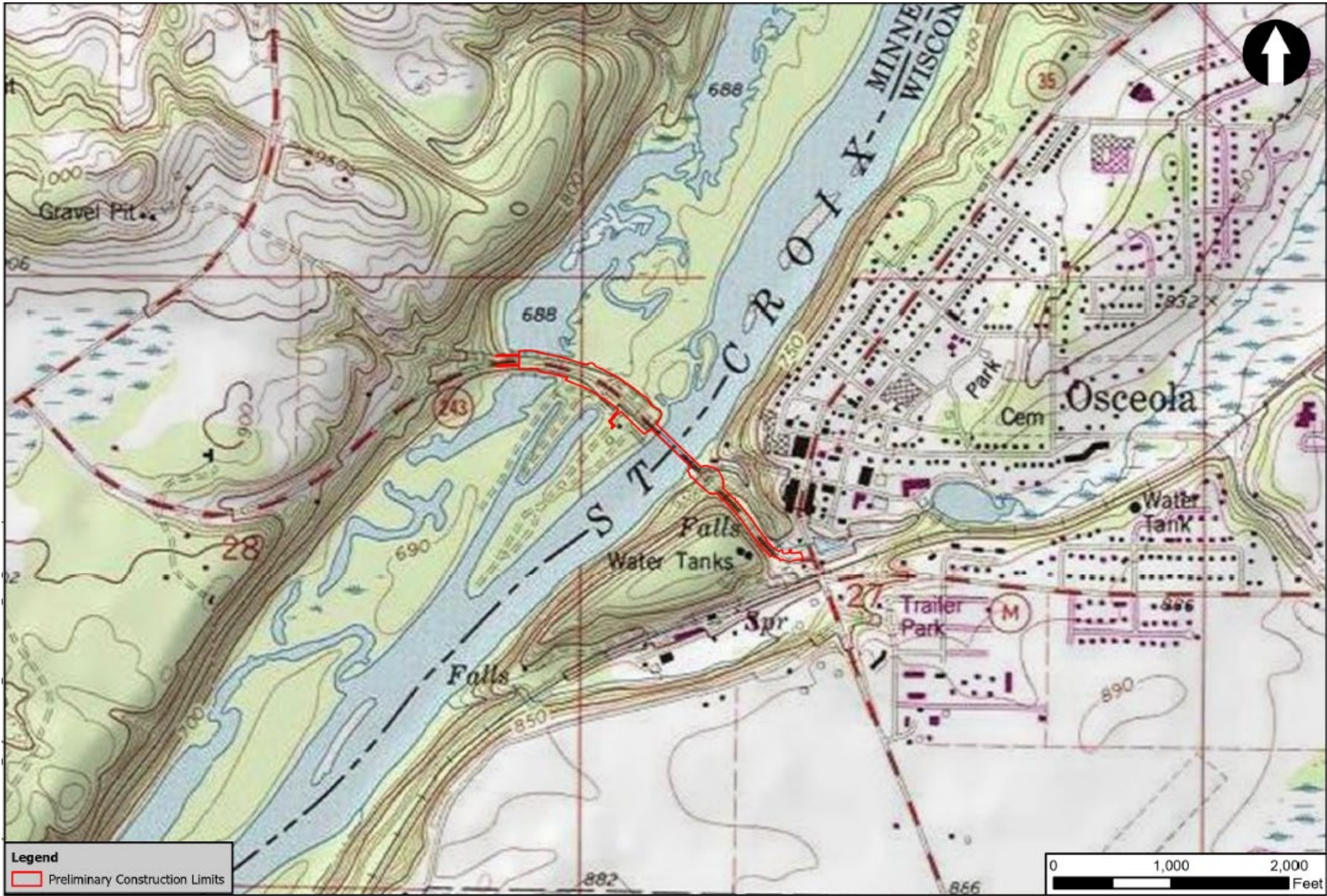
**GPS Coordinates:** 45.32139373991882, -92.70994127171967 (approximate center)

**Tax Parcel Numbers:** Chisago Co: 040023900, 040023800, 040024700, 040023700, 040023600, 040024510, 040024300. Polk Co: 165005670100, 165005320000, 165005690100, 165005280100

**At a minimum attach each of the following to the EAW:**

- County map showing the general location of the project (see **Figure 0-1** and **Figure 0-2**)
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (see **Figure 4-1**)
- Site plans showing all significant project and natural features
  - Existing cover types within the project area: **Figure 4-2**
  - Existing soil types within the project area: **Figure 4-3**
  - Water resources within the project area: **Figure 4-4**
  - Floodplain within the project area: **Figure 4-5**
- Pre-construction site plan and post-construction site plan (See Figure A1 in **APPENDIX A** (Figures)).
- List of data sources, models, and other resources (from the Item-by-Item Guidance: *Climate Adaptation and Resilience* or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project during the life of the project (see Section 4.1.7 Climate Adaptation and Resilience).

Figure 4-1. United States Geological Survey Topographical Map



## 4.1.6 Project Description

### 4.1.6.1 Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

MnDOT, in cooperation with WisDOT, proposes to replace the Hwy 243 Bridge over the St. Croix River in the St. Croix National Scenic Riverway. Improvements include reconstruction of Hwy 243 from WIS-35 to 550 feet west of the Osceola Landing entrance, constructing a westbound left turn lane to Osceola Landing, and constructing a shared-use path on the north side of Hwy 243. Stormwater management improvements include constructing a stormwater pond on the Minnesota side of the St. Croix River and a sump manhole and sediment basin along the Wisconsin bluff.

### 4.1.6.2 Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce waste, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal, or remodeling of existing structures, and 4) timing and duration of construction activities

#### 1) Construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes

The project would involve the construction of a new bridge structure that will replace the existing Hwy 243 Bridge (MnDOT Bridge No. 6347, WisDOT No. Bridge B-48-224) over the St. Croix River National Scenic Riverway. Proposed construction includes adding a westbound left turn lane at the Osceola Landing entrance, located west of the river. The project involves the following elements that will cause physical manipulation of the environment:

- The Hwy 243 Bridge would be reconstructed on the existing alignment; the bridge will be widened from existing condition to accommodate a shared-use path on the north side of the bridge.
- A shared-use path is proposed on the north side of Hwy 243 (on and off the bridge), as well as a shared-use path connection to the north side of Osceola Landing.
- Within Osceola Landing, the shared-use path/trail would continue (south of existing right of way) to provide a crosswalk/sidewalk connection to the comfort area on the south side of the parking lot.
- The planned shared-use path would continue east of the river bridge and extend to WIS-35 (the eastern limit of the project). The shared-use path on the Wisconsin side of the river will include ADA considerations like buffers away from the roadway (where practicable), and bump outs (three side landings on the north side of the shared-use path, to allow for a wheelchair accessible rest area as the grade change steepens. Planned landings would be 205 to 210 feet apart.
- The pavement of Hwy 243 would be reconstructed throughout the project area (east and west of the bridge reconstruction).
- A wet pond is proposed near the Osceola Landing entrance for stormwater and water quality management, along with drainage improvements within existing right of way to the west of

Osceola Landing. These improvements include management features to treat runoff from the bridge and improve water quality.

- Minnesota wayside rest relocation, to be relocated from existing location to directly across from Osceola Landing entrance (west of existing location).
- Addition of a pull off area on Hwy 243 on the Wisconsin side of the river.
- In-water work in the St. Croix River, including temporary causeway construction on each side of the river.
- Temporary construction staging areas on each side of the river, adjacent to Hwy 243.
- Bridge construction will require the use of barges (in-water) and cranes (on-land).
- Pier construction would use cofferdams to contain construction impacts within the St. Croix River.

A comprehensive constructability review is ongoing with the development of this project. Construction timeline/schedule, construction access, disturbance limits, and a recommendation were developed as part of the constructability review and report **APPENDIX E** (Constructability Report).

The evaluation of construction access involved determining crane sizing and placement/staging, pontoon barge feasibility, river water levels, temporary causeway assessment, and considerations for Wisconsin access due to the bluffs near the Hwy 243 Bridge. After reviewing several constructability considerations, the project team's recommended approach includes sheet pile supported earthen causeways (likely from each side of the river for temporary construction condition), pontoon barge operation in the main channel of the St. Croix River to support demolition and construction of the new bridge, as well as transportation of materials and equipment to the Wisconsin side of the river. Sheet pile supported temporary causeways are being considered because this method reduces the causeway footprint compared to other methods. The northern Osceola Landing parking lot would be used for construction staging/access which has involved active coordination with the NPS. The NPS used an area south of the Osceola Landing entrance road for equipment and materials storage for construction of the recent Osceola Landing Phase I Improvements Project. Because this area has been previously disturbed, it is anticipated that the Hwy 243 Osceola Bridge Project will also use this area for construction equipment and materials storage.

Recommendations also include excavation into the Wisconsin hillside adjacent to the Wisconsin bridge abutment to facilitate crane placement for concrete beam installation of the bridge. There is also potential for dredging to occur in the west side of the river, nearest the Osceola Landing parking lot, for launching of pontoon barges. A detailed map of construction access areas and in-water impacts can be found at the end of **APPENDIX E** (Constructability Report).

## **2) Modifications to existing equipment or industrial processes**

The project would not modify existing equipment or industrial processes.

## **3) Significant demolition, removal, or remodel of existing structures**

The proposed project would involve the demolition and removal of the existing Hwy 243 Bridge over the St. Croix National Scenic Riverway, including removal of the bridge and the existing bridge deck, superstructure, substructure, and bridge piers. New bridge piers, substructure, superstructure, and a new bridge deck would be constructed in place of the removed bridge structures.



The bridge deck and superstructure will be disassembled into manageable pieces using standard construction practices. Temporary shoring may be required to support the bridge during removal. Dropping the existing bridge deck and superstructure into the St. Croix River will not be allowed. The bridge abutments will be removed using standard construction practices to an elevation below the ground surface. The use of explosives for removal of the bridge deck and superstructure will not be allowed. All debris will be removed from the project site.

The existing bridge piers will be removed from the St. Croix River. MnDOT and WisDOT will prepare a removal plan for the existing bridge piers. The removal plan will identify all proposed methods for removal and best management practices to be implemented during removal. The following measures will be implemented for bridge pier removal:

- All required permits shall be granted prior to the start of removal operations in the St. Croix River.
- The use of explosives for bridge pier removal will not be allowed.
- The bridge piers shall be completely removed to a specified depth below the St. Croix River channel bottom. This depth will be identified in coordination with permitting agencies (e.g., USACE, USGS).
- All fugitive dust emissions during the pier removal process shall be contained.
- No turbid and/or sediment laden water shall leave the project limits.
- Cofferdams shall be used for bridge pier removal. All rubble and debris shall be contained and removed.
- The contractor shall confirm the required removal depth and indicate any obstructions remaining in the St. Croix River channel. Any obstructions remaining will be removed. This information shall be documented and provided to MnDOT.

No existing building impacts are anticipated in the project. All existing structures would be preserved and/or avoided.

The Minnesota state sign/monument would remain in its existing location.

#### **4) Timing and duration of construction activities**

Construction of the proposed Hwy 243 Osceola Bridge Project is anticipated to begin in Fall 2026 with the procurement of causeway permits and materials. Bridge construction is planned to occur for two construction seasons (2027 and 2028). The new bridge is anticipated to open in the fall of 2028. Restoration of construction staging areas, including Osceola Landing improvements, would occur in 2029. A preliminary construction schedule is provided in the Constructability Report in **APPENDIX E** (Constructability Report).

##### **4.1.6.3 Project magnitude**

**Table 4-1** tabulates the Hwy 243 Osceola Project magnitude. This table is required as part of the EAW process and document. Several parameters do not apply to a transportation project; therefore, they are not applicable.

**Table 4-1. Project Magnitude**

Description	Minnesota Magnitude	Wisconsin Magnitude	Total Magnitude
Total Project Acreage	5.64	2.61	8.25
Linear Project Length (miles)	0.4	0.28	0.68
Number and Type of Residential Units	Not applicable	Not applicable	Not applicable
Residential building area (in square feet)	Not applicable	Not applicable	Not applicable
Commercial building area (in square feet)	Not applicable	Not applicable	Not applicable
Industrial building area (in square feet)	Not applicable	Not applicable	Not applicable
Institutional building area (in square feet)	Not applicable	Not applicable	Not applicable
Other uses – specify (in square feet)	Not applicable	Not applicable	Not applicable
Structure height(s)	Top elevation close to existing	Top elevation close to existing	Top elevation similar to existing <sup>4</sup>

**4.1.6.4 Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.**

The purpose of this project is to address the bridge condition over the St. Croix River in the Hwy 243 corridor between Washington/Chisago counties in Minnesota and the Village of Osceola in Wisconsin and address pedestrian and bicycle comfort and mobility while minimizing impacts to the area’s sensitive resources.

**4.1.6.5 Are future stages of this development including development on any other property planned or likely to happen? If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.**

No. Not applicable to the Hwy 243 Osceola Bridge Project.

**4.1.6.6 Is this project a subsequent stage of an earlier project? If yes, briefly describe the past development, timeline and any past environmental review.**

No. Not applicable to the Hwy 243 Osceola Bridge Project.

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<sup>4</sup> The proposed bridge will have reduced structure depth and a reduced number of piers compared to the existing bridge. This will increase both vertical and horizontal clearance beneath the bridge.



## 4.1.7 Climate Adaptation and Resilience

### 4.1.7.1 Describe the climate trends in the general location of the project (see guidance: <https://www.eqb.state.mn.us/sites/eqb/files/documents/2023%20EAW%20Climate%20Guidance.pdf>) and how climate change is anticipated to affect that location during the life of the project.

Current and predicted future deviations in Minnesota and Wisconsin's microclimates include higher intensity rainfall events, more localized flooding, more frequent (recurrent) freeze/thaw cycles, lack of snow cover, extreme heat events, and droughts have the likelihood to impair infrastructure and create safety risks. For transportation infrastructure, the two primary concerns are the projected changes in temperature and rainfall intensity.

All the data sources reviewed gave high probabilities for increased temperatures and increased precipitation over the next 20 years, resulting in increased flooding and stormwater management concerns, as well as heat waves. However, review of the flood factor mapping for the project area in Chisago County indicated an overall minor-moderate risk of flooding. The increased rainfall intensity and frequency can affect stormwater management systems and increase water pollution. Higher temperatures can also harm water quality. Data also indicates a greater probability of drought periods, though these are not predicted to be as frequent as the periods of increased precipitation. These shifts in weather patterns will affect vegetation and wildlife (both aquatic and terrestrial).

MnDOT has identified several potential negative effects of climate change on the state's transportation system and the need to adapt. Confidence is high to very high for the following impacts: heavy precipitation/flooding, warmer winters, and new species ranges. Examples of negative effects include overtopping roads due to flooding, damage to the highway, more ice-buildup and reduced pavement conditions, changes in roadside vegetation mixes, and increases in invasive species.

The National Park Service's Foundation Document for the St. Croix National Scenic Riverway (September 2017) states the following regarding climate change:

*"Increases in mean annual temperature (+3.5°F–5.5°F by 2070), slight increases in mean annual precipitation (+3%–6% by 2070), increases in extreme heat events, and increases in storm frequency and intensity are projected for the region due to climate change. These changes in climate will have far-reaching impacts on the St. Croix and Namekagon Rivers, local aquifers, and aquatic environments at St. Croix National Scenic Riverway. Impacts on terrestrial habitats are also expected. Changes in species composition, increases in wildfire frequency, and increases in invasive species are possible, along with impacts (e.g., food and erosion events) on cultural resources and facilities within the Riverway. Adapting to the impacts of climate change will require park managers to continue to learn from the past, but be forward-looking, anticipating plausible and sometimes unprecedented conditions based on observations from monitoring and projections from regional climate models. The National Park Service is instructed to incorporate climate considerations in decision processes and management planning as parks consider adaptation options that may deviate from traditional practices."*

Several climate predictions summarized below use Representative Concentration Pathways (RCPs), which are greenhouse gas (GHG) concentration scenarios used by the Intergovernmental Panel on Climate Change. RCP 4.5 is an intermediate scenario in which emissions decline after peaking around 2040, and RCP 8.5 is a worst-case

scenario in which emissions continue to rise through the 21<sup>st</sup> century.<sup>5</sup> The *Minnesota Climate Explorer* tool was used to obtain historical average and projected temperatures/precipitation based on different climate projections.<sup>6</sup>

## Temperature

The historical average temperature within Chisago County between 1900 and 1999 was approximately 42.4°F. The historical temperature trend between 1900 and 1999 was a rise of approximately 0.17°F per decade. Between 2003 and 2023, the annual average temperature rose to 44.3°F. The average annual temperature within Chisago County is projected to continue to rise in the foreseeable future. Average annual temperature under RCP 4.5 is projected to increase to 47.2°F from 2040 to 2059. From 2080 to 2099, this measurement is projected to increase even further to 49.7°F under RCP 4.5 or 53.4°F under RCP 8.5.

### Excessive Heat Events

A series of unusually hot days is referred to as an extreme heat event. Extreme heat events have occurred in project area. Between 1950 and 2023, Chisago County experienced five (5) excessive heat events which occurred in 2011, 2016, two events in 2022, and 2023.<sup>7</sup> Between 1950 and 2023, Polk County experienced two (2) excessive heat events, which occurred in 2011 and in 2020.<sup>4</sup> No deaths, injuries, property damage, or crop damage were reported with any of the five events in Chisago County or Polk County. The severity and frequency of excessive heat events are anticipated to increase due to climate change. These events are often intensified in urban areas due to the urban heat island effect, which occurs when there is a high concentration of impervious surfaces that absorb and re-release more heat from the sun than natural and green surfaces. This year, the Village of Osceola is anticipated to experience 7 days with a “feels like” temperature of 100°F or above, and in 30 years the project area is anticipated to experience 14 days above 100°F, which would increase the potential for an extreme heat event to occur.<sup>8</sup>

### Freeze-Thaw Cycles

A freeze-thaw cycle occurs when air temperature drops low enough to freeze liquid water (32°F), then increases enough for it to melt again.<sup>9</sup> Freeze-thaw cycles typically occur most frequently in the wintertime, though have the potential to occur at any time of year. In the project area, freeze-thaw events most frequently occur due to warm daytime temperatures and cold nighttime temperatures during the early spring and late fall, although they have the potential to occur at any time of the year. When rainwater or snowmelt drains into cracks in concrete or pavement, the water begins to freeze and expand, causing small cracks to grow bigger. This

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<sup>5</sup> Minnesota Department of Natural Resources. *Climate Explorer Metadata*. Accessed in February 2024 and available at <https://www.dnr.state.mn.us/climate/climate-explorer-metadata.html>.

<sup>6</sup> Minnesota Department of Natural Resources. *Minnesota Climate Explorer*. Accessed in February 2024 and available at <https://arcgis.dnr.state.mn.us/ewr/climateexplorer/main/historical>.

<sup>7</sup> National Oceanic and Atmosphere Association. *Storm Events Database -Excessive Heat Events*. Accessed in March 2024 and available at <https://www.ncdc.noaa.gov/stormevents/>.

<sup>8</sup> Risk Factor. *Does Osceola Have Heat Risk?* Accessed in March 2024 and available at [https://riskfactor.com/city/osceola-wi/5560450\\_fsid/heat](https://riskfactor.com/city/osceola-wi/5560450_fsid/heat)

<sup>9</sup> GLISA. *Freeze-Thaw Cycles*. Accessed in March 2024 and available at <https://glisa.umich.edu/resources-tools/climate-impacts/freeze-thaw-cycles/>.

phenomenon can cause damage to infrastructure. As reported in the research report *Effect of Warmer Minnesota Winters on Freeze-Thaw Cycles*, the variation in freeze-thaw events for the 40-year period between 1941 and 1980 as compared to the 40-year period between 1981 and 2020 is minimal (a less than five event difference); however, freeze-thaw cycles typically increase during warmer winter periods.<sup>10</sup>

## **Precipitation**

### Annual Precipitation

The historical average annual precipitation within Chisago County between 1900 and 1999 was approximately 29.3 inches. Between 2003 and 2023, the annual average precipitation increased to 30.5 inches. The average annual precipitation within Chisago County is projected to continue to rise in the foreseeable future. In 2040-2059, average annual precipitation under RCP 4.5 is projected to increase to 32.0 inches. In 2080-2099, this metric is predicted to grow even higher to 32.9 inches under RCP 4.5 or 34.9 inches under RCP 8.5.

### Extreme Rainfall Events

Projections of intensifying storms are different from those of average conditions. Depth of precipitation, intensity of rainfall, and rainfall/storms duration are factors related to the predicted changes in Minnesota and Wisconsin's climate. While these factors are mostly independent, they could be correlated in their effects on hydrologic and hydraulic systems. According to the *Minnesota Climate and Health Report*, when comparing the 1960s decade to the 2000s, the number of storms discharging three inches of rainfall or more increased 71 percent.<sup>11</sup> Among climate scientists, it is widely accepted that along with increased precipitation depth and intensity, storm duration may also increase. According to the Climate Change Scenario Map from the EPA, the 100-year storm in the project area is projected to increase 2.4 percent to 13.6 percent by 2035 and 4.7 percent to 26.5 percent by 2060.<sup>12</sup>

### Stormwater Management Infrastructure and Design

Intensifying storms introduce potentially critical challenges in water resources management and drainage infrastructure function and protection. Increased precipitation depth, rainfall intensity, and storm duration are anticipated to affect drainage infrastructure in cases where existing storm sewer systems and stormwater management areas have been designed to previous standards of less extreme events. Temporary flooding on roadways and bridges and exceeding storage capacity of stormwater management areas and systems could take place due to any (or a combination) of the issues discussed above.

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<sup>10</sup> Minnesota Department of Transportation. *Effect of Warmer Minnesota Winters on Freeze-Thaw Cycles (2022)*. Available at <https://mdl.mndot.gov/items/202204>.

<sup>11</sup> Minnesota Department of Health. *Minnesota Climate and Health Profile Report (2015)*. Accessed in March 2024 and available at <https://www.health.state.mn.us/communities/environment/climate/docs/mnprofile2015.pdf>.

<sup>12</sup> Environmental Protection Agency. *CREAT Climate Change Scenarios Projection Map*. Accessed in March 2024 and available at <https://epa.maps.arcgis.com/apps/MapSeries/index.html?appid=3805293158d54846a29f750d63c6890e&platform%23map>.

### River Levels

Like the discussion of localized drainage infrastructure, it should also be expected that small-scale regional rainfall events with factors of differing depth, intensity, and duration would impact riverine flooding upstream and downstream of the project area; however, near the Hwy 243 Bridge, the floodplain widens west into Minnesota, where large wetland complexes can help store high volumes of stormwater in the event of flooding.

The effective Flood Insurance Rate Maps (FIRM) and Flood Insurance Study (FIS) from the Federal Emergency Management Agency (FEMA) report the 100-year (i.e., 1-percent annual flood chance) floodplain elevation in the project area is at an elevation of 703.6 feet and the 500-year (i.e., 0.2-percent annual flood chance) is at an elevation of 707.3 feet (see Section 4.1.12 for details of FEMA floodplain).

Existing conditions modeling was completed as part of the hydraulic analysis for the project. Hydraulic modeling analysis of the existing crossing indicates that the road overtops during flooding events equal to and larger than the 500-year storm event.

St. Croix River levels are highly variable in the project area. Flood events are common in the spring, and river levels will decrease throughout the remainder of the summer and fall. For example, flood conditions in Spring 2023 inundated Osceola Landing and the site was temporary closed. By the end of Summer 2023, river levels were low as the region experienced drought conditions.

A singular rainfall event in the St. Croix River Watershed is expected to have an effect on water levels of the St. Croix River within the project area, depending on the magnitude and duration of the rainfall. All runoff in the project area and surrounding watershed is destined for the river. River levels often increase following a rainfall event, though those increases slowly subside over time as runoff is transported downstream and leveled off. River levels are also impacted by periods of drought in the region. Generally, the levels of the St. Croix River react to weather and climate patterns in the area. Large-scale regional rainfall and snowmelt events occurring over several years are expected to have a larger and longer-term impact on average river levels. Although there is inherent uncertainty, research suggests large-scale regional rainfall and snowmelt events occurring over several years could impact river levels.

In general, the proposed Hwy 243 Bridge will follow the existing bridge profile. The existing bridge includes a 20-foot-deep superstructure. The proposed Hwy 243 Bridge includes a shallower superstructure, increasing vertical clearance under the bridge by more than 10 feet. The reduction in bridge superstructure depth minimizes potential risks for river level fluctuations to impact the Hwy 243 Bridge as noted in

#### **Table 4-2.**

**Figure 4-5.** FEMA Floodplain FIRMette illustrates locations that are currently below an elevation of 703.6 feet (the base/100-year flood elevation), which shows the locations within and near the project area that would be most immediately affected by rising St. Croix River water elevations. With the exception of Osceola Landing, there is minimal development within the floodplain in the project area that would immediately be affected by flooding.

**4.7.1.2 For each Resource Category in the table below: Describe how the project’s proposed activities and how the project’s design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.**

**Table 4-2.** Climate Considerations and **Adaptations** discusses climate considerations and adaptations, based on typical resource categories for a transportation project. Due to the location and design of this project, climate impacts are not anticipated.

**Table 4-2. Climate Considerations and Adaptations**

Resource Category	Climate Considerations	Project Information	Adaptations
Project Design	Existing risks and vulnerabilities associated with the increased frequency and intensity of rainfall events include transportation infrastructure damage, road closures, washouts, slope collapses, and other related failures.	Temporary increased flooding on roadways and bridges could occur due to limited conveyance capacity of drainage systems and storage capacity of stormwater management areas being surpassed.	A “resiliency check” storm event (i.e., 15-percent increase in the current Atlas 14 depth and intensity values) will be used to assess climate resilience on the project. The resiliency check storm may not factor into stormwater management area, culvert or storm sewer sizing; instead, it would be used to assess risks of infrastructure damage due to rainfall intensity above the current design storms, and then recommend locations for reinforcement or other solutions to improve climate resiliency. This vulnerability assessment will help improve the climate resiliency of the project to extreme storms.
Project Design	Risks and vulnerabilities associated with warming temperatures and increased frequency of excessive heat days and freeze-thaw events include increased pavement deterioration like cracking and road buckling. Additionally, extreme heat events and cracked or icy pavements can produce hazards and	These impacts may affect the lifespan and maintenance of a project. According to MnDOT, more frequent (repeated) freeze-thaw cycles associated with climate change will result in destructive impacts on pavement. High road surface	MnDOT is studying the effects of increased freeze-thaw cycles on pavement; as design standards are updated to address negative impacts, those standards would be implemented on projects at a statewide level. Freeze-thaw tolerant designs and materials are being used, therefore increases in freeze-thaw cycles are unlikely to have an impact.

Resource Category	Climate Considerations	Project Information	Adaptations
	<p>challenges for accessibility (people walking, rolling, or biking).</p>	<p>temperatures associated with these events can threaten the integrity of bridge infrastructure, including creating additional stress on joints and potentially causing pavement to buckle.</p>	
<p>Project Design</p>	<p>Uncertain long-term trends in river elevations of the St. Croix</p>	<p>Through coordination with the USCG, it is known that the proposed bridge must meet or exceed the vertical and horizontal clearances of the existing bridge. Increases in St. Croix River levels would directly affect navigation under the proposed bridge, however, there is no commercial or industrial navigation on the river; traffic is limited to kayaks, canoes, and small boats.</p>	<p>The proposed bridge design will result in vertical and lateral clearances that will exceed the existing clearances, making the bridge more adaptable in high-rise conditions. Additional coordination with the USCG will be conducted as part of the Section 9 permitting process. A summary of the St. Croix River water level considerations and resulting impacts to vertical clearance will be provided in the final bridge hydraulics letter.</p>
<p>Land Use</p>	<p>No critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are located</p>	<p>Not Applicable</p>	<p>Not Applicable</p>



Resource Category	Climate Considerations	Project Information	Adaptations
	within or near the project area.		
Water Resources	<p>Current climate trends and projected climate change near the project area could influence water resources. Water resources near and within the project area are likely to increase in temperature and volume due to warmer weather and increasing runoff from rainfall events. There could be localized evaporation and water available when it rains, causing increased flood risk. More intense storm events with higher, severe rainfall magnitudes are predicted, with will require drainage systems to be appropriately maintained to adapt to the increase in stormwater levels.</p>	<p>The project is anticipated to disturb approximately 8.5 acres and increase impervious surface by approximately 1.1 acres for the entirety of the project (both states combined). Stormsewer infrastructure and a new stormwater pond will be added to the project to convey runoff to stormwater management areas.</p>	<p>Each of the planned stormwater management areas (see Section 4.1.12.2 Describe effects from project activities on water resources and measures to minimize or mitigate the effects below.) are located above an elevation of 703 feet. Stormwater management areas could be designed with consideration to the possible increased tailwater effect of river level rises. Each of the stormwater management locations were prioritized near reasonable outlet locations with the goal of minimizing the need for drainage structures suspended from the bridge which could become overburdened during heavy rainfall events. MnDOT will run a resiliency storm check, as described above, to identify other potential impacts to the proposed storm sewer system. Using native plants and perennials for landscaping within stormwater management areas would help increase vegetative uptake of water and this is planned for post-construction.</p>
Contamination/ Hazardous Materials/Wastes	<p>More intense rainfall events and more frequent freeze/thaw cycles could damage infrastructure and create situations that result in accidental spills.</p>	<p>The proposed project is not anticipated to generate hazardous waste or materials. On-site storage and use of petroleum products for construction equipment.</p>	<p>A spill prevention plan will be prepared and implemented to address any accidental spills that occur during construction. Accidental spills that occur on the bridge deck after construction would be discharged to the new stormwater pond.</p>

Resource Category	Climate Considerations	Project Information	Adaptations
Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)	Current Minnesota and Wisconsin climate trends and projected climate change in the general location of the project could influence the local species and suitable habitat. Suitable habitat for species may become unsuitable due to increased temperature and increased runoff.	The project would not introduce a new barrier to wildlife passage or fish migration, nor prevent movement of species migrating due to shifts in suitable habitat range. The project will include a new stormwater pond, treating stormwater runoff and improving water quality for mussels.	Wildlife crossing locations and structures are planned and will be implemented with the project, west of the St. Croix River in Minnesota (see Section 4.1.14.4 Avoidance, Minimization, and/or Mitigation – Turtles for more information).

### 4.1.8 Cover Types

#### 4.1.8.1 Estimated Acreage

*Estimate the acreage of the site with each of the following cover types before and after development:*

**Table 4-3** summarizes the before and after acreages of the cover types analysis conducted for the project.

**Table 4-3. Cover Types<sup>13</sup>**

Cover Types	Before (acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep) <sup>14</sup>	0.28	0
Deep lakes (>2 meters deep)	0	0
Wooded/forest	4.58	0
Rivers/streams	0.56	0.56
Brush/Grassland	0	0
Cropland	0	0
Livestock rangeland/pastureland	0	0
Lawn/landscaping	1.30	4.97

<sup>13</sup> The “Before” and “After” area totals listed in the table above are preliminary estimates based on existing land cover data and preliminary design files and are subject to change through more detailed design and construction. Note “Before” and “After” acreage totals may not equal the sum of individual cover types due to factors like variability in data availability and rounding.

<sup>14</sup> Wetlands and wooded areas lost but not converted into additional impervious surface or stormwater pond are assumed to be landscaping/vegetated roadside.

Cover Types	Before (acres)	After (acres)
Green infrastructure TOTAL (from table below*)	0	0
Impervious surface	2.89	3.85
Stormwater Pond (wet sedimentation basin)	0	0.23
Other (describe)	0	0
<b>TOTAL</b>	9.61	9.61

**Table 4-4** summarizes before and after acreages of green infrastructure.

**Table 4-4. Green Infrastructure**

Green Infrastructure	Before (acres)	After (acres)
Constructed infiltration systems (infiltration basins/infiltration trenches/rainwater gardens/bioretention areas without underdrains/swales with impermeable check dams)	N/A	N/A
Constructed tree trenches and tree boxes	N/A	N/A
Constructed wetlands	N/A	N/A
Constructed green roofs	N/A	N/A
Constructed permeable pavements	N/A	N/A
Other (describe)	N/A	N/A
<b>TOTAL</b>	N/A	N/A

**Table 4-5** tabulates information on tree removal proposed with the project. Approximately ninety percent of the tree canopy within the preliminary construction limits would be removed, however, a landscaping plan is being developed to mitigate the tree removal.

**Table 4-5. Tree Removal**

Trees	Percent	Number
Percent tree canopy removed (within construction limits) or number of mature trees removed during development	90%	Up to 5.0 acres
Number of new trees planted (planned)	See below	See below

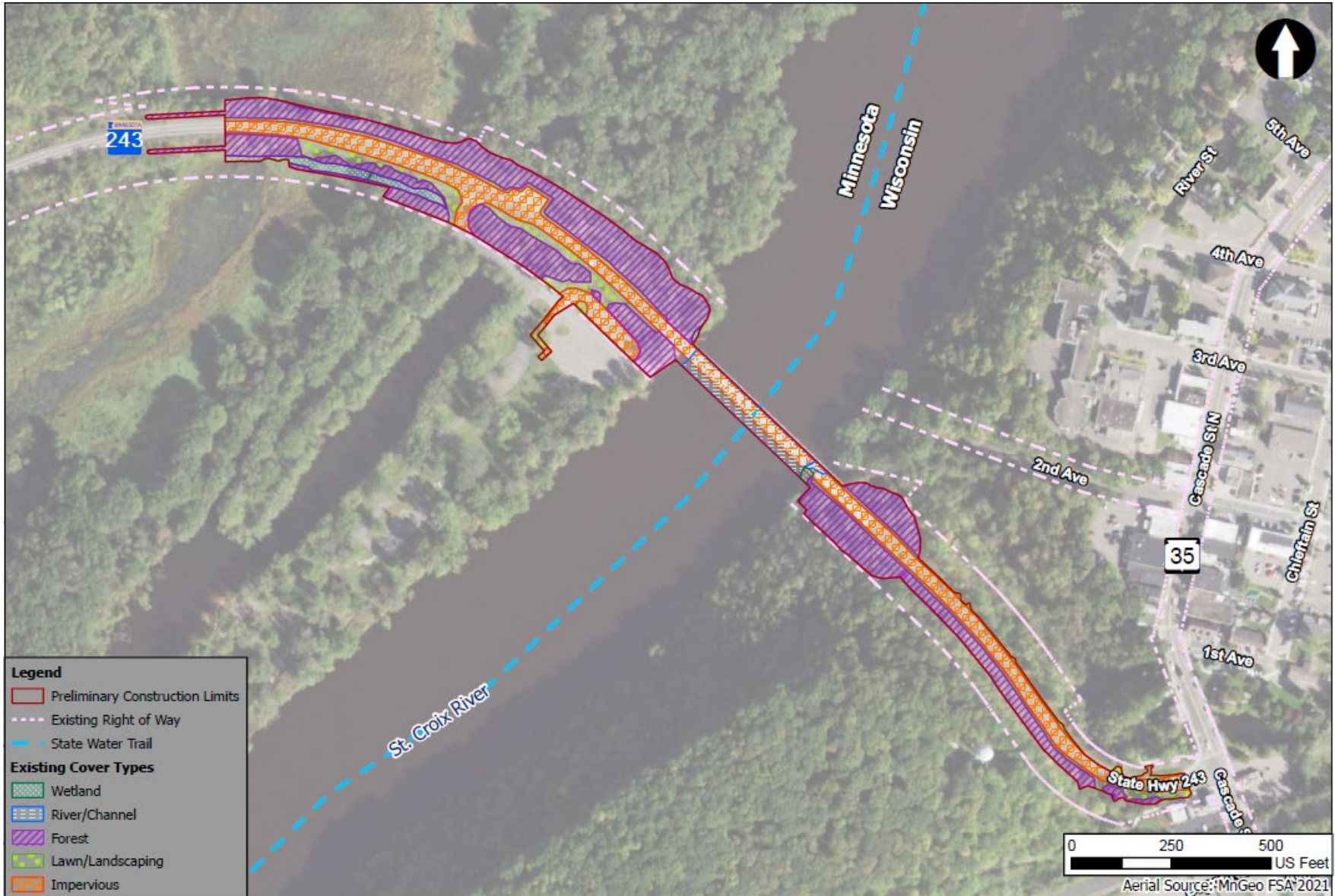
The highway in the Minnesota approach area descends the bluff and then is elevated above the adjacent flood plain to the north and the Osceola Landing site to the south. The reconstruction of the highway, bridge, and trails will impact the existing vegetation at the margins of the right of way. Planned revegetation includes native seeding and a mix of native trees and shrubs on roadway embankments. Over time, these will mature and create a framed view of the river crossing and buffer the Osceola Landing site. Clear sight lines to the Minnesota State Entry Sign at the wayside will be maintained. Clearances at roadway margins for sight lines and snow clearing will also be followed.

The terrain in the Wisconsin approach area is more dramatic with a steep bluff on the south side and deep ravine on the north side. Avoidance of impacts to the slope and existing vegetation on the north side was a key driver of the proposed highway design and layout. Limited pockets of revegetation with native trees and shrubs are planned at the east abutment area and near the east end of the project to blend in with the surroundings. Clear sight lines to the Village of Osceola Entrance Sign will be maintained.

The complete Visual Quality Manual (VQM) with a detailed landscaping plan can be requested from the MnDOT Project Manager (See contact information in Section 4.1.2 Proposer). Environmental commitments regarding vegetation are also included in the Environmental Management Plan (**APPENDIX F** (Environmental Management Plan)).

*The remainder of this page is intentionally left blank.*

Figure 4-2. Existing Cover Types



### 4.1.9 Permits and Approvals Required

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental reviews have been completed. See Minnesota Rules, Chapter 4410.3100.

**Table 4-6** is a comprehensive list of permits and approvals that will be applied for, are in progress, or have been completed to ensure all applicable state and federal clearances will be met. MnDOT or WisDOT will be acquiring the majority of the permits needed for this project.

**Table 4-6. Permits and Approvals**

Unit of Government	Type of Permit or Approval	Status
FHWA (Federal)	Environmental Assessment	Complete
FHWA (Federal)	Finding of No Significant Impact (anticipated)	Pending
FHWA (Federal)	Section 4(f) de minimis determination (for impacts to Lower St. Croix National Scenic Riverway) (anticipated)	Pending
FHWA (Federal)	Section 106 (Historic/Archaeological)	Complete
USACE (Federal)	Section 10/404 Permit (Individual Permit)	To be applied for
USCG (Federal)	Section 9 Permit	To be applied for
USFWS (Federal)	Endangered Species Section 7 Determination (Biological Opinion (BO))	BO under development (pending)
USFWS (Federal)	Migratory Bird Permit	To be applied for, if needed
USFWS (Federal)	Bald Eagle Incidental Take Permit	To be applied for, if needed
NPS (Federal)	Section 7(a) Evaluation and Determination	Pending
NPS (Federal)	Special Use Permit (Osceola Landing)	To be applied for
Federal Aviation Administration (FAA) (Federal)	Form FAA 7460-1 Notice of Proposed Construction or Alteration	To be applied for
MnDNR (Minnesota)	Endangered/Threatened Species Incidental Take Permits	To be applied for
MnDNR (Minnesota)	Public Waters Work Permit	To be applied for



Unit of Government	Type of Permit or Approval	Status
MnDNR (Minnesota)	Water Appropriation Permit <sup>15</sup>	To be applied for, if needed
Minnesota Pollution Control Agency (MPCA) (Minnesota)	Section 401 Water Quality Certification	To be applied for
MPCA (Minnesota)	National Pollution Discharge Elimination System (NPDES) Construction Stormwater Permit	To be applied for
MPCA (Minnesota)	NPDES Sediment Dredge Permit	To be applied for
MPCA (Minnesota)	Response Action Plan/Construction Contingency Plan (RAP/CCP)	To be applied for
MPCA (Minnesota)	No Association Determination	To be applied for, if needed
MnDOT (Minnesota)	Wetland Conservation Act (WCA)	Pending
MnDOT (Minnesota)	Environmental Management Plan	Pending
MnDOT (Minnesota)	Environmental Assessment Worksheet	Complete
MnDOT (Minnesota)	EIS Need Decision	Pending
Wisconsin Department of Natural Resources (WisDNR) (Wisconsin)	Final Letter of Concurrence	To be applied for
WisDNR (Wisconsin)	Wisconsin Pollution Discharge Elimination System (WPDES) Transportation Construction General Permit	To be applied for
WisDNR (Wisconsin)	Endangered/Threatened Species Incidental Take Permits	To be applied for
WisDNR (Wisconsin)	WPDES Sediment Dredge Permit	To be applied for
WisDNR (Wisconsin)	Section 401 Water Quality Certification	To be applied for
WisDNR (Wisconsin)	Navigational Buoy Permit	To be applied for

*Cumulative potential effects may be considered and addressed in response to individual EAW Questions (Sections 4.1.10 to 4.1.20), or the RGU can address all cumulative potential effects in response to EAW Question 22 (Section 4.1.22). If addressing cumulative effects under individual items, make sure to include information requested in EAW Question 21 (Section 4.1.21).*

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<sup>15</sup> Contractor will acquire this permit.

## 4.1.10 Land Use

### 4.1.10.1 Existing Land Use

*Existing land use of the site as well as areas adjacent to and near the site, including parks and open space, cemeteries, trails, prime or unique farmlands.*

Existing land uses within the study area were identified through a review of 2023 aerial photography and county parcel data. The study area contains existing roadways, bridge, roadside vegetation, and a variety of residential, industrial, and commercial land uses. These land uses include:

- To the north: wetlands, parks, MnDNR land
- To the east: wetlands, St. Croix River, waterfront, Village of Osceola local parks
- To the west: parks, wetlands, NPS Osceola Boat Landing, low density residential
- To the south: NPS Osceola Boat Landing, St. Croix River, wetlands, parks

See **APPENDIX M (Environmental Justice Analysis)** for locations of environmental justice populations and community facilities within the study area. Several trails (including Eagle Bluff Trail, Cascade Falls Trail, and Dr. John Simenstad Trail on the Wisconsin side) are located under and adjacent to the existing bridge. There is also an existing water trail (DNR State Water Trail on the St. Croix River). Parks within or near the study area include the St. Croix National Scenic Riverway, National Park Service Land, Osceola Landing, and Minnesota DNR Land on the Minnesota side, and Osceola Picnic Bluff, Geiger Brewery Park, Cascade Falls and Wilke Glen Park, Gristmill Park, Millpond Park, and Upper Millpond on the Wisconsin side. These recreational resources are depicted in **Figure 4-9**. Information regarding these resources are further discussed in Section 4.2.7 Section 4(f) of the USDOT Act of 1966

Based on the United States Geological Survey (USGS) National Map and review of Google Maps satellite imagery (2023), there are no cemeteries located within or adjacent to the study area.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, of the four soil types within the construction limits, none are classified as prime farmland or farmland of statewide importance.

### 4.1.10.2 Planned Land Use

*Plans. Describe planned land use as identified in comprehensive plans (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.*

The following planning documents were reviewed for their relation to project area:

- Village of Osceola Comprehensive Plan, 2009-2029 (November 10, 2009)<sup>16</sup>

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<sup>16</sup> Village of Osceola. 2009-2029 Comprehensive Plan. Accessed in December 2023 and available at [myosceola.com/wp-content/uploads/2023/10/Osceola\\_Comprehensive\\_Plan\\_2009-2019.pdf](https://myosceola.com/wp-content/uploads/2023/10/Osceola_Comprehensive_Plan_2009-2019.pdf).

- Chisago County Comprehensive Plan, 2016-2026 (September 20, 2017)<sup>17</sup>
- Polk County Comprehensive Plan, 2009-2029 (October 20, 2009)<sup>18</sup>
- Wisconsin Connections 2030 Long Range Multi-Modal Transportation Plan (October 2009)<sup>19</sup>
- Minnesota Statewide Multimodal Transportation Plan (2022)<sup>20</sup>
- St. Croix National Scenic Riverway Comprehensive River Management Plan (Anticipated 2025)<sup>21</sup>

### **Village of Osceola Comprehensive Plan, 2009-2029 (2009)**

*Village of Osceola Comprehensive Plan* is the Village of Osceola's comprehensive plan that was adopted in 2009. This plan's overall goal is to "promote and protect the health, safety, economy, appearance, and welfare of the Village by balancing growth with the preservation of our social and natural resources."

This plan defines a range of land uses within the study area. This plan calls for Park and Recreation, Urban Single-Family Residential, and Central Business District Zoning Districts (or Airport, Park, Single Family, and Commercial Uses) within the project area, as defined below. According to the comprehensive plan, it is important for land uses to promote the economy, respect natural, cultural, and agricultural resources, and to foster a small town atmosphere. This plan does not make specific recommendations relevant to the Hwy 243 Bridge.

- Park and Recreation (PR): The Park and Recreation District is intended to provide for areas where the park and recreational needs, both public and private, of the populace can be met without undue disturbance of natural resources and uses of other adjacent zoning districts. The PR District is further intended to include both public and private open space (including stormwater retention/detention areas) and recreation facilities. The various requirements of the PR District are established to increase the compatibility of park and recreational uses with the character of the Village as set forth in the Village of Osceola Comprehensive Plan and components thereof. The area and bulk requirements of the PR District are intended to permit development that enhances and protects the open space character of the PR District. The PR District is intended to be served by public sanitary sewer and water supply facilities.
- Urban Single-Family Residential (R-U): The R-U District is intended to provide for single-family residential development on lots of record within the original plat of the Village existing at the time of the adoption of the Ordinance codified under this title. The R-U District is intended to be served by public sanitary sewer and water supply facilities.
- Commercial Business District (CBD): The CBD District is intended to provide for the continuation of the Village of Osceola's traditional central business district. The existing commercial activities are of a

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<sup>17</sup> Chisago County. *Chisago County Comprehensive Plan*. Accessed in December 2023 and available at

<https://www.chisagocountymn.gov/DocumentCenter/View/9483/Comprehensive-Plan-2017-PDF?bidId=>

<sup>18</sup> Polk County. *2009-2029 Comprehensive Plan (Element 8: Land Use)*. Accessed in December 2023 and available at

<https://cms5.revize.com/revize/polk/Document%20Center/Divisions%20and%20Departments/Environmental%20Services%20Division/Land%20Information%20Office/Comprehensive%20Plan/Polk%20County%20Comprehensive%20Plan%202009-2029/PlanPolkCountyComprehensive20092029LandUse.pdf>

<sup>19</sup> Wisconsin Department of Transportation. *Connections 2030: Statewide Long-Range Transportation Plan*. Accessed in December 2023 and available at <https://wisconsindot.gov/Documents/projects/multimodal/conn2030/c2030-full.pdf>

<sup>20</sup> Minnesota Department of Transportation. *Statewide Multimodal Transportation Plan*. Accessed in December 2023 and available at <https://minnesotago.org/final-plans/sntp-final-plan-2022>

<sup>21</sup> National Park Service. St. Croix National Scenic Riverway. *Comprehensive River Management Planning*. Accessed in October 2024 and available at <https://www.nps.gov/sacn/learn/management/comprehensive-river-management-plan.htm>.

general nature and have been characterized by on-street parking and loading and structures that abut the street right-of-way or have small setbacks. While it is intended that the existing businesses be continued at their present level of service, it is also intended that new buildings located in the CBD District--to the extent possible--be required to provide for off-street parking and loading areas. The requirements of the CBD District are further established to maintain the traditional central business district characteristics of the Village of Osceola "downtown." The CBD District provides for an arrangement of retail trade and service uses as well as other uses that are compatible in intensity, function, and operation. The CBD District is designed to prevent land and structures in the CBD District from becoming nonconforming as they would if placed under different, more suburban-oriented, zoning classifications. The CBD District also provides for the minor infilling of vacant or redevelopment areas within the CBD District consistent with this planned and the established character of the Village of Osceola "downtown." It is not intended to create additional CBD Districts of this type elsewhere in the community. The CBD District is intended to be served by public sanitary sewer and water supply facilities.

### **Chisago County Comprehensive Plan (2017)**

The *Chisago County Comprehensive Plan*, adopted September 20, 2017, identifies land use trends and influences that may be important factors for future policy development. The Land Use Plan section includes goals and policies aiming to establish a comprehensive growth management strategy for the county, recognize the challenges and compatibility of present and future land use and strive for balance, plan for the growth of residential development in the county, and plan for commercial and industrial development and growth. This plan does not make specific recommendations relevant to the Hwy 243 Bridge.

### **Polk County Comprehensive Plan (2009)**

The *Polk County Comprehensive Plan*, adopted on October 20, 2009, establishes a bottom-up approach. This means that all of the local comprehensive plans were utilized in the creation of the *Polk County Comprehensive Plan*. Therefore, the land uses within the study area fall under the Village of Osceola's comprehensive plan. This plan does not make specific recommendations relevant to the Hwy 243 Bridge.

### **Wisconsin Connections 2030 Long Range Multi-Modal Transportation Plan (2009)**

Connections 2030 is Wisconsin's statewide, long-range multimodal plan. The plan addresses all forms of transportation, integrates transportation modes, and identifies policies and implementation priorities to aid transportation decisionmakers when evaluating program and project priorities over the next 20 years. Policy goals that are supported by the Hwy 243 Osceola Bridge Project include:

- Prioritize funding to address the physical condition, safety, operation, function, and connectivity of the system's structures, bridges, pavements, and interchanges.
- Work with the public, local governments, and the private sector to balance providing safe and efficient travel on state highways with local access concerns.

This plan does not make any specific recommendations relevant to the Hwy 243 Bridge.

### **Minnesota GO Statewide Multimodal Transportation Plan (2022)**

Minnesota GO is Minnesota’s highest level policy plan for transportation and was last updated in 2022. It is a 20-year plan based on the Minnesota DO Vision for a transportation system that maximizes the health of people, the environment, and the economy. It provides objectives, performance measures, strategies and actions to move Minnesota’s transportation system forward. Policy goals that are supported by this project are:

- To provide multimodal and intermodal transportation facilities and services to increase access for all persons and businesses and to ensure economic well-being and quality of life without undue burden placed on any community.
- To encourage tourism by providing appropriate transportation to Minnesota facilities designed to attract tourists and to enhance the appeal, through transportation investments, of tourist destinations across the state.
- To promote and increase bicycling and walking as a percentage of all trips as energy-efficient, nonpolluting and healthy forms of transportation.

This plan does not make any specific recommendations relevant to the Hwy 243 Bridge.

### **St. Croix National Scenic Riverway Comprehensive River Management Plan (Anticipated 2025)**

The NPS has initiated the planning process to inform future management of the St. Croix National Scenic Riverway. The comprehensive river management plan will provide overall management and direction to protect and enhance the outstandingly remarkable values (ORVs) of the St. Croix National Scenic Riverway. The comprehensive river management plan process began in 2023 and is anticipated to be complete in 2025.

The draft St. Croix National Scenic Riverway Comprehensive River Management Plan was not available at the time the EA/EAW for the Hwy 243 Osceola Bridge Project was developed.

#### **4.1.10.3 Zoning**

*Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.*

#### **Existing Zoning**

The Parcels located in Franconia Township are currently zoned as AG (Agricultural) and LO (Lower St. Croix Overlay).<sup>22</sup> The Parcels located in the Village of Osceola are currently zoned as CD (Conservancy), R-U (Urban Single-Family), I-1 (Light Industrial), and B-1 (General Commercial).<sup>23</sup> Any new development, redevelopment, change in land use, or change in zoning is required to be consistent with the Chisago County and Village of Osceola comprehensive plans.

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<sup>22</sup> Chisago County. *Franconia Township Zoning Map*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/4398/Franconia-PDF>.

<sup>23</sup> Village of Osceola. *Map 8-2: Existing Zoning Districts*. Accessed in December 2023 and available at [Village of Osceola Zoning Map https://myosceola.com/wp-content/uploads/2023/09/osceola\\_zoning\\_map.pdf](https://myosceola.com/wp-content/uploads/2023/09/osceola_zoning_map.pdf).

## Shoreland Overlay District

The Chisago County shoreland definition<sup>24,25</sup> includes lands within 1,000 feet from the ordinary high-water level of a lake, pond, or flowage and 300 feet from a river or stream, or the landward extent of a floodplain designated by ordinance on a river or stream, whichever is greater.<sup>26</sup> The project lies within the LO district. This applies to lands in Township 33, Tange 19, Section 27 Government Lots 1 and 4 and Section 28 Government Lots 1, 3, 4, 7, and part of Government Lot 2. No structure can be located nearer than two hundred (200) feet from the ordinary high-water mark and not less than one hundred (100) feet from a bluff line.

The project is not within the Osceola or Polk County shoreland overlay district.<sup>27</sup>

## FEMA National Flood Hazard

According to FEMA's FIRM, the project is located within the FEMA 100-year floodplain. The floodplain program is administered through local zoning within the Chisago County Flood Plain Ordinance<sup>28</sup> and the Village of Osceola Floodplain Zoning Ordinance.<sup>29</sup>

## Critical Areas

The St. Croix River is a critical area due to its designation as a National Wild and Scenic River.

### 4.1.10.4 Critical Facilities

*If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding, describe the risk potential considering changing precipitation and event intensity.*

The Hwy 243 Osceola Bridge Project would not propose any critical facilities within the FEMA 100-year floodplain. All transportation facilities would be located at an elevation higher than the 100-year floodplain of 703.6 feet.

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<sup>24</sup> Chisago County. *Chisago County Zoning Ordinance*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/14947/2020-Zoning-Code-Uncodified-Version>.

<sup>25</sup> Chisago County. *Shoreland Management Ordinance*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/4204/Chisago-County-Shoreland-Management-Ordinance?bidId=>.

<sup>26</sup> The limits of shorelands may be reduced whenever the waters involved are bounded by topographic divides which extend landward from the waters for lesser distances and when approved by the commissioner.

<sup>27</sup> Polk County. *Zoning Districts*. Accessed in December 2023 and available at <https://cms5.revize.com/revize/polk/Document%20Center/Divisions%20and%20Departments/Environmental%20Services%20Division/Maps/Zoning/ZoningDeptZoningDistricts.pdf>

<sup>28</sup> Chisago County. *Flood Plain Ordinance*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/4203/2012-Flood-Plain-Ordinance?bidId=>.

<sup>29</sup> Village of Osceola. *Article III Floodplain Zoning District*. Accessed in December 2023 and available at <https://ecode360.com/9813671#9813671>.



**4.1.10.5 Discuss the project’s compatibility with nearby land uses, zoning, and plans listed in Section 4.1.10 above, concentrating on implications for environmental effects.**

The project is not anticipated to result in any significant change in land use within the limits of construction. It is not anticipated to lead to the development of any large scale commercial, industrial, residential, or other development. Access to existing land uses will not be changed, and if so, changes would not be significant. The project is consistent with local and regional comprehensive plans.

**4.1.10.6 Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Section 4.1.10.5 above and any risk potential.**

Not applicable. The Hwy 243 Osceola Bridge Project is consistent with all local and regional comprehensive plans.

**4.1.11 Geology, Soils, and Topography/Land Forms**

**4.1.11.1 Geology**

*Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.*

On the Minnesota side of the project area, the geology includes floodplain alluvium, undivided bedrock, richfield terrace, and ice-contact stratified deposit.<sup>30</sup> On the Wisconsin side, the project area is underlain by outwash sand, non-calcareous sandy loamy till (ground moraine and end moraine).<sup>31</sup> The depth to bedrock throughout the study area varies, ranging in depth from approximately 0-100 feet.<sup>32,33</sup> The bedrock in the study area is comprised of the Tunnel City Group, Jordan Sandstone, upper volcanic sequence, undivided sandstone with some dolomite and shale, Prairie du Chien Group-Oneota Dolomite (surrounding area), and St. Lawrence Formation (surrounding area).<sup>34,35</sup> Depth to water table is approximately 0 to 50+ feet below the surface<sup>36</sup> in Minnesota and 0 to 50 feet<sup>37</sup> in Wisconsin. The project construction area does not have any known karst

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<sup>30</sup> Chisago County. *Surficial Geology Map*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/2248/Plate-3---Surficial-Geology?bidId=a>

<sup>31</sup> WisDNR. *Surficial Deposits*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/2248/Plate-3---Surficial-Geology?bidId=>

<sup>32</sup> Chisago County. *Geologic Atlas*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/294/Geologic-Atlas>

<sup>33</sup> Wisconsin Geological and Natural History Survey (WGNHS). *Depth to Bedrock in Wisconsin*. Accessed in December 2023 and available at <https://wgnhs.wisc.edu/catalog/publication/000376/resource/m051>

<sup>34</sup> WGNHS. *Bedrock Geologic Map of Wisconsin*. Accessed in December 2023 and available at <https://wgnhs.wisc.edu/catalog/publication/000390/resource/m078paper>

<sup>35</sup> Chisago County. *Bedrock Geology*. Accessed in December 2023 and available at <https://www.chisagocountymn.gov/DocumentCenter/View/2247/Plate-2---Bedrock-Geology?bidId=>

<sup>36</sup> Natural Resources Research Institute. *Minnesota Natural Resource Atlas*. Accessed in December 2023 and available at [https://mnatlas.org/gis-tool/?id=k\\_0279](https://mnatlas.org/gis-tool/?id=k_0279)

<sup>37</sup> WisDNR. *GCSM – Water Table Depth*. Accessed in April 2024 and available at <https://data-wi-dnr.opendata.arcgis.com/datasets/wi-dnr::gcsm-water-table-depth/explore>

features present within or near its limits based on MnDNR’s Karst Feature Inventory Points<sup>38</sup> and the USGS Land Subsidence in the United States.<sup>39</sup> Artesian groundwater was found in borings B-6 and B-7 at Pier 3 as well as approximately the soil/bedrock interface.<sup>40</sup> The artesian head pressure could reportedly be counter-balanced by approximately 3 feet of casing extension above existing grade at the time of drilling. The contractor will develop and adhere to an artesian conditions contingency plan.

**4.1.11.2 Soils and Topography**

*Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 12 (Water Resources).*

According to the NRCS Web Soil Survey, the project area is comprised of three different soil types (see **Table 4-7. Soil Types within the Project Area** and **Figure 4-3. Soil Types**). The erosion hazard rating included in **Table 4-7. Soil Types within the Project Area** indicates the hazard of soil loss from off-road areas after disturbance activities that expose the soil surface. Approximately 29.4 percent of the study area has soil erosion hazards that are not rated. In 57.6 percent of the study area, the soil erosion hazard is described as “slight,” meaning that erosion is unlikely under ordinary climatic conditions. The remaining 13 percent of the study area is water and is not rated.

**Table 4-7. Soil Types within the Project Area**

Map Unit Symbol	Description	Erosion Hazard	Percent of Study Area	Acres
1068	Caryville sandy loam, occasionally flooded	Slight	57.6	5.3
Fa	Fluvaquents	Not rated	4.4	0.4
Us	Udorthents, sandy	Not rated	25.0	2.3
W	Water	-	13.0	1.1
<b>Total</b>	-	-	<b>100</b>	<b>9.1</b>

Topography within the study area varies from 690 feet in elevation in the portions of the project area near the St. Croix River to 890 feet as one moves east or west of the river. The study area generally drains into the St. Croix River.

A Stormwater Pollution Prevention Plan (SWPPP) would be developed for this project. All areas disturbed during construction would be stabilized in accordance with the SWPPP and related permitting requirements. In areas with steep slopes, special consideration would be given to prevent erosion during construction, such as erosion

<sup>38</sup> MnDNR. *Minnesota Regions Prone to Surface Karst Feature Development*. Accessed in December 2023 and available at [https://files.dnr.state.mn.us/waters/groundwater\\_section/mapping/gw/gw01\\_report.pdf](https://files.dnr.state.mn.us/waters/groundwater_section/mapping/gw/gw01_report.pdf)

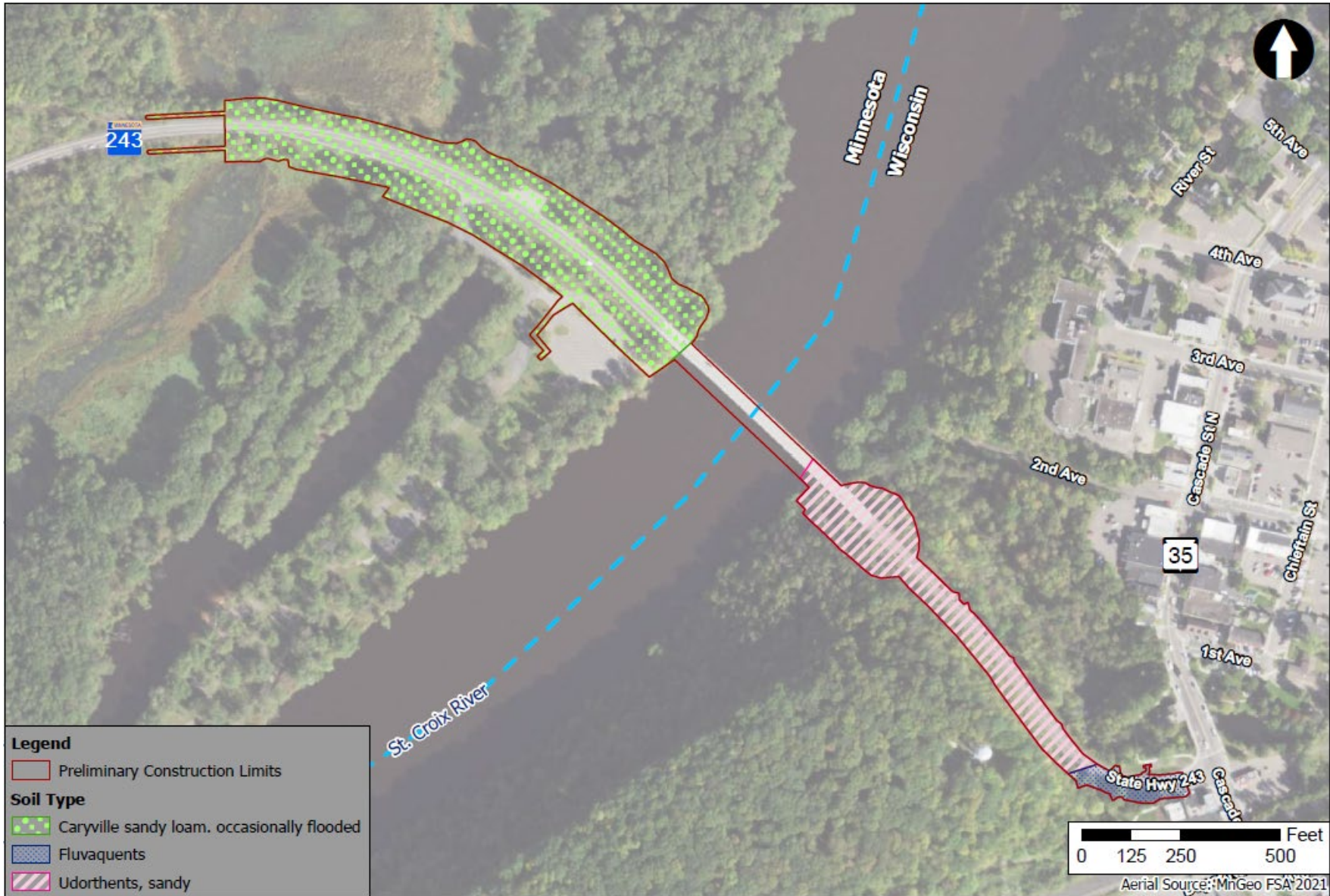
<sup>39</sup> USGS. *Land Subsidence in the United States*. Accessed in April 2024 and available at <https://water.usgs.gov/ogw/pubs/fs00165/>

<sup>40</sup> Dan Brown and Associates. *Foundation Analysis and Design Report*. Accessed in May 2024 and available upon request from the MnDOT Project Manager.

control blankets and soil reinforcement. No impacts to soils or topography are anticipated once construction of this project is complete. If there are any long-term remediation responsibilities for contaminated property management, an appropriate plan would be developed through coordination with the MPCA (if in Minnesota) or WisDNR (if in Wisconsin). See Section 4.1.13 Contamination/Hazardous Materials and Wastes and **APPENDIX I** (Contaminated Properties) for information about contaminated properties investigation.

*The remainder of this page is intentionally left blank.*

Figure 4-3. Soil Types



## 4.1.12 Water Resources

### 4.1.12.1 Describe surface water and groundwater features on or near the site

#### Surface water

*Lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive species and the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.*

**Figure 4-4** illustrates surface waters within approximately one mile of the study area. These include the St. Croix National Wild and Scenic River and Osceola Creek, which discharges to the St. Croix River.

#### Wetlands

Wetlands in Minnesota and Wisconsin were delineated using Level 2 (i.e., field review) methodology in 2022 and 2023. Wetlands were delineated using the Level 2 routine on-site method set forth in the 1987 Corps of Engineers Wetlands Delineation Manual and the USACE Northcentral Northeast Regional Supplement, Version 2.0 (the Delineation Manual). This method is required under both the federal Clean Water Act (CWA) and the Minnesota WCA. The Wetland Assessment and Two-Part Finding in **APPENDIX G** (Wetland Assessment & Two-Part Finding) contains additional details on methodology and permanent wetland impacts.

#### MnDNR Public Waters

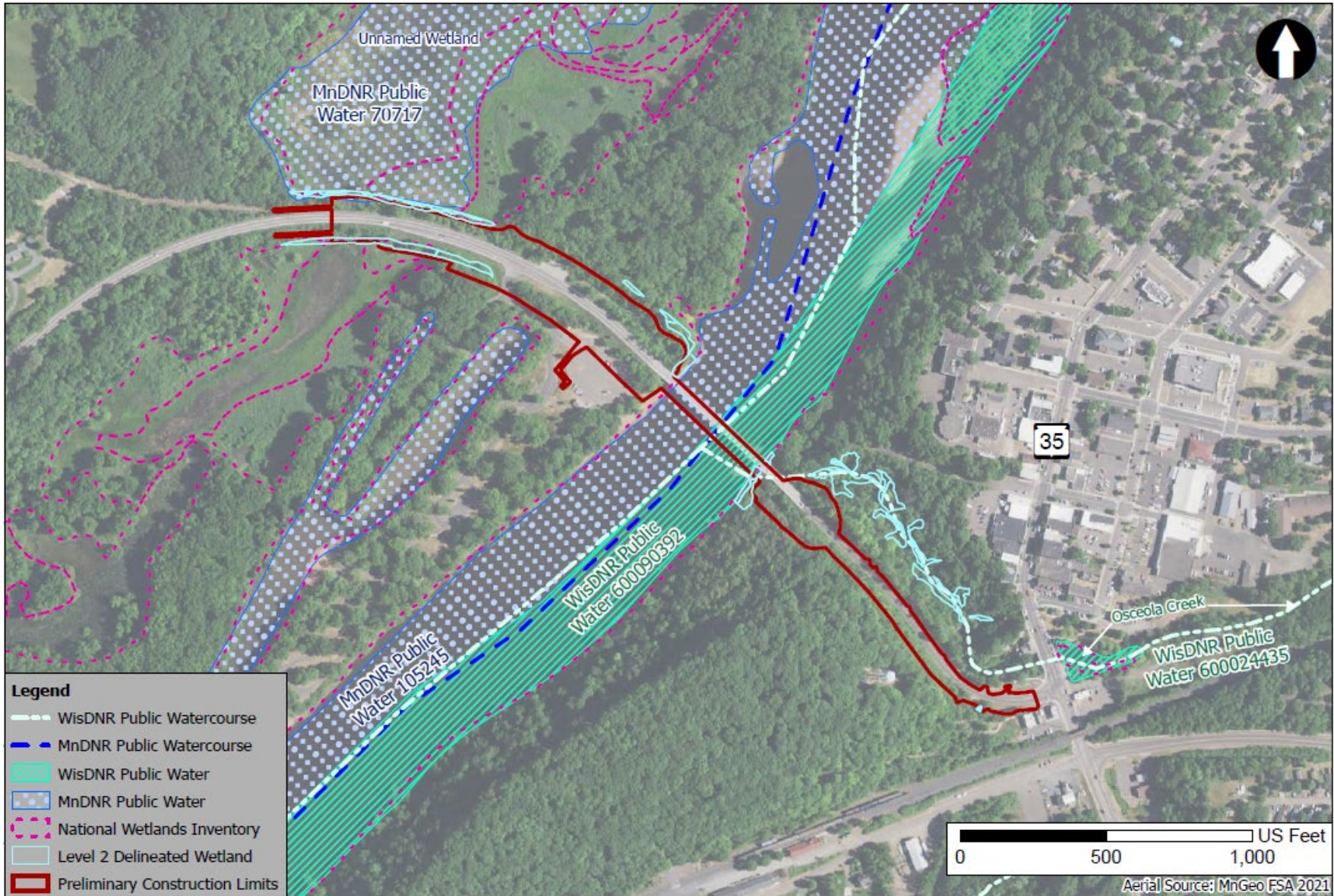
The MnDNR regulates public waters in the state of Minnesota, which include all water basins and watercourses that meet the criteria set forth in Minnesota Statutes, Section 103G.005, subd. 15 that are identified on Public Water Inventory maps authorized by Minnesota Statutes, Section 103G.201. Public waters within the vicinity of the project area includes the St. Croix River (105245) and an unnamed wetland (70717).

#### WisDNR Waterways and Public Waters

The WisDNR regulates navigable waterways in the state of Wisconsin. The WisDNR operates under the “Public Trust Doctrine,” which is based on Article IX of the state constitution. Generally, a waterway is navigable if it can float a small watercraft and has a defined bed and bank. Navigable waterways in the project area include the St. Croix River (600090392) and Osceola Creek (600024435).



Figure 4-4. Water Resources





### Impaired Waters

The MPCA's 2022 impaired water's list identifies the St. Croix River as an impaired water north of the project area (from the Snake River to the Taylors Falls Dam). The Snake River to the Taylors Falls Dam stretch of the St. Croix River was added to the impaired waters list in 1998 for mercury in fish tissue and in 2006, for PCBs in fish tissue. The St. Croix River between the Taylors Falls Dam to Lake St. Croix has been on the Total Maximum Daily Load (TMDL) list since 2006 for PCBs in fish tissue, in 2020 for nutrients, and in 2022 for perfluoro octane sulfonate (PFOS) in fish tissue.

As noted in the WisDNR initial response letter (**APPENDIX J** (Agency Correspondence)), the portion of the St. Croix River in the project area is a 303(d) listed waterbody. There is a fish consumption advisory for PCBs that is likely associated with contaminated sediment in the Mississippi River.

### MPCA Outstanding Resource Value Water

Minnesota Rules, part 7050.0335, designates Outstanding Resource Value Waters. The St. Croix River is a designated Outstanding Resource Value Water (ORVW). Outstanding resource value waters classified as "prohibited" and "restricted" have extra levels of protection above other waters to protect their unique natures. These include high-quality waters and waters that have exceptional recreation, cultural, aesthetic, or scientific value.<sup>41</sup> The St. Croix River is designated as "restricted" in the project area. Projects in Restricted ORVWs may be required to apply for an Individual 401 Water Quality Certification review.

### WI ASNRI Outstanding and Exceptional Resource Waters

Wisconsin's Administrative Code, chapters NR 102.10 and NR 102.11, designates Outstanding and Exceptional Resource Waters (ORWs/ERWs). The St. Croix River is a designated Outstanding Resource Water and Exceptional Resource Water. ORW/ERW status identifies waters that have been determined to warrant additional protection from the effects of pollution.

### Coastal Zones

The project area is not within or adjacent to any coastal zones in either Minnesota or Wisconsin.

### Floodplains

FEMA FIRMs and Flood Insurance Studies (FIS) were used to identify FEMA 100-year floodplains and floodways within the project area. Panels 27025C0425D (effective date of April 17, 2012) and 55095C0504D (effective date of September 16, 2011) were obtained and reviewed. According to the maps, a FEMA 100-year floodplain (i.e., 1% annual flood chance) is located within the project area. This floodplain is associated with the St. Croix River and has an established elevation of 703 feet in the National Geodetic Vertical Datum (NGVD) of 1929 at the Hwy 243 Bridge. FIS 55095CV000A for Polk County, WI and 27025CV000A for Chisago County, MN also both indicate

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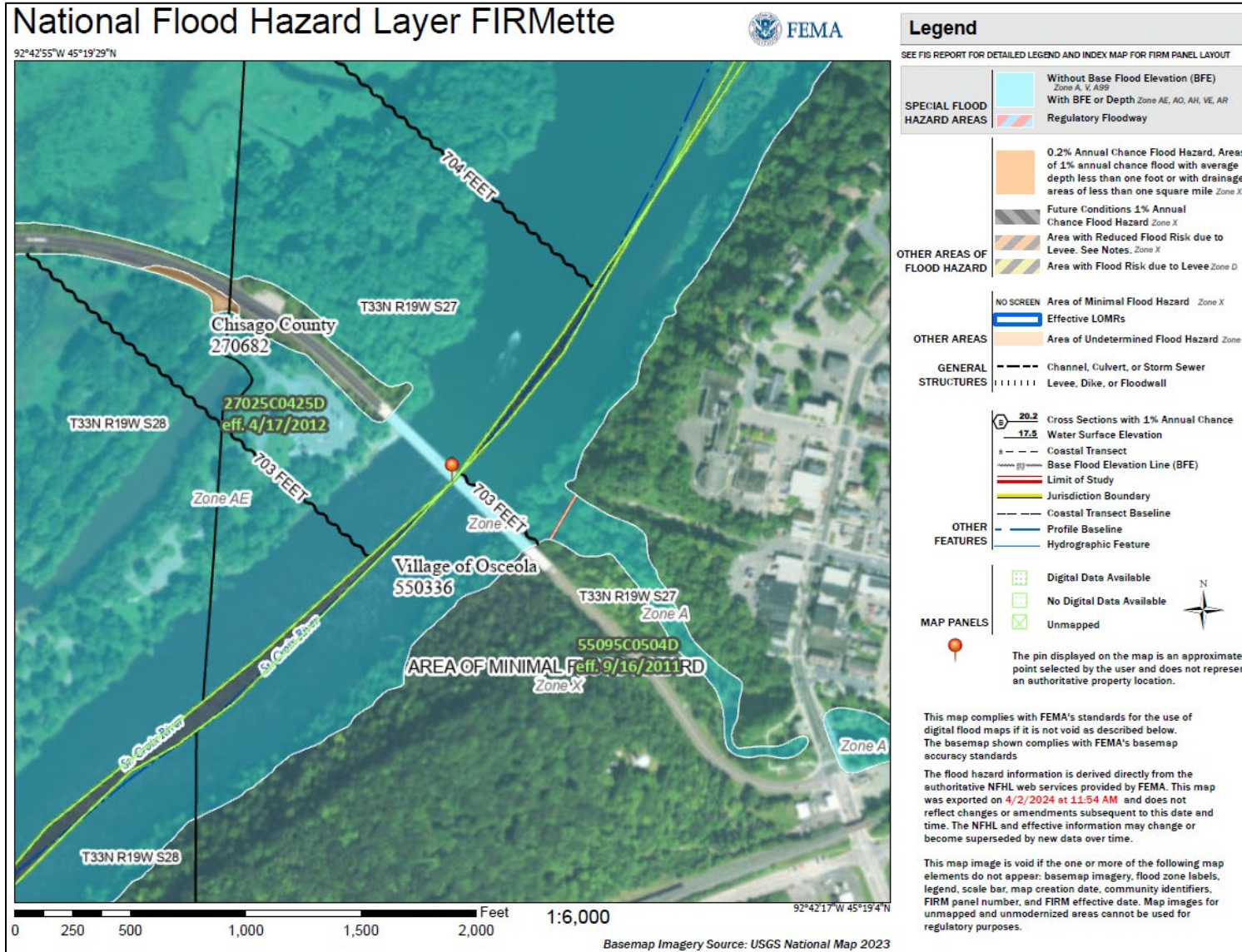
<sup>41</sup> Minnesota Pollution Control Agency. *Clean Water Act Section 401 water quality certifications*. Accessed in March 2024 and available at <https://www.pca.state.mn.us/business-with-us/clean-water-act-section-401-water-quality-certifications>

a base flood elevation (BFE) of 703 feet and flow rate of 61,000 cubic feet per second (cfs) in the 100-year event at the Hwy 243 Bridge. **Figure 4-5** illustrates floodplains in the project area. There is no regulatory floodway in the project area.

According to 44 CFR § 9.4, 100-year floodplain (also known as base floodplain) means the floodplain “for the flood which has a one percent chance of being equaled or exceeded in any given year” and “floodway means that portion of the floodplain which is effective in carrying flow, within which this carrying capacity must be preserved and where the flood hazard is generally highest, i.e., where water depths and velocities are the greatest. It is that area which provides for the discharge of the base flood so the cumulative increase in water surface elevation is no more than one foot.”

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Figure 4-5. FEMA Floodplain FIRMette



**Groundwater**

*Aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a Minnesota Department of Health (MDH) wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.*

1) Depth to Groundwater

Regional groundwater flow direction in the vicinity of the project corridor is presumed to be toward the St. Croix River, centrally located on the project corridor. Depth to groundwater is expected to be encountered less than 20 feet below ground surface (bgs) near the St. Croix River and on the eastern portion of the project corridor.<sup>42</sup> Depth to groundwater is expected to be encountered between 25 and 50 feet bgs on the western portion of the project corridor.<sup>43</sup>

2) Wellhead Protection Area

According to the MDH Source Water Protection Web Map Viewer,<sup>44</sup> the project area in Minnesota is not located within a Wellhead Protection Area or Drinking Water Supply Management Area (DWSMA). According to WisDNR Well Driller Viewer,<sup>45</sup> groundwater protection features, including trout streams, surveyed streams, and special casing areas are not located within the project area in Wisconsin.

3) Onsite or Adjacent Wells

Based on the MDH’s Minnesota Well Index and the WisDNR Wells map, there are three wells located within the study area (see **Table 4-8. Wells within the Project Area** and **Figure 4-6**). If any unknown wells are encountered within the study area, they would be sealed in accordance with MDH regulations or Wisconsin Administrative Code NR 812.26.

**Table 4-8. Wells within the Project Area**

Index Status	Well ID	Well Name	Well Depth	Date Drilled	State
Active	EL430	N/A	105 FT	May 17, 1992	WI
Unknown	8FT823	Unknown	Unknown	Unknown	WI
Unknown	8FU921	Unknown	Unknown	Unknown	WI

<sup>42</sup> Wisconsin Geological and Natural History Survey. *Geoscience Wisconsin, Volume 6*. Accessed in March 2024 and available at <https://wgnhs.wisc.edu/catalog/publication/000223/resource/gS06>.

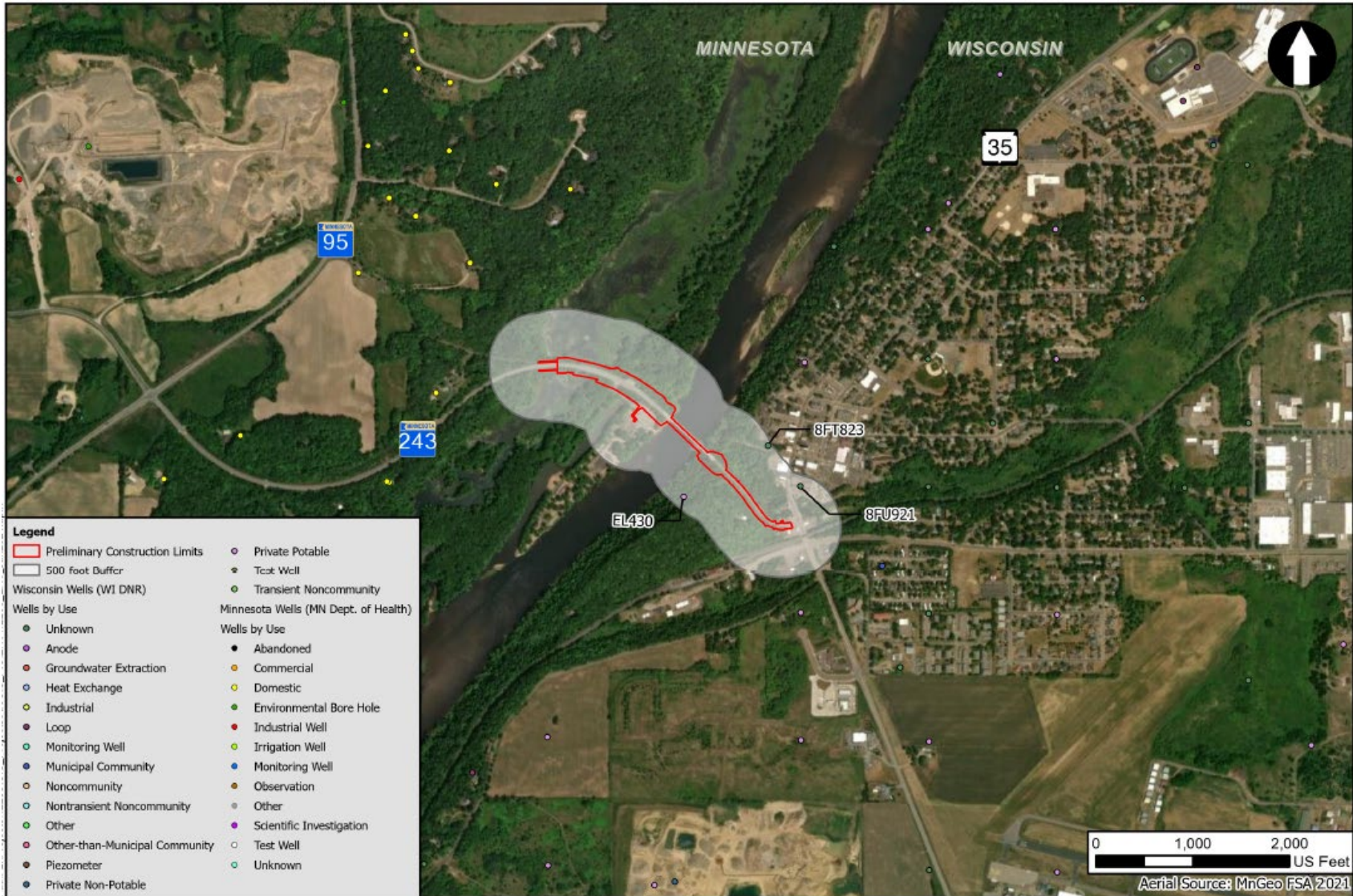
<sup>43</sup> SEH. *Environmental Review for Trunk Hwy 243*. May 30, 2023. Accessed in March 2024.

<sup>44</sup> Minnesota Department of Health. Source Water Protection Web Map Viewer. Accessed in February 2024 and available at <https://mdh.maps.arcgis.com/apps/View/index.html?appid=8b0db73d3c95452fb45231900e977be4>

<sup>45</sup> Wisconsin Department of Natural Resources. *Well Driller Viewer*. Accessed in February 2024 and available at [https://dnrmaps.wi.gov/H5/?viewer=Well\\_Driller\\_Viewer](https://dnrmaps.wi.gov/H5/?viewer=Well_Driller_Viewer)



Figure 4-6. Wells within or near the Project Area



**4.1.12.2 Describe effects from project activities on water resources and measures to minimize or mitigate the effects below.**

**Wastewater**

*For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.*

*If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.*

Not applicable.

*If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.*

Not applicable.

*If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.*

Not applicable.

**Stormwater**

*Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments or are classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.*



A drainage assessment was conducted for the Hwy 243 Osceola Bridge Project during project development in 2023 and 2024. The existing condition of stormwater management was assessed and a focus on enhancing water quality was integrated into the design of the project. Local and regional government requirements pertaining to stormwater management, including runoff rate and volume control and water quality rules were also reviewed.

The existing Hwy 243 Bridge deck drainage system includes scuppers (openings that drain directly through the bridge deck) that convey stormwater runoff and roadway contaminants (e.g., gasoline, oil, salt, sand, etc.) or accidental spills of materials directly to the St. Croix River. Stormwater runoff from the Hwy 243 approach roadways in Minnesota and Wisconsin are conveyed to receiving waters, through storm sewer, ditches, and culverts. The receiving waters include wetland complexes that are backwaters of the St Croix River, Osceola Creek (which drains to the St Croix River) and the St. Croix River directly. The St. Croix River exhibits outstanding water quality and is identified as an “outstanding resources water” by Minnesota and Wisconsin. The water quality of the St. Croix River also is an important criterion for its inclusion in the national wild and scenic river system. Therefore, the goal of the drainage design for this project is to treat as much stormwater as possible prior to discharging to the St. Croix River, while balancing aesthetics, wetland and tree impacts, right of way considerations, maintenance, and cost.

The Construction NPDES permit requires permanent best management practices (BMPs) if the project creates 1 acre or more of increased impervious area. Although MnDOT Metro District also has a Municipal Separate Storm Sewer System (MS4) permit, this project is outside of the Metro urbanized census area, therefore there are no additional requirements from MS4 permit. New (increased) impervious area proposed with the project in Minnesota will be approximately 0.6 acres, therefore, permanent stormwater BMPs are not required. Estimated impervious surface changes are tabulated in **Table 4-9**. However, the project design includes the construction of a wet pond just west of Osceola Landing and south of Hwy 243 to improve the water quality of the St. Croix River and offset any impacts due to added impervious area. Nearly all of the stormwater runoff within the project area within Minnesota and all of the runoff from the proposed bridge will drain to the wet pond for treatment. The wet pond was determined to be the preferred treatment mechanism in this area because it performs well for sediment and phosphorus removal and is less susceptible to sedimentation and damage from flood events compared to other treatment mechanisms such as infiltration. In addition, wet ponds are compatible with the soil and groundwater conditions within floodplains, while infiltration basins are difficult to construct successfully due to concerns with both soil type and groundwater elevation. The proposed Minnesota wet pond west of Osceola Landing is projected to remove 78% of Total Suspended Solids (TSS) from stormwater runoff. TSS is a water quality parameter that is defined as the quantity of material suspended in a known volume of water and is a common metric used to assess sediment removal.

**Table 4-9. Estimated Impervious Surface Changes with the Project**

State	Proposed Disturbance (acres)	Existing Impervious (acres)	Proposed Impervious (acres)	Net New Impervious (acres)
MN	5.8	1.5	2.1	0.6
WI	2.7	1.2	1.7	0.5
Total	8.5	2.7	3.8	1.1

New impervious area proposed with the project in Wisconsin will be approximately 0.5 acres, making the combined increased new impervious 1.1 acres for the whole project. Wisconsin PDES permit does not require permanent BMPs as the project meets the definition of minor reconstruction of a highway. During project development, however, WisDNR staff requested that there be no net increase in TSS in the stormwater that discharges to the St. Croix in Wisconsin, which is consistent with the goals of the project stormwater design to treat as much stormwater as possible prior to discharge to the St. Croix River. The Wisconsin side of the project area is characterized by bluffs and steep slopes; therefore, a pond or surface BMP is not feasible. Instead, storm sewer will convey runoff from the roadway to a sump manhole just southwest of the WI river bridge abutment, while the rock catchment ditch adjacent to the bluff south of Hwy 243 will convey runoff from the bluff area to a small sediment trap adjacent to the sump manhole. In addition to the project area, these two stormwater management features will provide treatment for a small offsite area. The proposed sump manhole is projected to remove 17% of TSS draining to it, while the sediment trap is projected to remove 20% of TSS draining to it. A maintenance plan for the proposed drainage features in Wisconsin will be developed by WisDOT.

For the entire project combined, the stormwater management features are projected to reduce TSS from stormwater runoff by 57% from existing condition. These features and the benefits provided are depicted in Figure A2 and Figure A3 in **APPENDIX A** (Figures).

### **Floodplains – Temporary Impacts**

Several constructability methods to remove the existing bridge and replace it with the proposed bridge were evaluated based on various models, as well as design and regulatory requirements. These requirements are listed below. Additional details regarding temporary and permanent floodplain impacts can be found in **APPENDIX H** (Floodplain Assessment).

#### Regulatory

- MnDNR recognizes a 0.5-foot allowable stage increase for the temporary condition in the 100-year event for major river projects. This criterion assumes the additional stage will not impact insurable structures.
- WisDNR does not recognize a 0.5-foot allowable stage increase for temporary causeways (Wisconsin Administrative Rules NR116 and FEMA 44 CFR (various sections)). WisDNR reviews temporary floodplain increases on a case-by-case basis for environmental impacts and regulatory floodplain requirements.
- Limit increases in velocities to less than 1 feet per second (fps) in the 2-year flood event from existing to temporary conditions.

#### Design

- Top of causeway elevation – minimum 1 feet of freeboard (preference of 2-3 feet to maintain constructability as much as possible) to maximize use during the construction months.
- Maintain a minimum 40-foot navigation opening for existing boat traffic, including the paddle-wheeler storage upstream of the crossing.
- Assume all piers will be in the river (worst case condition).

During the evaluation process, several causeway configurations were modeled to balance the opening span with the top of causeway elevation. The general cross-section modeled is shown in **Figure 4** of *Temporary River Impact Analysis Memorandum* in **APPENDIX H** (Floodplain Assessment). Results of the analysis are found in **Table 4-10**. Causeway Alternatives Analysis.

It was determined that a combination of causeways and barges are most suitable for:

- Navigation opening
- Culverts or other openings in the causeways for river flow, as well as aquatic organism passage

**Table 4-10. Causeway Alternatives Analysis**

Scenario	Causeway Elevation (ft)	100-year Stage Increase (ft)	Summer median event freeboard (ft)	2-year Velocity Delta (fps)
40 ft center	688.10	0.50	-3.97	0.10
76 ft center, set at 3ft above existing summer median event	684.87	0.23	-3.30	0.10
76 ft center	689.60	0.50	0.23	0.10
40 ft center, 2-20 ft openings LT & RT*	689.70	0.50	0.50	0.10
40 ft center, 2-30 ft openings LT & RT*	690.70	0.50	3.56	0.10
76 ft center, 20 ft opening LT	690.40	0.50	2.54	0.10
110 ft center	691.20	0.50	4.85	0.10
110 ft center, lowered to 1ft freeboard	687.35	0.27	1.00	0.10
110 ft center, 2-10x10 RCB**	686.69	0.23	1.00	0.10
90 ft center	690.30	0.50	2.64	0.10
90 ft center, 2-10x10 RCB	690.70	0.50	3.69	0.10

\*LT and RT indicate the left and right sides of the channel, respectively.

\*\*RCB indicates reinforced concrete box culvert.

The causeway will be in-place for a period of two construction seasons. During this time, river flows will pass through the center opening, effectively limiting movement of water directly upstream and downstream of the causeways. Adding culverts in this area will allow fish passage and will provide some movement of water in these ineffective flow areas.

In addition, Osceola Creek enters the St. Croix River directly upstream of the bridge. The causeway, and fingers to build the piers, may slow creek water down and cause sediment deposits upstream of the causeway. Installing a larger culvert in the east causeway will maintain some river flows and may reduce deposition of

sediment. Additional culverts also provide some capacity across the causeway, allowing the top to be slightly higher.

After a review of the various alternatives the following observations were made:

- The larger opening between the two sides of the river allows the causeway to be raised and reduces the risk of overtopping.
- None of the alternatives increase the velocities from the existing conditions more than 0.1 foot per second.
- Including smaller openings in each causeway allows for more height, slightly reducing risk of overtopping.

The recommended causeway configuration includes the 90-foot center opening with smaller 10-foot-wide openings in each causeway. The 90-foot opening maximizes the space between existing and proposed piers while allowing a buffer for pier construction. This alternative also provides a preferential freeboard and meets the 100-year allowable stage increase.

See the *Temporary River Impact Analysis Memorandum* in **APPENDIX H** (Floodplain Assessment).for additional details.

### **Floodplains – Permanent Impacts**

A transverse floodplain encroachment of approximately 600 feet is proposed with this project, see **APPENDIX H** (Floodplain Assessment). There is no significant potential for interruption of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route. There is no significant impact on natural and beneficial floodplain values, through the implementation of many mitigation measures for fisheries, wetlands, plants, open space/aesthetics, public boat access and passage, channel changes, threatened and endangered species, and water quality. These mitigation measures are being documented in **APPENDIX F** (Environmental Management Plan).

The proposed bridge replacement will mimic the existing hydraulic conditions; therefore, no stage increase is anticipated for permanent conditions after this project. No significant increased risk of flooding is anticipated. Lastly, the project will not support and/or result in incompatible floodplain development. Based on all of the above, no significant floodplain impacts are expected.

The proposed temporary and permanent impacts to the regulatory floodplain will be reviewed in conjunction with the Village of Osceola (local zoning authority) in final design and permitting to ensure that the standards of the local floodplain ordinance are followed and documented.

### **Avoidance, Minimization, and Mitigation Measures**

Although there would be an increase of impervious surface within the project area, the proposed project would improve the water quality of stormwater runoff through the implementation of a permanent stormwater management system. The system would meet the standards of the MPCA and WisDNR and local MS4 requirements in Minnesota. The general objective of these obligations is to require that a volume of stormwater

runoff is treated before discharge to other waters. Stormwater management features that are being designed with the project were identified based on the following criteria:

- Located within existing ROW and MnDOT/WisDOT easements.
- Avoidance of existing pier locations.
- Prioritized reasonable outlet locations with the intent of minimizing the need for drainage structures suspended from the bridge.
- Prioritized upland locations to minimize impacts to wetlands and aquatic resources.

A total of two locations and three stormwater management features would provide water quality treatment and rate control. Locations and details of stormwater management areas are shown in Figure A2 and Figure A3 in **APPENDIX A** (Figures). Overall, the project would provide enhanced treatment for the St. Croix River as stormwater runoff is not currently being treated in the project area.

Construction associated with the proposed project would disturb existing paved and vegetated surfaces and expose underlying soils to precipitation and runoff. Runoff from these disturbed soils could potentially travel from the construction site and create sediment deposits in adjacent waterways and waterbodies. Additionally, the potential exists for contamination found in exposed soil and other pollutants associated with construction (e.g., concrete washout, fertilizer, vehicle fluids, etc.) to be exposed during construction. Without temporary stormwater management (required by state and federal requirements), these activities could also result in an increase in runoff volume and discharge rates from the construction site that could erode or weaken slopes and transport additional sediment to receiving waters.

Temporary erosion and sediment control measures would be implemented throughout construction to mitigate potential effects to water resources. An NPDES Construction Storm Water Permit in Minnesota and a WPDES Transportation Construction General Permit in Wisconsin will be required for the proposed project and the project will adhere to permit requirements. These permits require the procurement of a project SWPPP, which includes instructions for both the construction stage pollution prevention measures and temporary and permanent sediment and erosion control. All aspects of pollution prevention, sediment, and erosion control measures would be in place and maintained throughout the entire construction period with an implementation timeline as stated in the SWPPP. Sediment and erosion control would be managed through planting and the placement of stabilizing perimeter control at all locations where surface stormwater leaves the construction site including additional measures near areas of environmental sensitivity. Erosion control measures would not be removed until all disturbed areas have been completely stabilized.

Floodplain modeling with the temporary causeways will be provided to MnDNR and WisDNR as part of final design and permitting processes. MnDOT and WisDOT will identify any insurable structures that would be impacted by temporary flood stage increases with the causeways based on final causeway elevations. WisDOT will provide written notification to all landowners with insurable structures that would be impacted by the increase caused by the temporary causeways during construction.

Only necessary construction equipment will be operated and stored in the floodway. Other construction equipment will be stored in construction staging areas along the Hwy 243 approaches in Minnesota and Wisconsin.

The contractor will be required to develop an emergency action plan for response to potential flood events during construction. The emergency action plan will identify St. Croix River flow velocity and elevation thresholds and procedures for removal of construction equipment and materials from the riverway.

### Climate Trends

Climates in the Midwest of the US are already changing rapidly and will continue to do so for the foreseeable future.<sup>46</sup> Though precipitation is predicted to increase in intensity and volume due to climate change, the project is being designed using current standards. This current standard approach has been reviewed by MnDOT and WisDOT. A standard practice and formal guidance on designing for climate trends has not yet been developed to address intensifying precipitation. However, as discussed in Section 4.1.7, a “resiliency check” storm would be modeled as the project develops to identify and minimize vulnerability and risks in the project area. The resiliency check storm is currently defined as a 15 percent increase in the 100-year storm event, which is a statewide temporary placeholder until more robust precipitation frequency estimates based on nonstationary climate data are assessed and published.

### **Water appropriation**

*Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should the appropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.*

The nature and extent of dewatering activities for this project are not yet known, though some temporary dewatering may reasonably be anticipated during construction of bridge piers, stormwater management facilities, or other underground utility work. If dewatering efforts exceed the minimum guidelines for a MnDNR Water Appropriations permit, MnDOT will coordinate with the MnDNR prior to construction. Any dewatering required for this project will be temporary, and no adverse effects on the groundwater or surface water are anticipated. Depending on the dewatering activity (i.e., volume and duration), it is recommended that the project SWPPP include provisions for the management of the discharge to prevent erosion and particulate pollutant loading in the receiving water.

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<sup>46</sup> Minnesota Department of Natural Resources (MnDNR). *Climate trends*. Accessed in June 2024 and available at [https://www.dnr.state.mn.us/climate/climate\\_change\\_info/climate-trends.html](https://www.dnr.state.mn.us/climate/climate_change_info/climate-trends.html)



Best management dewatering practices would be identified in the SWPPP, and a project dewatering plan would be attached to the construction documents. All locations that are determined to require dewatering would be included in the dewatering plan.

### Climate Resiliency During Construction

Dewatering activities for cofferdams during bridge construction could be affected by increased frequency of intense storms. Large storm events could overtop cofferdams. Pumping and treatment systems managed under normal weather conditions could be inundated by large storms and result in untreated discharge to surface waters. MnDOT will require cofferdams to be constructed to a certain elevation based on hydraulic modeling to minimize the risk of overtopping. Water pumped from the cofferdams would be treated prior to discharge as identified in the SWPPP.

### **Surface Waters**

*Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.*

Eight wetland basins of differing types would be impacted by the proposed project, totaling 0.35 acres of permanent cut or fill impacts. All impacts to wetlands are assumed to be permanent at this time. The specific nature of the proposed wetland impacts will be studied further as engineering progresses into final design. Temporary impacts to wetlands will be determined during final design and permitting for the Hwy 243 Osceola Bridge Project. Details regarding wetland impacts and their locations can be found in **APPENDIX G** (Wetland Assessment & Two-Part Finding). Indirect effects to the host watershed may include altered hydrological patterns and changes in vegetation within the project construction limits. Climate trends such as increased precipitation and intensifying droughts could exacerbate the aforementioned effects. To minimize impacts to the host watershed, standard best management practices (BMPs) would be used to prevent project site runoff from entering adjacent wetland areas, and only clean fill would be placed in wetland areas to construct the project. Native seed mixes would be utilized, as appropriate, to restore areas of temporary impact to pre-project conditions.

### Alternatives

The Alternatives Analysis process, which is detailed in **APPENDIX C** (Alternatives), evaluated the following concepts:

- No Build Alternative
- Build Concept A – Rehabilitation
- Build Concept B – Existing Alignment

- Build Concept C – North Alignment
- Build Concept D – South Alignment
- Build Concept E – 2nd Avenue Alignment
- Build Concept F – New Alignment

The proposed project considered a variety of different bridge alternatives designed to meet the project's primary need, bridge condition. Identified secondary needs include walkability/bikeability, with maintenance of traffic during construction, Osceola Landing considerations, stormwater management, regulatory requirements, and ecological connectivity identified as additional considerations. Three build alternatives were advanced for further study in Step 3 of the alternative analysis process, including: Build Alternative B (existing alignment), Build Alternative C (north alignment), and Build Alternative D (south alignment). Impacts to aquatic resources, among other factors, were evaluated during this analysis. The Preferred Alternative, Build Alternative B (existing alignment), results in the least amount of wetland impacts and was selected as the Preferred Alternative.

#### Minimization and Mitigation Measures

Wetlands and watercourses are afforded protection under the Clean Water Act (Section 404, Executive Order 11990 – Protection of Wetlands). The USACE regulates wetlands in both states. In Minnesota, the WCA regulates wetlands. MnDOT is the authority administering WCA for wetlands located in MnDOT right of way and Chisago County is the authority administering WCA for wetlands beyond MnDOT ROW. Wetlands and waterbodies identified as MnDNR Public Waters are regulated by the MnDNR. The MPCA also regulates wetlands in Minnesota through water quality requirements. In Wisconsin, the WisDNR regulates wetlands and watercourses. Laws protecting wetlands and aquatic resources require projects to perform “sequencing” by evaluating practicable methods of avoiding, minimizing, and lastly mitigating, through compensatory wetland credit replacement, any impacts to aquatic resources.

It was not feasible to completely avoid all wetland impacts resulting from the proposed project. Wetland impacts that are unavoidable have been minimized to the extent practicable without compromising safety. The following design measures were used to minimize these impacts.

- Steeper inslopes (1:4 or steeper)
- Utilizing guardrail if necessary and meets design standards.
- Narrow shoulders (unless needed for bikes or pedestrians).
- Reduced design speed.
- Reconstruction along the existing bridge alignment.
- Urban section roadway (curb and gutter) along Minnesota and Wisconsin approach roadways.

Replacement of lost wetlands will be in accordance with Section 404 of the Clean Water Act, Executive Order 11990: Protection of Wetlands, and all state wetland protection regulations. The purpose of the wetland compensatory mitigation plan will be to replace lost wetland functions and restore wetland area to fulfill the regulatory mitigation requirements. Compensatory wetland replacement is planned at a minimum replacement ratio of 2:1 for wetlands that are regulated by the Minnesota WCA. In Minnesota, compensatory mitigation would be achieved through the withdrawal of wetland credits from an established MnDOT wetland bank in the same wetland bank service area as the proposed permanent impacts, bank service area 6. In Wisconsin, compensatory mitigation would be achieved through withdrawal of wetland credits from a WisDOT wetland

bank at a minimum 1:1 replacement ratio in accordance with WisDNR and USACE requirements. The particular banks used for impacts in each state will be decided during the permitting process.

Wetland vegetation would also be restored to preconstruction conditions as feasible using appropriate native seed mixes. Wetland mitigation requirements would be further defined as detail design progresses and wetland impacts are more accurately quantified and reported in the required wetland permit applications.

This project will require work in and adjacent to the St. Croix River, which is a National Wild and Scenic River. This project will likely require a USACE Section 404 Individual Permit, as the Transportation Regional General Permit generally does not authorize regulated activities which may affect or are located in a designated portions of the National Wild and Scenic River System unless the appropriate Federal agency with direct management responsibility for the river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation.

*Other Surface Waters - Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicialditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.*

Removal of the existing bridge and reconstruction of the new Hwy 243 Bridge over the St. Croix River is challenging given the physical terrain and relatively shallow depth of water in the river. Review of construction methods has been completed and identified the need for temporary causeways to be constructed from both sides for up to two construction seasons. Several causeway configurations have been explored to meet the construction needs while meeting regulatory requirements for flooding, boat access, and channel velocities. The final configuration is likely to include a large opening for the navigation channel to allow passage of boats along with minor openings in the causeway to balance the flood levels, velocities, and access.

Channel impacts are also expected within the St. Croix River and Osceola Creek as part of this project. New fill, totaling 0.88 acres, would be placed in the river for the replacement bridge piers and the temporary earthen causeways required for construction of the new bridge. The expected duration of in-water construction is approximately 24 months. During construction, the existing bridge piers would be removed, and river bottom habitat would be restored in these locations once construction is complete.

The confluence of Osceola Creek with the St. Croix River is on the north side of the Hwy 243 Bridge. An earthen causeway would be constructed at Osceola Creek along the Wisconsin shoreline to allow for removal of the existing bridge and construction of the new bridge. A new bridge pier would be constructed adjacent to the Osceola Creek confluence along the Wisconsin shoreline. The outlet of Osceola Creek would be re-aligned to the north, and the north side of this pier would be armored with rip-rap material to prevent erosion and scouring at the pier as Osceola Creek discharges to the St. Croix River. The new outlet of Osceola Creek will be designed to match existing dimensions, slope, and velocities. A staging plan will be developed in final design for construction

of the outlet, including methods for maintaining Osceola Creek flow during construction with the temporary causeways and construction of the new outlet. Erosion control best practices will be used along the Wisconsin shoreline to control sediment discharge to the St. Croix River. The temporary impacts to Osceola Creek at the confluence with the St. Croix River and final design of the new outlet will be approved by WisDNR as part of the WisDOT/WisDNR Cooperative Agreement process.

#### Avoidance, Minimization, and Mitigation Measures

Causeways would be used in order to meet all the necessary requirements of working within the St. Croix River. Barges and cofferdams would also be used, in order to minimize construction impacts in the river. After construction is complete, the temporary fill for the causeways would be removed to restore preconstruction contours and preconstruction soil conditions, which includes the alleviation of any soil compaction that is caused by construction and river bottom restoration.

Construction of temporary causeways, as discussed in Section 4.1.6, is proposed on the west and east sides of the bridge on the Minnesota and Wisconsin approaches which would extend into the navigation channel. Piers would be removed down to the base such that navigation is not impaired. The shoreline would be stabilized and restored prior to the completion of construction. In-water pollution prevention measures would be established, documented, and followed as part of the project SWPPP.

The cofferdams would be removed when the pier structures have been constructed. Water pumped out of cofferdams could contain high concentrations of suspended solids. Adequate sediment control and treatment of water affected by construction activity would be completed before the pumped water is released. This includes filtered sump pits or other appropriate dewatering systems. Dewatering systems must be inspected frequently and repaired or replaced if sediment buildup recurs or if the system does not function as designed. The accumulated sediment that is removed from a dewatering mechanism must be spread onsite and stabilized, used as fill, or disposed of at an approved disposal site. Dewatering discharge may be pumped directly to a settling basin or other treatment pond.

Recurring examinations of erosion control practices will be required. Appropriate in-water pollution prevention measures like flotation silt curtains would be utilized to contain the active construction area within the river. The SWPPP will provide further details on best management practices to alleviate turbidity and sedimentation in the waterway.

Temporary and permanent impacts within the St. Croix River would be under the jurisdiction of the MnDNR or the WisDNR, and USACE. Permanent impacts that result from pier construction may be mitigated, in part, by the removal of the existing piers. Aquatic resource mitigation requirements would be further defined as final design progresses and impacts can be more accurately quantified and disclosed in the required aquatic resource permit applications. Permitting authorization for the Hwy 243 Osceola Bridge Project is subject to an affirmative Section 7(a) evaluation and determination from NPS.

Prior to construction, a detailed survey would be conducted to confirm the existing topography within wetlands and watercourses. When construction is completed, the temporary fill for the causeways would be removed to pre-construction contours as much as practicable. Vegetation within the wetlands would also be restored to preconstruction conditions as feasible using appropriate native seed mixes.

### 4.1.13 Contamination/Hazardous Materials and Wastes

#### 4.1.13.1 Pre-project site conditions

*Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.*

Early coordination between MnDOT and WisDOT began in 2017 and continued through 2020. Following early coordination, an environmental review of corridor contamination risks was completed by SEH Inc. in Spring 2023 to summarize the existing and potential footprint of contaminated materials within approximately 500 feet of the project area (Hwy 243 between MN-95 and WIS-35). All properties, public ROW areas, and intervening waterways within 500 feet of the project area were evaluated and ranked according to perceived risk of encountering contaminated materials from current and/or former land-uses and the potential presence of contamination. The SEH Environmental Review Report and other related documentation (e.g., Phase I and Phase II Environmental Site Assessment (ESAs)) will be available upon request from the MnDOT Project Manager.

The western portion of the project corridor in Franconia Township, Minnesota, west of the St. Croix River, has been primarily occupied by agricultural or forestland with farmsteads and private residences. By the early 1950s, an aggregate sand and gravel surface mine was located approximately one quarter mile northwest of the project corridor. The mine has expanded in subsequent decades.

The eastern portion of the project corridor in Osceola, Wisconsin, east of the St. Croix River, has been developed with industrial, commercial, and residential properties since at least the mid-1800s. A railroad corridor bisects the eastern portion of the corridor. Industrial properties historically surrounded the railroad corridor, including lumber and flour mills, bulk oil facilities, grain elevators, and produce and livestock product warehouses. Downtown Osceola has been developed with commercial stores and restaurants. A hospital/clinic was constructed in downtown Osceola in the approximate early 1970s.

From the Spring 2023 Environmental review of corridor contamination risks, a total of 25 sites of potential environmental concern were identified in the land-based area of interest and four sediment sampling sites were identified in the St. Croix River. The risk ranking system for the land-based areas in Minnesota and Wisconsin generally involved assigning an initial baseline ranking of “high,” “medium,” or “low” risk and are described further below.

#### Land-Based Risk Evaluations

The land-based rankings were determined based on current and/or former land-use factors and the potential presence of environmental impairments. In both Minnesota and Wisconsin, known remediation sites with ongoing investigations are considered “active” or otherwise considered “closed” by a governing regulatory agency. In Minnesota, contamination may remain on a “closed” site but the “closed” designation signifies no need for further cleanup actions. In Wisconsin, sites may be “closed” or “closed with continuing obligations”

where disturbances of remaining contaminated soil or dewatering of impacted groundwater may require additional remediation. The land-based risk ranking assignments are as follows:

- High risk: In general, sites with high environmental risk are properties that have documented releases of chemicals or hazardous or regulated substances (e.g., active and inactive state and federal cleanup sites, active and inactive dump sites, and active leaking underground storage tank sites), historical evidence of industrial or commercial land use that could result in undetected contamination, or storage of large volumes of petroleum or other chemicals (e.g., bulk storage tank facilities).
- Medium risk: Sites of medium environmental risk are properties associated with historical or current land use that is perceived to carry a lower threat to public health or the environment. Medium risk sites may share some characteristics of high-risk sites but the known or potential magnitude of chemical or petroleum releases are generally less significant. Medium risk sites are generally regulated under State or local government jurisdictions and not at the Federal level. Closed sites, such as closed leaking underground storage tank sites, are considered medium risks because residual soil or groundwater contamination may remain after initial investigations or remediation of the sites.
- Low risk: Low environmental risk sites include properties where minor volumes of chemicals or hazardous materials have been used or stored (e.g., hazardous waste generators, and possibly some farmsteads and residences).

The location of identified high, medium, and low risk sites are tabulated and illustrated in **APPENDIX I** (Contaminated Properties).

### **St. Croix River Sediment Investigation**

During the Summer of 2023, sediment screening and sampling were added to the geotechnical drilling in the St. Croix River to evaluate dredging and disposal requirements. MnDOT will hire an environmental consultant in to support additional investigations and construction monitoring.

The sediment investigation consisted of analysis of sediments obtained from four of the six geotechnical soil borings (see **APPENDIX I** (Contaminated Properties) for more on locations and boring depth). Sediments were sampled following MPCA guidance. Sediment was analyzed for grain size and hydrometer analysis, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, oil and grease, metals, phosphorous, nitrogen, and organic carbon. Analysis found that there were no field indicators of contamination in sediment; however, arsenic was detected in two sediment samples above the MPCA commercial/industrial soil reference value and a nitrogen compound was detected above the Minnesota Department of Agriculture cleanup goal.

### **Impact Evaluation**

#### No Build Alternative

Under the No Build Alternative, the Hwy 243 Osceola Bridge Project would not be constructed. Since the project would not be constructed, there would be no temporary construction-related impacts to identified contaminated properties.



### Preferred Alternative

The Preferred Alternative is anticipated to impact at least one land-based contaminated property with a high-high or high-unknown ranking, which indicates a high probability for petroleum and non-petroleum-based contaminated properties to have an impact on future ROW acquisition and construction activities. Construction of the Preferred Alternative may also present risk of encountering unknown contamination.

### **Avoidance, Minimization, and/or Mitigation Measures**

To understand more about the contaminated property risks to the project, a Phase II ESA investigation is planned. The purpose of the Phase II ESA is to verify the presence of contamination and to conduct an initial characterization of the extent and magnitude of contamination within MnDOT and WisDOT ROW areas. The Phase II ESA also identifies any restrictions in potential soil reuse, based on MPCA and WisDNR guidance. If contaminated materials are identified, a plan would be developed to properly handle and treat any contaminated materials encountered during project construction in accordance with applicable state and federal regulations. It is not anticipated that liability protections are needed as MnDOT will not acquire additional ROW and WisDOT will acquire any property they need on the Eastern half of the project. Correspondence related to contamination investigations is located in **APPENDIX J** (Agency Correspondence).

Drilling work plans would be completed for investigations of the soil and groundwater to establish the presence of and the magnitude of chemical impacts to the environment. This information will be used in conjunction with the construction design plans to write specific contract special provisions and a contaminated materials management plan for handling known contaminated soils, dredged sediments, and groundwater that would be encountered during construction.

Unknown materials may also be encountered during construction that were not identified during the initial site investigations. A Construction Contingency Plan would be written and incorporated within the contaminated material management plan, and would discuss how to handle unknown conditions that are encountered. MnDOT will hire an environmental construction oversight contractor to help manage contaminated and regulated materials in both Minnesota and Wisconsin to make sure that these materials are handled in accordance with all appropriate federal, state, and local regulations.

#### **4.1.13.2 Project related generation/storage of solid wastes**

*Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solidwaste including source reduction and recycling.*

All solid wastes, soils, and sediments generated by construction of the proposed project would be disposed of properly in a permitted, licensed solid waste facility. Solid wastes that require temporary stockpiling would be covered or managed in a way that prevents any release to the environment. Project demolition of concrete, steel, asphalt, and other potentially recyclable construction materials would be directed to the appropriate storage, crushing, or renovation facility for recycling.

#### **4.1.13.3 Project related use/storage of hazardous materials**

*Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.*

No above ground or below ground storage tanks are planned for permanent use in conjunction with this project. Temporary storage tanks for petroleum products may be located in the project area for refueling construction equipment during construction. Other chemicals used during construction would be stored as required by respective state law in which the storage takes place.

Appropriate measures would be taken during construction to avoid spills that could contaminate soil, groundwater or surface water in the project area. If a spill of hazardous or toxic substances should occur in Minnesota during or after construction of the proposed project, it is the responsibility of the contractor (during construction) or transport company to notify the Minnesota Department of Public Safety, Division of Emergency Services, to report corrective actions. Any contaminated spills or leaks that occur during construction in Minnesota are the responsibility of the contractor, who would immediately implement containment procedures, notify the Minnesota Duty Officer, and work with the MPCA to contain and remediate contaminated soil/materials in accordance with state and federal standards. In Wisconsin, any contaminant spills or leaks that occur during construction are the responsibility of the contractor, who would immediately implement containment procedures and notify WisDNR through the spill reporting hotline. They shall also notify the WisDOT Environmental Coordinator and work with WisDNR to contain and remediate any contaminated soil/materials in accordance with state and federal standards.

Spills that occur on the highway and the Hwy 243 Bridge after construction will be managed following MnDOT's spill cleanup permit special provisions (e.g., MnDOT Spills Cleanup Standard Conditions and MnDOT Standard Spills Procedure. Information regarding spill cleanup is on the MnDOT webpage at <https://www.dot.state.mn.us/environment/contaminatedmaterials/spills.html>.

#### **4.1.13.4 Project related generation/storage of hazardous wastes**

*Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.*

Removal of the existing bridge and associated structures within the site is not anticipated to generate new hazardous waste. Toxic or hazardous waste to be stored within the site during construction would include the oil necessary to operate heavy construction equipment, and during operations may include commercial cleaning supplies. Regulated materials that may require special handling include treated wood, potential asbestos culverts, traffic signals/lighting, potential lead paint, lead plates, and electronics. Regulated materials/wastes

would be managed on this project in accordance with MnDOT and WisDOT special provisions. Areas of hazardous waste contaminated soil would be excavated and managed by appropriately trained contractors. Any hazardous wastes generated from the project would be managed through each state's representative hazardous and universal waste disposal contract.

#### **4.1.14 Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)**

##### **4.1.14.1 Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.**

The project area is within the St. Croix Moraine ecological subsection as defined by the MnDNR Ecological Classification System Field Guide. The project area is also within the WisDNR's Western Plains Ecological Landscape and the MnDNR's St. Croix Outwash Plain and Stagnation Plains Ecoregion. The project area within Minnesota is adjacent to multiple MnDNR Native Plant Communities with outstanding biodiversity. Near the western limit of the project, north and south of Hwy 243, there are Mesic Hardwood Forest Systems that contain red oak (*Quercus rubra*), sugar maple (*Acer saccharum*), Basswood (*Tilia americana*), and bitternut hickory (*Carya cordiformis*). North of Osceola Landing, across from Hwy 243, is a Floodplain Forest System with silver maple (*Acer saccharinum*) and Virginia creeper (*Parthenocissus quinquefolia*).

The Hwy 243 Bridge spans over the St. Croix River, a Wild and Scenic River which flows between Minnesota and Wisconsin. It provides ecological value that is unique to the region and is considered an Outstanding Resource Water by both Minnesota, Wisconsin, and the National Park Service. It is comprised of shallow, warm water fish habitats which supports a diverse fishery. Osceola (also known as Cascade) Creek drains to the St. Croix River from Wisconsin and is a cool/cold water resource that supports both a warm water and cold water fish habitat.

##### **Fish and Wildlife Species**

The warm water fishery within the St. Croix River includes more than 60 fish species that includes the recreationally important walleye (*Sander vitreus*), sauger (*Sander canadense*), northern pike (*Esox lucius*), muskellunge (*Esox masquinongy*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), white bass (*Morone chrysops*), bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), and flathead catfish (*Pylodictis olivaris*). Additionally, various state listed species are present in the St. Croix River, including the crystal darter (*Crystallaria asprella*), black buffalo (*Ictiobus niger*), blue sucker (*Cycleptus elongatus*), river redhorse (*Moxostoma carinatum*), pugnose shiner (*Notropis anogenus*), paddlefish (*Polyodon spathula*), and shoal chub (*Macrhybopsis hyostoma*). These recreationally important and rare species, and numerous others (e.g., various redhorse species, freshwater drum (*Aplodinotus grunniens*), etc.), can be presumed to occur within the project area.

Fish that are classified as aquatic invasive species are also found in this stretch of the St. Croix River. These include grass carp (*Ctenopharyngodon idella*), silver carp (*Hypophthalmichthys molitrix*), and bighead carp (*Hypophthalmichthys nobilis*).<sup>47</sup> Additionally, invasive carp have been identified by the USCG in the St. Croix River

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<sup>47</sup> National Park Service. *NPSpecies (Information on Species in National Parks)*. Accessed in March 2024 and available at <https://irma.nps.gov/NPSpecies/Search/SpeciesList/SACN>.

south of Taylors Falls. The USCG have also found zebra mussels (*Dreissena polymorpha*) and Eurasian milfoil (*Myriophyllum spicatum*) downstream of the project study area in Lake St. Croix.

Non-fish aquatic species are also present within the St. Croix River, including aquatic macroinvertebrates and freshwater mussels. Data and guidance from the USFWS, MnDNR, WisDNR, MnDOT, and WisDOT regarding the project indicates there are populations of state and federally endangered/threatened species of mussels in the project area. Mussel surveys were required prior to the construction of the project and were completed in 2020 and 2023. Federally listed and proposed species collected during these surveys include snuffbox (*Epioblasma triquetra*), spectaclecase (*Cumberlandia monodonta*), and salamander mussel (*Simpsonaias ambigua*). State (Minnesota and Wisconsin) listed species collected included mucket (*Actinonaias ligamentina*), purple wartyback (*Cyclonaias tuberculata*), pistolgrip (*Tritogonia verrucosa*), butterfly (*Ellipsaria lineolata*), spike (*Eurynia dilatata*), monkeyface (*Theliderma metanevra*), among other non-listed species.

A relocation of freshwater mussels from the in-stream work area will occur prior to the start of project construction. Further detailed results of the completed surveys are detailed in the next section of this EAW question (4.1.14.2 Rare Features) and in **APPENDIX K** (Biological Assessment).

Mammalian species are abundant in or near the project area, due to the high-quality habitats that the St. Croix National Scenic Riverway provides. Among those species include but are not limited to the white-tailed deer (*Odocoileus virginianus*), eurasian elk (*Alces alces*), coyotes (*Canis latrans*), the common gray fox (*Urocyon cinereoargenteus*) and red fox (*Vulpes vulpes*), black bears (*Ursus americanus*), and the federally threatened (MN)/endangered (WI) gray wolf (*Canis lupus*).<sup>42</sup> Bats also reside in the project area, which are described in the following section (4.1.14.2 Rare Features).

The St. Croix National Scenic Riverway provides habitat for numerous bird species, including the golden winged warbler (*Vermivora chrysoptera*) (under Federal review) and whooping crane (*Grus americana*) (experimental non-essential population).

Amphibian and reptilian species are also abundant in or near the project area. These include several species of frogs and salamanders, as well as snakes and turtles.<sup>42</sup> The project area contains the Minnesota and Wisconsin state-listed wood turtle (*Glyptemys insculpta*) (threatened) and the Minnesota state-listed and Wisconsin special concern Blanding's turtle (*Emydoidea blandingii*) (threatened), which are detailed further in the following sections.

The project area is also known to harbor two rare insect species; the federally-endangered rusty-patched bumble bee (*Bombus affinis*) and the candidate monarch butterfly (*Danaus plexippus*). As the monarch is known to occur in the project area, and the project is within a rusty-patched bumblebee High Potential Zone (HPZ), both species are assumed present in the project area.

### **Wildlife Management Areas**

No Wildlife Management Areas are directly adjacent to or within the project area.

### **Migratory Birds and Bald Eagles**

A review for migratory birds was completed to address migratory and non-migratory bird use of the bridge structure as well as the surrounding habitats. Bird use is defined as actual use of the structural components of the bridge for perching, roosting, nesting, hovering, and other behaviors. Protected bird species nests (likely from American robins (*Turdus migratorius*)) were present on the Hwy 243 Bridge during a 2023 inspection.

MnDOT OES completed a bald eagle (*Haliaeetus leucocephalus*) nest survey of the project study area in December 2021. No bald eagle nests were observed within the vicinity of the project. A bald eagle nest is on the north side of Hwy 243 in Minnesota; however, this nest is estimated to be more than 1,000 feet from the highway. An additional bald eagle survey is planned prior to construction of this project.

#### **4.1.14.2 Rare Features**

*Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-\_\_\_\_) and/or correspondence number (MCE\_\_) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.*

### **Federally Listed Species**

A list of federally threatened, endangered, proposed and candidate species, and designated and proposed critical habitat that overlaps with the action area, was requested via the USFWS Information for Planning and Consultation (IPaC) web application. Based on this list, the project is within the range of the following species:

- Gray wolf (*Canis lupus*) – Federally Threatened in Minnesota, Federally Endangered in Wisconsin - habitat found in northern forests.
- Tricolored bat (TCB) (*Perimyotis subflavus*) – Proposed Federally Endangered - known to hibernate in caves, mines, and tunnels. Roosts in live or dead trees, buildings, culverts, and bridges. Forages along forested edges over waterways.
- Northern long-eared bat (NLEB) (*Myotis septentrionalis*) – Federally Endangered – known to hibernate in caves, mines, and tunnels. Roosts in live or dead trees, buildings, and occasionally on bridges or culverts. Forages along forested edges over waterways. According to the Minnesota Department of Natural Resources Natural Heritage Information System and information provided by the Wisconsin Department of Natural Resources, there are two hibernacula with documented NLEB and TCB use within 5 miles of the project area, including one within the project’s action area.
- Whooping crane (*Grus americana*) – Non-essential Experimental Population - utilizes a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, pastures, and agricultural fields.
- Higgins eye pearlymussel (*Lampsilis higginsii*) – Federally Endangered - habitats in the Mississippi and St. Croix Rivers.
- Snuffbox (*Epioblasma triquetra*) – Federally Endangered - habitats in the Mississippi and St. Croix Rivers.
- Spectaclecase (*Cumberlandia monodonta*) – Federally Endangered - habitats in the Mississippi and St. Croix Rivers.

- Winged mapleleaf (*Quadrula fragosa*) - Federally Endangered - habitats in the Mississippi and St. Croix Rivers.
- Salamander mussel (*Simpsonaias ambigua*) – Proposed Federally Endangered and proposed Critical Habitat – habitats in the Mississippi and St. Croix Rivers.
- Rusty patched bumble bee (RPBB) (*Bombus affinis*) – Federally Endangered – habitats found in grasslands with flowering plants from April through October, underground and abandoned rodent cavities or clumps of grasses above ground as nesting sites, and undisturbed soil for hibernating queens to overwinter. Due to the presence of known RPBB populations near the project area and the project area being partially within a mapped High Potential Zone for the species, RPBB presence is assumed present in the project area. A RPBB habitat assessment was conducted by MnDOT ecologists, which can be found in **APPENDIX K** (Biological Assessment).
- Monarch butterfly (*Danaus plexippus*) – Candidate Species – found in grassland habitats where milkweed (*Asclepias spp.*) and flowers are present.

The reach of the St. Croix River within the project area is under review by the USFWS to be designated as Critical Habitat for the snuffbox mussel (*Epioblasma triquetra*), spectaclecase mussel (*Cumberlandia monodonta*), and the salamander mussel (*Simpsonaias ambigua*).

### **Wisconsin Listed Species & Wisconsin Endangered Resources Review**

A Wisconsin Endangered Resources Review (ERR) request was submitted to identify known occurrences of rare plant and animal species in and around the project area in Wisconsin. The Wisconsin ERR identified twenty (20) known occurrences of rare species within or adjacent to the study area. See **APPENDIX J** (Agency Correspondence) for the WisDNR Initial Response Letter.

These included the state-threatened river redhorse (*Moxostoma carinatum*), the state-endangered crystal darter (*Crystallaria asprella*), the state-threatened black buffalo (*Ictiobus niger*), the state-threatened blue sucker (*Cycleptus elongatus*), the state-threatened shoal chub (*Macrhybopsis hyostoma*), the state-threatened northern long-eared bat (*Myotis septentrionalis*), the state-threatened big brown bat (BBB) (*Eptesicus fuscus*), the state-threatened tricolored bat (*Perimyotis subflavus*), and the state-threatened little brown bat (LBB) (*Myotis lucifugus*).

Eleven of the rare species were species of mussels. These included the state-endangered elephant ear (*Elliptio crassidens*), the state-endangered spectaclecase (*Cumberlandia monodonta*), the state-endangered snuffbox (*Epioblasma triquetra*), the state-threatened wartyback (*Quadrula nodulata*), the state-threatened fawnsfoot (*Truncilla donaciformis*), the state-threatened monkeyface (*Theliderma metanevra*), the state-endangered butterfly (*Ellipsaria lineolata*), the state-endangered winged mapleleaf (*Quadrula fragosa*), the state-threatened buckhorn (*Tritogonia verrucosa*), the state-endangered Higgins eye (*Lampsilis higginsii*), and the state-threatened wood turtle (*Glyptemys insculpta*).

Several Wisconsin state species of special concern were also identified in the ERR as occurring within or near the project area. These include lake sturgeon (*Acipenser fulvescens*), American eel (*Anguilla rostrata*), elktoe (*Alasmidonta marginata*), the bat hibernaculum (special concern) which is near the project area, and the Blanding's turtle (*Emydoidea blandingii*).



## Minnesota Listed Species

The Minnesota Natural Heritage Information System (NHIS) database was queried by MnDOT to identify element occurrences of any rare plant or animal species, native plant communities, or other significant natural features within a 1-mile buffer of the project area in Minnesota. MnDOT has a liaison with the DNR who performs reviews internally; therefore, there is no applicable License Agreement (LA) or Ecosystems Research and Development Bureau (ERDB) number. The letter is included in **APPENDIX J** (Agency Correspondence).

Minnesota Species of Special Concern that reside in the project area include the tri-colored bat (*Perimyotis subflavus*), big brown bat (*Eptesicus fuscus*), and little brown bat (*Myotis lucifugus*). These bats tend to hibernate in caves, mines, and tunnels during the winter, and roost in trees and bridges structures near water sources when not in hibernation.

Occurrences of Minnesota-listed fish species are known to occur within the St. Croix River including the state-special concern lake sturgeon (*Acipenser fulvescens*), the state-special concern gilt darter (*Etheostoma microperca*), and the state-special concern American eel (*Anguilla rostrata*).

Minnesota state-listed threatened species include the wood turtle (*Glyptemys insculpta*) and the Blanding's turtle (*Emydoidea blandingii*), as well as the plains spotted skunk (*Spilogale interrupta*) and the Eastern spotted skunk (*Spilogale putorius*). The wood turtle is largely aquatic and prefers small to medium sized rivers and streams with adjacent coniferous and deciduous forests.<sup>48</sup> Typical Blanding's turtle habitat includes wetland complexes and nearby sandy uplands, as well as calm and shallow waters associated with rivers and streams that are home to rich aquatic vegetation.<sup>49</sup> Striped skunks live and thrive in rural and urban environments throughout Minnesota. Eastern spotted skunks are generally found in open lands that have riparian woodlands, shelterbelts, thickets, and brush. In agricultural areas they prefer cover made by humans, including outbuildings, corncribs, trash piles, rock piles and haystacks.<sup>50</sup>

Minnesota threatened plant species include bog bluegrass (*Poa paludigena*), which is a native, cool-season grass that typically thrives in wet, shady places such as swamps, bogs, and forested seeps.

The only fish species that is state-listed in Minnesota as endangered and occurs within the project area is the crystal darter (*Crystallaria asprella*). This species prefers in medium to large rivers, typically with clean sand and gravel river bottoms and moderate to fast currents.<sup>51</sup>

Minnesota state-listed fish species that are listed as threatened and occur within the project are the black buffalo (*Ictiobus niger*), pugnose shiner (*Notropis anogenus*), and paddlefish (*Polyodon spathula*).

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<sup>48</sup> MnDNR. *Rare Species Guide*. Accessed in March 2024 and available at <https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=ARAAD02020>

<sup>49</sup> MnDNR. *Rare Species Guide*. Accessed in March 2024 and available at <https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=ARAAD04010>

<sup>50</sup> MnDNR. *Living with skunks*. Accessed in March 2024 and available at [https://www.dnr.state.mn.us/livingwith\\_wildlife/skunk.html](https://www.dnr.state.mn.us/livingwith_wildlife/skunk.html)

<sup>51</sup> MnDNR. *Rare Species Guide*. Accessed in March 2024 and available at <https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AFCQC01010>

Minnesota state-listed threatened species include mucket (*Lampsilis abrupta*), spike (*Elliptio dilatate*), monkeyface (*Quadrula sparsa*), elktoe (*Alasmidonta marginata*), wartyback (*Plethobasus cicatricosus*), fawnsfoot (*Truncilla donaciformis*), butterfly mussel (*Ellipsaria lineolata*), and fluted-shell (*Lasmigona costata*). Mussel species that are state-listed as endangered are Higgins eye pearlymussel (*Lampsilis higginsii*), snuffbox (*Epioblasma triquetra*), spectaclecase (*Cumberlandia monodonta*), winged mapleleaf (*Quadrula fragosa*), salamander mussel (*Simpsonaias ambigua*), pistolgrip/buckhorn (*Tritogonia verrucosa*), elephant ear (*Elliptio crassidens*), and purple wartyback (*Cyclonaias tuberculata*). These mussels generally occur in medium to large rivers, which contain rock, gravel, and sand, along with a swift current, making the St. Croix River an optimal habitat for freshwater mussels.

Mussel surveys were conducted in 2020 and 2023 for the St. Croix River within the project area. Five-hundred and twenty-one (521) live individuals of 23 species were collected during the 2023 survey effort for this project. The following federal and state-listed species were either collected during this survey or their presence is assumed likely based on the findings of past surveys within 1.0 mile of the project area in 2018 and 2020:

- Butterfly (*Ellipsaria lineolata*)
- Elktoe (*Alasmidonta marginata*)
- Fawnsfoot (*Truncilla donaciformis*)
- Fluted-shell (*Lasmigona costata*)
- Higgins eye pearlymussel (*Lampsilis higginsii*)
- Mucket (*Lampsilis abrupta*)
- Purple wartyback (*Cyclonaias tuberculata*)
- Salamander mussel (*Simpsonaias ambigua*)
- Snuffbox (*Epioblasma triquetra*)
- Spectaclecase (*Cumberlandia monodonta*)
- Spike (*Elliptio dilatate*)
- Winged mapleleaf (*Quadrula fragosa*)

### **Minnesota Biological Survey - Sites of Biodiversity Significance**

Natural prairie remnants (railroad prairies) and rare/endangered plant species have not been identified within MnDOT right of way at locations where potential work is proposed. However, within and adjacent to the areas of proposed work, the general areas on both the north and south sides of Hwy 243 are not only classified as native plants communities of various types (Southern Mesic Oak Basswood Forest, Southern Floodplain Forest, Northern Bulrush-Spikerush Marsh), but they are also classified as sites of outstanding biodiversity significance as determined by the Minnesota Biological Survey. Outstanding sites contain the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most ecologically intact or functional landscapes. The Sites of Biodiversity Significance adjacent to the project area are ranked as such for it's outstanding vegetative composition.

#### **4.1.14.3 Impact Evaluation**

*Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of*

*the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.*

### **No Build Alternative**

The No Build Alternative would not result in any impacts to identified fish, wildlife, plant communities, rare features, and ecosystems.

### **Preferred Alternative**

Possible effects to fish, wildlife, and known threatened and endangered species include possible noise and vibration impacts and habitat impacts from construction and associated clearing of vegetation and trees. Construction of the bridge would include direct and permanent impacts to the aquatic habitat within the footprint of the existing and the proposed piers. The potential noise and vibrational impacts would be limited to the period of bridge construction, see Section 4.1.19 Noise.

Bridge work, tree removals, and hibernacula impacts (rock cuts, roadway construction, percussives, vibration) are anticipated to impact bat species that occur within the project area. Ground disturbances which include tree and vegetation removal are anticipated to impact the rusty-patched bumble bee (RPBB) (*Bombus affinis*). Habitat/wetland disturbances and active construction are anticipated to impact turtle species. In-stream work including bridge demolition, causeway and pier construction, and barge utilization is anticipated to impact mussel and fish species. However, conservation measures are proposed with the project to minimize or mitigate impacts for all species (see Section 4.1.14.4 Avoidance, Minimization, and/or Mitigation).

#### Tree Clearing

While approximately 3.72 acres of tree removals are currently anticipated, up to 5.0 acres may be required due to contractor access, constructability needs, and other unforeseen requirements. These tree removal estimates differ slightly from the quantities developed during the alternatives analysis process which occurred from 2022 to 2023. These differences are due to the refined design which has since occurred for the Preferred Alternative (Build Alternative B). These removals may indirectly impact federal and state protected bat species such as the NLEB, TCB, LBB, and BBB. Most of the tree removal is anticipated to be within 100 feet of the existing roadway and a small fraction (0.03 acre) is anticipated to be between 100 to 300 feet from the existing roadway. No tree removal is anticipated to be greater than 300 feet from the roadway. Tree clearing will occur along the St. Croix River at the bridge abutments and along the Wisconsin bluff. The Biological Assessment in **APPENDIX K** (Biological Assessment) includes a figure illustrating the anticipated tree removal. Among the trees anticipated to be removed are oak and ash trees. Section 4.1.14.4 Avoidance, Minimization, and/or Mitigation discusses the post-construction landscaping plan.

#### Ground Disturbance

Approximately 6.0 acres of total ground disturbance is anticipated with the project. Upland construction activities include tree/vegetation removal, bluff impacts, equipment staging, and other general construction activities. Some areas along the project where improvements are proposed will be cut/filled or retained with retaining walls for the proposed bridge.

### In-Water Construction

In-water construction activities which would occur in the St. Croix River and may directly impact aquatic species include:

- Construction of temporary causeways in the river
- Barge spudding and fleeting
- Dredging of the river bottom
- Installation of cofferdams
- Operation of heavy equipment and general construction activities within the river for bridge demolition and construction

In-water construction activities may indirectly affect aquatic species through:

- Temporary increases in turbidity and siltation because of construction activities that may impact mussel feeding and respiration;
- Temporary altered hydraulic regimes and flow because of causeway installation and other in-stream work activities that may result in riverbed scour, sedimentation, and other impacts to mussel habitat;
- Temporary alterations of fish host behavior because of in-stream work activities that may interfere with mussel reproduction;
- Introducing or increasing populations of aquatic invasive species (e.g., zebra mussels (*Dreissena polymorpha*)) in the area via inadequate construction equipment preventative measures prior to equipment introduction to the waters of the St. Croix River.

During construction, an in-water impact area of at least 2.3 acres is anticipated, though the area could be as large as 3.9 acres. The (up to) 3.9 acres of in-water area would include direct and indirect impacts. Details regarding these areas can be found in the Constructability Report in **APPENDIX E** (Constructability Report) and the Biological Assessment in **APPENDIX K** (Biological Assessment).

River velocities are anticipated to be impacted during construction of the project. Causeways will be used for bridge demolition and construction and will narrow the area/opening of river flow, which would increase river velocities compared to existing conditions. Increases in river velocities would impact the ability for fish species to migrate through the project area and spawn upstream of the Hwy 243 Bridge. The project proposes a minimum 90-foot gap between causeways with two additional 10-foot openings in the causeways to improve river flow. A hydraulic analysis has been prepared for the bridge construction condition with two causeways in the St. Croix River using a HEC-RAS 2D model. See the completed *Temporary River Impact Analysis Memorandum* in **APPENDIX H** (Floodplain Assessment) or refer to Section 4.1.12.2 Describe effects from project activities on water resources and measures to minimize or mitigate the effects below. Floodplains.

Initial 2D modeling results without scour indicate river velocities would increase by approximately 2 feet per second (fps) compared to existing conditions for the baseline scenario during construction (i.e., summer median event condition prior to overtopping). The baseline condition velocity with the two causeways with the 90-foot center opening is projected to be 3.3 fps. In general, velocities greater than 3 fps can restrict fish movement (depending upon species). Additional hydraulic analyses accounting for river scour with the causeways will be completed and provided to MnDNR and WisDNR as part of the permitting process. Opportunities to minimize

the increase in river velocities during construction to allow for fish passage will be evaluated in final design and permitting.

The proposed Hwy 243 Bridge removes one pier from the St. Croix River compared to the existing structure. River velocities at the Hwy 243 Bridge are expected to decrease compared to existing conditions, after construction of the project. The proposed bridge would not create a permanent impact or barrier to fish passage and migration. See the hydraulic analysis in **APPENDIX H** (Floodplain Assessment).

MnDNR maintains a hydroacoustic receiver in the St. Croix River downstream of the Hwy 243 Bridge. This hydroacoustic receiver is used by MnDNR to track tagged fish in the river. The hydroacoustic receiver is within the bridge construction work zone. MnDOT will coordinate with MnDNR prior to the start of construction to relocate the hydroacoustic receiver downstream of the project. MnDNR will replace the hydroacoustic receiver back to its original location following construction.

### **Federally Listed Species**

MnDOT, on behalf of FHWA, requested concurrence from USFWS in a Section 7 Biological Assessment dated February 23, 2024 (see **APPENDIX K** (Biological Assessment)). In this document, effect determinations were made on 11 species of concern or critical habitats. The following determinations were made:

- Gray wolf (*Canis lupus*) – may affect, not likely to adversely affect.
- Tricolored bat (*Perimyotis subflavus*) – provisional determination of may affect, likely to adversely affect. *FHWA requested formal conferencing with the USFWS on the Tricolored bat. Not likely to jeopardize.*
- Northern long-eared bat (*Myotis septentrionalis*) – may affect, likely to adversely affect.
- Whooping crane (*Grus americana*) – no effect.
- Higgins eye pearlymussel (*Lampsilis higginsii*) – may affect, likely to adversely affect.
- Snuffbox (*Epioblasma triquetra*) – may affect, likely to adversely affect.
- Spectaclecase (*Cumberlandia monodonta*) – may affect, likely to adversely affect.
- Winged mapleleaf (*Quadrula fragosa*) – may affect, likely to adversely affect.
- Salamander mussel (*Simpsonaias ambigua*) and proposed Critical Habitat – provisional determination of may affect, likely to adversely affect. *FHWA requested formal conferencing with the USFWS on the Salamander mussel and proposed Critical Habitat. Not likely to result in adverse modification/destruction of Critical Habitat.*
- Rusty patched bumble bee (*Bombus affinis*) – may affect, likely to adversely affect.
- Monarch butterfly (*Danaus plexippus*) – candidate species; no jeopardy.

Avoidance, minimization, and mitigation measures related to federally protected species impacts are presented in Section 4.1.14.4 Avoidance, Minimization, and/or Mitigation and in the Environmental Management Plan in **APPENDIX F** (Environmental Management Plan).

### **Migratory Birds and Bald Eagles**

The WisDNR identified this project as having the potential to impact migratory birds. Due to the evidence of protected bird nests on the Hwy 243 Bridge, it is assumed that they may be impacted by the project. Based on the scope of work and evidence of nests on the bridge, the alternatives evaluation process for this project

included considerations for migratory birds. Conservation measures regarding migratory birds have been identified based on standard commitments and are detailed in Section 4.1.14.4 Avoidance, Minimization, and/or Mitigation and the Environmental Management Plan (see **APPENDIX F** (Environmental Management Plan) ).

Bald eagles (*Haliaeetus leucocephalus*) are protected by the Bald and Golden Eagle Protection Act. No bald eagle nests are known within the project limits. An additional bald eagle survey is planned prior to construction of this project. However, if a bald eagle nest is discovered during Project activities, the contractor will immediately report Bald Eagle nests to the Department's wildlife ecologist, <https://www.dot.state.mn.us/environment/wildlife.html>.

### Minnesota Listed Species

Though conservation measures are proposed to minimize impacts to Minnesota listed species, incidental take of several Minnesota state-listed species is anticipated, including mussels, fish, turtles, and plant species. Incidental take permits with the MnDNR will be applied for, as applicable. These include:

- Fish
  - State-endangered crystal darter (*Crystallaria asprella*)
  - State-threatened black buffalo (*Ictiobus niger*)
  - State Special Concern gilt darter (*Percina evides*)
  - State-threatened pugnose shiner (*Notropis anogenus*)
  - State-threatened paddlefish (*Polyodon spathula*)
- Turtles
  - State-threatened wood turtle (*Glyptemys insculpta*)
  - State-threatened Blanding's turtle (*Emydoidea blandingii*)

MnDOT reviewed the project area for two state-listed plant species: butternut (*Juglans cinerea*) and bog bluegrass (*Poa paludigena*). Butternut was not observed in the project area and no impacts to this species are anticipated. Bog bluegrass is not anticipated to occur in the project limits. Additional surveys for bog bluegrass will be completed by MnDOT in summer 2024. If bog bluegrass is observed within the project limits, then survey results will be provided to MnDNR and conservation measures will be identified. If necessary, MnDOT will apply for an incidental take permit from MnDNR.

### Wisconsin Listed Species

The mussel surveys conducted in 2020 and 2023 considered both Minnesota and Wisconsin listed species. Incidental take of Wisconsin state-listed threatened or endangered mussel species is anticipated. Incidental take permits will not be required for special concern species. The WisDNR's Endangered Resources Review resulted in possible impacts to the following threatened, endangered, or species of special concern:

- Bats
  - State-threatened northern long-eared bat (*Myotis septentrionalis*)
  - State-threatened big brown bat (*Eptesicus fuscus*)
  - State-threatened tricolored bat (*Perimyotis subflavus*)



- State-threatened little brown bat (*Myotis lucifugus*)
- Special concern bat hibernaculum
- Fish
  - State-threatened river redhorse (*Moxostoma carinatum*)
  - State-endangered crystal darter (*Crystallaria asprella*)
  - State-threatened black buffalo (*Ictiobus niger*)
  - State-threatened blue sucker (*Cycleptus elongatus*)
  - State-threatened shoal chub (*Macrhybopsis hyostoma*)
  - State special concern lake sturgeon (*Acipenser fulvescens*)
  - State special concern American eel (*Anguilla rostrata*)
- Mussels
  - State-endangered elephant ear (*Elliptio crassidens*)
  - State special concern elktoe (*Alasmidonta marginata*)
  - State-endangered spectaclecase (*Cumberlandia monodonta*)
  - State-endangered snuffbox (*Epioblasma triquetra*)
  - State-threatened wartyback (*Quadrula nodulata*)
  - State-threatened fawnsfoot (*Truncilla donaciformis*)
  - State-threatened monkeyface (*Theliderma metanevra*)
  - State-endangered butterfly (*Ellipsaria lineolata*)
  - State-endangered winged mapleleaf (*Quadrula fragosa*)
  - State threatened buckhorn (*Tritogonia verrucosa*)
  - State-endangered Higgins eye pearlymussel (*Lampsilis higginsii*)
  - State-threatened wood turtle (*Glyptemys insculpta*)
- Turtles
  - State special concern Blanding's turtle (*Emydoidea blandingii*)

The WisDNR identified the project area as a valuable wildlife corridor and requested that habitat connectivity be addressed with the project, which is detailed in the Section 4.1.14.4 Avoidance, Minimization, and/or Mitigation. An Endangered/Threatened Species Incidental Take Authorization is anticipated from the WisDNR prior to construction. In completing the permit(s), appropriate compensatory mitigation measures would be developed. It has not yet been determined if broad incidental take or individual take permits will be required; this will be determined in consultation with WisDNR during the permitting process.

### **Minnesota Biological Survey - Sites of Biodiversity Significance**

While there are areas within this project area that may not need direct protection, the MnDNR concern is that soil disturbance, incidental herbicide exposure, hydrologic alterations, competition from non-native species, or sod-forming grasses can all lead to degradation of these areas. Significant impacts are not anticipated at this time, however, coordination on these environmentally sensitive areas will continue between various local, state, and federal stakeholders, to ensure that no significant impacts result from the proposed project.

### **Invasive Species**

Curly leaf pondweed (*Potamogeton crispus*) and Asiatic clams (*Corbicula fluminea*) are aquatic invasive species that occur in the project, as identified by the WisDNR. Emerald ash borer (*Agrilus planipennis*) and oak wilt

(*Bretziella fagacearum*) have also been identified as a WisDNR concern within the project area. Invasive carp have been identified by the USCG in the St. Croix River south of Taylors Falls. The USCG have also found zebra mussels (*Dreissena polymorpha*) and Eurasian milfoil (*Myriophyllum spicatum*) downstream of the project study area in Lake St. Croix.

### **Noxious Weeds**

Noxious weeds have been identified along the Hwy 243 corridor in the past, including wild parsnip, which can be a safety concern to those working in the areas where it may be growing.

### **Climate Change Impacts**

Natural resource impacts due to climate change are anticipated to vary between ecosystems, populations, and species. Both positive and negative impacts are projected, and these impacts depend on the ecosystem, population, or species. Fish, wildlife, and plant species that are more mobile may respond to climate change by altering their ranges of where they occur based on adaptation and survival in changing conditions. Species that are less mobile may not have the capacity to migrate, therefore other interventions may be needed (e.g., assisted migration). Protecting population refuges and movement/migration corridors will be of utmost importance in the world of wildlife conservation, and efforts to increase landscape permeability (quality of heterogeneous land area in providing passage for animals), are expected to be of key significance in a changing climate.<sup>52</sup>

MnDOT seeks to maintain and enhance ecological connectivity on its projects through both programmatic approaches, such as the standard use of wildlife passage benches under bridges spanning public waters, and through project-specific designs components, such as multi-use structures and dedicated wildlife crossing structures and fencing. Maintaining and enhancing ecological connectivity reduces the barrier effect roads have on individual animals, populations, and ecosystems, which in turn improves natural resource resiliency. These types of improvements are being integrated with this project and are detailed further in the following section.

#### **4.1.14.4 Avoidance, Minimization, and/or Mitigation**

*Identify measures that will be taken to avoid, minimize, or mitigate the adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources.*

All of the following conservation measures that are proposed to avoid, minimize, and/or mitigate adverse effects to fish, wildlife, and plant communities will also be documented and implemented through the Environmental Management Plan for the project (see **APPENDIX F** (Environmental Management Plan)).

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<sup>52</sup> Jonathan R. Mawdsley, Robin O'Malley and Dennis S. Ojima. A Review of Climate-Change Adaptation Strategies for Wildlife Management and Biodiversity Conservation. Accessed in April 2024 and available at <https://www.jstor.org/stable/40419680>.

### **General Project Level Conservation Measures**

All interested parties (e.g., MnDOT, WisDOT, USFWS, NPS, etc.) will be invited to attend preconstruction meetings, joint site walks and inspections, and similar activities. These meetings will be scheduled as allowed considering personnel availability and construction milestones.

All contractors will be required to attend an 'environmental regulations' training course ahead of the start of construction.

The project commits to implementing and adhering to an erosion and sediment control plan that will outline measures implemented to reduce construction site erosion, sedimentation, and subsequent discharges into the St. Croix River. The erosion and sediment control plan may include, but is not limited to, a vegetation management plan, SWPPP, spill prevention plan, and dust control plan. The erosion and sediment control plan will be approved in consultation with the Minnesota Department of Natural Resources, Wisconsin Department of Natural Resources, the U.S. Army Corps of Engineers, the Minnesota Pollution Control Agency, the MnDOT Office of Environmental Stewardship, and other effected parties prior to start of construction.

Tree species native to the St. Croix River Valley will be replanted as part of the post-construction landscaping plan. This is consistent with the intent of the Visual Quality Manual (VQM). The post-construction landscaping plan will be implemented within two years after completion of construction.

### **Fisheries**

The project anticipates that causeways extending from both the Minnesota and Wisconsin banks will be required. The project will maintain a mid-channel opening in the causeway to maintain river flows and fish passage and the causeways will include additional embedded culverts for additional water conveyance and fish passage. The proposed causeway design includes a 90-foot-wide center opening with two additional 10-foot openings. These measures are anticipated to address the potential slowing of Osceola Creek, as well as reduce the deposition of sediment near the confluence of Osceola Creek and the St. Croix River.

Work in-water exclusion dates to allow for fish passage and migration range from March 15 to June 15 in Minnesota and March 1 to June 15 in Wisconsin. It is anticipated that the project cannot entirely avoid in-water work during these restriction dates and exemptions will be required from MnDNR and WisDNR. An Endangered/Threatened Species Incidental Take Authorization is anticipated from the WisDNR prior to construction. In completing the permit(s), appropriate compensatory mitigation measures would be developed. It has not yet been determined if broad incidental take or individual take permits will be required; this will be determined in consultation with WisDNR during the permitting process. Additional conservation measures for fisheries, if necessary, will be identified in consultation with MnDNR and WisDNR in final design and permitting.

### **Freshwater Mussels**

The project may result in impacts to mussels; however, the project will not result in jeopardy to the continued existence or recovery of mussel species. Impacts to mussels have been minimized through the alternatives evaluation process (i.e., construct on existing bridge alignment), bridge type selection (i.e., pier placement to

avoid mussel habitat), in-water work considerations, and implementation of the conservation measures described below.

The primary conservation measure used to minimize effects on freshwater mussels will be a systematic relocation of all individuals from the area of temporary and permanent in-stream impacts to a suitable Recipient Site beyond the project's impacts. Relocation efforts will occur ahead of construction; as construction is anticipated to begin Fall 2026, relocation efforts are anticipated for Summer/Fall 2026, during low-water conditions. Relocation of mussels from within the in-stream impact area will be accomplished by qualified biologists and will follow a USFWS, MnDNR, and WisDNR – approved relocation plan. The Mussel Relocation Plan will be submitted to the USFWS and will be approved prior to construction. The relocation plan will incorporate a post-construction freshwater mussel survey to assess the condition of individuals moved during the relocation and to determine any post-construction recolonization.

All mussels relocated from the in-water work area at the Hwy 243 Bridge will be relocated to another site (recipient site) near the project area in the St. Croix River. The specific location for the recipient site will be determined as part of the pre-construction relocation plan development. In general, the preferred location for the recipient site is upstream of and as close to the project area as possible in an area of suitable mussel habitat.

Additional conservation measures regarding mussels, as outlined in the BA, include:

- Restoration of the St. Croix River streambed to original elevation where earthen causeways are constructed.
- Project will implement to MnDNR best practices for preventing spread of aquatic invasive species per the Project' MnDNR Public Waters Work Permit
- All contractor(s) will be required to implement and adhere to an aquatic invasive species management/decontamination plan to ensure that no aquatic invasive species are introduced into the St. Croix River through construction equipment (e.g., barges, boats, heavy machinery, etc.).
- Contractors must submit the aquatic invasive species management/decontamination plan to MnDOT's Office of Environmental Stewardship *and* USFWS for approval prior to any in-stream work.
- Stormwater runoff from the existing Hwy 243 Bridge and approach roadways are currently discharged directly into the St. Croix River without any treatment. The proposed action includes construction of a stormwater basin (i.e., wet pond) on the Minnesota side of the St. Croix River adjacent to the Osceola Landing entrance. Stormwater runoff from the proposed bridge surface will be conveyed by curb and gutter and storm sewer to this stormwater basin for treatment prior to discharge. The stormwater basin will be designed to National Urban Runoff Program (NURP) standards and would help reduce pollutant loading to the St. Croix River compared to existing conditions.
- To compensate for unavoidable impacts to a mussel bed with federally listed mussel species, the project commits to transferring funds into a mussel in-lieu fee/pooled fund or other compensatory mitigation program. The specific program to be used will be determined in consultation with the USFWS. Although this measure will not minimize effects to mussel species within the project area, it will help offset those consequences at suitable habitat elsewhere in the states of Minnesota and Wisconsin. This funding may be used for mussel propagation, habitat creation or restoration, research, or other activities related to freshwater mussel conservation. Funds transferred into the compensatory mitigation program will be under the jurisdiction of USFWS and will be used in the St. Croix River.

- The USFWS used a mussel bed density of 3.45 individuals/m<sup>2</sup> based on previous mussel surveys in the action area and the St. Croix River to calculate the compensatory mitigation required to offset adverse impacts across 15,621 m<sup>2</sup> of suitable in-stream mussel habitat within the action area. FHWA/MnDOT will work with the USFWS to use the most updated version of the mussel mitigation HEA model developed by the USFWS to determine a funding amount.
- FHWA/MnDOT will work with the USFWS to develop a funding agreement.
- Within two years of the issuance of the Biological Opinion, and prior to the start of construction, MnDOT will transmit payment based on the terms of the funding agreement, plus any administrative fees associated with managing the funds.

More detailed information on freshwater mussel conservation measures can be found in Section 6 of the Biological Assessment (see [APPENDIX K \(Biological Assessment\)](#)).

### Bats

Inspection of buildings proposed for demolition and culvert replacements will occur for the northern long-eared bat, the tricolored bat, the big brown bat, and the little brown bat following USFWS survey standards. For WisDNR buildings and bridges, this means a yearly bi-yearly inspection, respectively. For USFWS buildings and bridges, this means an inspection every two years for both.

Because the proposed project is within ¼ mile of a known bat hibernaculum with this species present, it is recommended to proceed with the option that results in the least amount of tree removal and bluff disturbance. If grading were to occur within 500 feet of the cave, that activity needs to be completed when bats are not hibernating (May 10 - August 31) so potential collapses associated with work and vibrations do not affect the bats. To avoid impacts to roosting bats outside of the cave, tree clearing will occur from November 15 –March 31, inclusive.

The need for a bat house will be determined in consultation with WisDNR as part of the WisDOT/WisDNR Cooperative Agreement process.

The following conservation measures were identified as part of this project’s Biological Assessment for federally listed bats and will benefit additional state listed and common bat species:

- All commitments will be included in the project’s Environmental Management Plan (see [APPENDIX F \(Environmental Management Plan\)](#)).
- To the maximum extent practicable, the project has been designed to minimize the project footprint, minimize habitat removal, utilize existing infrastructure and disturbed areas, and where possible, co-locate project features (e.g., place trails adjacent to existing roads).
- All tree clearing and grubbing will occur during the winter months (**November 15 to March 31**, inclusive). Tree removal will be limited to those specified in project plans and it will be ensured that contractors understand tree clearing limits and how the limits are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).
  - If the project schedule allows, tree clearing and grubbing *may* occur **December 1 to February 28**, inclusive to accommodate unseasonable warm fall and/or spring.

- Impacts to bluffs within the project area will be minimized to the extent practicable.
- Impacts to bluffs will occur when bat species are not anticipated to be utilizing the hibernaculum (bluff impacts allowed **May 10 to August 31**, inclusive), eliminating direct disturbances to hibernating bats.
- Impacts to bluff areas will be completed via ‘mechanical scaling’ the bluff face (e.g., reshaping bluff face). No explosives will be used, limiting potential indirect impacts to bat hibernacula.
- While ‘mechanical scaling’ of the bluff face using an excavator bucket is the preferred method to reshape the bluff face, hydraulic hammering may be required in areas of more resilient rock and will be limited to the extent practicable.
- Existing bridge expansion joint glands will be sliced on the bridge in the spring ahead of bridge demolition activities (e.g., before April 1) and ahead of the bat pupping season, to increase airflow and moisture to modify the microclimate within the joints to deter bats from utilizing the joints ahead of bridge demolition activities.
- On-site personnel must use best management practices, secondary containment measures, or other standard spill prevention and countermeasures to avoid spills and impacts to possible hibernacula.
- Where practicable, a 300-foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography.
- The project is not anticipating the removal of documented NLEB roost trees.
- The project will utilize properly muffled equipment to minimize noise impacts.
- Back-up alarms on equipment (i.e., tweety-bird alarms) will be muffled during the pupping season (**June 1 to August 15**, inclusive) and other safety measures will be used to minimize noise impacts.
- Installation of new or replacement of existing permanent lights must use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, be as close to 0 for all three rating with a priority of “uplight” of 0 and “backlight” as low as practicable.
- Any temporary lighting used will be directed away from wooded areas during the bat active season (**April 1 to November 14**, inclusive), or when bats are present.
- The contractors working in areas of known or presumed bat habitat will be made aware of all FHWA environmental commitments, including all applicable avoidance and minimization measures (AMMs). Bat sightings (including sick, injured, and/or dead bats) on the project must be reported to the MnDOT OES wildlife ecologist (612-741-7678) and the Minnesota-Wisconsin Ecological Services Field Office ([dawn\\_marsh@fws.gov](mailto:dawn_marsh@fws.gov); 612-283-8054) within 24 hours.
- Appropriate take permits will be acquired for impacts to Wisconsin-listed bat species.
- Bat house(s) may be installed near the bridge to encourage off-structure roosting.

## Bees

The following conservation measures were identified as part of this project’s Biological Assessment (BA) for federally listed bees and will benefit additional state-listed and common bee species:

- Revegetating a minimum of 4.0 acres with pollinator-friendly native seed mixes (see Table 7 of the BA in **APPENDIX K** for a list of preferred herbaceous plant species nectar sources by the RPBB in the Great Plains States that are also present in the proposed seed mixes). Native seed mixes and acreages of each mix will be determined during further design phases and will follow guidelines outlined in the 2023 MnDOT Seeding Manual (MnDOT, 2023). Proposed seed mixes include:



- Native seed mixes appropriate for use in upland areas in full sun above the floodplain (e.g., MnDOT Seed Mix #35-241 [Mesic Prairie General] or similar). This proposed seed mix is common in areas of mesic soil conditions and includes seven species within Table 7 of the BA (**APPENDIX K**).
- Native seed mixes appropriate for use in non-wetland areas adjacent to the St. Croix River which are likely to experience seasonal flooding (e.g., MnDOT Seed Mix #34-261 [Riparian South and West] or similar). This proposed seed mix contains both grasses/sedges (graminoids) and forbs, including five species within Table 7 of the BA (**APPENDIX K**).
- Native seed mixes appropriate for use along the edges of stormwater facilities (e.g., MnDOT Seed Mix # 33-261 [Stormwater South and West] or similar). This proposed seed mix contains two species within Table 7 of the BA (**APPENDIX K**).
- Temporary seeding must not include smooth brome or other similarly aggressive non-native species that may be detrimental to the future establishment of native vegetation.
- Local origin, or seed as closely related as possible, native seed mixes may be used.
- Project must include mowing and spot weed control to establish seeded vegetation, as described in the MnDOT Seeding Manual.
- Requiring the Contractor to prepare and submit a noxious and invasive weed management plan to the Project Engineer prior to the start of construction, which helps prevent the spread of noxious and invasive weed species and maintains greater plant diversity. The plan must be reviewed and approved by MnDOT OES Roadside Vegetation Management Unit prior to the start of construction.
- Requiring the contractor to apply herbicide, if used, in a targeted fashion (i.e., cut-stem application, hand applications, directly spraying targeted plant) using handheld sprayers to limit effects of herbicide beyond targeted plant species.
- Prohibiting the use of neonicotinoid pesticides.

## Turtles

Wildlife crossings are being implemented with the project on the Minnesota side of the St. Croix River, in order to minimize impacts to wood turtles (*Glyptemys insculpta*) and Blandings turtles (*Emydoidea blandingii*). The project is anticipating to construct two culverts under Hwy 243 west of the Osceola Landing entrance. These culverts would function as wildlife crossings. Fencing is anticipated to be installed along Hwy 243 to channel wildlife to these culverts. Access to Osceola Landing would be maintained when the wildlife crossing culverts are installed. Two options for maintaining access to Osceola Landing include constructing the wildlife crossings after bridge construction is complete. Access to Osceola Landing would be provided from Wisconsin to the east. A second option includes maintaining traffic on one side of Hwy 243 with flagging operations while the culverts are installed. A final decision regarding timing of wildlife crossing construction and methods (e.g., open-cut vs. one side of the roadway at a time) will be made in final design.

Wildlife fencing is also proposed on the north side of the proposed stormwater basin in Minnesota (located east of the Osceola Landing entrance), to prohibit movement from the basin to Hwy 243, thereby minimizing risk of wildlife road mortality.

### Wood Turtle

Suitable habitat for the wood turtle (*Glyptemys insculpta*) appears to be present within 300 meters of the St. Croix River. Therefore, to follow the Wood Turtle Broad Incidental Take Permit/Authorization (BITP/A) from the WisDNR, the measures below will be followed:

- No ground disturbance, heavy equipment operation or supply/equipment storage within nesting habitat (exposed sand or gravel areas within 200 feet of a suitable stream/river) during the nesting season (May 20 – September 18) unless herp exclusion fencing has been installed or the habitat has been made unsuitable outside of these dates.
- Aggregate surfacing must be placed on all rip-rapped areas and slopes above the Ordinary High Water Level (OHWL) to fill voids per MnDOT specifications and special provisions (2118). Project personnel (individuals on site for project purposes rather than for the purpose of looking for turtles) must move any turtles observed on site out of harm's way.
- Land conversion activities (e.g., new development, road expansion, etc.) that permanently alter or reduce habitat are not allowed unless avoidance measures are put into place.
- Active dates are updated frequently in the spring and fall and will be checked here: <https://dnr.wi.gov/topic/Wildlifehabitat/HerpRegulations.html>.

The BITP/A for the wood turtle also includes a time of year restriction for in-stream work. In-stream work and drawdowns during the maximum overwintering period (October 1-April 30) is not allowed. In-stream work includes, but is not limited to, streambank/rip-rap installation, causeway installation and removal, open cut trenching, barge spudding, and dredging. An incidental take permit for wood turtle will be acquired from WisDNR prior to construction if the project cannot avoid in-water work during the time of year restriction dates.

### Blanding's Turtle

The WisDNR determined that Blanding's turtle (*Emydoidea blandingii*) conservation measures are appropriate for this project, which includes the following:

- Overwintering areas – Blanding's turtles typically overwinter in wetlands or water bodies with standing water at least three feet deep. Because this species can be found in these wetlands and water bodies throughout the year, impacts to these wetlands and waterbodies should be minimized at all times.
- Non-overwintering areas – for wetlands/water bodies shallower than three feet at the deepest point, work will be conducted outside of the Blanding's turtle's active season (March 5 – November 15). The installation and maintenance of exclusion fencing using the WisDNR Amphibian and Reptile Exclusion Fencing Protocol will be used during this period and the exclusion fencing will be installed between November 16 and March 4. In order for work to be conducted within the fenced area at any time of year, the fencing will be maintained.
- Upland nesting habitat – work will be avoided in suitable upland nesting habitat (sandy and/or well-drained soils) within 275 meters (900 feet) of a wetland or water body during the Blanding's turtle's nesting period (May 20 – October 15). The installation and maintenance of exclusion fencing using the WisDNR Amphibian and Reptile Exclusion Fencing Protocol will be used during this period as and the exclusion fencing will be installed between October 16 and May 19. In order for work to be conducted within the fenced area at any time of year, the fencing will be maintained.

Incidental take permits will be acquired from the MnDNR and WisDNR for impacts to threatened and endangered species. During the permit approval process, additional mitigation measures (compensatory or otherwise) will be developed, as needed.

### **Migratory Birds**

The existing bridge is known to harbor nesting birds that may be protected under the Migratory Bird Treaty Act (MBTA). MnDOT standard commitments for projects that may impact migratory birds will be followed.

Commitments may include:

- Contractor will cover soil stockpiles when any surface of a stockpile is not in use for 48 hours or longer.
- Contractor must prevent bird nesting by either covering that surface with fabric or tarps or by grading that surface to a slope no steeper than 65 degrees.
- If a nest or nests are encountered that have eggs and/or live young, photograph the nest, avoid work in that location and immediately contact the Department's wildlife ecologist, <https://www.dot.state.mn.us/environment/wildlife.html>.
- Contractor will prevent birds from establishing active nests (those containing eggs or live young) until such time as the construction activities are completed, or no longer threaten the nests.
- Contractor will remove inactive nests from the previous nesting season and remove nests that are being established but before they are active (i.e., before they have eggs or young).
  - This action requires frequent inspections and nest removals to prevent nests from being constructed and becoming active. Allow no more than two Calendar days between inspections and removals. Daily inspections and removals may be needed in areas with frequent bird use. Nest removal must start prior to April 15.
- If impacts to nesting birds are unavoidable, appropriate depredation permit(s) will be acquired from USFWS ahead of construction.

### **Minnesota Biological Survey – Sites of Biodiversity Significance**

All pertinent stakeholders will be closely consulted with to ensure that proper precautions are taken, where necessary, to minimize impacts to sites of biodiversity significance and to ensure that proper and acceptable restoration (methods and materials) of disturbed areas. Requirements pertaining to these environmentally sensitive areas will be followed. Native seeds will be used in those locations where restoration or replacement is required. Temporary fence will be placed along the limits of construction (based on MnDOT Standard Specification 2572.3A.1). Since the project will require the use of temporary fence, it will be clearly called for in the construction plans, and the Standard Plan 5-297.302 will be included in the plan package.

Sites of Biodiversity Significance will be identified as an 'Area of Environmental Sensitivity' (AES) on plans. This designation helps assure special protection during construction through MnDOT Standard Specifications for Construction #1717 (Air, Land, and Water Pollution), #2573 (Stormwater Management), and #2575 (Establishing Vegetation and Controlling Erosion). MnDNR AES best practices guidance (based on MnDOT Construction Specification 2572.3) will be followed.

## Invasive Species

The St. Croix River will be identified as ‘designated infested waters’ on project plans and provisions. While invasive carp are generally not an issue related to bridge construction activities, construction provisions shall be written to state that all incoming equipment to be placed into or near the water must have documentation that they have been cleaned prior to transport to the site. The MnDNR concern is to not introduce species such as zebra mussels (*Dreissena polymorpha*), quagga mussels (*Dreissena bugensis*), New Zealand mudsnails (*Perna canaliculus*), faucet snails (*Bithynia tentaculata*), or spiny waterfleas (*Bythotrephes longimanus*). See [https://files.dnr.state.mn.us/publications/ewr/invasives/ais/best\\_practices\\_for\\_prevention\\_ais.pdf](https://files.dnr.state.mn.us/publications/ewr/invasives/ais/best_practices_for_prevention_ais.pdf) for decontamination of construction equipment will be followed prior to equipment arrival on-site.

In their review of the project, the WisDNR also included considerations of invasive species. This segment of the St. Croix River contains populations of Curly-leaf Pondweed (*Potamogeton crispus*) and Asiatic Clams (*Corbicula fluminea*), which are aquatic invasive species. The project also has the potential for spreading terrestrial invasives such as the Emerald Ash Borer (EAB) (*Agilus planipennis*) beetle. While it is legal to move ash debris or wood throughout Wisconsin, it is a best management practice to prevent spreading the beetle to areas where it is not yet established. Invasive carp have been identified by the USCG in the St. Croix River south of Taylors Falls. The USCG have also found zebra mussels (*Dreissena polymorpha*) and Eurasian milfoil (*Myriophyllum spicatum*) downstream of the project study area in Lake St. Croix.

See WisDNR Best Management Practices at <https://dnr.wisconsin.gov/topic/Invasives/bmp> to prevent the introduction and spread of invasive terrestrial or aquatic species will be implemented, such as boat, gear, and equipment decontamination and disinfections. These will be implemented to avoid the spread of invasive species as outlined in Wis. Adm. Code NR 40 and MnDNR Operational Order 113.

WisDOT policy regarding preventing transmission of oak wilt will be followed.

## Noxious Weeds

MnDOT Standard Specification 2575.J contains contractor requirements regarding weed control on all MnDOT projects and will be followed.

### 4.1.15 Historic Properties

*Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.*

Because federal funding sources from FHWA are being pursued for the Hwy 243 Osceola Bridge Project, the project is considered a federal undertaking and must comply with Section 106 of the National Historic Preservation Act of 1966 (Section 106) and its implementing regulations. Section 106 requires federal agencies to consider the effects of their undertakings on historic properties. Historic properties are any building, structure, object, site, or district that is considered eligible for or listed in the NRHP. The MnDOT Cultural

Resources Unit (MnDOT CRU), in partnership with WisDOT Cultural Resources Team (WisDOT CRT), has taken the lead in assisting FHWA in the Section 106 process.

FHWA, as the lead federal agency for the proposed project, has authority to:

- Initiate the Section 106 process by determining whether the action is an undertaking and notifying the SHPO, Indian tribes, and other consulting parties.
- Identify historic properties by determining an area of potential effect (APE), conducting surveys and evaluating properties under NRHP criteria.
- Assess the effects of the undertaking on historic properties by applying the criteria of adverse effect and consulting with SHPOs, the Office of the State Archaeologist (OSA), the Minnesota Indian Affairs Council (MIAC), Indian tribes, other consulting parties and the public.
- Resolve any adverse effects by continuing consultation with Section 106 consulting parties to explore measures that avoid, minimize, or mitigate the adverse effects, and develop a Section 106 Agreement to document the agreed-upon measures.

The following section summarizes the historic properties investigations conducted for the project including consultation efforts, development of an area of potential effects, and initial results of investigations. Additional information on these investigations is included in the following reports, which are available upon request from the project manager:

- Archaeological Literature Search for the Hwy 243 Osceola Bridge Project, Franconia Township, Chisago County, Minnesota and Osceola, Polk County, Wisconsin (February 2021)
- Phase I Archaeological Survey for the Hwy 243 Osceola Bridge Project, Franconia Township, Chisago County, Minnesota (October 2022)
- Phase I Archaeological Survey for the Hwy 243 Osceola Bridge Project, Osceola, Polk County, Wisconsin (November 2022)
- Draft Architecture/History Literature Review and Proposed Area of Potential Effect, Osceola Bridge over the St. Croix River, Chisago County, Minnesota and Polk County, Wisconsin (March 2021)
- Phase I Architecture/History Survey for the Osceola Bridge over the St. Croix River, Franconia Township, Chisago County, Minnesota and Osceola, Polk County, Wisconsin (March 2022)

#### **4.1.15.1 Consultation**

On behalf of FHWA, MnDOT and WisDOT notified tribes who expressed interest in projects in this geographical area and invited their participation in the Section 106 process pursuant to 36 CFR § 800.21(2)(ii). MnDOT CRU and WisDOT CRT contacted the following tribes in 2020 and 2021 regarding the project:

- Fort Peck Tribes
- Leech Lake Band of Ojibwe
- Mille Lacs Band of Ojibwe
- Santee Sioux Nation
- Shakopee Mdewakanton Sioux Community
- Turtle Mountain Band of Chippewa

- Upper Sioux Community
- Fond du Lac Band of Lake Superior Chippewa
- Prairie Island Indian Community

No responses were received from the Tribal Nations contacted in 2020 and 2021. In February 2021, the Ho-Chunk Nation of Wisconsin contacted MnDOT CRU and requested that they remain a consulting party for the project and requested copies of the project's archaeological reports for their files. **APPENDIX J** (Agency Correspondence) includes MnDOT CRU's tribal notification forms and the Ho-Chunk Nation of Wisconsin response.

Any tribe may request to enter into consultation at any point during the Section 106 review. MnDOT CRU and WisDOT CRT will notify all tribes who have expressed an interest in this geographic area of the identification of any historic properties that may be of significance to them. Prior to the start of construction, MnDOT CRU in consultation with the WisDOT CRT would develop an unanticipated discovery plan to define the process that would be followed in the event of the discovery of new historic properties, new effects to identified historic properties, and human remains and/or burial-related objects during project construction activities. The plan would include information on what tribes would be notified and how they will be notified in the event of such discoveries. MnDOT CRU and WisDOT CRT would provide tribes with the opportunity to review and comment on the plan prior to finalizing it.

NPS requested to become a Section 106 consulting party in a letter to the MnDOT Project Manager in May 2021. MnDOT CRU responded in a letter to NPS in August 2021 acknowledging NPS's status as a consulting party in the Section 106 process for the Hwy 243 Osceola Bridge Project. The USACE is also a consulting party under the terms of the Statewide Programmatic Agreement (PA).

The consulting parties in the Section 106 review of the Hwy 243 Osceola Bridge Project include:

- Minnesota SHPO
- Wisconsin SHPO
- USACE
- NPS
- Ho-Chunk Nation of Wisconsin

#### **4.1.15.2 Area of Potential Effects (APE)**

An APE is the geographical area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties are present. The APE is influenced by the scale and nature of the undertaking and must account for both direct and indirect effects, including permanent and temporary effects. The APE encompasses the Hwy 243 right of way limits from approximately 2,000 feet west of the St. Croix River in Minnesota to the WIS-35 intersection in Osceola. The APE included a 300-foot buffer around the existing Hwy 243 Bridge. In April 2024, the APE was expanded in Minnesota to include areas in the NPS Osceola Landing site that would be used for construction staging and access to the St. Croix River.

Architecture/history and archaeology surveys are summarized below in Section 4.1.15.3 Existing Conditions. Survey limits encompassed a broad project study area along Hwy 243 from MN-95 in Minnesota to WIS-35 in



Wisconsin. Architecture/history and archaeology surveys included a broad project study area because the surveys were initiated prior to the identification of the Preferred Alternative and preliminary construction limits for the project. The APE described above is within the project study area for architecture/history and archaeology surveys.

#### **4.1.15.3 Existing Conditions**

Cultural resources investigations included file searches for previously identified resources, documentary research to identify potential unrecorded resources, and field survey. Results of architecture/history and archaeology surveys are summarized below.

##### **Architectural History**

###### Minnesota Results

The *Phase I Architecture/History Survey for the Osceola Bridge over the St. Croix River, Franconia Township, Chisago County, Minnesota and Osceola, Polk County, Wisconsin* (March 2022) identified four properties in Minnesota. Three properties built before 1977 and located within the APE in Minnesota were previously determined not eligible within the past ten years. MnDOT CRU has determined that the fourth property built before 1977 and located within the APE in Minnesota, Hwy 243 (XX-ROD-120), is not eligible for the NRHP. Minnesota SHPO concurred with MnDOT CRU's determination that Hwy 243 (XX-ROD-120) is not eligible for the NRHP (see Minnesota SHPO correspondence dated October 11, 2023 in **APPENDIX J** (Agency Correspondence)).

###### Wisconsin Results

The *Phase I Architecture/History Survey for the Osceola Bridge over the St. Croix River, Franconia Township, Chisago County, Minnesota and Osceola, Polk County, Wisconsin* (March 2022) identified one property in Wisconsin. One residence was inventoried in Wisconsin. This property was determined not eligible for the NRHP. Wisconsin SHPO concurred with the determination that this residence is not eligible for the NRHP (see WisDOT Form DT1635 Section 106 Review Archaeological/Historical Information in **APPENDIX J** (Agency Correspondence)).

##### **Archaeology**

###### Minnesota Results

The *Phase I Archaeological Survey for the Hwy 243 Osceola Bridge Project, Franconia Township, Chisago County, Minnesota* (October 2022) describes one previously identified archaeological site and two new archaeological sites in Minnesota. MnDOT CRU concluded that two of the sites are not eligible for listing in the National Register. The third site is beyond the archaeology APE and no further investigation was warranted.

No concerns regarding properties of cultural significance in this area were brought forward to MnDOT or WisDOT during initial tribal consultation efforts. One tribe, the Ho Chunk Nation, requested to be a consulting party on the project, and have been sent copies of the cultural resource reports. The Ho Chunk Nation have not expressed any concerns that the identified archaeological sites in Minnesota may be culturally significant.

### Wisconsin Results

The *Phase I Archaeological Survey for the Hwy 243 Osceola Bridge Project, Osceola, Polk County, Wisconsin* (November 2022) describes two previously identified archaeological sites. No new archaeological sites were identified along Hwy 243 in Wisconsin with the Phase I survey. The two previously identified archaeological sites are outside of the archaeology APE and are avoided by the Hwy 243 Osceola Bridge Project.

#### **4.1.15.4 Section 106 Finding**

##### **No Build Alternative**

The No Build Alternative would not result in any impacts to identified historic properties.

##### **Build Alternative**

### Minnesota Results

MnDOT CRU submitted the results of architectural history and archaeological investigations to the Minnesota SHPO on September 12, 2023. MnDOT CRU determined that there would be “**no historic properties**” affected by the Hwy 243 Osceola Bridge Project. The Minnesota SHPO responded on October 11, 2023 and concurred with the no historic properties finding. See MnDOT CRU and Minnesota SHPO correspondence in **APPENDIX J** (Agency Correspondence).

### Wisconsin Finding

WisDOT submitted a project description and information regarding cultural resources investigations to the Wisconsin SHPO in December 2023, including a “**no historic properties**” (historical or archaeological) in the APE finding. Wisconsin SHPO agreed with the no historic properties finding on February 5, 2024. See the WisDOT Form DT 1635 in **APPENDIX J** (Agency Correspondence).

#### **4.1.16 Visual**

*Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.*

A Visual Impact Assessment (VIA) was conducted for the proposed project. The purpose of this assessment is to evaluate the project’s impact on the relationship between viewers and the environment. Viewers include neighbors who can see the project and travelers who use the roadway; and environment includes the natural, cultural (e.g., built or ‘fabricated’), and/or project related components (e.g., geometrics and/or structural). The following sections summarize the VIA. See **APPENDIX L** (Visual Impact Assessment) for the complete VIA.

##### **4.1.16.1 Existing Conditions**

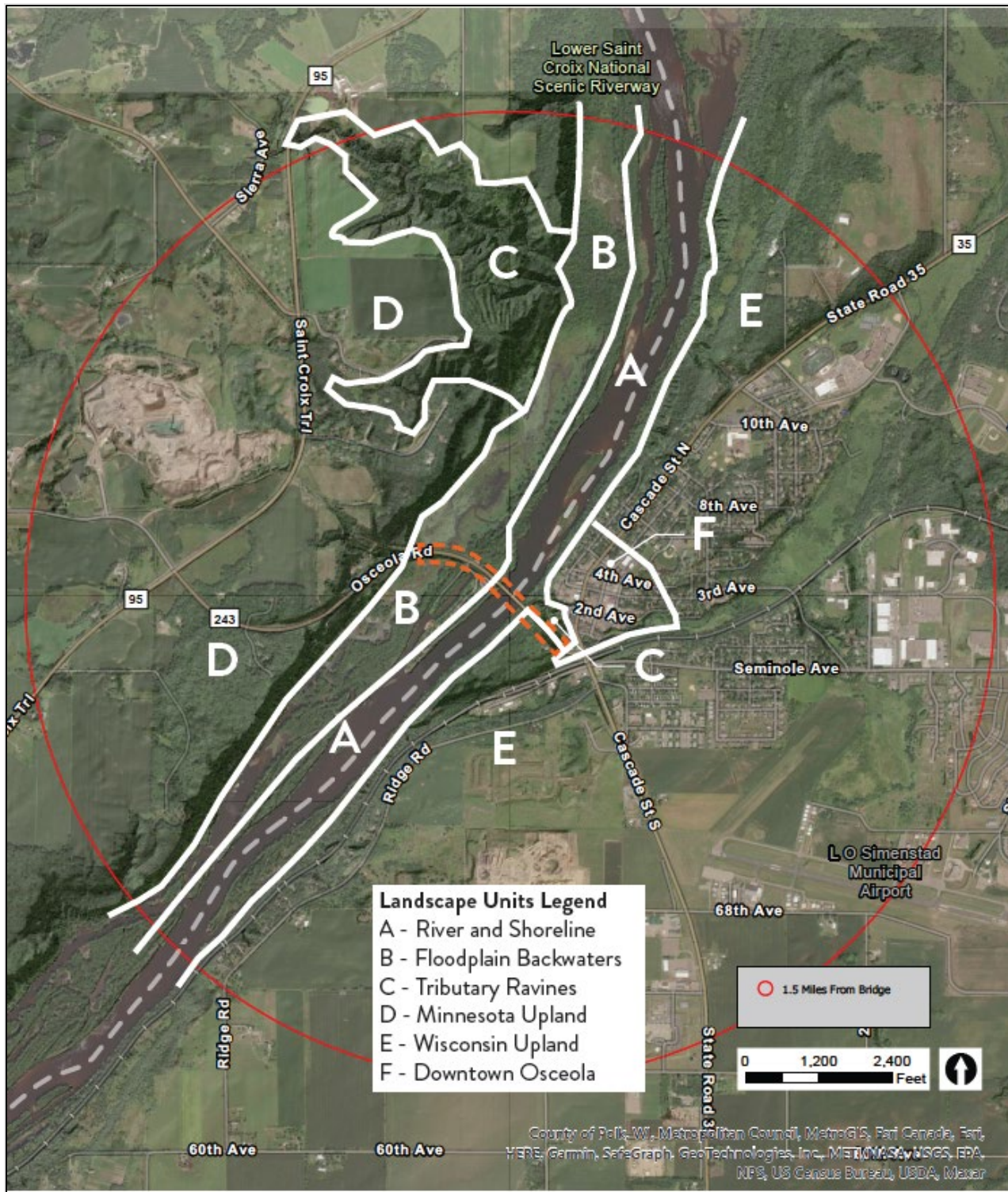
There are several visual resources located near the Hwy 243 Bridge. The Area of Visual Effect (AVE) for the Project includes exemplary natural water features (the Lower St. Croix National Scenic Riverway),

vegetation, and geology as well as unique cultural features such as Osceola Landing (National Park Service), the Osceola Commercial Historic District (listed on the National Register of Historic Places), and nearby parks and trails. Within the AVE, the terrain and settlement patterns define six unique landscape units which were determined based on assessment of aerial mapping and field visits, see **Figure 4-7**. Area of Visual Effect and Visual Landscape Units.

The affected population includes motorists, recreational users, and a limited number of residents. Several common characteristics of the AVE influence the user's visual experience. The primary hallmark of the Riverway is its linear form and long-distance views framed by the adjacent landform that create an immersive experience. The bluffs also provide dramatic vistas from higher elevations looking down on the Riverway but sometime restrict views from certain vantage points.

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Figure 4-7. Area of Visual Effect and Visual Landscape Units





### 4.1.16.2 Impact Evaluation

#### No Build Alternative

The No Build Alternative would not result in any visual impacts with the AVE.

#### Preferred Alternative

Fourteen key viewsheds were identified for an assessment of impacts of the Preferred Alternative. Visual Compatibility and Viewer Sensitivity of the preferred alignment was evaluated within each of the fourteen viewsheds, and the resulting impacts were rated as positive, neutral, or negative. Visual Compatibility is the measure of how the project’s visual character will fit within the project environment’s visual character. The Visual Quality project team assessed three primary criteria for Visual Compatibility - Scale, Form, and Materials. Viewer Sensitivity is the measure of how users may perceive the project and effects on the environment based on anticipated exposure and awareness. This measure accounts for the unique nature of static and dynamic viewpoints and distance. The Visual Quality project team assessed three primary criteria for Viewer Sensitivity - Natural Harmony, Cultural Order, and Project Coherence.

Reconstruction of the bridge and highway along the same established alignment is beneficial by minimizing impacts to the immediately adjacent natural and cultural features. Based on the selected bridge type, and compared to the existing bridge, the overall structure depth will be reduced, and there will be fewer piers, thereby creating more visual openness from the river. In general, the Preferred Alternative would result an overall neutral to positive degree of impact to key viewsheds in the project area. One viewshed, the Wisconsin shoreline north of the bridge, received a neutral/negative overall degree of impact rating because of initial impacts to vegetation. This impact would be temporary and will be addressed through the landscaping plan described in the Visual Quality Manual (VQM) (see Section 4.1.16.3 Mitigation). The landscaping plan combined with the regrowth of vegetation over time would result in a net neutral visual impact along the Wisconsin shoreline north of the bridge.

The degree of visual quality impacts of the Preferred Alternative is documented in detail in Section 4.3 of the VIA, in **APPENDIX L** (Visual Impact Assessment. **Table 4-11**. Summary of Visual Impacts summarizes the impacts for the fourteen key viewsheds that were studied.

**Table 4-11. Summary of Visual Impacts**

Viewshed	Landscape Unit	Existing Visual Quality	Visual Compatibility	Viewer Sensitivity	Overall Degree of Impact
Osceola Landing Boat Launch	A (River and Shoreline)	Moderate	Neutral/Negative	Positive/Neutral	Neutral
Osceola Landing Picnic Area	A (River and Shoreline)	High	Positive/Neutral	Neutral	Neutral

Viewshed	Landscape Unit	Existing Visual Quality	Visual Compatibility	Viewer Sensitivity	Overall Degree of Impact
Osceola Landing Peninsula	A (River and Shoreline)	High	Neutral	Neutral	Neutral
Eagle Bluff Trail	E (Wisconsin Upland)	High	Neutral	Neutral	Neutral
WI Shoreline North of Bridge	C (Tributary Ravines)	Moderate	Neutral/Negative	Neutral/Negative	Neutral/Negative
Ladd Overlook	E (Wisconsin Upland)	Low	Neutral	Neutral	Neutral
Minnesota Hwy 243 Approach	D (Minnesota Upland)	Moderate	Neutral/Negative	Neutral	Neutral
Wisconsin Hwy 243 Approach	E (Wisconsin Upland)	Moderate	Neutral/Negative	Neutral	Neutral
St. Croix Riverway View Upstream	A (River and Shoreline)	High	Positive/Neutral	Positive/Neutral	Positive/Neutral
St. Croix Riverway View Downstream	A (River and Shoreline)	High	Positive/Neutral	Positive/Neutral	Positive/Neutral
Cascade Falls Overlook	F (Downtown Osceola)	Low	Positive/Neutral	Neutral	Neutral
Downtown Osceola Cascade/2 <sup>nd</sup>	F (Downtown Osceola)	Moderate	Neutral	Neutral	Neutral
Cascade Falls Trail East	C (Tributary Ravines)	High	Positive/Neutral	Neutral	Neutral
MN Shoreline North of Bridge	A (River and Shoreline)	Moderate	Neutral/Negative	Positive/Neutral	Neutral

#### 4.1.16.3 Mitigation

The VIA has outlined recommended mitigation measures, which are subject to change based on agency and public review of this document. The project team identified three categories of mitigation measures to preserve visual quality in the project area: context sensitive bridge aesthetics, vegetation restoration, and trail wayfinding signage.



### **Context Sensitive Bridge Aesthetics**

Even though the planned bridge reconstruction is the central feature of the Project, it was clear from early VQAC input that the structure should intentionally try to draw less attention to itself compared to the unique natural setting. Primary strategies developed for minimizing the visual effect of the bridge included: right-sizing the scale of each required component (piers, abutments, wing walls, barriers, and railings), avoiding simulated stone concrete textures, and employing color finishes that complement the natural materials inherent to the Riverway.

### **Vegetation Restoration**

As part of the bridge, roadway, and trail construction, there will inevitably be limited impacts to the existing vegetation along the edges of the corridor and nearby shorelines. With the goal of ultimately allowing the infrastructure to blend into the landscape visually, new vegetation will soften its hardened appearance as it matures. In addition, new vegetation can provide shade for trail users, habitat and food sources for wildlife, and mitigate stormwater runoff and soil erosion. As part of the visual quality design process, a conceptual vegetation plan will be developed that restores areas of the landscape impacted by construction.

### **Trail Wayfinding Signage**

The introduction of the pedestrian and bicycle trail to the corridor creates a new way to experience the river at this location. The connection between Osceola Landing and the Village of Osceola will invite a greater diversity of visitors to explore the river crossing that was previously only available through a car windshield. In order to orient and guide visitors, nodes that provide maps and recreational destination information will support positive experiences. New trail wayfinding signage will complement existing identity and interpretive signage.

### **Visual Quality Manual**

MnDOT and WisDOT prepared a Visual Quality Manual (VQM) for the Hwy 243 Osceola Bridge Project. The VQM identifies design features and mitigation measures to minimize impacts and enhance visual quality with the project. The VQM includes recommended mitigation strategies for context-sensitive bridge aesthetics, vegetation restoration (including a landscape plan), and trail wayfinding signage. The VQM was developed with input from the Visual Quality Advisory Committee (VQAC). The VQAC consisted of federal, state, and local agency representatives. The VQAC met five times from June through November 2023 during the development of the VQM. A sixth VQAC meeting was hosted in May 2024 to present final VQM recommendations and conclude the VQAC process. Final VQM recommendations were presented at a public meeting in June 2024. The VQAC provided feedback on visual quality goals and reviewed aesthetic options for the Hwy 243 Bridge and other supporting design features. The VQM is available upon request by contacting the MnDOT Project Manager (see contact information in Section 4.1.2 Proposer).

## **4.1.17 Air**

### **4.1.17.1 Stationary source emissions**

*Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.*

No boilers, exhaust stacks, or any other stationary source emissions are proposed as part of the Hwy 243 Osceola Bridge Project.

### **4.1.17.2 Vehicle emissions**

*Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.*

The following section answers the above question for highway transportation projects and air quality.

#### **National Ambient Air Quality Standards (NAAQS)**

The project conforms to the state implementation plan. This project does not require an air quality analysis because it is exempt from Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS) transportation conformity requirements in 40 CFR 93 (Exempt Projects in 40 CFR 93.126, 40 CFR 93.127, or 40 CFR 93.128) OR because the State of MN is in full attainment as of September 24, 2022, and no longer has any maintenance areas for purposes of air quality conformity. Therefore, no air quality analysis related to the NAAQS has been performed.

#### **Carbon Monoxide**

Carbon monoxide (CO) is the traffic-related pollutant that has previously been of concern in the Twin Cities Metropolitan Area. In 1999, the EPA re-designated all of Hennepin, Ramsey, Anoka, and portions of Carver, Scott, Dakota, Washington, and Wright Counties as a maintenance area for CO. This means the area was previously classified as a nonattainment area but has now been found to be in attainment. The 20-year maintenance period for the Twin Cities Metropolitan Area ended in November 2019 and a CO maintenance plan/project-level conformity analysis is no longer required.

Projects may still be subject to anti-backsliding regulations under the Clean Air Act (CAA). Due to these anti-backsliding requirements, a project may require a CO hot spot analysis if it is a federally funded project, if intersection volumes exceed the benchmark average annual daily traffic (AADT) of 82,300 vehicles, or if a project includes one or more of the intersections on MnDOT's top 10 intersection list.

CO evaluation is performed by evaluating the worst-operating (hot-spot) intersections in the project area. The EPA has approved a screening method to determine which intersections need hot-spot analysis. The hot-spot screening method uses a traffic volume threshold of 82,300 entering vehicles per day. Intersections with traffic volumes above this threshold must be evaluated using EPA-approved emission and dispersion models. Intersections with traffic volumes below this threshold are not expected to result in CO concentrations that exceed state or federal standards, and detailed modeling is not required.

The highest forecasted (2045) daily volume roadway is MN-95 with approximately 9,000 vehicles per day. Because this project is in a rural area with low volume roadways, no intersection within or near the project area approaches the threshold for hot-spot analysis, therefore, quantitative analysis for CO is not required.

### **Mobile Source Air Toxics**

A qualitative Mobile Source Air Toxics (MSAT) analysis has been prepared for the Hwy 243 Osceola Bridge Project. Controlling toxic air emissions became a national priority with the passage of the CAA of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS).<sup>53</sup> In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA).<sup>54</sup> These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

### Motor Vehicle Emissions Simulator (MOVES)<sup>55</sup>

According to EPA, MOVES3 is a major revision to MOVES2014 and improves upon it in many respects. MOVES3 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2014. These new emissions data are for light- and heavy-duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES3 also adds updated vehicle sales, population, age distribution, and vehicle miles traveled (VMT) data. In the November 2020 EPA issued "MOVES3 Mobile Source Emissions Model Questions and Answers"<sup>56</sup> where EPA states that for on-road emissions, MOVES3 updated heavy-duty diesel and compressed natural gas emission running rates and updated heavy-duty gasoline emission rates. They updated light-duty emission rates for

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<sup>53</sup> EPA. *Integrated Risk Information System (IRIS)*. Accessed in June 2024 and available at <https://www.epa.gov/iris/>.

<sup>54</sup> EPA. *National Air Toxics Assessment (NATA)*. Accessed in June 2024 and available at <https://www.epa.gov/national-air-toxics-assessment>.

<sup>55</sup> FHWA. January 30, 2023. Updated Interim Guidance on Mobile Source Air Toxic (MSAT) Analysis in National Environmental Policy Act (NEPA) Documents. Accessed March 2023 and available at [https://www.fhwa.dot.gov/ENVIRONMENT/air\\_quality/air\\_toxics/policy\\_and\\_guidance/msat/](https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/air_toxics/policy_and_guidance/msat/).

<sup>56</sup> EPA Office of Transportation and Air Quality. *EPA Releases MOVES3 Mobile Source Emissions Model: Questions and Answers*. Accessed March 2023 and available at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1010M06.pdf>.

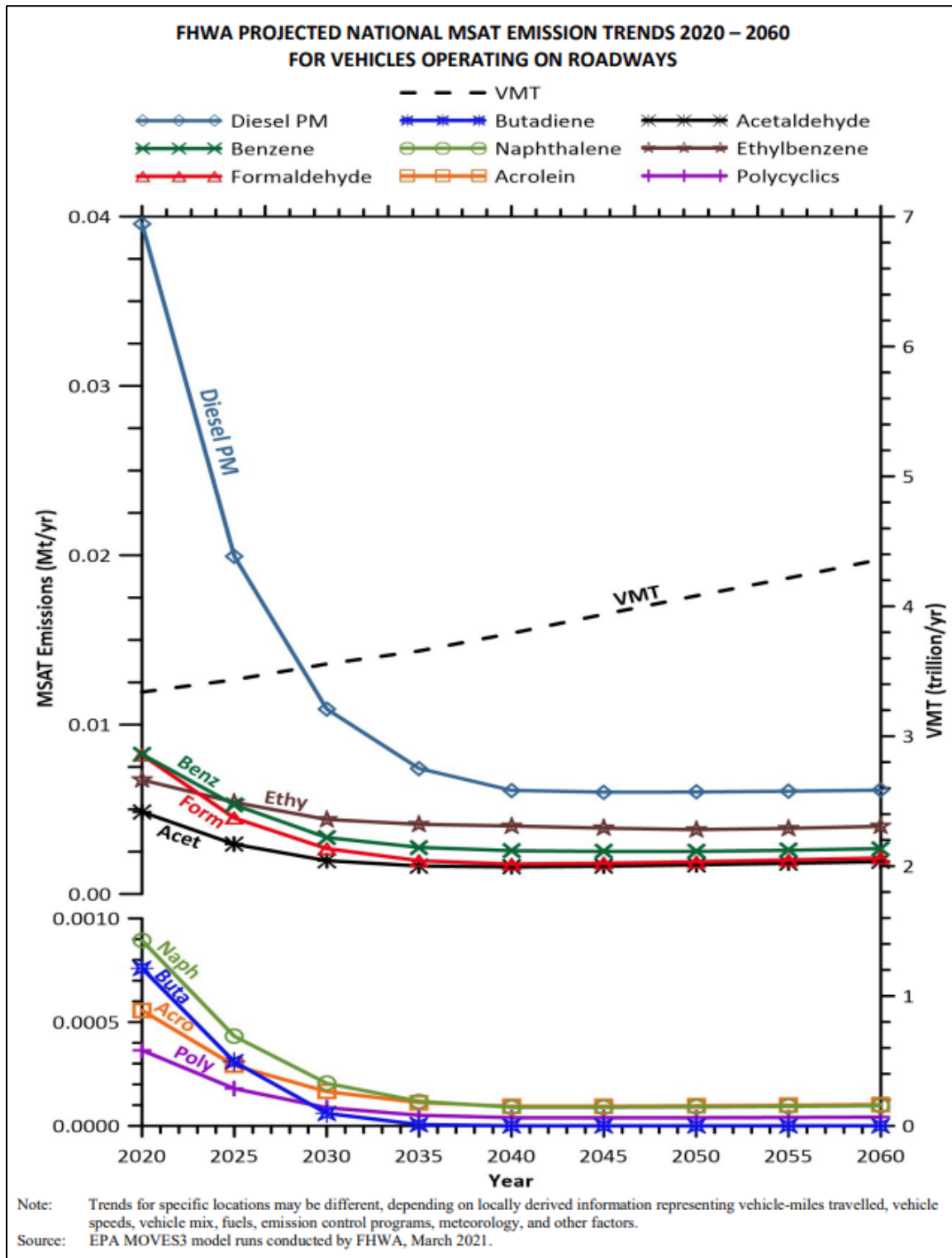
hydrocarbon, CO, and nitrogen oxide, and updated light-duty particulate matter rates, incorporating new data on Gasoline Direct Injection vehicles.

Using EPA's MOVES3 model, as shown in **Figure 4-8**, FHWA estimates that even if VMT increases by 31 percent from 2020 to 2060 as forecast, a combined reduction of 76 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Diesel PM is the dominant component of MSAT emissions, making up 36 to 56 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES3 will notice some differences in emissions compared with MOVES2014. MOVES3 is based on updated data on some emissions and pollutant processes compared to MOVES2014, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES3 emissions forecasts are based on slightly higher VMT projections than MOVES2014, consistent with nationwide VMT trends.

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Figure 4-8. FHWA Projected National MSAT Emission Trends 2020-260 For Vehicles Operating On Roadways Using EPA’s MOVES3 Model



## MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to arise on highway projects during the NEPA process. Even as science emerges, the public and other agencies expect FHWA to address MSAT impacts in its environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to define potential risks more clearly from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

## NEPA Context

NEPA requires, to the fullest extent possible, that the policies, regulations, and laws of the Federal Government be interpreted and administered in accordance with its environmental protection goals, and that Federal agencies use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment (42 U.S.C. 4332). In addition to evaluating the potential environmental effects, FHWA must also consider the need for safe and efficient transportation in reaching a decision that is in the best overall public interest (23 U.S.C. 109(h)). The FHWA policies and procedures for implementing NEPA are contained in regulation at 23 CFR Part 771.

### Incomplete or Unavailable Information for Project Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects".<sup>57</sup> Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

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<sup>57</sup> EPA. *Integrated Risk Information System (IRIS)*. Accessed in June 2024 and available at <https://www.epa.gov/iris/>.



Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Several HEI studies are summarized in *FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations<sup>58</sup> or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI.<sup>59</sup> As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, “[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk.”<sup>60</sup>

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to

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<sup>58</sup> Health Effects Institute (HEI). *Special Report 16: Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects (2007)*. Accessed in June 2024 and available at <https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects>.

<sup>59</sup> HEI. *Special Report 16, 2007. Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects*. Accessed in June 2024 and available at <https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects>.

<sup>60</sup> EPA. *IRIS – Diesel Engine Exhaust, Section II.C*. Accessed in June 2024 and available at <https://www.epa.gov/iris/>.

maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.<sup>61</sup>

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

#### Qualitative MSAT Analysis

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives.<sup>62</sup>

According to FHWA guidance, a highway widening project is considered minor if the design year traffic is predicted to be less than 140,000 – 150,000 vpd. Forecast (year 2045) annual average daily traffic (AADT) volumes range from 7,400 to 9,000 within the project corridor. Because the design year (2045) Build Alternative projection for average daily traffic (ADT) would not exceed 150,000 vpd within the project corridor, a qualitative MSAT analysis, rather than a quantitative MSAT analysis, is warranted for the project.

For each alternative in the project, the amount of MSATs emitted would be proportional to the average daily traffic volumes, or ADT, assuming that other variables such as fleet mix are the same for each alternative. The ADT estimated for the Build Alternative is higher than that for the No Build Alternative because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in ADT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the EPA's MOVES3 model, emissions of all the priority MSAT

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<sup>61</sup> US Court of Appeals, District of Columbia Circuit. *Natural Resource Defense Council and Louisiana Environmental Action Network v. Environmental Protection Agency and the American Chemistry Council*. Accessed in June 2024 and available at [https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/\\$file/07-1053-1120274.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf).

<sup>62</sup> FHWA. *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*. Accessed in June 2024 and available at [https://www.fhwa.dot.gov/ENVIRONMENT/air\\_quality/air\\_toxics/research\\_and\\_analysis/mobile\\_source\\_air\\_toxics/msatmission4.cfm](https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatmission4.cfm).

decrease as speed increases. The estimated ADT with the Hwy 243 Osceola Bridge Project under each of the Build alternatives does not vary, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives (apart from the No Build Alternative). It is expected that overall MSAT emissions would be marginally higher for the Hwy 243 Osceola Bridge Project though increases will likely be countered (by some magnitude) by advances in technology and regulations. Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year because of EPA's national control programs that are projected to reduce annual MSAT emissions by over 76 percent between 2020 and 2060 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Hwy Administration, January 18, 2023). Local conditions may differ from these national projections in terms of fleet mix and turnover, ADT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for ADT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

#### **4.1.17.3 Dust and odors**

*Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.*

Dust would be generated because of construction activities associated with the project. Dust generated during construction will be minimized through standard dust control measures such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions. Construction contractors will be required to control dust and other airborne particulates in accordance with the contract specifications. After construction is complete, dust levels are anticipated to be minimal because all soil surfaces exposed during construction will be in permanent cover (i.e., paved or re-vegetated areas).

The proposed project would not generate substantial odors during construction. Potential odors would likely include exhaust from diesel engines and fuel storage.

#### **4.1.18 Greenhouse Gas (GHG) Emissions/Carbon Footprint**

##### **4.1.18.1 GHG Quantification**

*For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to come to that conclusion and any GHG emission sources not included in the total calculation.*

Minnesota's position near the center of North America subjects us to an exceptional variety of extreme weather. During the course of a single year, most Minnesotans will experience both blizzards and heatwaves, windstorms, strong thunderstorms, and heavy rains.

The conditions, however, have changed rapidly, and an overwhelming base of scientific evidence projects that Minnesota's climate will see additional significant changes through the end of the 21st century.<sup>63</sup> Over the last several decades, the state has experienced substantial warming during winter and at night, with increased precipitation throughout the year, often from larger and more frequent heavy rainfall events. These changes alone have damaged buildings and infrastructure, limited recreational opportunities, altered our growing seasons, impacted natural resources, and affected the conditions of lakes, rivers, wetlands, and our groundwater aquifers that provide water for drinking and irrigation. The years and decades ahead in Minnesota will bring even warmer winters and nights, and even larger rainfalls, in addition to other climatic changes not yet experienced in the state.

In the years and decades ahead, winter warming and increased extreme rainfall will continue to be Minnesota's two leading symptoms of climate change. Climate models used in the 2017 National Climate Assessment also project that Minnesota will have a greater tendency toward extreme heat, especially by the middle of the 21st century.<sup>64</sup> The future drought situation in Minnesota is less clear and appears to depend on how much greenhouse gas emissions increase by mid-century.

GHG's are gases that warm the atmosphere and surface of the planet. Human activity has been increasing the amount of GHG's in the atmosphere, leading to changes in the earth's climate. The primary GHG's are carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), sulfur hexafluoride (SF<sub>6</sub>), and two classes of compounds called hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

The most recent GHG emissions inventory from the MPCA showed that transportation overtook the electricity generation sector to become the number one source of GHG emissions in Minnesota starting in 2016.<sup>65</sup> This is consistent with trends in other states, and changes in both sectors and trends (electricity decreasing, transportation increasing) are expected to continue in the future.

A GHG analysis was completed for this project using the Minnesota Infrastructure Carbon Estimator (MICE), version 2.1.<sup>66</sup> MnDOT evaluates GHG emissions from projects due to concerns about current and future impacts of climate change in Minnesota. GHGs from transportation (carbon dioxide, methane and nitrous oxide) contribute to warming of the atmosphere, which leads to effects in Minnesota that include increases in heavy precipitation, increased flooding, and more episodes of extreme heat.

Because the project will not change traffic, operational greenhouse gas emissions are not expected to change. Construction greenhouse gas emissions will result from production and transportation of construction materials, and from fuel used in construction equipment. Pond construction and other drainage improvements that are not culverts or storm sewer are not covered by the MICE tool and are therefore not included in this GHG

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<sup>63</sup> MPCA. *Adapting to Climate Change in Minnesota*. Accessed in February 2024 and available at <https://www.pca.state.mn.us/sites/default/files/p-gen4-07c.pdf>.

<sup>64</sup> US Global Change Research Program. *Impacts, Risks, and Adaptations in the United States: Fourth National Climate Assessment, Volume II*. Accessed in February 2024 and available at [https://nca2018.globalchange.gov/downloads/NCA4\\_Ch21\\_Midwest\\_Full.pdf](https://nca2018.globalchange.gov/downloads/NCA4_Ch21_Midwest_Full.pdf).

<sup>65</sup> MnDOT. *Sustainability and Public Health*. Accessed in February 2024 and available at <https://www.dot.state.mn.us/sustainability/>

<sup>66</sup> MnDOT. *Minnesota Infrastructure Carbon Estimator Tool*. Accessed in December 2023 and available at <http://www.dot.state.mn.us/project-development/subject-guidance/greenhouse-gas-analysis/process.html>.

analysis. **Table 4-12.** MnDOT Greenhouse Gas Analysis Summary summarizes the planning-level greenhouse gas emissions which were calculated using the MICE tool.

**Table 4-12. MnDOT Greenhouse Gas Analysis Summary**

Construction CO2e Emissions (Total over Construction Period)	CO2e, Metric Tons (total)
Build Alternative	1,519

**4.1.18.2 GHG Assessment**

*Describe any mitigation considered to reduce the project’s GHG emissions.*

MnDOT has identified several practices that can help reduce emissions from projects. These practices directly reduce emissions through decreased fuel use, or indirectly through materials reuse (i.e. less processing and transport of new materials). The project is still under design, so the emissions reductions (per mile) for all of these practices has not yet been determined.

*Describe and quantify reductions from selected mitigation, if proposed to reduce the project’s GHG emissions. Explain why the selected mitigation was preferred.*

Two standard mitigation practices applied to all projects include the switch from diesel to soybean-based fuel (to reflect state biofuel requirements) and alternative snow removal strategies (snow fencing, wing plows). Additional mitigation practices that are expected for this specific project are existing roadway concrete and bituminous pavement recycling. Total GHG emissions reductions from these practices are estimated to be approximately 40 metric tons of CO2e. This includes reductions in materials, transportation, construction, and maintenance.

*Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.*

Assuming a lifetime of 20 years for the project, the total net lifetime GHG emissions are 1,519 metric tons CO2e for the build alternative construction emissions, plus 15 metric tons per year associated with land use changes, which equals 1,819 total metric tons CO2e.

MnDOT was the first state agency to apply the Next Generation Energy Act GHG reduction goals to all agency operations, including fleet fuel use and electricity. Minnesota was also the first state in the country to create GHG reduction goals for the state highway construction program.<sup>67</sup> While this project may not directly contribute to the achievement of the Minnesota Next Generation Energy Act, the project will eliminate GHG emissions associated with transportation inefficiencies, mobility, and crashes. As mentioned previously, MSAT emissions are also projected to decrease over time due to increased speeds in the project area and from the

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<sup>67</sup> MnDOT. *Sustainability and Public Health*. Accessed in February 2024 and available at <https://www.dot.state.mn.us/sustainability/>

EPA's national control programs which are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Hwy Administration, October 12, 2016). MnDOT is also dedicated to other state legislation. Executive Order 19-27 requires MnDOT to report and make progress on six sustainability goals, one of which is reducing GHG emissions. In 2022, MnDOT formulated seven actions to increase understanding of sustainable pavement opportunities, all of which have potential to reduce GHG emissions.<sup>68</sup>

While agencies will need to search for a multitude of ways to reduce emissions, the net effect of the effort to meet the Minnesota Next Generation Energy Act goals may be increased innovation, collaborative opportunities, and public/private partnerships. Quantifying emissions by activity is the first step in meeting these goals.

### Summary of GHG Discussion

This section summarizes the GHG emissions associated with construction of the proposed project, and vehicle traffic associated with the project. It does not include an assessment of the potential climate effects of those emissions. In the case of GHGs and climate change, climate is driven by global cumulative changes of GHG concentrations in the atmosphere; the changes in emissions from one individual project are simply too small to justify calculation of resulting changes in temperature, sea level, precipitation, and other significant cumulative climate effects. However, estimation of emissions is still useful to the public and decisionmakers so that they can understand whether projects are contributing to progress in mitigating climate change.

Assessing GHG emissions from transportation projects is one of several strategies that MnDOT is pursuing to address the issue of climate change. Other strategies that MnDOT is pursuing include intermodal transportation, electric vehicle incentives and infrastructure, clean vehicle standards, and alternative fuels. The agency is also developing a process for evaluating flood risk to MnDOT bridges, large culverts, and pipes. Studying the performance of infrastructure under predicted extreme events will help MnDOT gain knowledge and better assess the impacts of climate changes to plan, design, build, and maintain assets for resilience. More information regarding MnDOT's efforts to address climate change can be found at Sustainability at <https://www.dot.state.mn.us/sustainability/>

#### **4.1.19 Noise**

*Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.*

Construction activities associated with the proposed project would result in increased noise levels relative to existing conditions. These impacts would primarily be associated with construction equipment and pile driving. **Table 4-13** shows peak noise levels monitored at 50 feet from several types of construction equipment. This

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<sup>68</sup> MnDOT. *MnDOT 2022 Sustainability Report*. Accessed in February 2024 and available at <https://www.dot.state.mn.us/sustainability/>



equipment is usually used during site grading, site preparation, and roadway construction which is usually the loudest phase of the roadway construction process.

**Table 4-13. Typical Construction Equipment Noise Levels at 50 Feet**

Equipment Type	Manufacturers Sampled	Total Number of Models in Sample	Peak Noise Level (dBA) Range	Peak Noise Level (dBA) Average
Backhoes	5	6	74-92	83
Front Loaders	5	30	75-96	85
Dozers	8	41	65-95	85
Graders	3	15	72-92	84
Scrapers	2	27	76-98	87
Pile Drivers	N/A	N/A	95-105	101

Source: United States EPA and FHWA.

Elevated noise levels are to a degree unavoidable for this type of project. MnDOT will require that construction equipment be properly muffled and in proper working order. While MnDOT and its contractor(s) are exempt from local noise ordinances, it is the practice to require that the contractor(s) comply with applicable local noise restrictions to the extent possible. Advance notice will be provided to affected communities for any abnormally loud construction activities. However, construction will be limited to daytime hours as much as possible. This project is anticipated to be under construction for two construction seasons.

Any associated high-impact equipment noise such as pile driving, pavement sawing, or jack hammering will be unavoidable with construction of the Preferred Alternative. Pile driving noise is associated with any sheet piling necessary for bridge construction and any retaining wall construction. The use of pile drivers, pavement sawing, and jack-hammering equipment will be prohibited during nighttime hours.

Elevated noise levels would be temporary (i.e., limited to the construction of phase of the project) and minimized to the extent practicable as described above. The proposed project would not contribute to traffic growth, does not include additional highway capacity, and maintains the Hwy 243 Bridge along its existing alignment. The proposed project would not permanently change traffic noise levels compared to the No Build Alternative.

**4.1.19.1 Existing Noise Levels/Sources in the Area**

Noise is defined as any unwanted sound. Sound travels in a wave motion and is measured as a sound pressure level. This sound pressure level is commonly measured in decibels. Decibels (dB) represent the logarithm of the ratio of a sound energy relative to a reference sound energy. For highway traffic noise, an adjustment, or weighting, of the high-and low-pitched sound is made to approximate the way that an average person hears sound. The adjusted sound levels are stated in units of “A-weighted decibels” (dBA). A sound increase of 3 dBA is barely noticeable by the human ear, a 5 dBA increase is clearly noticeable, and a 10 dBA increase is heard as twice as loud. For example, if the sound energy is doubled (i.e., the amount of traffic doubles), there is a 3 dBA

increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases by a factor of ten times, the resulting sound level will increase by about 10 dBA and be heard to be twice as loud.<sup>69</sup>

Existing noise sources in the project area include traffic noise from Hwy 243, as well as traffic entering and exiting Osceola Landing in Minnesota. Other noise sources include operations at Osceola Landing and activities on the St. Croix River, such as motorized boats. Ambient noise levels are anticipated to be low due to the rural nature of the project and the low volumes of vehicles on Hwy 243. There is also a railway just south of the project area in Wisconsin, which intermittently contributes existing noise levels in the area.

#### **4.1.19.2 Nearby Sensitive Noise Receptors**

Because the project is within the St. Croix National Scenic Riverway, much of the project consists of undeveloped MnDNR or NPS land. Noise sensitive receptors within the immediate vicinity of the project include Osceola Landing in Minnesota and two recreational trails that exist beneath the Hwy 243 Bridge on the Wisconsin side of the river. These trails are Cascade Falls Trail and Eagle Bluff Trail.

Other noise sensitive receptors are beyond the project area. Several noise sensitive receptors reside in the Village of Osceola, Wisconsin, which begin approximately 125 feet from the eastern project limit. A residential property resides approximately 1,500 feet west of the western project limit.

#### **4.1.19.3 Conformance to the State Noise Standards**

The Minnesota state noise standards are located in Minnesota Rules Chapter 7030. The MPCA is the state agency responsible for enforcing state noise rules. In 2016, the Commissioners of the MPCA and MnDOT agreed that the traffic noise regulations and mitigation requirements from the FHWA are sufficient to determine reasonable mitigation measures for highway noise. By this agreement, existing and newly constructed segments of highway projects under MnDOT's jurisdiction are statutorily exempt from the Minnesota State Noise Standard (Minnesota Rules Chapter 7030) if the project applies the FHWA traffic noise requirements. As a result, the traffic noise analysis conducted for the project has followed FHWA criteria and regulations only. This project is not required to address Minnesota Rules Chapter 7030.

Traffic noise impacts in Minnesota are evaluated by measuring and/or modeling the traffic noise levels that are exceeded 10 percent and 50 percent of the time during the hours of the day and/or night that have the loudest traffic scenario. These numbers are identified as the L10 and L50 levels, respectively. The L10 value is the noise level that is exceeded for a total of 10 percent, or 6 minutes, of an hour. The L50 value is the noise level that is exceeded for a total of 50 percent, or 30 minutes, of an hour.

Wisconsin requirements for traffic noise follow the FHWA's traffic noise regulation in 23 Code of Federal Regulations (CFR) Part 772 (Procedures for Abatement of Hwy Traffic Noise and Construction Noise).

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<sup>69</sup> MnDOT. *Hwy Traffic Noise and Noise Barriers*. Accessed in February 2024 and available at [https://www.dot.state.mn.us/environment/noise/pdf/Noise%20BrochureV4\\_FINAL\\_no%20contact%20for%20web.pdf](https://www.dot.state.mn.us/environment/noise/pdf/Noise%20BrochureV4_FINAL_no%20contact%20for%20web.pdf).

The Hwy 243 Osceola Bridge Project is not a Type I project and is not anticipated to contribute to traffic growth or any other permanent changes to traffic noise, therefore a detailed traffic noise analysis was not completed. Documentation of reasoning for this determination is provided below. This documentation was discussed and agreed upon with MnDOT's Noise and Air Quality Program Supervisor.

- **Horizontal alignment.** The centerline of the proposed bridge/roadway shifts by approximately 11-12 feet to the south compared to the existing bridge. The north edge of the proposed bridge matches the north edge of the existing bridge. The proposed bridge includes a 12-foot wide shared-use path on the north side of the bridge. The travel lanes are shifted to the south by 11-12 feet to accommodate the shared-use path.
  - The nearest noise sensitive receptor on the north side of the bridge is a home along the WI shoreline. The bridge isn't moving closer to this residence and does not change the line of sight to this residence.
  - The nearest noise sensitive receptor on the south side of the bridge on the MN side is Osceola Landing. The 11-12 foot shift in the travel lanes does not halve the distance.
  - The nearest noise sensitive receptor on the south side of the bridge on the WI side is a public access/dock (operated by Village of Osceola). The 11-12 foot shift in travel lanes does not halve the distance. A trail is perpendicular to the bridge and crosses underneath along the WI shoreline. The proposed bridge does not vertically or horizontally halve the distance to this trail.
- **Vertical alignment.** The elevation of the existing bridge at the WI abutment is 741.4 feet (from original plans). The elevation of the proposed bridge at the WI abutment is 741.6 feet. There is no substantial change in vertical alignment of the bridge.
- **Lanes.** No additional thru lanes or capacity is being added to the bridge or the surrounding roadway network.

#### 4.1.19.4 Quality of Life

Quality of life is not anticipated to be permanently impacted by the proposed project.

#### 4.1.20 Transportation

*Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.*

*Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>) or a similar local guidance*

This project is a transportation improvement project that has a purpose to maintain a highway connection over the St. Croix River in the Hwy 243 corridor. The project does not add highway capacity (i.e., does not add lanes to Hwy 243) and does not change traffic volumes compared to the No Build Alternative. The project does not affect traffic congestion on Hwy 243 and would not generate additional traffic to and/or from the project area. Therefore, a traffic impact study was not prepared as part of this EA/EAW.

The Hwy 243 Bridge would be fully closed to traffic during construction. US Hwy 8 is the recommended detour route for the Hwy 243 Bridge closure that will occur during construction of the project. A Transportation Management Plan (TMP) for construction is being developed for the project. The TMP included an assessment of existing and proposed peak queueing conditions at the US Hwy 8 and MN-95 intersection in Taylors Falls, MN. For the purposes of this analysis, the existing condition represents when the Hwy 243 Bridge is open and proposed conditions represent the Hwy 243 Bridge closure. Traffic operations at US Hwy 8 and MN-95 during construction, including metrics such as traffic delays, queueing, and LOS. LOS is a qualitative measure of the effect of traffic flow factors, such as speed and travel time, interruption, freedom to maneuver, driver comfort and convenience, and indirectly, safety and operating costs.<sup>70</sup>

Several scenarios were evaluated to assess traffic delay and LOS at US Hwy 8 and MN-95 during the proposed Hwy 243 Bridge closure. These three scenarios included: 1) existing lane configuration on the US Hwy 8 bridge (two westbound lanes, one eastbound lane) with the Hwy 243 Bridge open; 2) re-striping the US Hwy 8 bridge to include one westbound lane and two eastbound lanes with the Hwy 243 Bridge closed; and 3) re-striping the US Hwy 8 bridge to four lanes (two lanes in each direction) with the Hwy 243 Bridge closed. Traffic operations were modeled for Friday, Saturday, and Sunday peak hours. Figures A4-1 through A4-9 in **APPENDIX A** (Figures) illustrate the findings of this traffic operations analysis. The four-lane configuration on the US Hwy 8 bridge would result in the least magnitude of delay and shortest traffic queues at the US Hwy 8/MN-95 intersection during Hwy 243 Bridge closure.

The US Hwy 8 bridge will be temporarily re-striped to four lanes to accommodate higher volumes of traffic during the Hwy 243 Bridge closure. Figure A5 in **APPENDIX A** (Figures) shows the existing and proposed lane configuration for the US Hwy 8 bridge during construction of this project.

The Hwy 243 approach roadways in Minnesota and Wisconsin would be closed to traffic during construction. Hwy 243 from MN-95 to the Osceola Landing entrance in Minnesota would remain open during construction for public access to the Osceola Landing site. Hwy 243 from the St. Croix River up the Wisconsin bluff to WIS-35 would be closed to traffic. The existing four-way stop at Hwy 243 and WIS-35 would be temporarily converted to a two-way stop condition during construction.

MnDOT and WisDOT met with emergency service providers on August 20, 2024 to discuss the project and closure of the Hwy 243 Bridge during construction. Osceola Fire (Wisconsin) currently responds to incidents on the St. Croix River and at Osceola Landing. Osceola Fire uses Osceola Landing for boat access to the river. Shafer Franconia Fire & Rescue (Minnesota) will act as the primary responder to Osceola Landing during construction.

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<sup>70</sup> MnDOT. *Information and resources*. Accessed in April 2024 and available at <https://www.dot.state.mn.us/information/glossary.html>.

MnDOT and WisDOT will continue to coordinate with emergency service providers as part of the TMP development.

Any construction traffic mitigation measures implemented for this project would be temporary in nature; therefore, these measures do not need to be analyzed for traffic noise impacts as part of the Hwy 243 Osceola Bridge Project. “Temporary” means that the facilities off the mainline construction will be returned to their pre-project state no later than 90 days after the contractor is demobilized from the mainline construction project. If weather conditions make it impossible to return temporary improvements to the original condition within the 90-day period, then the temporary work will be returned to pre-project conditions within 90 days of April 15 of the next calendar year or when season striping operations begin, whichever comes first.

**4.1.20.1 Parking**

Additional parking spaces are not proposed; however, the project will reconstruct existing parking areas within the Minnesota wayside rest (north side of Hwy 243) and within Osceola Landing (south of Hwy 243). The wayside rest area would be relocated to the west with the project and is estimated to be approximately 10 parking spaces or less. The Osceola Landing north parking lot would be used for staging and construction of the Hwy 243 Bridge replacement. The Osceola Landing north parking lot would be reconstructed to be outside of existing MnDOT right of way and a design coordinated with the National Park Service.

**4.1.20.2 Total average daily traffic generated**

The proposed project would not generate any additional traffic to the area. However, existing roadways experience daily traffic and are anticipated to experience gradual traffic growth between now and 2040. **Table 4-14. Daily Traffic Volumes (Existing and Forecasted)** tabulates existing and forecasted daily traffic volumes for existing roadways within or near the project area.

**Table 4-14. Daily Traffic Volumes (Existing and Forecasted)**

Roadway/Location	Existing Volume (2022)	2040 No Build Alternative	2040 Build Alternative
Hwy 243 Bridge	5,690	7,400	7,400
MN-95	6,650	9,100	9,100
WIS-35	9,500	13,000	13,000

Note: Existing AADT volumes for Minnesota roadways were retrieved from MnDOT’s Traffic Mapping Application. Traffic volumes for WIS-35 are north of the Hwy 243 intersection in the Village of Osceola.

**4.1.20.3 Estimated Maximum Peak Hour Traffic Generated and Time of Occurrence**

Traffic volumes on the Hwy 243 Bridge have a distinct directionality during the peak hours of the day. Traffic flow in the morning is predominately destined westbound whereas traffic flow in the afternoon is predominately destined eastbound. **Table 4-15** tabulates forecast peak hour traffic volumes on the Hwy 243 Bridge.

**Table 4-15. Hwy 243 Peak Hour Traffic Volumes**

Peak	Eastbound	Westbound	Total (both directions)
AM	300	440	740
PM	490	370	860

Note: The AM Peak generally represents the 7:00 am to 8:00 am hour and the PM Peak generally represents the 4:00 pm to 5:00 pm hour.

**4.1.20.4 Source of Trip Generation Rates used in Estimates**

The Met Council’s Activity Based Model (ABM) is the travel demand forecasting model for the Twin Cities Metropolitan Area, and includes Polk, St. Croix, and Pierce counties in Wisconsin. The ABM was first used to develop traffic forecasts for the Hwy 243 Osceola Bridge Project to predict travel patterns at the regional level. Travel movements for the project study area were extracted from the ABM and used to develop traffic forecasts at the project level.

**4.1.20.5 Availability of Transit and/or other alternative transportation modes**

There are no existing transit facilities or services within the project area in either the Village of Osceola or Franconia Township and no transit is planned. Polk County offers non-emergency medical transport to senior citizens or people with disabilities to meet their healthcare needs<sup>71</sup> but this is not considered public transit. Arrowhead Transit services parts of Chisago County, but not within the project area. Alternative transportation modes like medical transport and school bus routes would be impacted by the Hwy 243 Bridge closure and would be routed to the US Hwy 8 detour to the north of the project area. Coordination with transport service and school bus operators will occur prior to construction and closure of the Hwy 243 Bridge.

**4.1.21 Cumulative Potential Effects**

*(Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)*

**4.1.21.1 Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.**

Minnesota Rules, Part 4410.0200, subpart 11a and 40 CFR Part 1508.7 define cumulative impacts as impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or persons undertake such actions. The objective of cumulative potential effects analysis is to identify impacts that may be minimal, and therefore, neither significant nor adverse when examined within the context of the proposed action, but that may accumulate and become significant and adverse when combined with other actions.

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<sup>71</sup> Polk County, Wisconsin. *Transportation in Polk County*. Accessed in February 2024 and available at [https://www.polkcountywi.gov/residents/transportation\\_in\\_polk\\_county.php](https://www.polkcountywi.gov/residents/transportation_in_polk_county.php).



The geographic areas considered for cumulative potential effects are those areas directly adjacent to or near the Hwy 243 Osceola Bridge Project, as well as areas near the detour route for the bridge closure. Past actions in the project vicinity include decades of agricultural, residential, institutional, industrial, and commercial development and transportation infrastructure improvements. All the past actions have resulted in the current built environment surrounding the Hwy 243 Bridge, which is generally undeveloped near the bridge but urban development to the east in the Village of Osceola, Wisconsin. The current limit of comprehensive planning efforts for the project area is the year 2030. These efforts can be used as the basis for future cumulative impacts from projects planned within this time frame.

Project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects and proposed mitigation are tabulated in **Table 4-16**. Project Related Environmental Effects and Geographic Extent.

**Table 4-16. Project Related Environmental Effects and Geographic Extent**

Reference	Topic	Environmental Effects	Geographic Extent	Mitigation Plan
Section 4.1.11.2 (EAW Item 11)	Soils and Topography (Erosion and Sedimentation Control)	Disturbed ground/soils during project construction.	Throughout the project area	NPDES and WPDES permits and SWPPP would be developed prior to construction.
Section 4.1.12 (EAW Item 12)	Water Resources	Increase in impervious surface of 1.1 acres across the entire project (MN and WI areas combined). Impacts to wetland basins: 0.35 acres Impacts to aquatic resources: 0.88 acres	Throughout the project area	Water resources impacts have been minimized to the extent practicable with sequencing methodology throughout project development. Compensatory mitigation will be completed for unavoidable wetland impacts. Cofferdams and barges will be used during construction to reduce river bottom and sedimentation impacts within the St. Croix River. River bottom restoration will be completed once the causeways are removed.
Section 4.1.13 (EAW Item 13)	Contaminated and Regulated Wastes	Twenty-five (25) contaminated sites were identified within or near the	Throughout the project area	Hazardous materials and regulated waste encountered as part of the proposed and future actions would be handled and disposed of

Reference	Topic	Environmental Effects	Geographic Extent	Mitigation Plan
		project area.		according to applicable state and federal rules and regulations.
Section 4.1.14 (EAW Item 14)	Fish, Wildlife, and Plant Communities	Aquatic habitats and communities are anticipated to be impacted by the project during the entirety of construction.	Throughout the project area	Addressed via permanent stormwater management, implementation of a SWPPP, date restriction on construction activities to minimize light, noise, wildlife habitat impact, revegetation of disturbed soil would include native seed mixes. Conservation measures will be implemented to minimize impacts to bats. Two wildlife crossings will be constructed in Minnesota, west of Osceola Landing. Rip rap along the St. Croix will be constructed to avoid small openings (for small wildlife protections). Wildlife fencing is planned near the proposed Minnesota stormwater pond near Osceola Landing. Mussels will be relocated from the project area to an approved relocation site. A Mussel Relocation Plan will be approved by USFWS prior to the start of construction. Post-relocation monitoring will be completed per the Mussel Relocation Plan. The earthen causeways include a 90-foot center opening and two additional 10-foot-wide openings for fish passage during construction.

Reference	Topic	Environmental Effects	Geographic Extent	Mitigation Plan
Section 4.1.18 (EAW Item 18)	GHG Emissions/Carbon Footprint	Greenhouse gas distribution changes due to detour route during construction.	Throughout the project area and along the project detour route	In the long-term, the Build Alternative is not anticipated to affect VMT relative to the No Build Alternative.
Section 4.1.19 (EAW Item 19)	Construction Noise	Areas adjacent to or near the project would experience noise from equipment and activities during construction, see Section 4.1.19.	Throughout the project area	Advance notice will be provided to affected communities for any abnormally loud construction activities. Any associated high-impact equipment noise such as pile driving, pavement sawing, or jack hammering will be unavoidable with construction of the Preferred Alternative. The use of pile drivers, pavement sawing and jack-hammering equipment will be prohibited during nighttime hours.
Section 4.1.20 (EAW Item 20)	Transportation	Construction of the bridge would require the closure of the Hwy 243 Bridge for multiple years and as such there would be long-term traffic diversions that may result in a temporary increase in vehicle miles traveled.	Throughout the project area and along the project detour route	Traffic management planning would be conducted prior to construction. Public outreach would continue prior to and throughout construction to provide advance notice of transportation impacts.
Section 4.2.7 (Additional Federal Issues)	Section 4(f) Resources	De Minimis impacts to the St. Croix National	Throughout the project area	Several protection and mitigation measures are proposed for the Riverway,

Reference	Topic	Environmental Effects	Geographic Extent	Mitigation Plan
		Scenic Riverway and temporary occupancy of the State Water Trail and the Cascade Falls Trail. Section 4(f) documentation can be found in <a href="#">APPENDIX N (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies)</a> .		based on each outstandingly remarkable value that is anticipated to be impacted. River navigation within the Riverway and the State Water Trail will be periodically opened to recreational users throughout construction, with a focus on peak visitation times. A detour is proposed for the temporary closure of the Cascade Falls Trails along the Wisconsin shoreline. Other protection and mitigation measures are described in detail in Table 2 of the De Minimis Determination Notice of Intent Request located in <a href="#">APPENDIX N (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies)</a> .

**4.1.21.2 Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.**

MnDOT’s 2024-2033 Capital Hwy Investment Plan (CHIP), MnDOT’s 2024-2027 State Transportation Improvement Program (STIP), Chisago County 2016-2026 Comprehensive Plan, Chisago County 2024-2027 Capital Improvement Plan, Village of Osceola 2009-2029 Comprehensive Plan, and WisDOT’s Northwest Region Hwy Projects and Studies website were reviewed to identify reasonably foreseeable future projects near the Hwy 243 Osceola Bridge Project area and the US Hwy 8 detour route. As noted in the BA, potential cumulative effects of this project could include the effects of future non-federal state, local, or private activities that are reasonably certain to occur adjacent to or within the project area. Projects for which no timeframe is determined are routine roadway and bridge maintenance (e.g., snow and ice control), and routine bridge inspections. The following programmed projects were identified, see **Table 4-17**.

**Table 4-17. Reasonably Foreseeable Projects Near the Project Area and Detour Route**

Timeframe	Agency	Location	Project Description
2026	MnDOT	Hwy 243 and MN-95	Construct roundabout
2026	MnDOT	MN-95 and Pleasant Valley Rd	Construct dedicated right and left turn lanes, drainage work, install lighting
2028-2029	NPS	Osceola Landing north parking lot	Osceola Landing Phase 2 Improvements - reconstruction of the northern parking lot and river access points/boat launches
2028-2029	WisDOT	US Hwy 8 - MN/WI State Line to Glacier Rd	Mill and overlay existing pavement and other incidentals necessary
2030	MnDOT	US Hwy 8 and the St. Croix River	Replace US Hwy 8 bridge over the St. Croix River
2033	MnDOT	Hwy 36 and the St. Croix River	Resurface Hwy 36 bridge over the St. Croix River

**4.1.21.3 Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.**

Environmental effects that would result from the proposed project are summarized in **Table 4-16**. Project Related Environmental Effects and Geographic Extent. Each of the reasonably foreseeable projects near the project or detour route, shown in **Table 4-17**, could influence the following environmental topics:

- Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features):** foreseeable future actions are anticipated to be on or within existing facilities and would not expand capacity or substantially change existing alignment, thus impacts to wildlife habits are anticipated to be limited. Foreseeable future projects are expected to occur within previously disturbed areas. Foreseeable future projects that are granted federal funding will undergo separate Section 7 review and/or consultation, if needed, which will result in specific project-level conservation measures to avoid, minimize, and mitigate impacts on these natural resources. No other foreseeable future project involves in-water work within the St. Croix River. The most significant project which would affect fish, wildlife, plant communities, and rare features is the Hwy 243 Osceola Bridge Project. The Preferred Alternative for this project results in the least amount of in-water impacts and least number of impacts to the surrounding natural environment compared to all other alternatives considered. Formal consultation with the USFWS, as well as direct coordination with the MnDNR and WisDNR, is occurring with the proposed project. A multitude of conservation measures are proposed with the Hwy 243 Osceola Bridge project and will be implemented during construction with an Environmental Management Plan (**APPENDIX F** (Environmental Management Plan)).
- Noise:** future construction projects that occur simultaneously with the Hwy 243 Osceola Bridge Project may contribute to construction noise. This could potentially lead to additional localized increases in

noise levels. All projects, including the Hwy 243 Osceola Bridge Project and future projects, will be required to comply with applicable local and state noise requirements.

- **Transportation:** The cumulative impact of the foreseeable future projects would result in improved traffic conditions and an overall better experience for transportation users. Future development is taken into consideration as part of the Traffic Management Plan and other traffic analysis completed for the Hwy 243 Osceola Bridge Project. Construction of the proposed project would occur from late 2026 to the summer of 2029 and would require a detour north to US Hwy 8 to cross the St. Croix River. The Preferred Alternative of this project results in the shortest duration of overall construction compared to other build alternatives that were evaluated, therefore minimizing traffic impacts to the extent practicable. MnDOT and WisDOT would coordinate with local agencies to ensure the detour route and adjacent roads would not conflict vehicle, transit, or pedestrian traffic with future construction projects.
- **Section 4(f) Resources:** impacts to the St. Croix National Scenic Riverway are not anticipated to be permanent or substantial, due to the high-level of communication and coordination with NPS, the Official with Jurisdiction (OWJ) over the Riverway, as well as the inclusion of a robust set of protection and mitigation measures with the Hwy 243 Osceola Bridge Project. Coordination of this project's effects on the St. Croix National Scenic Riverway began in 2021, are ongoing, and will continue through construction. The proposed project will restore Section 4(f) resources to a condition at least as good as prior to construction, if not a better condition compared to existing. The Osceola Landing Phase 2 Improvements will be constructed by MnDOT and WisDOT in coordination with NPS following completion of bridge construction. Therefore, substantial cumulative effects are not anticipated. See **APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies) for the De Minimis Determination and documentation for the St. Croix National Scenic Riverway.

Based on the information known through the development of this EA/EAW, there is little potential for substantial cumulative impacts to the resources directly or indirectly impacted by the project. Existing regulatory controls and mitigation measures proposed through the environmental review process will minimize impacts (as much as practicable) and restore the resources, therefore, no cumulative potential effects are anticipated to resources affected by this project.

#### 4.1.22 Other Potential Environmental Effects

*If the project may cause any additional environmental effects not addressed by Sections 4.1.1 to 4.1.21, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.*

Section 4.2 Additional Federal Issues discusses other potential environmental effects. (**APPENDIX F** (Environmental Management Plan) includes the Environmental Management Plan (i.e., conservation measures, mitigation commitments, and enhancements) for the Hwy 243 Osceola Bridge Project. The project will be reviewed and coordinated with WisDNR through the WisDOT/WisDNR Cooperative Agreement process.



### 4.1.23 RGU CERTIFICATION

*(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

**I hereby certify that:**

The information contained in this document is accurate and complete to the best of my knowledge. The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively. Copies of this EAW are being sent to the entire EQB distribution list.

Signature Lynn Clarkowski Digitally signed by Lynn Clarkowski  
Date: 2024.11.15 15:35:07 -06'00' Date \_\_\_\_\_

Title Assistant Engineering Services Division Director

**Environmental Assessment Worksheet** was prepared by the staff of the Environmental Quality Board at the Minnesota Department of Administration, Office of Geographic and Demographic Analysis. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-201-2492, or <http://www.eqb.state.mn.us>

## 4.2 Additional Federal Issues

Discussed below are the federal issues not discussed in the EAW.

### 4.2.1 Social Impacts

The following social impacts were evaluated for the Hwy 243 Osceola Bridge Project:

- Travel patterns and access
- Accessibility
- Community facilities and public services
- Community and neighborhood cohesion
- Transportation sensitive communities

#### 4.2.1.1 Travel Patterns and Access

Existing Hwy 243 intersections and MN-95 and WIS-35 will not change with the project. Access to NPS's Osceola Landing will not change and will be maintained with the project. However, Hwy 243 between Minnesota and Wisconsin will be temporarily closed during construction. Hwy 243 is expected to be closed for two years (24 months). The primary detour route during project construction will use MN-95 and WIS-35 to the US Hwy 8 Bridge over the St. Croix River between Taylors Falls, Minnesota and St. Croix Falls, Wisconsin. **Figure 2-4** in Section 2 illustrates the anticipated primary detour route. This detour route would increase travel times and distances between Franconia Township and Village of Osceola. It is anticipated that trips destined to/from the Village of Osceola and the Twin Cities Metropolitan Area will likely divert to the MN-36/WI-64 crossing at Oak Park Heights, Minnesota and Town of St. Joseph, Wisconsin.

Students on the Minnesota side of the St. Croix River attend school in the Village of Osceola, Wisconsin. School buses will cross the St. Croix River at Hwy 243 to access Village of Osceola schools. Closure of Hwy 243 during project construction will increase travel times and distances for students in Minnesota to access schools in Wisconsin. School bus trips using the detour route to US Hwy 8 in Taylors Falls/St. Croix Falls will need to account for additional travel time at the start and end of the school day to reach their destinations.

There are no transit routes that use the Hwy 243 Bridge that would be temporarily or permanently impacted by the project.

Once project construction is complete and the Hwy 243 Bridge is open to traffic, existing travel patterns and access across the St. Croix River between Franconia Township and Village of Osceola will be restored.

#### 4.2.1.2 Accessibility

The proposed shared-use path on the north side of Hwy 243 would be located within public right of way. Design and construction of all shared-use path and sidewalk facilities associated with the Hwy 243 Osceola Bridge Project will comply with the provisions established by the ADA of 1990.

#### **4.2.1.3 Community Facilities and Public Services**

Community facilities (schools and churches) within a half-mile radius of the project area are listed below. These community facilities would not be impacted by the proposed project.

- Osceola United Methodist Church (306 River St, Osceola WI 54020)
- Trinity Evangelical Lutheran Church (300 Seminole Ave, Osceola WI 54020)
- Osceola Village Hall (310 Chieftain St, Osceola WI 54020)
- Housing Authority (403 2<sup>nd</sup> Ave, Osceola WI 54020)

Village of Osceola emergency service providers (e.g., fire, ambulance) rely on the Hwy 243 Bridge for transportation and use the bridge to respond to calls on the Minnesota side of the St. Croix River. Emergency service providers from Wisconsin also use Osceola Landing to access the St. Croix River and respond to incidents on the Riverway.

Access to community facilities in the Village of Osceola will be maintained for Wisconsin residents throughout construction. Minnesota residents accessing community facilities in the Village of Osceola would have to travel longer distances during construction with closure of the Hwy 243 Bridge. The Contractor will be required to maintain a boat ramp in the north parking lot at Osceola Landing for emergency services access to the Riverway.

Emergency vehicle access across the St. Croix River at the Hwy 243 Bridge and access to community facilities in the Village of Osceola for Minnesota residents will be restored following completion of the project. A pull-off area will be constructed on the south side of Hwy 243 near the Wisconsin abutment for emergency service providers to use when responding to incidents on nearby trails and on the Riverway.

#### **4.2.1.4 Community and Neighborhood Cohesion**

The project would not displace any residents or businesses, change any access to Hwy 243 or local roadways, or result in any permanent roadway closures. The project includes the reconstruction of an existing roadway and bridge and would not create a new barrier to community or neighborhood cohesiveness. The proposed shared-use path along the north side of Hwy 243 and the Hwy 243 Bridge would benefit the surrounding communities by improving connectivity for non-motorized travel between the NPS's Osceola Landing and Village of Osceola.

#### **4.2.1.5 Transportation Sensitive Communities**

Transportation sensitive communities that depend on public transportation, such as non-drivers, transit dependent would not be impacted by the project. There are no transit routes that currently operate on the Hwy 243 Bridge. All pedestrians and bicyclists, including the elderly and handicapped, would benefit from the proposed shared-use path between Osceola Landing and the Village of Osceola. The shared-use path and sidewalks will be designed and constructed to meet ADA requirements. Landing areas will be constructed along the shared-use path up the Wisconsin bluff to provide resting areas and mitigate for the greater than five percent shared-use path grade.

#### 4.2.1.6 Mitigation

The project was designed to minimize impacts to travel patterns and accessibility, community facilities and public services, and community and neighborhood cohesion. The social impacts, such as increased travel times and altered access to community facilities, that would occur during construction of the project would be mitigated by the creation of a Transportation Management Plan (TMP). This plan would help travelers understand how to navigate the Hwy 243 Bridge closure during construction, access key destinations in the project area (e.g., Osceola Landing, downtown Osceola). The TMP also would help ensure that communities along detour routes are not substantially impacted by increased traffic during construction. No temporary improvements along the detour route are anticipated; however, project staff will monitor traffic operations during construction and implement temporary traffic control measures if problems arise. Project staff will collaborate with emergency service providers to ensure access is maintained to resources throughout the area to the extent possible and communicate upcoming closures and other changes to access.

#### 4.2.2 Considerations Relating to Pedestrians and Bicyclists

Hwy 243 and the Hwy 243 Bridge do not have existing pedestrian or bicycle facilities. Pedestrian and bicycle use is permitting on the roadway and bridge shoulders. Walkability/bikeability was identified as a secondary need for the project. The NPS Osceola Landing and amenities in downtown Osceola include trip origins and destinations for pedestrians and bicyclists, and the Hwy 243 Bridge is the only St. Croix River crossing connection between these two locations. The narrow shoulders on the existing Hwy 243 Bridge create uncomfortable conditions for most pedestrians and bicyclists. See the purpose and need statement in **APPENDIX B** (Purpose & Need).

The project includes a 12-foot-wide shared-use path on the north side of Hwy 243 between the Wayside Rest Area in Minnesota and the WIS-35 intersection in Wisconsin. The shared-use path would cross under the proposed Hwy 243 Bridge, connecting with the north parking lot area in the Osceola Landing site. A 5-foot-wide sidewalk will connect the shared-use path to an existing sidewalk in the northwest corner of the Hwy 243/WIS-35 intersection. The proposed design does not preclude a future crossing of Hwy 243 at the end of the shared-use path in Osceola. This future crossing could connect to an existing local trail on the south side of Hwy 243 that extends from the WIS-35 intersection into the Osceola Picnic Bluff property.

The Village of Osceola operates an existing trail under the Hwy 243 Bridge along the Wisconsin shoreline (Cascade Trail). This trail connects recreational properties on both sides of Hwy 243. This trail connection will be maintained with the project. A new trail connection will be constructed along the Wisconsin shoreline under the proposed bridge. WisDOT will secure an agreement with the Village of Osceola following project construction to permit the trail within highway right of way.

#### 4.2.3 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, dated February 11, 1994, directed "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high

and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.... The proposed project has federal funding and federal permit requirements and is considered a federal project for purposes of compliance with the Executive Order.”

FHWA Order 6640.23A FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations establishes policies and procedures for the FHWA to use in complying with Executive Order 12898. FHWA issued Order 6640.23A on June 14, 2012. For more information on the regulatory context of this subject area, see the Environmental Justice (EJ) Standard Attachment (**APPENDIX M** (Environmental Justice Analysis)). A summary is provided below.

#### 4.2.3.1 EJ Study Area

The EJ study area is the geographic area where the proposed project has potential for human health or environmental effects. A typical study area boundary consisting of the area approximately one-quarter mile from the project area was applied for this analysis per MnDOT guidance.<sup>72</sup> In addition, the temporary traffic detour route north to Hwy 8 was included in the EJ study area, with the same one-quarter mile buffer from the detour route. This analysis was completed in 2023, before separate MnDOT Metro guidance was released on May 31, 2024. Therefore, this document relies on the quarter-mile buffer, rather than a 500-foot buffer which is now included in Metro EJ guidance. All Census Block Groups that were partially or completely located within the EJ study area were included in the analysis. The minority and low-income populations within these geographic areas were included in the environmental justice analysis.

The EJ study area was investigated for the presence of readily-identifiable:

- minority and/or low-income populations residing in the EJ study area,
- community facilities in the EJ study area that serve minority and/or low-income populations, and
- businesses in the EJ study area that are owned by, employ, and/or serve minority and/or low-income populations.

The investigation included review of demographic data, a desktop review using ArcGIS and American Community Survey (ACS) 5-year data, consultation with knowledgeable local representatives, and public outreach activities, as described below.

#### 4.2.3.2 Minority Populations

Minority populations were identified from the American Community Survey Five-Year Estimates (2017-2021) at the Census Block Group level. A minority community is generally defined as a community in which the minority population is either 10 percentage points above the county average (Chisago County: 7.93%, Polk County: 5.62%), or at least 50 percent of the total geographic unit. Minority populations were determined by comparing

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<sup>72</sup> Minnesota Department of Transportation. *Transportation Project Development Process (TPDP) Environmental Justice*. Accessed in April 2024 and available at <https://www.dot.state.mn.us/project-development/subject-guidance/environmental-justice/index.html>.

the percentage of the minority population for each Census Block Group in the EJ study area to that of Chisago or Polk County, based on which county the block group is located within. No Census Block Group surpasses the threshold to qualify as a minority/EJ population.

#### 4.2.3.3 Low-Income Populations

Low-income populations were identified using income data for households collected from the 2017-2021 American Community Survey (ACS) at the Census Block Group level. For the purposes of this analysis, a low-income community is defined as a community in which the low-income population is either 10 percentage points above the county average (Chisago County: 6.55%, Polk County: 9.24%), or at least 50 percent of the total geographic unit. The FHWA defines “low-income” geographies where the median household income is at or below the Department of Health and Human Services (HHS) poverty guidelines. Poverty thresholds are updated each year by the Census Bureau and vary based on family size and composition. The 2021 100% poverty threshold for a family of four with two children was \$26,500 according to the U.S. Department of Health and Human Services (HHS).<sup>73</sup> No Census Block Group surpasses the threshold to qualify as a low-income/EJ population; however, the presence of a manufactured home park and other low-income/affordable housing properties (located in the Village of Osceola, Polk County, WI) within the quarter-mile buffer indicate identifiable EJ populations within the study area. These facilities are within the quarter-mile EJ study area but will not be physically impacted by the proposed project.

#### 4.2.3.5 Impacts

Executive Order 12898 requires that the proposed actions be reviewed to determine if there are “disproportionately high and adverse” impacts on these populations. Disproportionately high and adverse effect on minority and low-income populations means an adverse effect that:

- is predominately borne by a minority population and/or a low-income population, or
- will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

As described in this environmental document, the proposed action would have impacts on human health and environment with regard to the following topics: social impacts, traffic impacts, construction noise impacts, visual impacts, and air quality (dust/odor) impacts. Based on the analysis as discussed in **(APPENDIX M** (Environmental Justice Analysis), there are no disproportionately high and adverse impacts to EJ populations in the study area.

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<sup>73</sup> HHS. *HHS 2021 Poverty Guidelines*. Accessed in June 2024 and available at <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/povguid.pdf>.



#### **4.2.3.6 Environmental Justice Finding**

Readily identifiable low-income populations have been identified in the project area. However, after considering mitigation, off-setting benefits, and public engagement, the adverse effects of the project will not be predominately borne by a minority or low-income population, nor will they be appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority or non-low-income population. Based on the nature, scale, and location of the Hwy 243 Osceola Bridge Project, the temporary construction impacts (dust, odors, noise, and traffic detours) and visual impacts will be borne by all populations near the proposed project. Therefore, the proposed action will not have disproportionately high and adverse human health or environmental effects on any minority population or low-income population.

#### **4.2.4 Economics**

The project does not require right of way acquisition from any residence or business which would experience economic impacts from additional property needs. Minor impacts to businesses/economic activity in the Village of Osceola are anticipated to occur due to the temporary traffic detour which will result in delays and longer travels times for those that would typically utilize the Hwy 243 Bridge to reach the Village of Osceola. Public engagement would continue throughout construction to prepare and notify project-area residents, businesses, and commuters for construction; listen to their concerns; and develop plans to reduce traffic detour impacts.

Temporary economic impacts during construction would be mitigated with the creation and implementation of a Traffic Management Plan that would ensure motorists and other travelers are aware of construction timelines and required detours to reach their destinations.

#### **4.2.5 Relocation**

The project does not require any relocations.

#### **4.2.6 Right of Way**

The project does not require any right of way or easements from adjacent property owners. A special use permit will be acquired from the NPS for the use of Osceola Landing during construction.

#### **4.2.7 Section 4(f) of the USDOT Act of 1966**

Section 4(f) of the US Department of Transportation Act of 1966 is a federal law that protects publicly owned parks, recreation areas, and wildlife and/or waterfowl refuges and publicly or privately owned significant historic sites. Section 4(f) requirements apply to all transportation projects that require funding or other approvals by the US Department of Transportation, including the FHWA. This law, commonly known as Section 4(f), is codified in 23 USC Section § 138 and 49 USC Section § 303 and is implemented by the FHWA through the regulation in 23

CFR Part 774. Additional guidance on the implementation of Section 4(f) is provided in the FHWA Section 4(f) Policy Paper.<sup>74</sup>

#### 4.2.7.1 Methodology

FHWA defines a Section 4(f) “use” as either a direct use or constructive use. A direct use occurs when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of land that is adverse to a resource’s protection under Section 4(f). Constructive use occurs when a project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.

Before approving a project that "uses" a Section 4(f) resource, FHWA must find that there is no prudent and feasible alternative and that the selected alternative minimizes harm to the resource. If there is a prudent and feasible alternative that completely avoids Section 4(f) resources, it must be selected. If there is no prudent and feasible alternative that avoids Section 4(f) resources, FHWA has some discretion in selecting the alternative that causes the least harm to those resources.

In addition, FHWA regulations state that when a Section 4(f) use is anticipated, applicable regulations also require consultations with the official having jurisdiction over the resource to verify the site’s significance and coordinate conclusions on use of the land, including efforts to avoid or mitigate the impacts.

Section 4(f) resources were identified using mapping and data sources for publicly owned lands in the project area. Section 4(f) resources were reviewed with MnDOT, WisDOT, and FHWA to determine if these parcels had a designated recreational use. FHWA is ultimately responsible for making the determination regarding the applicability of Section 4(f) on any identified recreation and refuge resources.

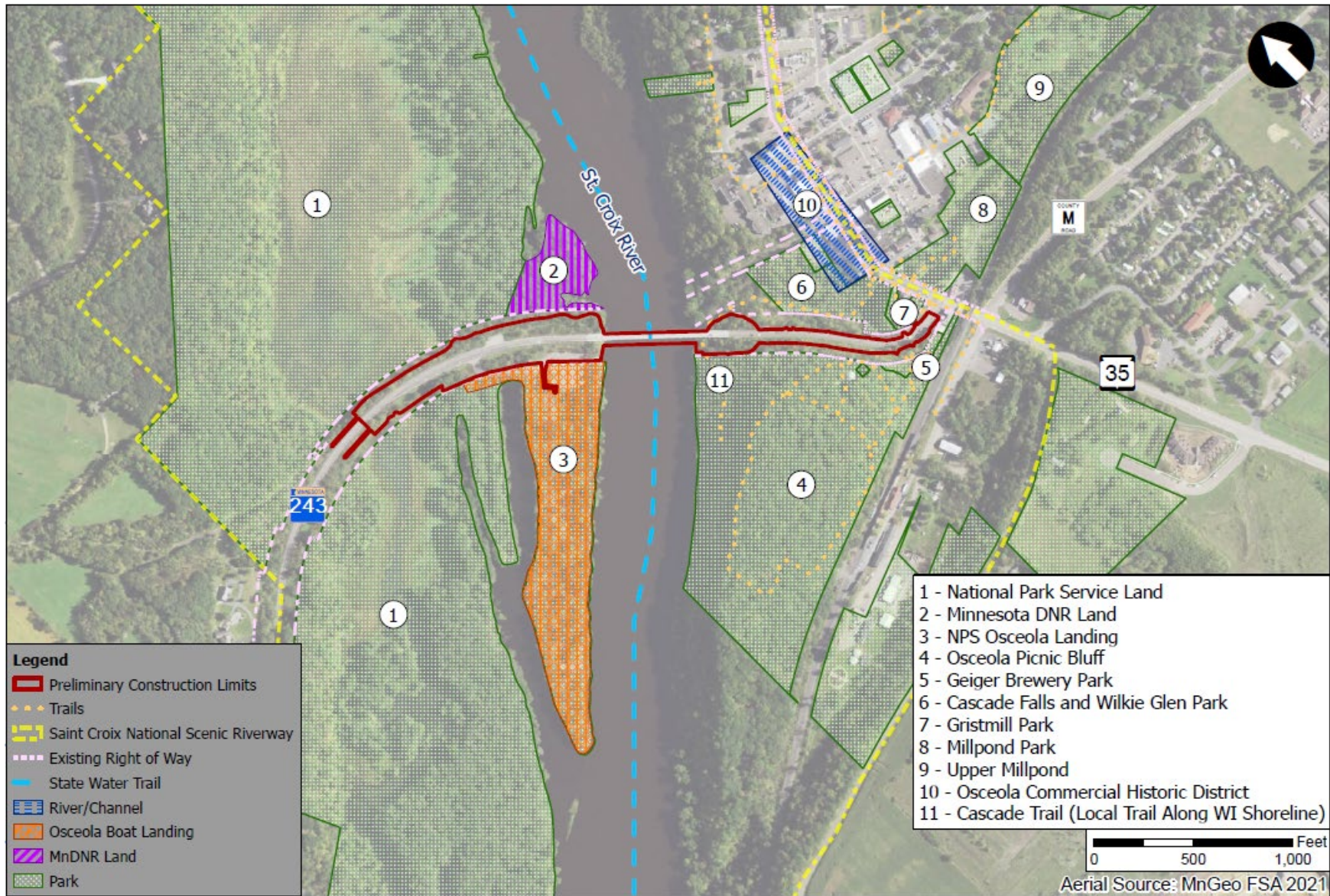
#### 4.2.7.2 Existing Conditions

Section 4(f) resources (recreational lands/parks/trails) identified within the general project vicinity are listed below and shown in **Figure 4-9**. There is one historic property listed on the NRHP near the project area, known as the Osceola Commercial Historic District. However, it is outside of the project area and will not be impacted by the project; therefore, only recreational resources are reviewed in this section.

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<sup>74</sup> FHWA. *Section 4(f) Policy Paper*. Accessed in March 2024 and available at <https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.aspx>.

Figure 4-9. Section 4(f) Resources within the Project Area





### **St. Croix National Scenic Riverway**

The St. Croix National Scenic Riverway is a federally protected component of the wild and scenic rivers system and a unit of the national park system administered by the National Park Service located northwest Wisconsin and eastern Minnesota. The St. Croix National Scenic Riverway (Riverway) is known for its water quality, free flowing condition, mussel diversity/ecology, human history, recreational opportunities, river conservation history, geology, and scenery. As a wild and scenic river, the Riverway has Outstandingly Remarkable Values (also known as ORVs) which guide its planning and management. The ORVs identified for the Lower St. Croix River where the project is located are aquatic, cultural, geology, recreation, riparian, and scenic-aesthetic, in addition to water quality and free-flowing condition. These are detailed further in **APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies).

The proposed project is within the Lower St. Croix National Scenic Riverway, which includes Osceola Landing in Franconia Township, Minnesota. The Riverway accommodates hiking, biking, picnicking, scenic viewing, photography, bird watching, swimming, motorized and non-motorized boating, fishing, camping, snowmobiling, cross-country skiing, and interpretive programs.

### **St. Croix River State Water Trail**

The Minnesota State Water Trail system is a system of rivers and waterways located throughout Minnesota. The Minnesota DNR manages the Minnesota State Water Trail system for canoeing, kayaking, boating, and camping. The St. Croix River is part of the Minnesota State Water Trail system. The Hwy 243 Bridge crosses the St. Croix River State Water Trail at river mile 45.5.

### **Osceola Picnic Bluff**

The Osceola Picnic Bluff property is located along the Wisconsin shoreline on the south side of Hwy 243. The Osceola Picnic Bluff property is owned by the Village of Osceola. The Osceola Picnic Bluff consists primarily of undeveloped, open space with trails for hiking and snowshoeing.

### **Gristmill Park**

The Gristmill Park property is located along the north side of Osceola Creek, near the Hwy 243 and Cascade Street (WIS-35) intersection, in Wisconsin. It is located behind the Watershed Café. The Gristmill Park property is owned by the Village of Osceola. The Gristmill Park property consists primarily of undeveloped, open space with trails for hiking and snowshoeing, as well as seating and tables for picnicking.

### **Cascade Falls/Wilke Glen**

The Cascade Falls/Wilke Glen property is located along the Wisconsin shoreline on the north side of Hwy 243. Osceola Creek bisects the Cascade Falls/Wilke Glen property. The confluence of Osceola Creek with the St. Croix River is west of the Cascade Falls/Wilke Glen property along with St. Croix River shoreline. The Cascade

Falls/Wilke Glenn property is owned by the Village of Osceola. The Cascade Falls/Wilke Glen property consists primarily of undeveloped, open space with trails for hiking and snowshoeing.

### **Cascade Trail (Local Trail Along Wisconsin Shoreline)**

Cascade Trail is along the Wisconsin shoreline crossing under the Hwy 243 Bridge. This trail connects the Cascade Falls/Wilke Glen property on the north side of Hwy 243 with the Osceola Picnic Bluff property on the south side of Hwy 243. A canoe landing and small dock is in the St. Croix River on the south side of the Hwy 243 Bridge in WisDOT right of way. River users can use this landing and dock and trails to access amenities in downtown Osceola. Portions of Cascade Trail and the canoe landing were improved in 2014 with a Federal recreational trail grant (see Wisconsin DNR correspondence in **APPENDIX J** (Agency Correspondence)). This trail and dock is owned by the Village of Osceola. There is no current WisDOT State Hwy Connection Permit for the trail and landing to be in highway right of way.

### **4.2.7.3 Section 4(f) Involvement**

Properties within the project area protected by Section 4(f) were evaluated to determine if there would be a use of the property, as defined in 23 CFR § 774.17. The project was evaluated for temporary occupancy, de minimis, and constructive use of Section 4(f) resources within the project area. Definitions for each is provided in the FHWA's *Section 4(f) Policy Paper*.<sup>75</sup>

The project is located within MnDOT and WisDOT right of way and would not require permanent acquisition of land from any of the Section 4(f) resources identified above. The following sections summarize Section 4(f) involvement for the Hwy 243 Osceola Bridge Project.

### **St. Croix National Scenic Riverway**

**APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies). includes the Section 4(f) de minimis determination notice of intent request for the St. Croix National Scenic Riverway. The OWJ for the St. Croix National Scenic Riverway is NPS. FHWA intends to make a determination that the project meets the requirements for a Section 4(f) de minimis finding for the St. Croix National Scenic Riverway. MnDOT has been coordinating closely with the NPS on impacts and associated mitigation to the Riverway. NPS coordination since 2021 is documented in **APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies), as well as proposed mitigation measures for minimizing impacts to the Riverway. Section 4(f) mitigation measures will be included in this project's Environmental Management Plan (**APPENDIX F** (Environmental Management Plan)).

FHWA will request concurrence from NPS on the assessment of effects to the St. Croix National Scenic Riverway following the public comment period on this EA/EAW. Any NPS agreement with the Section 4(f) de minimis

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<sup>75</sup> FHWA. *Section 4(f) Policy Paper*. Accessed in March 2024 and available at <https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.aspx>.

determination for the St. Croix National Scenic Riverway does not confer an affirmative Section 7(a) determination. NPS will prepare a Section 7(a) evaluation and determination for the Hwy 243 Osceola Bridge Project in accordance with the NWSRA.

Section 4.2.7.4 (Constructive Use) lists the situations addressed in 23 CFR 774.15(e) regarding constructive use. The project does not constitute a Section 4(f) constructive use of the St. Croix National Scenic Riverway as identified below.

- The project is not a Type I Project under 23 CFR 772.5. The project does not add highway capacity and does not change traffic volumes compared to the No Build Alternative. The project includes reconstruction of an existing highway and bridge along its existing alignment through the St. Croix National Scenic Riverway. Therefore, there would be no projected noise increase attributable to the project.
- The proposed project would not substantially impair the scenic/aesthetic features of the St. Croix National Scenic Riverway. The project follows the existing highway and bridge alignment and will remove one bridge pier from the Riverway. In general, reconstructing the highway and bridge along the same established alignment is beneficial by minimizing impacts to the adjacent natural and cultural features. The reduced structure depth of the proposed bridge and fewer piers will create more open views along the St. Croix River compared to existing conditions. The Visual Quality Manual describes guidelines for visual mitigation strategies, including minimizing the project footprint, minimal constructed features, and use of natural materials and colors to blend into the environment. The NPS participated in the Visual Quality Manual development as a member of the Visual Quality Advisory Committee (VQAC).
- The project does not change or restrict access to the St. Croix National Scenic Riverway.
- The vibration impact from construction or operation of the project would not substantially impair the use of the St. Croix National Scenic Riverway. There are no historic buildings in the St. Croix National Scenic Riverway adjacent to the project that would be susceptible to vibrations. Buildings adjacent to construction staging areas at the north end of Osceola Landing (e.g., pump house, comfort station) would be protected during construction. Any physical damage would be restored. Operational traffic induced vibrations are less than any known criteria for structural damage to buildings.
- The project would not substantially diminish the value of wildlife habitat or use of the St. Croix National Scenic Riverway. The project avoids and minimizes impacts to adjacent wildlife habitat in the St. Croix National Scenic Riverway by following the existing highway and bridge alignment. The proposed bridge type was identified to avoid mussel habitat along the shorelines of the St. Croix River. Mussels will be relocated from the work area prior to the start of construction. The river bottom will be restored after construction with removal of earthen causeways. Section 4.1.14 (Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources) describes minimization and mitigation measures for permanent and temporary impacts to wildlife, fisheries, and mussels. One of the mitigation measures includes construction of a wildlife crossing under Hwy 243 west of Osceola Landing, improving wildlife connectivity backwater shallow marshes and floodplains in the Riverway.



### **St. Croix River State Water Trail**

The St. Croix River State Water Trail crossing under the Hwy 243 Bridge would be periodically closed during project construction. **APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies ) includes correspondence between the Minnesota DNR and MnDOT regarding the St. Croix River State Water Trail closure. Section 4(f) temporary occupancy conditions as identified in 23 CFR 774.13(d) are listed in the correspondence with Minnesota DNR. FHWA concurs that the project meets the requirements for a Section 4(f) temporary occupancy exception and does not constitute a Section 4(f) use of the St. Croix River State Water Trail, including constructive use (See Section 4.2.7.4 Constructive Use).

### **Osceola Picnic Bluff**

The project would not result in a Section 4(f) use of Osceola Picnic Bluff, including constructive use (see Section 4.2.7.4 Constructive Use). No new right of way would be acquired from Osceola Picnic Bluff. Preliminary construction limits do not encroach into Osceola Picnic Bluff. Trails within the Osceola Picnic Bluff property would remain open during project construction. Therefore, no Section 4(f) involvement is necessary.

### **Gristmill Park**

The project would not result in a Section 4(f) use of Gristmill Park, including constructive use (see Section 4.2.7.4 Constructive Use). No new right of way would be acquired from Gristmill Park. Preliminary construction limits do not encroach into Gristmill Park. Therefore, no Section 4(f) involvement is necessary.

### **Cascade Falls/Wilke Glen**

The project would not result in a Section 4(f) use of Cascade Falls/Wilke Glen, including constructive use (see Section 4.2.7.4 Constructive Use). No new right of way would be acquired from Cascade Falls/Wilke Glen. Preliminary construction limits do not encroach into Cascade Falls/Wilke Glen. Trails within the Cascade Falls/Wilke Glen property would remain open during project construction. Therefore, no Section 4(f) involvement is necessary.

### **Cascade Falls Trail (Local Trail Along Wisconsin Shoreline)**

The project would result in a temporary occupancy of the Cascade Falls Trail along the Wisconsin shoreline of the St. Croix River. The portion of this trail that would be temporarily closed is beneath the Hwy 243 Bridge. No new right of way would be acquired for temporary occupancy of this trail because it is within existing WisDOT right of way. The OWJ of this property is the Village of Osceola **APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies) includes correspondence between the Village of Osceola and MnDOT regarding the Cascade Falls Trail closure. Section 4(f) temporary occupancy conditions as identified in 23 CFR 774.13(d) are listed in the correspondence with the Village of Osceola. FHWA concurs that the project meets the requirements for a Section 4(f) temporary occupancy exception and does not constitute a Section 4(f) use of the Cascade Falls Trail, including constructive use (see Section 4.2.7.4 Constructive Use).

#### 4.2.7.4 Constructive Use

A constructive use occurs when a project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired. Substantial impairment only occurs when the protected activities, features, or attributes are substantially diminished (23 CFR 774.15(a)).

23 CFR 774.15(e) describes the situations where FHWA has determined that constructive use would occur. These situations do not apply to Section 4(f) resources in the project study area (i.e., St. Croix River State Water Trail, Osceola Picnic Bluff, Gristmill Park, Cascade Falls/Wilke Glen, and Cascade Falls Trail) as described below.

- The projected noise level increase attributable to the project substantially interferes with the use and enjoyment of a noise-sensitive of a property protected by Section 4(f).

The Hwy 243 Osceola Bridge Project is not a Type I project as established in 23 CFR 772.5. Therefore, the project requires no analysis for highway traffic noise impacts. The project does not involve a highway on a new location, added capacity, construction of new through lanes or auxiliary lanes, or substantial changes in the horizontal or vertical alignment of the roadway that exposes noise sensitive land uses to an existing highway noise source (see Section 4.1.19 Noise).

- The proximity of the proposed project substantially impairs aesthetic features or attributes of a property protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the property.

The project does not substantially impact aesthetic features or attributes of a Section 4(f) property. **Table 4-11** in Section 4.1.16 (Visual) summarizes the visual impacts of the project by key viewsheds in the project area. In general, the overall degree of impact on visual compatibility and viewer sensitivity at key viewsheds is neutral. Visual mitigation strategies, including context-sensitive bridge aesthetics, vegetation restoration, and trail wayfinding signage will be implemented as identified in the Visual Quality Manual.

- The project results in a restriction of access which substantially diminishes the utility of a significant publicly-owned park, recreation area, or a historic site.

The project does not result in a restriction or change in access to Section 4(f) properties.

- The vibration impact from construction or operation of the project substantially impairs the use of a Section 4(f) property, such as projected vibration levels that are great enough to physically damage a historic building or substantially diminish the utility of the building, unless the damage is repaired and fully restored consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Construction-related, vibration-causing activities of the project would not substantially impair the use of Section 4(f) properties. Construction-related, vibration-causing activities of the project include pile driving, compaction, and rock scaling along the Wisconsin bluff. The project will not include blasting.

These activities are temporary and would be limited to the construction period. There are no buildings on Section 4(f) properties adjacent to the project that would be physically damaged or diminished with construction of the project.

Vibration impacts from operation of the project would not substantially impair the use of Section 4(f) properties. There are no buildings on Section 4(f) properties adjacent to the project that would be physically damaged or diminished with highway-induced traffic vibrations.

MnDOT CRU determined that there would be “**no historic properties**” affected by the Hwy 243 Osceola Bridge Project. The Minnesota SHPO and Wisconsin SHPO concurred with the no historic properties finding.

- The ecological intrusion of the project substantially diminishes the value of wildlife habitat in a wildlife and waterfowl refuge adjacent to the project, substantially interferes with the access to a wildlife and waterfowl refuge when such access is necessary for established wildlife migration or critical life cycle processes, or substantially reduces the wildlife use of a wildlife and waterfowl refuge.

None of the Section 4(f) properties adjacent to the project are designated wildlife or waterfowl refuges. These properties function primarily for park/recreational area purposes and do not function primarily as a refuge.

#### 4.2.8 Section 6(f)/Land and Water Conservation Fund Act

Section 6(f) of the Land and Water Conservation Fund Act (LWCF) requires that any resource which has received LWCF funds be protected from conversions to non-recreation uses. Property subject to LWCF protection cannot be converted to non-recreation uses unless approved by a state’s DNR and/or NPS, and replacement land of at least equal fair market value and reasonably equivalent usefulness is provided. This project was reviewed and no properties subject to Section 6(f) requirements are located within the project limits.

#### 4.2.9 Noise

The project would not result in substantial horizontal or vertical alignment alteration and does not add capacity to an existing roadway. The project also does not add a new or substantially alter a weigh station, rest stop, ride-share lot, or toll plaza. The proposed project meets the definition of a Type III project; therefore, it does not require a traffic noise analysis under 23 CFR 772. See agency correspondence in **APPENDIX J** (Agency Correspondence). Section 4.1.19 Noise provides additional detail on noise.

Construction noise for the duration of the project is anticipated to affect the project area and surrounding community. Advance notice will be provided to affected communities for any abnormally loud construction activities. Any associated high-impact equipment noise such as pile driving, pavement sawing, or jack hammering will be unavoidable with construction of the Preferred Alternative. The use of pile drivers, pavement sawing, and jack-hammering equipment will be prohibited during nighttime hours. Measures regarding

construction noise will be included in this project's Environmental Management Plan (**APPENDIX F** (Environmental Management Plan)).

#### **4.2.10 Farmland Protection Policy Act**

The Farmland Protection Policy Act (FPPA) was enacted as a subtitle of the 1981 Farm Bill to minimize the extent to which deferral programs contribute to the unnecessary conversion of farmland to non-agricultural uses (P.L. 97-98, Sec. 1539-1549; 7 U.S.C. 4201, et seq.). FPPA requires federal agencies to examine the impact of projects that convert farmland to non-agricultural uses. If a federal agency, or its representative, determine that a project will impact agricultural lands, a Farmland Conversion Impact Rating Form (Form AD-1006) is completed to rate the relative impact of the project.

The project is not anticipated to cause any adverse impact to prime farmlands, unique farmlands, farmlands of statewide or local importance, or agricultural land or operations. No agricultural land will be acquired and no farm will be severed or triangulated. The project will not have a significant effect upon agricultural production in Chisago County, Minnesota or Polk County, Wisconsin.

#### **4.2.11 Section 7 of the Endangered Species Act**

Section 7 of Endangered Species Act of 1973, as amended, requires each federal agency to review any action that it funds, authorizes, or carries out to determine whether it may affect threatened, endangered, or proposed species or listed critical habitat. Federal agencies (or their designated representatives) must consult with the USFWS if any such effects may occur as a result of their actions. Consultation with the USFWS is not necessary if the proposed action will not directly or indirectly affect listed species or critical habitat. If a federal agency finds that an action will have no effect on listed species or critical habitat, it should maintain a written record of that finding that includes the supporting rationale.

Section 4.1.14 Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features) of this document details state and federally protected species and contains additional information regarding impacts and mitigation commitments. A Biological Assessment has been submitted for the project and the USFWS will release a Biological Opinion (pending). The Biological Assessment can be found in **APPENDIX K** (Biological Assessment).

#### **4.2.12 Section 106 of the National Historic Preservation Act**

Section 106 of the National Historic Preservation Act of 1966 requirements apply to projects that are considered a federal undertaking (i.e., projects that include federal funding or require a federal permit). 36 CFR 800 codifies regulations regarding the Section 106 review process. It is anticipated that construction of the Hwy 243 Osceola Bridge Project will include federal funding and, therefore, the project is subject to Section 106 requirements. These requirements are detailed in Section 4.1.15.4 Section 106 Finding. Correspondence regarding Section 106 from both MnDOT and WisDOT can be found in **APPENDIX J** (Agency Correspondence).

MnDOT CRU determined that there would be “no historic properties” affected by the Hwy 243 Osceola Bridge Project. The Minnesota SHPO and Wisconsin SHPO concurred with the no historic properties finding.

#### 4.2.13 Section 7(a) of the National Wild and Scenic Rivers Act

The St. Croix National Scenic Riverway was established as a National Wild and Scenic River under the Wild and Scenic Rivers Act of 1968 (16 USC 1271-1287, Public Law (PL) 90-542) (Act). The Lower St. Croix National Scenic Riverway, from St. Croix Falls, Wisconsin to the confluence with the Mississippi River, was added to the system in 1972. Section 7(a) of the Act directs federal agencies to protect the free-flowing condition, water quality, and ORVs of wild and scenic rivers. NPS is responsible for making evaluations and determinations under Section 7(a) of the Act. The Hwy 243 Osceola Bridge Project is subject to review by NPS under Section 7(a) of the Act.<sup>76</sup>

NPS is a Cooperating Agency for the Hwy 243 Osceola Bridge Project. NPS participated in Cooperating Agency meetings and reviews of the alternatives evaluation report. NPS provided concurrence on identification of Alternative B as the Preferred Alternative on June 21, 2023. MnDOT and WisDOT facilitated recurring meetings with NPS to discuss project development, share information, and answer questions. MnDOT, WisDOT, and NPS coordination meetings are listed in the Section 4(f) de minimis documentation in **APPENDIX N** (Section 4(f) Involvement – De Minimis Determination and Temporary Occupancies).

NPS will evaluate the temporary and permanent impacts of the project with respect to the free-flowing condition, water quality, and outstandingly remarkable values (ORVs) applicable to the segment of the St. Croix River at the Hwy 243 Bridge. Riverway ORVs at the Hwy 243 Bridge include aquatic ORV, cultural ORV, recreation ORV, riparian ORV, and scenic-aesthetic ORV. NPS will determine if the project would or would not result in a direct and adverse effect on these characteristics of the St. Croix National Scenic Riverway.

NPS prepared an initial assessment of the Hwy 243 Osceola Bridge Project in support of this EA/EAW. **APPENDIX P** (NPS Section 7(a) Correspondence) includes correspondence from NPS. The NPS will publish their Section 7(a) evaluation and determination at the conclusion of the environmental review process for the project.

Coordination with NPS will continue through final design and permitting, including bi-weekly meetings as needed. MnDOT will apply for a special use permit from NPS for use of Osceola Landing for construction staging. MnDOT and NPS also will complete inter-agency agreements for project construction, including a cooperative construction agreement for Osceola Landing improvements, funding for NPS visitor service assistant (VSA) staff during construction, and replacement of St. Croix National Scenic Riverway highway signs. Coordination with NPS will continue through project construction with implementation of mitigation measures (see **APPENDIX F** (Environmental Management Plan)).

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<sup>76</sup> US Department of Interior. National Park Service. *St. Croix National Scenic Riverway Foundation Document* accessed April 2024 and available at <https://www.nps.gov/sacn/learn/management/foundation-document.htm>.

## 5. PUBLIC AND AGENCY INVOLVEMENT (AND PERMITS/APPROVALS)

### 5.1 Informational Process

#### 5.1.1 Public Engagement

##### 5.1.1.1 Public Involvement Plan

A public involvement plan (PIP) was developed and implemented early in the project development process. This plan has helped to establish communication between MnDOT and the public and has given MnDOT a better understanding of the concerns that the public and agencies have about the proposed project. It has also given the public and agencies knowledge about what it is that MnDOT is trying to accomplish with the project, and the standards, procedures, and constraints that MnDOT needs to consider while developing the project. The PIP documents the goals, strategies, and methods for engaging with the public. See below for the stakeholder groups representing the PIP. Elements of the public involvement plan include public information meetings, stakeholder meetings, passive engagement, pop-up events, virtual meetings, virtual office hours, interactive surveys and maps, a project website, project email and phone, and written and virtual comments/communications.

##### 5.1.1.2 Stakeholder Groups

Several stakeholder groups were identified for the Hwy 243 Osceola Bridge Project. Stakeholders are staff and officials from partner organizations that are affected by the project. Stakeholders are directly involved in the steering, management, or development of the project. All stakeholders will be engaged throughout the project process both through invitations to public meetings and through meetings of the project advisory groups. A brief description of each stakeholder group and their role is listed below.

- **Technical Advisory Committee (TAC):** The Technical Advisory Committee is comprised of management staff from MnDOT and partnering agencies. Its role is to be the technical project partner. The TAC's responsibilities include providing recommendations on project decision points/major milestones and providing input in the development of the project.
  - MnDOT
  - WisDOT
  - Consultant groups
  - FHWA
- **Local Advisory Committee (LAC):** The Local Advisory Committee is comprised of local agency and government leaders. The purpose of the LAC is to provide feedback on project approach, public engagement, and project goals.
  - MnDOT
  - WisDOT



- NPS
- Chisago County, MN
- Franconia Township, MN
- Polk County, WI
- St. Croix Falls, WI
- Consultant groups
- Taylors Falls, MN
- Town of Osceola, WI
- Village of Dresser, WI
- Village of Osceola, WI
- Visual Quality Advisory Committee (VQAC): The VQAC will incorporate agency, stakeholder, and public input. Visual quality planning will utilize a systematic Context Sensitive Solutions (CSS) process that explores, documents, and illustrates consensus decision-making. The purpose of the VQAC is to provide feedback on the visual quality planning process and develop the VQM.
  - MnDOT
  - WisDOT
  - NPS
  - Chisago County, MN
  - Members of the public
  - Osceola Chamber, WI
  - Polk County, WI
  - Taylors Falls, MN
  - St. Croix Falls, WI
  - Village of Dresser, WI
  - Village of Osceola, WI

### 5.1.1.3 Public Meetings

Several public and agency meetings were held and newsletters sent out between March 2022 and June 2024. See **Table 5-1. Public Engagement Activities** for a summary of Public Engagement Activities and the general themes of public comments.

**Table 5-18. Public Engagement Activities**

Engagement Activity	Description
<p>Virtual Public Meeting                      March 3, 2022                      Online</p>	<p>Over 100 residents attended the meeting (Total: 126). Seven people viewed the online recording.</p> <p>Meeting materials, including video recording of the virtual meeting presentation, were posted to the project website. Members of the public were able to access the materials online and provide comments through the online questionnaire and comment portal. Hard copies of the presentation and comment cards were placed at City Hall and the Library in Osceola.</p> <p>Fifty-three comments were received during this meeting. One hundred twenty-seven total comments were gathered during the entirety of this engagement period (March 2022). General themes of comments received included:</p> <ul style="list-style-type: none"> <li>• Alternatives design details</li> <li>• Concerns about construction impacts on bridge crossing/commutes</li> <li>• Pedestrian and bicycle considerations</li> <li>• Safety needs</li> <li>• Noise concerns</li> </ul>
<p>In-person Public Meeting                      May 10, 2023                      Village of Osceola Township offices                      (Village of Osceola)</p>	<p>Over 100 people attended the meeting. Thirty individuals viewed the online recording.</p> <p>The meeting included a short presentation from the project team, project information boards, and informal opportunities for the public to ask questions and discuss with project representatives.</p> <p>Six comments were received from comment cards, and another seven comments were submitted online through the project website.</p> <p>General themes of comments received included:</p> <ul style="list-style-type: none"> <li>• Concerns about bridge closure timeframe</li> <li>• Other alignment options</li> <li>• Construction phasing techniques</li> <li>• Pedestrian and bicycle facility needs</li> </ul>

Engagement Activity	Description
In-person Public Meeting June 25, 2024 Osceola High School (Large Group Instruction Room) (Village of Osceola)	More than 55 people attended the meeting.  The purpose of the meeting was to share information from the visual quality management process and provide schedule updates. The meeting included a short presentation by the MnDOT Project Manager, project information boards, and informal opportunities for the public to ask questions and discuss with project representatives. The presentation was posted to the project website following the meeting.  General themes of comments received included: <ul style="list-style-type: none"> <li>• Hwy 243 and WIS 35 intersection in Osceola</li> <li>• Project schedule and timing of construction</li> <li>• Trail connectivity in Wisconsin</li> </ul>

### 5.1.2 Project Management Team

A Project Management Team (PMT) was formed in November 2020 to help provide community input into the project process and to encourage communication between the MnDOT and the affected communities. The PMT held 38 meetings between November 2020 and January 2024. The PMT is composed of representatives from each county, city and township directly affected by the proposed project. There are also members representing the following organizations:

- FHWA
- MnDOT
- WisDOT
- Consultant groups

### 5.1.3 Agency Coordination

#### 5.1.3.1 Cooperating and Participating Agencies

MnDOT, WisDOT and FHWA prepared an *Agency Coordination Plan* for the Hwy 243 Osceola Bridge Project. The purpose of the *Agency Coordination Plan* is to guide DOT interactions with Cooperating and Participating Agencies for the Hwy 243 Osceola Bridge Project. The *Agency Coordination Plan* describes agency roles and responsibilities, agency expectations, concurrence points, and project milestones. Cooperating and Participating Agency roles are summarized below. The *Agency Coordination Plan* is available for review from the MnDOT Project Manager upon request (see contact information in Section 4.1.2 Proposer – Proposer).

**Table 5-2.** Cooperating and Participating Agencies lists the Cooperating and Participating Agencies of the Hwy 243 Osceola Bridge Project.

**Table 5-19. Cooperating and Participating Agencies**

Joint Lead Agencies	Cooperating Agencies	Participating Agencies
<ul style="list-style-type: none"> <li>• FHWA (lead federal agency) (Minnesota and Wisconsin Division Offices)</li> <li>• MnDOT (lead state agency)</li> <li>• WisDOT</li> </ul>	<ul style="list-style-type: none"> <li>• NPS</li> <li>• USACE</li> <li>• EPA</li> <li>• USFWS</li> <li>• USCG</li> </ul>	<ul style="list-style-type: none"> <li>• MnDNR</li> <li>• WisDNR</li> <li>• Village of Osceola</li> <li>• Franconia Township</li> </ul>

Four Cooperating and Participating Agency meetings were held during the development of this EA/EAW. The focus of these meetings was to review the project needs, discuss the alternatives evaluation process and results, and to solicit input from agency representatives. Cooperating and Participating Agency meetings will be on-going through the conclusion of the environmental review process.

**Cooperating Agencies**

A Cooperating Agency is any federal agency that has jurisdiction by law or special expertise to assist with the environmental process. Federally Recognized Tribes are Cooperating Agencies when project effects are on lands of Tribal interest. Five Federal agencies accepted the invitation to be Cooperating Agencies for the Hwy 243 Osceola Bridge Project (see **Table 5-2. Cooperating and Participating Agencies**).

Cooperating Agencies provide input related to relevant areas of expertise during the evaluation of alternatives and development of the EA/EAW. MnDOT, WisDOT and FHWA will request formal written agreement from Cooperating Agencies at three milestone points in the project development process for Hwy 243 Bridge. These milestones are referred to as “Concurrence Points.” **Table 5-3. Hwy 243 Osceola Bridge Project Concurrence Points** lists the Hwy 243 Bridge concurrence points and current status.

**Table 5-20. Hwy 243 Osceola Bridge Project Concurrence Points**

Concurrence Point	Description	Status
Concurrence Point #1	Purpose and need statement and evaluation criteria	Completed July 2021 Concurrence received from USACE, NPS, and EPA
Concurrence Point #2	Alternatives evaluation and identification of Preferred Alternative	Completed June 2023 Concurrence received from USFWS, NPS, and EPA
Concurrence Point #3	Mitigation measures and enhancements	To be completed

**Participating Agencies**

Participating Agencies include federal, state, or local agencies or Federally Recognized Tribes that have an interest in the Hwy 243 Osceola Bridge Project. Four state and local agencies accepted the invitation to be Participating Agencies for the Hwy Osceola Bridge Project (see **Table 5-2. Cooperating and Participating**

Agencies). Participating Agencies agree to identify issues of concern regarding the project's potential impacts and provide meaningful and timely input throughout the environmental review process.

### 5.1.3.2 Agency Coordination Meetings

MnDOT and WisDOT hosted agency coordination meetings throughout the environmental review process to communicate project status and preliminary design development, discuss agency comments and feedback, and to facilitate future permitting activities. Agency partners included the Cooperating and Participating Agencies listed above. Representatives from MPCA attended meetings regarding stormwater management. Representatives from Minnesota Board of Soil and Water Resources (BWSR), Chisago County, and Chisago Soil and Water Conservation District (SWCD) were invited to participate in the wetland delineation review process.

#### NPS Coordination Meetings

More than 20 coordination meetings were hosted by MnDOT and WisDOT with NPS St. Croix National Scenic Riverway staff during the environmental review for the Hwy 243 Osceola Bridge Project. The purpose of these meetings was to provide project updates, share information, and discuss topics relevant to the NPS Section 7(a) evaluation process under the NWSRA. Coordination meetings with NPS staff will be on-going through issuance of the Section 7(a) determination and project construction.

#### USFWS/DNR Coordination Meetings

More than 15 meetings were hosted by MnDOT and WisDOT with USFWS, Minnesota DNR, and Wisconsin DNR staff during the environmental review for the Hwy 243 Osceola Bridge Project. The purpose of these meetings was to provide project updates, share information, discuss topics relevant to the Section 7 Endangered Species Act process, and discuss potential impacts and mitigation for state-listed species. **APPENDIX K** (Biological Assessment) includes the Biological Assessment. The USFWS Biological Opinion is in development and will be issued prior to the NEPA decision document. Implementation of mitigation measures will be coordinated with USFWS. Coordination with Minnesota DNR and Wisconsin DNR will be on-going through the permitting process (e.g., state incidental take permitting).

## 5.2 Summary of Early Coordination Comments

### 5.2.1 Minnesota

These agencies and MnDOT functional groups responded and provided comments about the project after the initial Early Notification Memo (ENM) in April 2020:

- United States Coast Guard – April 9, 2018
- MnDOT Contaminated Materials Management – April 17, 2020
- MnDOT Noise and Air/GHG – April 17, 2020
- MnDOT Rest Area Program – April 17, 2020
- MnDOT State Entrance Monument Program – April 17, 2020
- MnDOT Metro Traffic – April 20, 2020

- MnDOT Right of Way Considerations – April 24, 2019
- MnDOT CRU – April 30, 2020
- NPS St. Croix National Scenic Riverway – May 18, 2020
- MnDOT OES Vegetation Review – May 21, 2020
- MnDOT OES Threatened and Endangered Species – June 17, 2020
- MnDOT Regulated Materials Management – July 2, 2020
- MnDNR Transportation Liaison Response – July 14, 2020
- MnDOT Wetlands and Protected Species – March 10, 2021
- MnDOT Wetlands Coordination – October 20, 2023

An ENM update was distributed for the project (which included the Preferred Alternative layout and preliminary construction limits) in December 2023. The following MnDOT functional groups provided further comments:

- MnDOT OES Vegetation Review – December 19, 2023
- MnDOT Noise – December 21, 2023, January 2, 2024
- MnDOT State Entrance Monument Program – December 29, 2023
- MnDOT Bridge Projects – January 22, 2024
- MnDOT Regulated Materials – January 22, 2024
- MnDOT Contaminated Materials Management – January 31, 2024
- MnDOT CRU to MnSHPO APE correspondence – April 10, 2024
- MnSHPO correspondence to MnDOT CRU – May 7, 2024

All initial ENM responses that are still relevant, as well as ENM update responses can be found in **APPENDIX J** (Agency Correspondence).

## 5.2.2 Wisconsin

These agencies responded and provided comments about the project:

- WisDNR DNR Initial Review – December 20, 2023
- WisDOT Section 106 Historical/Archaeological Review – February 5, 2024

See the Wisconsin DNR Initial Review Letter and Section 106 Review Form (DT1635) in **APPENDIX J** (Agency Correspondence).

## 5.3 Public Comment Period and Public Hearing

Comments from the public and agencies affected by this project are requested during the public comment period described in the transmittal letter distributing this Environmental Assessment. A combined public informational meeting/public hearing will be held after this Environmental Assessment has been distributed to the public and to the required and interested federal, Native American Tribes, state, and local agencies for their review.

At the informational meeting/public hearing, preliminary design layouts for the alternatives under consideration along with other project documentation will be available for public review. The public will also be given the



opportunity to express their comments, ideas, and concerns about the proposed project. These comments will be received at the hearing and during the remainder of the comment period and will become a part of the official hearing record.

## 5.4 Report Distribution

Copies of this document have been sent to agencies, local government units, libraries, and others as per Minnesota Rule 4410.1500 (Publication and Distribution of an EAW).

## 5.5 Process Beyond the Hearing

Following the comment period, MnDOT and the FHWA will make a determination as to the adequacy of the environmental documentation. If further documentation is necessary it could be accomplished by preparing an EIS, by revising the Environmental Assessment, or clarification in the Findings of Fact and Conclusion, whichever is appropriate.

When the environmental documentation is determined adequate, MnDOT will choose a project alternative, either the No Build or one of the alternatives under consideration.

If an EIS is not necessary, as currently anticipated, MnDOT will prepare a "Negative Declaration" for the state environmental requirements. MnDOT will also prepare a request for a FONSI that will be submitted to the FHWA. If the FHWA agrees that this finding is appropriate, it will issue a FONSI.

Notices of the federal and state decisions and availability of the above documents will be placed in the Federal Register and the Minnesota Environmental Quality Boards (MEQB) Monitor. MnDOT will also distribute the Negative Declaration and FONSI to the Environmental Assessment Worksheet distribution list and publish notices in local newspapers announcing the environmental and project alternative decisions that were made.