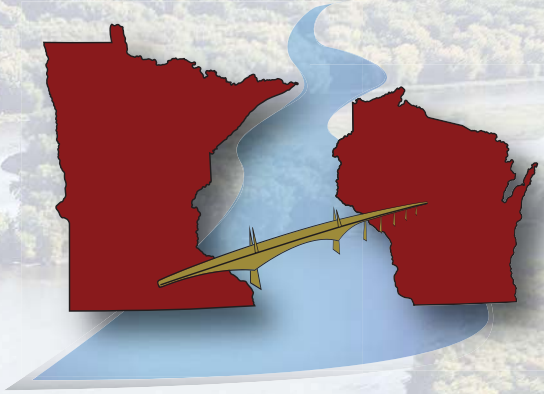

US 63 River Bridge and Approach Roadways Project

Environmental Assessment
& Programmatic Section 4(f) Evaluation

June 2015

WISCONSIN DEPARTMENT OF TRANSPORTATION

MINNESOTA DEPARTMENT OF TRANSPORTATION

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ENVIRONMENTAL ASSESSMENT

US 63 River Bridge and Approach Roadways Project
MN State Project: 2515-21
WI State Project: 7210-00-76 and 7210-00-78

From: Town of Trenton, WI to Red Wing, MN
Town of Trenton, Pierce County, Wisconsin and City of Red Wing, Goodhue County, Minnesota
Section(s), Township, Ranges: Sections 29 And 30, T113N, R14W (MN) and Sections 10, 11 and 14, T24N, R18W (WI)

Submitted Pursuant To 42 U.S.C 4332, M.S. 116d and Wis. Chapt. Trans 400 by the U.S. Department of Transportation, Federal Highway Administration, Minnesota Department of Transportation and Wisconsin Department of Transportation for

Replacement of the existing US 63 bridge over the Mississippi River with a new bridge and construction of Minnesota and Wisconsin approach roadways

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Recommended for Approval by:

5/22/15
MnDOT - District 6 Engineer Date

5/26/15
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6/11/15
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6/9/2015
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6/11/2015
FHWA Date

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I. REPORT PURPOSE

This Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) for the proposed US 63 River Bridge and Approach Roadways Project in Goodhue County, Minnesota and Pierce County, Wisconsin provides background information and analysis, including:

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

This EA/EAW was prepared as part of the National Environmental Policy Act (NEPA) process and environmental review process to fulfill requirements of 42 USC 4332, Minn Statutes 116D (the Minnesota Environmental Policy Act (MEPA) and Wis. Chapt. Trans 400 (the Wisconsin Environmental Policy Act (WEPA)).

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.

At the state level, this document also serves as a State of Minnesota Environmental Assessment Worksheet (EAW), and is used by the Minnesota Department of Transportation (MnDOT) to provide sufficient environmental documentation to determine whether or not preparation of a state EIS is required.

The Wisconsin Department of Transportation's (WisDOT's) requirements for WEPA are fulfilled by the federal NEPA documentation.

This document is made available for public review and comment in accordance with the requirements of 23 CFR 771.119 (d) and Minnesota Rules 4410.1500 through 4410.1600.

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II. PURPOSE AND NEED FOR PROJECT

The primary needs to be addressed by this project are to provide structurally sound bridge crossings of the Mississippi River Main Channel at Red Wing and of US 61, as well as to provide acceptable mobility conditions for motorized and non-motorized traffic in the downtown Red Wing commercial/historic district. Due to the condition of the existing bridges and maintenance requirements (detailed below), the existing bridges will not adequately meet this need without extensive investment. Furthermore, given forecast growth in motorized and non-motorized traffic levels over the 20-year planning horizon the existing trunk highway network will not be able to address the mobility needs in the downtown commercial/historic district.

The project has secondary needs due to the role of US 63 in the project area transportation system and due to the physical and cultural setting of the project. The project needs to provide for continuity of US 63 between Minnesota and Wisconsin. The crossings, connecting roadways, and intersection(s) need to maintain the connection of US 63 to Trenton Island, Wisconsin, to US 61 and to MN 58 in Red Wing. Maintenance of traffic -- both across the river and on the river -- needs to be maximized (i.e. as short an amount of time with total closure as possible). Pedestrian and bicyclist facilities need to be at least maintained and potentially improved.

Finally, it is desirable, though not essential, for the project to meet other transportation needs, which are described under "Other Considerations" below.

A. PRIMARY NEEDS

1. Need for Structurally Sound Bridge Crossing of the Mississippi River Main Channel at Red Wing

a. Rehabilitation, Maintenance and Inspection History

The existing US 63 bridge (MN Bridge 9040/WI Bridge B470024 and hereafter called the "river bridge") was completed in 1960, has maintenance needs that will require extensive ongoing investment, and is nearing the end of its design life. The bridge still has its original deck, which is approximately 50 years old. In 1978 a 2-inch low slump overlay was added to the bridge deck. The expansion joints were also reconstructed at that time. The bridge received a complete painting (zinc/epoxy/urethane paint system) in 2002. The final coat of paint that was applied in 2002 was poor quality, which will likely negatively impact the life of the paint system.

The north abutment and pier 8 began to experience substantial movement/settlement problems shortly after the bridge was constructed. In 1972 the bearing areas on the abutment and pier were reconstructed. The bridge seat for the north abutment was raised approximately 26-29 inches to restore the bridge to the original grade. The concrete bridge seat was also raised approximately 16 inches on pier 8 to raise the bridge to the original grade on account of the movement and settlement issues. The raised portion of the beam seats is experiencing concrete deterioration and all of the blocks under the five girders are experiencing cracking, spalling, and delamination. Steel supports have also been added to pier 8 in order to raise the bridge to provide support during future maintenance activities. Settlement has slowed in recent years, however the abutment and pier 8 continue to settle. Pier 7 is also experiencing some settling issues. The total settlement of the north abutment is nearly 3.5 feet and the total settlement of pier 8 is approximately 2.5 feet.

Several inspection reports, including the May 2010 bridge inspection report, have noted that many of the tack welds in the superstructure have cracked, however none have been noted to have propagated into the main members thus far. Monitoring of the cracked tack welds will continue during future inspections to verify that cracking has not propagated into the base metal.

Several inspection reports have also noted that the superstructure has been continually moving longitudinally toward the south, likely due to the bearings not working properly. The July 2010 fracture critical inspection confirmed that the bearings on pier 8 have expanded to their limits and are no longer functioning. Several other bearings in other locations of the structure are also nearing their limit. Several of the bearings were re-seated in 1972, however movement has continued and many are in need of re-seating again. This cannot be done without further modification or replacement of the piers and north abutment, since the plates and bearings are reaching the limit of where they can be moved toward the edge of the seat on the top of the piers and abutment.

b. Condition Summary

Overall the bridge is still functional. Activities over the last few decades have assisted in extending the life of the bridge, however it is time for a higher level of investment in the structure as the bridge has reached an age at which substantial maintenance needs are anticipated. Maintenance needs and costs have been relatively low for the bridge up to this point, however, the scope of maintenance work and the costs of that work will be substantially higher in the near future.

The bridge currently has a sufficiency rating of 43.8. The deck has a large amount of cracking and widespread spalling throughout, especially the concrete stools adjacent to the floor beams and stringers. Deck replacement will be needed in the near future to address the problems. The July 2010 fracture critical inspection found that the deck condition is getting worse, likely due to the substantial amount of salt brine that is applied during winter conditions. Concrete delamination and spalling was found under the deck in numerous areas. As a result, many of these areas of delaminated and spalled concrete were knocked down by maintenance crews to prevent safety issues from falling concrete.

The existing finger joints allow a substantial amount of chloride to drain onto the bridge beams and cause corrosion. The finger joints are in need of replacement to help reduce future corrosion. The paint system is functioning adequately at this time, with 5 percent being unsound, but due to the paint that was used in 2002 it is unlikely that it will have a life longer than 15 years.

Pier 2 has vertical cracking, spalling, and large areas of delaminated concrete, due to two separate barge impacts that occurred in 1992 and 1995 and because of the age of the structure. Several other piers also have cracking and spalling concrete noted in the inspection reports. Numerous areas of the superstructure and bearings have been noted as having failed paint and active corrosion. Several of the bearings have pack rust and are not functioning properly, as noted above. Several of the hinges on the stringers have heavy corrosion and large amounts of debris, which is likely restricting movement.

The truss spans appear to be in relatively good condition, especially when compared to other similar structures built during the same time period. They also have adequate load capacity. The north approach spans are in worse condition and do not have the required load capacity. Inspection reports for the bridge do not note any serious deficiencies in the fracture critical members. However, initial assessment of the bridge structure indicated that there are no economical means of correcting the lack of redundancy for the truss spans. Geometrically, the bridge cannot be expanded to provide more travel lanes.

Substantial maintenance activities that have been completed on the existing bridge thus far include pier and abutment repairs due to settlement (1972); the addition of a low-slump concrete wearing course (1978); and truss repainting (1974, 1987, & 2002).

Without a higher level of investment in the river crossing there are extensive maintenance activities that are expected on the existing structure in the near future to keep the bridge functional in the short term. Some of these activities include complete deck replacement; replacement of expansion joint devices; replacement of several bearings; replacement of several approach span girders (to meet load rating requirements); replacement of the north abutment, Pier 8, and potentially Pier 7 to address settlement/movement issues; repainting; concrete surface repairs; channel stabilization at Pier 2; concrete surface repairs to piers; possible stringer and floorbeam replacement (where joint leakage has led to corrosion); and possibly the addition of a containment system for deck run-off.

2. Need for Structurally Sound Crossing of US 61

The existing river bridge over US 61 (MN Bridge 9103 and hereafter called the "US 61 overpass") on the Minnesota approach to the river bridge was completed in 1960. US 63 functions as a modified facility on the bridge, since northbound US 63 functions as a single lane and southbound US 63 widens from one to two lanes on the bridge. It is a concrete slab span, curved structure, has maintenance needs that will require extensive ongoing investment, and is nearing the end of its design life. It currently has a sufficiency rating of 50.4. In 1978 a low slump overlay was added to the bridge deck. Both of the abutments and most of the piers have map cracking, delaminated areas, and spalling concrete. The concrete deck on several of the spans has numerous spalls that have been knocked off. Many of the rebars are exposed and are rusting. Many of the masonry plates and bearings have active corrosion with some loss of section.

This bridge is located on the Minnesota approach to the river bridge. The US 61 overpass and MN Bridge 9040/WI Bridge B470024 (the existing river bridge) are separated by approximately 350 feet, there are no roadway accesses between the two bridges, and the length of a potential detour for the bridges is identical. The traffic capacities of the two bridges are interrelated, so limiting the capacity of one bridge also limits the capacity of the other. However, the two bridges are structurally independent and as a result it is possible to alter one without physically impacting the other.

3. Need to Improve Motorized and Non-Motorized Traffic Mobility on Trunk Highways within the Downtown Red Wing Commercial/Historic District

Downtown Red Wing has been a focal point of commercial, industrial, retail, tourism, and transportation activity for over 150 years. The long-standing importance of downtown helps explain the unique and challenging trunk highway network that includes the confluence of three highways of regional and state-wide importance; US 61 (Main Street) which parallels the Mississippi River, US 63 that extends across the river bridge into Wisconsin, and MN 58 that connects Red Wing to US 52 and points south and west.

The intersection of these highways is complicated by many factors especially, as illustrated in Figure 1 of Appendix A, traffic to and from Wisconsin via US 63 loops through a portion of the downtown commercial/historic district and combines with MN 58 for one block before accessing US 61 (the destination for most US 63 traffic from Wisconsin). As traffic comes together on these three highways in downtown Red Wing, long traffic queues form during peak hour travel. Field observations by City staff and MnDOT project staff of queues during recent PM peak hour traffic periods included backups extending from the Plum/3rd Street intersection several hundred feet back toward the river bridge, while queues for eastbound traffic on US 61 extended from the Plum Street intersection several blocks through

the downtown. The traffic analysis model limits include the intersections represented as green dots on Figure 1 of Appendix A.

The *Red Wing Bridge Project – Purpose and Need Minnesota Approach Mobility Issues Memo* dated May 29, 2014 (see Appendix B's supplemental CD) contains additional information about this traffic analysis model.

Traffic analysis modeling was used to assess the extent of highway traffic queuing and to better understand the impediments to motorized traffic flow on the trunk highway system. Figures 2 and 3 of Appendix A illustrate the results of the model analysis for year 2022 (the year after anticipated project completion) and year 2042 (the standard 20-year forecast horizon). Figure 2 shows that in the year 2022 during the PM peak period traffic queues will extend northeast back from the Plum/3rd Street intersection (approximately 600 feet) while queues for eastbound traffic on US 61 will extend 1,200 feet back from the Plum Street intersection. As illustrated in Figure 3, the traffic congestion becomes even greater in the year 2042 with queues at these same intersections projected to extend to 900 feet and 2,000 feet, respectively.

The mobility issues in the downtown commercial/historic district were assessed in a detailed traffic operational analysis recently completed by MnDOT. The analysis estimates that the PM peak hour average travel speeds in the year 2022 would be 14 mph and there would be 75 hours of total travel delay. In 2022 the total travel time for all vehicles during the PM peak hour is projected to be nearly double what it would be without congestion. By the year 2042, the average PM peak hour travel speed decreases to 8 mph and the total travel delay increases to 449 hours which represents a 600 percent increase over year 2022 levels. To better illustrate how this network level data equates to individual trips, "example" trips were defined through the downtown commercial/historic district. Table 1 below details the total traffic queue length and total travel delay for representative trips between the river bridge and US 61/Broad Street on the west side of the downtown area. This 0.6 mile segment was selected because based on the origin-destination study, it is the most common through trip for travel to/from the river crossing.

Table 1: Travel between River Bridge and US 61/Broad Street, Year 2022 and 2042

Year 2022 Travel between River Bridge and US 61/Broad Street

	River Bridge to US 61/Broad Street		**US 61/Broad Street to River Bridge**	
	Total Traffic Queue Length (ft)	Total Travel Time (mins)	Traffic Queue Length (feet)	Total Travel Time (mins)
AM Peak Hour	1,040	0.7	760	0.9
PM Peak Hour	1,290	1.2	2,000	2.7

Year 2042 Travel between River Bridge and US 61/Broad Street

	River Bridge to US 61/Broad Street		**US 61/Broad Street to River Bridge**	
	Total Traffic Queue Length (ft)	Total Travel Time (mins)	Traffic Queue Length (feet)	Total Travel Time (mins)
AM Peak Hour	1,300	0.9	900	1.0
PM Peak Hour	2,100	3.4	2,600	24.1[1]

1 Total travel time reflects impact of network breaking down resulting in gridlock through cross-streets.

Through observations and technical analysis collected and conducted by MnDOT, it has become clear the focal points of the motorized mobility issues in downtown that lead to the extensive queuing observed are the US 61 (Main Street)/MN 58 (Plum Street) and MN 58/US 63 (3rd Street) intersections. These intersections are where the three trunk highways come together, and many vehicles are making turning

movements. The congestion resulting from the high traffic volumes and large number of turning movements is further compounded by the grid street network in the commercial/historic district. The right-hand turns with tight turning radii are especially problematic for the large number of trucks using the trunk highway system. Large trucks (e.g., semi-trailers) either have to cut over the sidewalk curbs to make the right turns or, more commonly, they encroach into the oncoming traffic lanes to get the room they need to turn. If there is traffic already in the oncoming lane, trucks may sit through multiple signal cycles waiting for other vehicles to be able to move to make room for them to turn.

Furthermore, over the past 10 years, staff at MnDOT and the City of Red Wing have observed that pedestrian traffic has been compounding the motorized traffic mobility issues through the downtown commercial/historic district. In particular motorized traffic turning onto and off of Plum Street frequently has to yield to pedestrians in the intersection crosswalks, decreasing motor vehicle throughput at the Plum Street intersections.

In addition to the adverse impacts on traffic mobility along the trunk highway network, the long traffic queues and delays compromise the mobility of vehicular traffic on the local intersecting streets. As the trunk highway queues extend through the "up-stream" intersections it becomes increasingly difficult for traffic on the intersecting streets to access or cross-over the congested trunk highways.

The City of Red Wing's Hiawathaland transit service runs weekday regular route bus operations throughout the community, including the downtown area. The bus routing provides a further illustration of the substantial mobility challenges in the downtown area in that the bus routes have been designed to avoid Highways 58, 61, and 63 in the core downtown commercial/historic district area.

In summary, the extensive amount of technical analysis conducted by MnDOT has concluded that the traffic mobility issues described above result from three factors coming together in the downtown commercial/historic district:

- Trunk highway network convergence and routing;
- Restrictive roadway geometry; and
- Additional motorized vehicle delay due to pedestrian traffic crossing.

Given the broad array of land uses and dense level of development, the downtown commercial/historic district experiences very high levels of non-motorized traffic (i.e. pedestrians and bicyclists). As noted by City staff and documented in several City documents including the *Bicycle and Pedestrian Master Plan* completed in 2011, accommodating and encouraging non-motorized mobility and accessibility is vital for the economic vitality of the downtown and in attaining the community's livability goals. The trunk highway network is a major impediment for non-motorized traffic mobility because pedestrians and bicyclists must cross the highways to travel between the downtown businesses, the riverfront, parking facilities, and adjacent neighborhoods.

The primary pedestrian crossing locations include US 61 at Bush Street, US 61 at Broad Street, and Plum Street at 3rd Street. Each of these locations is adversely impacted by the high traffic volumes and turning traffic discussed earlier. Furthermore, the impacts to non-motorized mobility are compounded because signal cycle lengths are typically increased and signal phases are added to accommodate the high volume of vehicular traffic. In addition, as motorized traffic increases, pressure to remove on-street parking and to widen intersections to facilitate truck turning movement increases in an effort to improve traffic mobility. However, the loss of on-street parking removes a buffer between motorized and non-motorized

traffic and the widening of intersections increases pedestrian "exposure." All of these factors contribute to a reduction in the quality of the pedestrian experience in the downtown commercial/historic district. The City has identified that creating a pedestrian-friendly environment in the downtown commercial/historic is important to maintain the viability of this district for work, shopping, and tourism.

It is understood that some bicyclist traffic uses the trunk highway routes, however, given the high levels of motorized traffic, the City has focused the bicycle network on local streets. However, even this bicycle traffic is required to cross one or more trunk highways, and as a result, the pedestrian crossing issues noted above also apply to bicyclist traffic.

Over time, motorized vehicle volumes will continue to increase. Recent grants received by the City of Red Wing for riverfront improvements (including trail improvements and tour boat docking capacity improvements) will likely increase pedestrian traffic generation in the downtown commercial/historic district. The combination of these two increases will increase the conflicts between motorized and non-motorized traffic on downtown in the future.

3. Summary

The motorized and non-motorized mobility issues described above result from the conflict in attempting to address the mobility needs of the trunk highway network as well as the access needs of the non-motorized traffic and downtown land uses. The trunk highway network that was set in place in 1960 with the completion of the existing Eisenhower river bridge is no longer able to accommodate motorized traffic mobility needs. In addition, the current trunk highway network adversely impacts the mobility of non-motorized traffic. As a result, there is a need to improve and better balance the mobility of both motorized and non-motorized traffic in the downtown commercial/historic district.

B. Secondary Needs

1. Need for Continuity of US 63

US 63 is an important regional and interstate route that extends from I-20 (Ruston, LA) to US 2 (Ashland, WI). The river bridge and the US 61 overpass provide a critical connection to maintain the continuity of US 63. Both Wisconsin and Iowa classify US 63 as a Principal Arterial. It is designated as a State of Wisconsin Corridors 2030 Connector Route as well as an Official Designated Long Truck Route. Minnesota classifies US 63 as a principal arterial roadway within the project area, from US 61 to the river bridge. The river bridge and the US 61 overpass serve to connect this important highway.

US 63 is an important freight route between Wisconsin, Red Wing, and southeast Minnesota. A large number of trucks use this interstate route daily. It is a critical hauling route for bringing grain and other loads from Wisconsin to both the CP Rail terminal and the port in Red Wing. It is also an important freight route that is used for hauling between Wisconsin and the Rochester, Minnesota area, with trucks using the US 63 to MN 58 to US 52 route. Truck counts taken in August 2010 from 7:00-10:00 AM and 2:00-6:00 PM indicated approximately 170 trucks crossing from Wisconsin into Red Wing with 27 percent traveling south on MN 58 and 35 percent with destinations to the north on US 61, including the port and the rail terminal. The river bridge and US 61 overpass are an important link in this freight route.

2. Need for Connection to US 61 and MN 58

The US 63 in Wisconsin to US 61 and MN 58 connections are important regional and interstate routes. US 61 is a part of the National Highway System and connects New Orleans, Louisiana to Minneapolis/St. Paul.

It is a portion of the Great River Road and is designated as a National Scenic Byway. It is a principal arterial roadway in the Red Wing area; and is an important route for people commuting for work, shopping, and personal trips, as well as being an important route for commerce, recreation, and tourism. Therefore, the direct connection of US 63 in Wisconsin to US 61 needs to be maintained.

The US 63 in Wisconsin to MN 58 connection is an important commuter and commerce route. MN 58 connects US 63 to US 52, which is a state Interregional Corridor. Commuters utilize US 63 in Wisconsin and MN 58 to travel from communities in Wisconsin to Rochester, home of IBM and the Mayo Clinic, and to other communities in southern Minnesota. A substantial amount of freight is hauled from western Wisconsin to southern Minnesota utilizing US 63 and MN 58. Therefore, the connection of US 63 in Wisconsin to MN 58 needs to be maintained.

3. Need for Adequate Bridge Capacity

Since addressing the primary bridge structural needs could result in substantial improvements, there is a need to consider whether the project investment would meet the bridge traffic-carrying capacity needs for the 20-year planning horizon, at a minimum. Under future No Build conditions, forecast traffic volumes are within the capacity of the existing bridges, based on planning-level thresholds. The two-lane river bridge carried an average daily traffic (ADT) of 12,000 vehicles per day in 2012. The forecast daily traffic volume on the river bridge and the US 61 overpass for year 2042 (20 years after anticipated project completion) is 15,600 vehicles, which is within the capacity of an urban two-lane, controlled access facility.

Wisconsin DOT had also completed traffic forecasts as a part of an EA process completed in 2004 to study upgrading US 63 in Wisconsin. The 2040 traffic forecast for the US 63 river crossing corridor was 19,400 vehicles per day. The Wisconsin EA also stated that public input indicated that traffic congestion on US 63 is currently a problem, especially during AM and PM peak hour periods. The EA determined that the existing two-lane facility in Wisconsin would not be able to handle the projected traffic increases at some point in the future. The outcome of the WisDOT EA process was that US 63 in Wisconsin is planned to be upgraded to a four-lane divided facility in future years. Therefore, there is a need to not preclude the ability to address future continuity of the four-lane section from Wisconsin, across the river, into Minnesota.

4. Need for Maximum Maintenance of Traffic

Sections 2 and 3 above describe the role of the river bridge crossing and connecting roadways in regional and interstate traffic transportation. The river bridge provides the only access across the Mississippi River between Hastings (approximately 25 miles northwest) and Wabasha (approximately 30 miles southeast). Closure of the river bridge necessitates a detour of approximately 58 miles (over one hour) for travelers between Red Wing and Pierce and Pepin Counties in Wisconsin.

Stakeholders have stated the bridge crossing plays an important role for the community on both sides of the river with a large number of people using the bridge to commute between home and work, as well as for shopping and other personal trips. The Red Wing Regional Airport is located in Bay City, WI on Highway 35 across the river from Red Wing. The airport, which averages 38 flights per day and has 57 aircraft based on the field, is an important facility for Red Wing business travelers. Thus it is necessary for travelers from Red Wing to utilize the river bridge in order to access the city airport. The bridge also serves as a regional crossing to move goods and provide roadway access to the river ports in Red Wing. Continuous access is necessary to meet community and economic needs. Both Wisconsin and Red Wing area stakeholders have requested the existing bridge remain open during any construction to the maximum extent possible.

The communities on both sides of the river rely on the river bridge to provide access for emergency response, including fire, law enforcement, and emergency medical vehicles. Without the bridge in place, emergency response times would be substantially slower, which would negatively impact quality of life. In addition, service providers would face personnel complications, as some staff for providers in Red Wing live in Wisconsin.

The river bridge is a critical link in one of the officially designated Prairie Island Nuclear Plant evacuation routes in the event of a nuclear emergency. US 63 is one of only three designated evacuation routes for people in the Red Wing area. It also is the link for people to get to Elmwood, Wisconsin which is one of the two officially designated nuclear evacuation Reception Centers. Maintaining traffic across the river bridge during construction is critical for public safety in the event of a nuclear emergency.

The Mississippi River provides access for barges and other river traffic. According to the Army Corps of Engineers, an average of 5,800 barges a year passed through Lock and Dam 3 (located just upstream from Red Wing) from 2007-2009. An average of 6,500 barges a year passed through Lock and Dam 4 (located south of Wabasha) from 2007-2009. Since Red Wing has the only river ports between these two Lock and Dams, approximately 5,800-6,500 barges a year travel under the river bridge. Several thousand recreational vessels pass under the bridge as well on an annual basis. It is economically important to ensure the river remains open to navigation to the maximum extent possible during construction. The U.S Coast Guard, which has jurisdiction over structures spanning the navigational channel, will also require this.

5. Need for Access to Trenton Island

The connection to Trenton Island located in the Town of Trenton in Pierce County, Wisconsin is necessary to provide access to the Island Campground and Marina. The connection provides access to 108 campsites, 54 boat slips, and boat access to the Mississippi River. The only access to the campsites east of US 63 is provided under the existing river bridge. No other roadway connection to Trenton Island exists, other than what is provided off of US 63. Emergency fire, ambulance, and law enforcement services need to access Island Campground and Marina via/under the river bridge.

6. Need to Maintain or Improve Pedestrian/Bicycle Facilities on the US 63 River Bridge and US 61 Overpass

US 61 through Red Wing and Wisconsin Highway 35 are both a part of the Mississippi River Trail, which courses along from Itasca, Minnesota to the Gulf of Mexico, offering approximately 3000 miles of on-road bicycle trails and pedestrian pathways. The Mississippi River Trail is the only US Bicycle Route in Minnesota. Red Wing is also a popular bicycle destination, with access to the Cannon Valley Trail and the city is looking long-term to connect all of the major city parks with bike trails. The Wisconsin DOT promotes bicycling on the state bike maps for several nearby roadways. Wisconsin Highway 35, which is part of the Great River Road, and several nearby county roads are listed on the state bike map as having the "Best Conditions for Bicycling." US 63 and the river bridge provide a link between these Minnesota and Wisconsin bicycle routes.

The existing bridges provide 2.5-foot wide sidewalks on both sides of the bridges, which does not meet the current MnDOT standard of a minimum 6-foot width for pedestrian use, or minimum 10-foot width for a combined bike/pedestrian facility. The existing right shoulders on US 61 under the river bridge are the width of the gutter, which does not meet current MnDOT standards.

C. Other Considerations

The following describes needs that would be desirable to address.

1. Structural Redundancy

The river bridge is a fracture critical bridge with non-redundant design. Current designs in compliance with MnDOT design standards do not contain fracture critical design components. Chapter 152 of the Minnesota Legislature 2008 Session Laws directs MnDOT to establish a bridge improvement program with an emphasis on structurally deficient and fracture critical bridges. The river bridge is classified as a Tier 1 bridge in Chapter 152, which means that if it is repaired but not replaced, justification for the repair instead of replacement is required.

2. Wisconsin Corridors 2030 Plan

The *Wisconsin Corridors 2030 System* is a statewide plan that identifies the highway corridors that provide critical links for the Wisconsin economy. The intent of a Connector Route is to provide a higher Level of Service (LOS) for the mobility function of the roadway. Wisconsin DOT's goal is to maintain a LOS of "D" or better for Corridors 2030 Connector Routes.

3. Geometrics

a. Bridges

The geometric design of the river crossing bridge does not meet current MnDOT design standards. The roadway width is 30 feet, which includes two 3-foot shoulders. Table 9- 2.03A in the MnDOT Road Design Manual specifies a minimum shoulder width of four feet to barrier rail for low speed, two-lane urban highways. [The existing posted speed on the bridge is 30 mph, which falls in the low speed range.] The inadequate shoulder width does not allow for snow storage and also results in effectively closing a lane of traffic during vehicle breakdowns, emergency stops, or law enforcement stops. Additionally, for occasional over-width loads, the bridge must be restricted to a one-way crossing until the permitted load passes due to overhang and encroachment into the opposing lane. From 2007 to 2009 there were a total of 1,549 (516 annually) oversize trucks requiring permits that crossed the river bridge. Of those, 546 exceeded 12 feet in width.

US 63 is also a route used for hauling oversized permit loads. The existing shoulders on the river bridge are only 3 feet wide, which requires closure of the opposing lane when certain loads go across. Depending on the time of day, this causes various backups for the opposing traffic on US 63. From 2007 to 2009 a total of 1,549 trucks in excess of the legal width of eight feet six inches were issued permits for crossing, with 877 from 10 to 12 feet and 546 of them in excess of 12 feet.

b. Approach Roadways

The right shoulder widths on US 61 under the US 61 overpass do not meet current MnDOT design standards. The right shoulder width in each direction on US 61 is the width of the gutter. Table 4-4.01A in the MnDOT Road Design Manual specifies a right shoulder width of six feet for low-speed, divided urban arterial highways. The location of the bridge piers for the US 63 bridge over US 61 prohibits the widening of US 61 under the bridge, so it is not possible to meet current MnDOT design standards for right shoulder width. US 61 is an important bicycle route, since it is part of the Mississippi River Trail. The inadequate shoulder widths under the bridge also affect safety for bicyclists, since they are forced to ride in the through lanes on US 61.

The design of the US 63/MN 58 intersection is inadequate and is very tight for trucks turning right from 3rd Street onto Plum Street. Several other intersections are also moderately difficult for certain vehicles to navigate on account of the roadway design. Many of the turn lanes do not meet design standards and are shorter and/or narrower than recommended.

4. Economic Development

The amount of congestion in downtown Red Wing makes it undesirable for shoppers and tourists to visit the businesses during certain hours of the day. A portion of the downtown area is comprised of buildings that are vacant and/or in need of maintenance, which is unattractive for businesses. The city has been promoting redevelopment of the area to restore existing or construct new facilities to fit in with the downtown historic district and also to make it more attractive for businesses to locate there. The city has indicated that there is a need to improve traffic flow, increase opportunities for redevelopment, and foster economic development in the downtown area.

5. Parking

Access to nearby parking for businesses in the downtown, for tourists and local people, is critical to maintaining the economic viability of the downtown. Stakeholders in Red Wing have voiced concerns about the lack of parking near businesses in the downtown area and the negative impact that the lack of parking has on businesses. Congestion along several of the streets makes it difficult to utilize on-street parking and the number of nearby parking lots is minimal. Any proposed project alternatives that affect roadways in downtown Red Wing need to consider the availability of on-street parking and/or parking facilities for downtown businesses.

6. Regulatory Requirements

The project must consider numerous regulatory requirements; due to the context of the project, requirements related to historic resources, parklands, navigation, and stormwater management are particularly critical. While these requirements alone do not establish the need for a project to occur, any project (rehabilitation, reconstruction, or both) needs to meet these regulatory requirements to gain regulatory agency approval.

a. Historic Resources

The existing river bridge over the Mississippi River and the US 61 overpass have been reviewed to determine their eligibility for listing on the National Register of Historic Places. It has been determined that the US 61 overpass is eligible for listing, while Bridge 9040 over the Mississippi River is not eligible. The US 61 overpass was determined eligible for listing in the area of engineering at the state level of significance due to its high artistic value and unique design. In addition, Red Wing currently has a total of 25 properties listed on the National Register of Historic Places. Its downtown is comprised of four historic districts and the majority of the commercial buildings that were constructed during the city's early boom period of 1860-1910 have been retained. Barn Bluff, which is immediately adjacent to US 63 on the Minnesota approach to the bridge, is also listed on the National Register of Historic Places.

Existing truck traffic and traffic congestion have a detrimental effect on the historic nature of the downtown historic districts and properties. Access to parking, along with pedestrian and bicycle mobility, is critical to maintain the historic and economic viability of the downtown districts. Noise and pollution from trucks and other friction from traffic congestion all degrade the historic districts. As a magnet for

tourism, the downtown historic districts need to maintain their historic nature, which has been recognized nationally and internationally numerous times.

The project needs to comply with Section 4(f) of the Department of Transportation Act of 1966 which requires avoidance of impacts (e.g. property acquisition and/or demolition) to an historic resource unless no prudent and feasible alternative exists. The project also needs to comply with Section 106 of the National Historic Preservation Act which also provides protection against both direct and indirect (e.g. noise, visual) adverse effects for historic properties, and emphasizes first avoiding impacts. If impacts cannot be avoided, efforts must be made to minimize, and then mitigate for the impacts.

b. Parkland

In addition to protecting historic resources as described above, Section 4(f) provides protections for publicly owned parks, trails, recreational areas, and wildlife and waterfowl refuges. As noted above, Section 4(f) requires avoidance unless there is no prudent and feasible alternative to the use. If avoidance is not possible, then Section 4(f) requires all possible planning to minimize harm to the park property. Section 4(f) protected park or refuge properties in close proximity to the river bridge include Levee Park, Barn Bluff, and Colvill Park.

c. Navigational Channel

The U.S. Army Corps of Engineers maintains a navigational channel on the Mississippi River beneath the river bridge. As noted in Section (f) above, the U.S. Coast Guard has jurisdiction over structures spanning the navigational channel. The U.S. Coast Guard has determined that the project will need to maintain adequate horizontal and vertical clearances. The existing vertical clearance is 64 feet over the normal pool. The existing horizontal clearance is approximately 418 feet, which is the clear distance between the inside faces of the existing piers flanking the navigational channel.

d. Stormwater

Under current conditions, stormwater on the river bridge drains directly to the Mississippi River, to land adjacent to the Mississippi River, or to municipal storm sewer without treatment. Further, since most bridge stormwater empties directly into the Mississippi River, any roadway contaminants (gasoline, oil, salt, etc.) or accidental spills of hazardous materials also directly enter the Mississippi River. The existing infrastructure does not meet current stormwater management practices. Construction of bridge and/or roadway improvements would require incorporation of stormwater management practices consistent with current regulations.

7. Property Impacts

There are numerous residential properties, some of which are currently being investigated for their eligibility on the National Register of Historic Places, near the US 61 overpass that experience noise and traffic impacts related to the nearby highways. Several of these properties are presumed to be lower income housing. Several of the downtown businesses also are affected by the noise and traffic of the highways, as detailed in Section 4(f) of the Other Considerations. The project needs to consider whether any proposed project improvements would affect the noise, property, and traffic impacts to these neighborhoods and properties.

D. Statement of Purpose

The primary purpose of the project is to provide a structurally sound bridge crossing of the Mississippi River Main Channel, a structurally sound crossing of US 61, and to improve motorized and non-motorized mobility in the downtown Red Wing commercial/historic district. In addition, the project needs to maintain the connection between the Red Wing, Minnesota and Wisconsin highway systems, the connection to Trenton Island, and maintain traffic to the maximum extent possible during construction.

III. ALTERNATIVES

This section summarizes the alternatives development and evaluation process and describes the Preferred Alternative that will be advanced, along with the No Build Alternative, to the detailed assessment of social, economic, and environmental (SEE) effects documented in Section IV (SEE Impacts). Details of the steps in the alternatives decision-making process are included in the technical memoranda (key reports included on the supplemental CD in Appendix B) referenced in each of the sections below.

A. Alternatives Development and Evaluation Process

Early in the project development process it was determined that the most logical and efficient way to advance through the alternatives development and evaluation phase would be to divide the overall project into three primary components as follow:

- River Bridge – includes the entire river crossing from the Minnesota abutment to the Wisconsin abutment.

- Minnesota Approach – includes the US 63 approach roadway from the Minnesota river bridge abutment to the intersections of US 61 and MN 58.

- Wisconsin Approach – includes the segment of US 63 from the Wisconsin river bridge abutment through the US 63/825th Street intersection.

This approach allowed the process to advance through three more manageable sub-processes, facilitated more refined analysis, and enabled clearer communication with project stakeholders including the Project Advisory Committee (PAC) and Technical Advisory Committee (TAC) which met regularly through the alternatives development and evaluation process. The composition and purpose of the PAC and TAC are described in Section V (Public and Agency Involvement). A flow diagram depicting the process followed for each of the three project components is presented in Figure 1 below. The remainder of this section describes the steps illustrated in the flow diagram by each project component.

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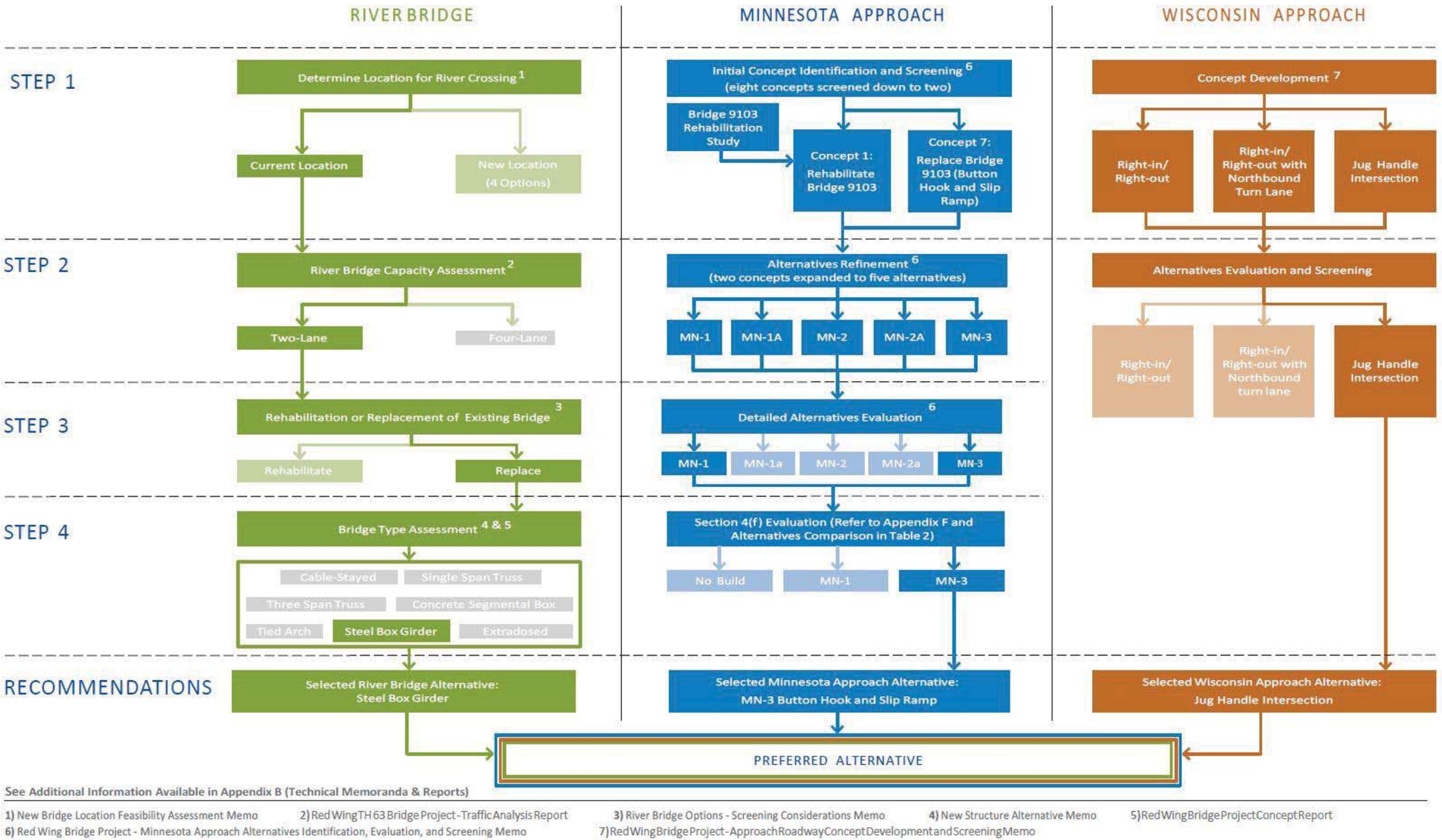
Figure 1: Alternatives Development and Evaluation Process Diagram



See Additional Information Available in Appendix B (Technical Memoranda & Reports)

1) New Bridge Location Feasibility Assessment Memo
2) Red Wing TH 63 Bridge Project - Traffic Analysis Report
3) River Bridge Options - Screening Considerations Memo
4) New Structure Alternative Memo
5) Red Wing Bridge Project Concept Report
6) Red Wing Bridge Project - Minnesota Approach Alternatives Identification, Evaluation, and Screening Memo
7) Red Wing Bridge Project - Approach Roadway Concept Development and Screening Memo

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1. River Bridge

As illustrated in Figure 1 there were four key steps that informed the river bridge alternatives selection process:

- Determine the location of the river crossing
- Determine if the river bridge should be a two-lane or a four-lane facility
- Determine whether to rehabilitate or replace the existing river bridge (Bridge 9040)
- Determine the river bridge structure type

The four steps and their related decision-making processes are summarized below.

1) Determine the Location of the River Crossing

The first step in the alternatives development and evaluation process was to determine whether the US 63 river crossing should remain in its current location or shift to a new location either upstream or downstream. Considering new location alternates is an important element of a comprehensive alternatives development and evaluation process and is consistent with both NEPA and MEPA guidance. The *New Bridge Location Feasibility Assessment Memo* dated July 2, 2012 (see the supplemental CD in Appendix B) contains detailed information regarding the assessment of alternative bridge locations.

The assessment process addressed five primary bridge location alternatives:

- Bench Street location (outside immediate downtown area)
- Broad Street location (within immediate downtown area)
- Bush Street location (within immediate downtown area)
- Plum Street location (within immediate downtown area)
- Existing bridge location

See Figures 4 and 5 in Appendix A for maps of these locations.

It was determined that the Bench Street location should not be selected because of a variety of issues and impacts including, but not limited to, substantial additional wetland and floodplain impacts, increased roadway and bridge length for US 63 traffic, and impacts to the upper harbor conservation lands including Pottery Pond Park.

Each of the three alternate locations within the downtown area had substantial design challenges given the close proximity and vertical grade differences between the river and US 61. In addition, each alternative would introduce substantial impacts to parklands, historic resources, commercial and industrial land uses, and the existing visual setting and sightlines in downtown Red Wing. Furthermore, a May 14, 2012 letter from the U.S. Coast Guard states that the three new downtown location alternatives are not acceptable from a navigational standpoint due to the proximity of the river bend immediately upstream.

Given the substantial issues associated with the range of new river crossing alternatives, as well as the input provided by the PAC and TAC, it was determined that the project should focus on identifying and

evaluating all viable bridge rehabilitation or replacement options within the existing river crossing location.

2) Determine if the River Bridge should be a Two-Lane or Four-Lane Facility

The determination of the number of lanes needed to accommodate traffic volumes at the river crossing was based on comparison of forecast traffic volumes for the river crossing to the capacity of a two-lane bridge.

Traffic forecasts at the US 63 river crossing are 13,200 AADT in 2022 and 15,600 AADT in 2042. Based on these forecasts a two-lane river bridge would operate at a LOS E by the year 2030 and through 2042.

Given a two-lane facility retains acceptable traffic conditions through the 20-year planning horizon, it was decided to proceed with a two-lane facility. Both the PAC and TAC concurred with this decision. See the *Traffic Analysis Report: Red Wing TH 63 Bridge Project Memo* dated March 25, 2014 for additional information (see the supplemental CD in Appendix B). Furthermore, since WisDOT identified their plans to construct four-lanes on the Wisconsin approach in the future (see Section II.B.3 – Purpose and Need), it was decided that the project will be designed to allow for potential expansion to a four-lane facility if at some point in the future traffic levels warrant capacity expansion.

3) Determine whether to Rehabilitate or Replace the Existing River Bridge (Bridge 9040)

The *River Bridge Options – Screening Considerations Memo* dated June 18, 2013 (see the supplemental CD in Appendix B) contains detailed information regarding Bridge 9040 rehabilitation and replacement considerations and analysis. Options to rehabilitate rather than replace Bridge 9040 were considered within the context of purpose and need objectives, SEE factors, and cost considerations. Early on in the process it was concluded that any replacement option would need to be immediately upstream from the existing river bridge, since the proximity of Barn Bluff (which is listed on the National Register of Historic Places) and the need to avoid impacts to the Bluff prohibits downstream options.

The river bridge options screening analysis concluded that rehabilitating Bridge 9040 would:

- Result in very substantial maintenance of traffic impacts during construction (detours, delays, emergency services, economic activity)
- Retain no separated pedestrian/bicyclist facility (not ADA compliant)
- Minimize adverse impacts to natural environmental resources
- Retain a fracture critical structure
- Cost approximately $67-74 million (2018 dollars) with an estimated service life of 40 years

The analysis further concluded that replacing Bridge 9040:

- Has very minor maintenance of traffic issues
- Would include a 12-foot separated pedestrian/bicyclist facility that is ADA compliant
- Would add pretreatment of stormwater prior to discharging into the Mississippi River
- Would cost approximately $72-$144 million (2018 dollars), depending on bridge type, with an estimated service life of 100 years.
- Includes the opportunity to provide a bridge with structural redundancy

- Would not adversely affect river navigation

Based on these considerations, along with input from the PAC and TAC, the decision was made to replace rather than rehabilitate Bridge 9040. This decision was based on the following key elements:

- The replacement options have substantially less construction period impacts, especially related to maintenance of traffic
- The replacement options include alternatives that are structurally redundant
- The replacement options provide a separate pedestrian facility and will be designed to be fully ADA compliant
- The replacement options can be designed to pretreat water runoff prior to being discharged into the Mississippi River
- There are replacement options that are approximately the same cost as the rehabilitation option
- Increased bridge service life and lower maintenance costs and lifecycle costs

4) Determine Type of Bridge Structure

The *Red Wing Bridge Project Bridge Concept Report* dated January 2014 and the *Bridge 9040 New Structure Alternatives* memo dated March 4, 2013 (both included on the supplemental CD in Appendix B) contain detailed information regarding the Bridge 9040 bridge type decision-making process.

The *Bridge 9040 New Structure Alternatives Memo* identifies seven bridge types that were analyzed as bridge replacement alternatives. The seven concepts considered include:

- Alternate 1: Tied Arch
- Alternate 2: Simple Span Truss
- Alternate 3: Three-Span Continuous Truss
- Alternate 4: Extradosed Bridge
- Alternate 5: Cable-Stayed Bridge
- Alternate 6: Concrete Segmental Box Girder
- Alternate 7: Steel Box Girder

Each alternative was evaluated based on the following criteria:

- Approach roadway grade raise requirements
- Future maintenance and inspection requirements
- Aesthetic considerations
- Constructability
- Redundancy and fracture critical issues
- Future expansion capabilities
- Estimated cost

The evaluation process concluded with the decision to advance the following three bridge types for more detailed consideration.

- Alternate 1: Tied Arch
- Alternate 6: Concrete Segmental Box Girder
- Alternate 7: Steel Box Girder

The *Red Wing Bridge Project Bridge Concept Report* details the major differences among the remaining three alternates. The major advantages and disadvantages of each are summarized below:

- Alternate 1: Tied Arch – Advantage: shallow structure depth. Disadvantages: potential steel price volatility; the highest construction cost; the highest maintenance costs; and difficult inspection characteristics.
- Alternate 6: Concrete Segmental Box Girder – Advantages: non-complex erection; relatively straightforward inspection; low long term maintenance costs; and the lowest construction cost. Disadvantages: substantial profile increase requirement; the greatest visual impacts; and the longest distance at maximum grade for US 63 (4 percent).
- Alternate 7: Steel Box Girder – Advantages: conventional erection and construction; relatively straightforward inspection; modest profile impacts; and a low construction cost (comparable to the concrete segmental box girder alternative). Disadvantages: potential volatility of steel prices and periodic painting requirements.

Based on the technical details, along with input provided by the PAC and TAC, MnDOT and WisDOT concluded that the steel box girder alternative be moved forward as the recommended alternative. This conclusion was based on the following:

- Lower construction cost than the tied arch and comparable to the concrete segmental box;
- Lower maintenance cost compared to the tied-arch;
- Shallower profile and reduced approach grades compared to the concrete segmental box girder; and
- Aesthetic qualities that complement stakeholder values and the historic character of the project area.

2. Minnesota Approach

The *Minnesota Approach Alternatives Identification, Evaluation, and Screening Memo* dated September 8, 2014 (see the supplemental CD in Appendix B) contains detailed information regarding the process followed to develop and assess a range of Minnesota approach options. Information from this document is summarized below.

Building from the Purpose and Need and working with the PMT, the TAC, the PAC, and other public input, eight concept alternatives for the Minnesota approach to the river crossing were developed:

- Concept 1: Rehabilitate Bridge 9103
- Concept 2: Three Leg At-Grade Signalized Intersection (US 61 Direct Connection)
- Concept 3: Three Leg At-Grade Signalized Intersection (US 63 Direct Connection)
- Concept 4: Four Leg At-Grade Signalized Intersection
- Concept 5: Four Leg At-Grade Roundabout Intersection
- Concept 6: Buttonhook Signalized Intersection
- Concept 7: Buttonhook Signalized Intersection with Slip Ramp
- Concept 8: Buttonhook Intersection (Roundabout)

The eight concepts were assessed against the following feasibility screening criteria:

- Traffic operations and mobility

- Traffic safety
- Environmental considerations
- Property impacts
- Design standards
- Estimated construction cost
- Construction staging and complexity
- Compatibility with a parallel river bridge (if Bridge 9040 was rehabilitated and a new river bridge was built immediately adjacent to accommodate four traffic lanes)

Based on consideration of the screening evaluation, Concept 1 and Concept 7 were retained for further consideration given the following:

- Concept 1: Rehabilitate the US 61 overpass – This concept retains the US 61 overpass (Bridge 9103) and its eligibility for the National Register of Historic Places and has minimal environmental effects.
- Concept 7: Buttonhook Signalized Intersection with Slip Ramp – This concept provides the best traffic operations, improves downtown operations, and works with either a two-lane or four-lane river crossing.

Following the selection of Concepts 1 and 7 to advance for further consideration the recommended alternative for the river bridge (i.e., replacement with a steel box girder bridge) was identified. This decision helped guide the development of sub-options within Concepts 1 and 7 for the Minnesota approach alternatives.

Moving forward with the recommended concepts, additional design work was completed and coordination between MnDOT and FHWA staff was conducted. Much of these efforts focused on ensuring full consideration of concepts that would enable Bridge 9103 to be retained given its National Register eligibility. Other important factors included considering sub-options that could help address traffic and mobility needs in downtown Red Wing.

Consideration of these issues ultimately led to the identification of five Minnesota approach alternatives, as follows:

- Alternative MN-1 (former Concept 1): This alternative involves rehabilitating Bridge 9103 as documented in the *Bridge 9103 Rehabilitation Study* (see Figure 6 in Appendix A).
- Alternative MN-1A: This alternative includes rehabilitating Bridge 9103. This alternative also includes modifications to the downtown Red Wing street network to retain reasonable traffic operations through the 2042 forecast year (see Figure 7 in Appendix A).
- Alternative MN-2 (new alternative, not studied in the feasibility phase): This alternative allows retaining the existing roadway network, minimizes most environmental impacts, but requires removal of Bridge 9103 and replacing it with a new bridge structure. This alternative was added to allow for comparison of costs between Alternative MN-1 (rehabilitation of Bridge 9103) and a new bridge (see Figure 8 in Appendix A).
- Alternative MN-2A: Similar to Alternative 2, this option involves replacement of Bridge 9103 with a new bridge and also includes the modifications to the downtown Red Wing street network as proposed with Alternative MN-1A (see Figure 7 in Appendix A).

- Alternative MN-3 (former Concept 7): This alternative includes replacing Bridge 9103 with a new bridge and button-hook ramp configuration that reorients the connection of US 63 to US 61 to the east of downtown Red Wing. This alternative also includes a one-way slip-ramp which provides an option for southbound US 63 traffic to have a direct access to downtown Red Wing and MN 58 via 3rd Street (see Figure 9 in Appendix A).

The evaluation of the five approach alternatives centered on evaluation criteria that included the purpose and need statement, SEE factors, and cost considerations. MnDOT and FHWA staff met several times to review the criteria and discuss the evaluation process and results. Based on the analysis and coordination it was concluded that Alternatives MN-1A and MN-2A should be eliminated from further consideration because:

- They would introduce a Section 106 adverse effect (and a resulting Section 4(f) use) to the Downtown Commercial/Historic District;
- They would introduce a Section 4(f) impact to Dankers Park in Downtown Red Wing;
- They do not adequately address the network mobility needs through the year 2042.

MnDOT and FHWA staff also concluded given full consideration of the purpose and need, SEE impacts, and cost factors that Alternative MN-2 should be removed from further consideration because it does not meet the primary need related to mobility and because it requires removal of Bridge 9103 which results in an adverse effect under Section 106 and a Section 4(f) use. Compared to Alternatives MN-1 and MN-3, Alternative MN-2 met fewer components of the project purpose and need and had greater Section 106 and Section 4(f) impacts. As a result of the detailed evaluation, Alternatives MN-1 and MN-3 along with the No Build Alternative were selected to carry forward for further consideration since alternative MN-1 is the only project alternative that avoids a Section 4(f) use of Bridge 9103 and alternative MN-3 is the only alternative that meets all of the project primary needs.

To facilitate selecting the recommended MN approach alternative and to ensure all issues were fully vetted, MN-1, MN-3 and the No Build Alternative were assessed against the purpose and need statement, the full range of SEE factors, as well as cost considerations. Table 2 below details the results of this comprehensive evaluation process. The table below is sourced from Table 2 of the *Minnesota Approach Alternatives Identification, Evaluation, and Screening Memo* dated September 8, 2014 (see the supplemental CD in Appendix B).

Table 2: Minnesota Approach Alternatives Evaluation Matrix

EVALUATION CRITERIA		No-Build Alternative	MN-1 - Rehab Bridge 9103 (includes cathodic protection & TL-2 railing)	MN-3 - Replace Bridge 9103 plus Button-hook with Slip-Ramp
PRIMARY NEEDS				
Structurally sound crossing of the Mississippi River	Ability to meet structural requirements	NA to MN approach alternatives	NA to MN approach alternatives	NA to MN approach alternatives
Structurally sound crossing of US 61	Ability to meet structural requirements	Future load restrictions will eventually be required.	Yes	Yes
Improve motorized and non-motorized traffic mobility on THs in downtown commercial/historic district	Year 2042 trunk highway network delay	564 hours; NOTE: Estimated delay is underestimated, due to limitations in model's ability to reflect adverse effects of grid street network, tight geometrics, & pedestrian conflicts.	564 hours; NOTE: Estimated delay is underestimated, due to limitations in model's ability to reflect adverse effects of grid street network, tight geometrics, & pedestrian conflicts.	84 hours
	Network motor vehicle traffic queue lengths; 2042 PM peak hour maximum queues at the seven analyzed intersections	8,795 feet	8,795 feet	5,361 feet; NOTE: reduction in queues at critical approaches is muted by reporting total queue length on all intersection approaches. Queues on trunk highways show a substantial reduction.
	Year 2042 total trunk highway network travel time	643 hours; NOTE: Estimated travel time is underestimated, due to limitations in model's ability to reflect adverse effects of grid street network	643 hours; NOTE: Estimated travel time is underestimated, due to limitations in model's ability to reflect adverse effects of grid street network	173 hours
	Year 2042 PM peak hour travel time for a representative trip between the River Bridge and US 61/Broad Street	- River Bridge to US 61/Broad Street = 2 mins, 25 secs - US 61/Broad Street to River Bridge = 21 mins, 31 secs	- River Bridge to US 61/Broad Street = 2 mins, 25 secs - US 61/Broad Street to River Bridge = 21 mins, 31 secs	- River Bridge to US 61/Broad Street = 1 min, 15 secs - US 61/Broad Street to River Bridge = 1 min, 24 secs
	Change in trunk highway volumes on roadway segments within commercial/historic district, compared to No-Build	No Change	No Change	3rd Street between Plum and Potter, approximately 70% Reduction; Plum Street between Main and 3rd, 30% to 50% Reduction
	Turning movement volumes compared to No-build at key intersections (US 61/MN 58 and MN 58/3rd Street)	No Change	No Change	Main at Plum, 30% to 50% reduction; 3rd at Plum, 35% to 45% Reduction
	Change in peak hour truck right turn volumes compared to No-Build at key intersections with inadequate RT radii: US 61/MN 58 and MN 58/3rd Street	No Change	No Change	Main/Plum = 63% AM and 68% PM reduction; Plum/3rd = 93% AM and 96% PM reduction
	Pedestrian level of service (HCM analysis)	LOS B	LOS B	LOS B

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EVALUATION CRITERIA		No-Build Alternative	MN-1 - Rehab Bridge 9103 (includes cathodic protection & TL-2 railing)	MN-3 - Replace Bridge 9103 plus Button-hook with Slip-Ramp
	Pedestrian crossing delay at US 61/MN 58 and MN 58/3rd Street	No Change	No Change	Reduction in vehicle traffic enables changing signal cycles to increase pedestrian crossing times; Removal of SB LT phase at MN 58/3rd will increase the east side crossing time by up to 30 seconds per cycle.
	Change in intersection width for ped crossing compared to No Build	No Change	No Change	No change
	Change in number of traffic lanes crossed by pedestrians, compared to No Build	No Change	No Change	Reduction in vehicle traffic enables changes in lane striping which will decrease the number of approach lanes on the east and north legs of the MN 58 & 3rd Street intersection, reducing ped exposure
	Other changes in pedestrian and bicyclist 'quality of experience' (qualitative assessment)	No Change	No Change	Reduced turning traffic volumes decreases pedestrian/vehicle conflict potential and enhances pedestrian environment and walkability in commercial/historic district.
SECONDARY NEEDS				
Continuity of US 63	Ability to maintain continuity	Maintains continuity	Maintains continuity	Maintains continuity
US 63 connection to US 61 and TH 58	Ability to provide connection of US 63 to US 61	US 63 connection overlaps with MN 58	US 63 connection overlaps with MN 58	Improved by providing direct US 63 connection to US 61
	Ability to provide connection to MN 58	NB/SB connection provided via 3rd St.	NB/SB connection provided via 3rd St.	SB connection provided via 3rd St.; NB connection provided via US 61
Adequate Bridge Capacity	Ability to accommodate forecast year traffic volumes	Yes	Yes	Yes
Maximum maintenance of traffic	Duration of full closure of US 63	No closure required	No full closure required	No full closure required
Access to Trenton Island	Ability to maintain access to Trenton Island	NA to MN approach alternatives	NA to MN approach alternatives	NA to MN approach alternatives
Maintain or improve pedestrian/bicycle facilities on US 63 River Bridge and US 61 Overpass	Ability to maintain or improve pedestrian/bicycle facilities	Maintains existing connectivity.	Widens west side curb to a five foot sidewalk. 12 foot river crossing trail needs to be reduced to five feet at Bridge 9103. No separated bicycle facility. Maintains narrow right shoulder (used by bicyclists) on SB US 61 below Bridge 9103.	Provides 12 foot separated multi-use trail at US 63 MN approach. Right shoulder (used by bicyclists) on SB US 61 below bridge can be widened to current standards.
OTHER CONSIDERATIONS				
Structural redundancy	Provide a structurally redundant river crossing	NA to MN approach alternatives	NA to MN approach alternatives	NA to MN approach alternatives
Wisconsin Corridors 2030 Plan	Ability to meet stated LOS D or better objective	NA to MN approach alternatives	NA to MN approach alternatives	NA to MN approach alternatives

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EVALUATION CRITERIA		No-Build Alternative	MN-1 - Rehab Bridge 9103 (includes cathodic protection & TL-2 railing)	MN-3 - Replace Bridge 9103 plus Button-hook with Slip-Ramp
Geometrics	Ability to accommodate truck turning paths	No improvement to the substandard turning radii at US 61/Plum Street and Plum Street/3rd Street	No improvement to the substandard turning radii at US 61/Plum Street and Plum Street/3rd Street	Substantial improvement associated with reduction in turning truck traffic at the problem intersections
Economic development	Ability to maintain or improve traffic flow, based on City's goals/recommendations for promoting economic development	Continued degradation of downtown traffic flow and pedestrian environment not consistent with City's plans for economic development	Continued degradation of downtown traffic flow and pedestrian environment not consistent with City's plans for economic development	Reduction of truck and commuter traffic through downtown provides greater improvement in motorized and non-motorized mobility, consistent with City's plans for enhancing economic development
Parking	Increase or reduction of parking spaces	No change	No change	No change
Regulatory Requirements:				
Section 106	Potential for adverse effects on historic properties	No adverse effects.	No likely adverse effects identified.	Removes Bridge 9103 = Likely adverse effect.
Section 4(f) Compliance (parklands and historic properties)	Section 4(f) impacts	No impacts	No impacts	Section 4(f) Impacts: Requires removal of Bridge 9103 = adverse effect would be a Section 4(f) use
Navigational channel	Ability to maintain navigational clearance requirements	NA to MN approach alternatives	NA to MN approach alternatives	NA to MN approach alternatives
Section 404 water quality requirements	Accommodations to treat storm water runoff and meet required practices	No accommodations required to treat runoff from Bridge 9103.	No accommodations required to treat runoff from Bridge 9103, however new ponding will be required to address Bridge 9040 runoff.	Yes
OTHER SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS				
Prime or Unique Farmland	Impacts to Farmland	No impacts	No impacts	No impacts
Floodplains	Impact to Existing Floodplains	No impacts	No impacts	No impacts
Geology	Impacts to Susceptible Features	No impacts	No impacts	No impacts
Soils	Impacts to Highly Erodible or Permeable Soils	No impacts	No impacts	No impacts
Groundwater	Impacts to Groundwater or Wellhead Protection Areas	No impacts	No impacts	No impacts
Wetlands	Impacts to Identified Wetland Resources	No impacts	No impacts	<0.5 acres
Hazardous Materials/Contamination	Contaminated materials impacts	No impacts	Acquisition of a moderate to high risk contaminated parcel may be required for stormwater ponding	Acquisition of a moderate to high risk contaminated parcel will be required
Fish and Wildlife/Vegetation	Impacts to T&E Resources	No impacts	No impacts	No impacts
Visual Quality	Change in visual environment/change in views	No change	No change	More substantial change with new buttonhook and slip ramp to 3rd Street.
Air Quality	Impacts to adjacent receptors	No impacts	No differentiating impacts anticipated	No differentiating impacts anticipated

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EVALUATION CRITERIA		No-Build Alternative	MN-1 - Rehab Bridge 9103 (includes cathodic protection & TL-2 railing)	MN-3 - Replace Bridge 9103 plus Button-hook with Slip-Ramp
Noise	Potential change in noise levels at adjacent receptors	No impacts	No change in proximity to noise receptors. No substantial changes in noise levels are anticipated.	Includes new roadway segment in closer proximity to residential receptors. May result in increased noise levels for these receptors.
Cumulative Effects	Incremental SEE impacts from alternative plus foreseeable future actions	No impacts	No cumulative SEE impacts anticipated, beyond the direct SEE impacts of the proposed alternative.	No cumulative SEE impacts anticipated, beyond the direct SEE impacts of the proposed alternative.
Right-of-way impacts	Number of parcels impacted	No impacts	1 (for stormwater pond)	4 (for stormwater pond and button-hook)
	Number of structures impacted; Number of relocations	No impacts	1 (for stormwater pond); 0 relocations	4 (for stormwater pond and button-hook); 2 residential relocations
Economic	Potential loss of property tax revenue from property acquisitions	No impacts	No impacts	Minor loss of property tax collection due to removal of one residential property and a former warehouse now used for storage.
Social and Community	Cohesion [1) changes in street configurations; 2) connectivity within city]	1) No changes in street configurations. 2) Connectivity: No change to existing TH's looping through the downtown commercial historic district that City staff indicate 'sever' pedestrian access within downtown and between some residential neighborhoods and downtown.	1) No changes in street configurations. 2) Connectivity: No change to existing TH's looping through the downtown commercial historic district that City staff indicate 'sever' pedestrian access within downtown and between some residential neighborhoods and downtown.	1) Street configuration change: Requires severing East 3rd Street connection to Bluff Street. But similar level of access to Bluff Street from the neighborhood will be retained via 4th Street. 2) Connectivity: Beneficial change from decreases in TH traffic through downtown commercial historic district, decreasing the 'severing' effect identified by City staff.
	Community facilities impacted	No impacts	No impacts	May impact Bluff Community Garden.
Transit	Impacts to Existing or Planned Transit Service	No impacts	No impacts	No impacts
Environmental Justice	Any disproportionate high and adverse impacts to minority or low income populations	No impacts	No impacts	City has identified the Bluff neighborhood as having a higher concentration of low income individuals as compared to the entire City. One residential acquisition identified in this neighborhood would not be a 'significant' impact. The EA will conduct a detailed assessment to determine whether any impacts, direct or indirect, (e.g., noise) are disproportionately high and adverse.

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EVALUATION CRITERIA		No-Build Alternative	MN-1 - Rehab Bridge 9103 (includes cathodic protection & TL-2 railing)	MN-3 - Replace Bridge 9103 plus Button-hook with Slip-Ramp
Relationship to Other Proposed Transportation Improvements	Relationship to Year 2015 Main Street Reconstruction Project	No substantive positive or negative impacts.	No substantive positive or negative impacts.	This alternative plus the City of Red Wing's Main Street project provide complementary benefits by MN-3 shifting traffic volumes at the US 61/MN 58 intersection from approach legs where bump-outs/ped crossing improvements are not being made to legs where bump-outs are being constructed as part of the Main Street Reconstruction project (years 2015 & 2016). Traffic volumes due to MN-3 alternative would increase on US 61 east of Plum Street, which is outside of the downtown commercial historic district and outside the area where pedestrian improvements are being made with the Main Street reconstruction project. The two projects together would result in additive benefits to pedestrian traffic in the downtown commercial historic district.
COST				
Construction Cost Estimate 1/	2018$	$0	$7,700,000	$25,875,000
On-going Maintenance (20 years)	2018$	$2,300,000 - 2,900,000	$105,000	$35,000
Bridge Service Life	Number of years until major rehabilitation would be required	15 years 2/	20 years 2/	75 years 3/

Notes

1/ Cost estimate reflects Minnesota approach improvements (to Minnesota-side river bridge abutment), right-of-way and contamination clean-up

2/ Bridge 9103

3/New bridge associated with the buttonhook

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The following findings have been drawn based on the information provided in Table 2:

- The No Build and MN-1 are very similar across most of the criteria;
- The No Build will eventually require load restrictions to be put in place on Bridge 9103;
- MN-3 addresses the traffic mobility primary need, while the No Build and MN-1 alternatives do not;
- In terms of secondary needs, the primary differentiation is with traffic connectivity and ped/bike accommodations which MN-3 better addresses;
- The No Build and MN-1 do not require removal of Bridge 9103 which is eligible for the National Register;
- The differentiators regarding SEE impacts include:
    - MN-1 and MN-3 require acquisition of a contaminated parcel;
    - MN-1 and MN-3 include stormwater ponding to treat runoff from the river bridge;
    - MN-3 introduces additional visual and noise effects on the residential neighborhood adjacent to the project;
    - MN-3 includes acquisition of four parcels (including 2 residential relocations), MN-1 requires acquisition of one parcel, and the No Build has no property impacts;
    - MN-3 includes acquisition of at least one residential parcel in the Bluff neighborhood, which has been identified as having a higher percentage of low income and/or minority residents than the City average. Therefore, environmental justice impacts would need to be assessed in the EA;
- MN-3 has the highest cost ($25.9 million) followed by MN-1 ($7.7 million);
- MN-3 has the lowest on-going maintenance costs ($35,000) followed by MN-1 ($105,000), and the No Build ($2.3-2.9 million); and
- MN-3 has the longest bridge service life (75 years), followed by MN-1 (20 years), and the No Build (15 years).

After reviewing the results of the assessment with the PAC and TAC, MnDOT determined and FHWA concurred to advance MN-3 as the recommended alternative for the Minnesota approach roadway. Alternative MN-3 was selected because – although it results in greater costs and some additional environmental impacts – the additional environmental impacts would not preclude project implementation and it is the only alternative that meets all of the primary project needs.

Since Alternative MN-3 would result in a Section 106 adverse effect and, therefore, a Section 4(f) impact, assessment of avoidance alternatives was required by Section 4(f) regulations. The Programmatic Section 4(f) Evaluation in Appendix F describes the comparison of the preferred alternative to avoidance alternatives (including Alternative MN-1 and the No Build), which resulted in a finding that there are no prudent avoidance alternatives. This allowed Alternative MN-3 to move forward as the preferred alternative.

3. Wisconsin Approach

The Wisconsin approach assessment focused on the US 63/825th Street intersection located at the base of the river bridge. The scope of the project does not extend further into Wisconsin because US 63 extending north to the Wisconsin Channel Bridge and WIS 35 was studied in the US 63 EA prepared by WisDOT in 2004. As a result, no alteration to the existing US 63 causeway or Wisconsin channel bridge approximately one mile to the north will be required.

Three alternatives were defined and evaluated as part of the Wisconsin approach assessment. The *Approach Roadway Concept Development and Screening Memo* dated September 18, 2012 (see the supplemental CD in Appendix B) describes each alternative. The three included:

- Right-in/Right-out (RIRO) Access (see Figure 10 in Appendix A)
- Northbound Left Turn Lane (see Figure 11 in Appendix A)[1]
- Jughandle Intersection (see Figure 12 in Appendix A)

Ultimately, the jughandle intersection was selected as the recommended alternative for the Wisconsin approach because it provides full access at the intersection of US 63 and 825th Street and eliminates the need to cross conflicting traffic. It also maintains and enhances access to properties along the Wisconsin banks of the Mississippi River.

B. Description of the Alternatives Evaluated in this EA

1. River Crossing

a. No Build Alternative

The No Build Alternative maintains the current facility. Extensive maintenance activities are expected on the existing structure in the near future to keep the bridge functional. Some of these activities include complete deck replacement; replacement of expansion joint devices; replacement of several bearings; replacement of several approach span girders (to meet load rating requirements); replacement of the north abutment, Pier 8, and potentially Pier 7 to address settlement/movement issues; repainting; concrete surface repairs; channel stabilization at Pier 2; concrete surface repairs to piers; and possible stringer and floorbeam replacement (where joint leakage has led to corrosion).

b. Preferred Alternative

The river crossing Preferred Alternative is to replace the existing river bridge with a two-lane steel box girder bridge immediately upstream from the current crossing. Section IV.A.6.b (Project Description) provides additional details of the preferred alternative features.

See Figure 14 within Appendix A for the overall project layout.

2. Minnesota Approach

a. No Build Alternative

The existing US 61 overpass would continue to serve as the southern approach to the river bridge and the bridge would be maintained using standard maintenance practices (i.e., not a substantial structural rehabilitation). The US 61 overpass is currently in "fair" condition, but substantial damage exists in the form of delaminated and deteriorated concrete, spalling, and high levels of chloride content contributing to corroding steel.

[1] Note: Since completion of the 2012 evaluation, WisDOT completed an intersection improvement project which included adding a painted left-turn lane for northbound US 63 traffic.

b. Preferred Alternative

The Minnesota approach Preferred Alternative is to construct a button-hook intersection with a slip ramp. This alternative includes replacing the US 61 overpass with a new three-lane structure and button-hook ramp configuration that reorients the connection of US 63 to US 61 immediately east of downtown Red Wing. This alternative also includes a one-way slip-ramp which provides an option for southbound US 63 traffic to continue to have a direct access to downtown Red Wing and MN 58 via 3rd Street. Section IV.A.6.b (Project Description) provides additional details of the preferred alternative concept.

See Figure 15 within Appendix A for Minnesota approach project layout details.

3. Wisconsin Approach

a. No Build Alternative

The No Build Alternative is to maintain the existing intersection configuration at the base of Bridge 9040 providing access to 825th Street.

b. Preferred Alternative

The Wisconsin approach Preferred Alternative is to construct a jughandle intersection at 825th Street. This design provides a four-legged intersection with a median on US 63.

See Figure 16 within Appendix A for Wisconsin approach project layout details.

4. Summary of Preferred Alternative & No Build: SEE Impacts

Table 3 below provides an overview comparison of social, environmental, and economic impacts between the Preferred Alternative and No Build options. Detailed information for each SEE component is located within Section IV (SEE Impacts).

Table 3: Preferred Alternative and No Build Comparison: SEE Impacts

SEE Component	Preferred Alternative	No Build
Land Use	Compatible with existing land uses;	Compatible with existing land uses
Floodplain	"No-Rise Certificate" issued; No significant floodplain impacts anticipated	Existing conditions continue; No impacts
Geology/Soils/Topography	No impacts and/or project limitations anticipated	Pier settlement issues
Water Resources	Approx. 6.5 acres wetland impacts (3.0 permanent, 3.5 temporary); 3.2 acres new impervious surface; stormwater treatment will be provided	Existing conditions continue; No water resources/wetlands physical impacts; no improved stormwater treatment
Contamination/Hazardous Materials/Waste	7 identified sites of concern within preliminary construction limits	Existing asbestos, lead paint, creosote on river bridge structure; 7 identified sites of concern within preliminary construction limits

SEE Component	Preferred Alternative	No Build
Fish/Wildlife/Plants	Potential impacts to fish, wildlife, and vegetation resources, especially at river crossing. Impacts can be mitigated.	Existing conditions continue; No impacts
Cultural Resources	Removal of Bridge 9103	Existing conditions continue; No impacts
Visual	Aesthetic treatments of elevated structures	No impacts anticipated
Air	Potentially lower MSAT impacts resulting from enhanced traffic operations	No MSAT impacts anticipated
Noise	Noise levels on Wisconsin side do not exceed noise standards; Noise levels on Minnesota side exceed noise standards and meet noise barrier criteria at one location (noise barrier voting opportunity at this location)	Noise levels on Wisconsin side do not exceed noise standards; Noise levels on Minnesota side exceed noise standards
Transportation	2-lane river crossing bridge facility with expansion capability; Substantial improvement to traffic operations in downtown Red Wing	Existing conditions continue; Does not meet identified transportation needs
Pedestrian and Bicycle Facilities	Addition of bike/ped facility on bridge; downtown Red Wing enhancements	Existing conditions continue; Minimal pedestrian accommodations on Minnesota approach only
Right-of-Way	5 acquisitions (2 relocations); Approximately 2.9 acres; Potential temporary easements of 1.2 acres	No impacts
Farmland	No impacts anticipated	No impacts
Cumulative Potential Effects	No substantial impacts anticipated	No substantial impacts anticipated

C. Cost and Funding

The project will utilize a shared funding arrangement between MnDOT and WisDOT, with potential local funding for specific elements. In general, project costs related to the replacement of the bridge structure will be shared equally between the agencies. The bridge approaches within each state will be funded separately by the appropriate state agency.

Estimate of Cost

Estimated costs below are separated by the Minnesota approach, Wisconsin approach, and bridge crossing structure components. Estimated costs are in 2018 dollars and include structures, surfacing, subbase/base, grading/drainage, miscellaneous, right-of-way, contingency, and engineering costs.

- Minnesota approach: Approximately $24,800,000 to $27,400,000
- Wisconsin approach: Approximately $4,500,000 to $4,900,000
- River bridge structure: Approximately $63,400,000 to $70,500,000
- Total Approximately $92,700,000 to $102,800,000

Anticipated Funding

State of Minnesota Chapter 152 bond and Federal Aid funds will cover the majority of Minnesota costs. State and Federal Aid funds will fund the Wisconsin portion. Some project elements that benefit local municipalities would likely be funded by local agencies.

D. Benefit-Cost Analysis

The purpose of a benefit-cost analysis is to express the effects of an investment (or closure) into a common measures (dollars). This allows for the fact that the benefits or costs of a project are often accrued over a long period of time, while the initial investment is incurred during the initial years of the project. In this approach, any quantified benefits that are greater than or equal to the quantified costs (a benefit-cost ratio greater than one) represents an economically viable project.

The preliminary analysis indicates that the build alternative has benefit-cost ratio of approximately 3.2. Since this is greater than 1.0, it indicates that the vehicle miles traveled (VMT), vehicle hours traveled (VHT), and crash reduction benefits of the project are estimated to be greater than the costs associated with the construction of the project.

At this level of analysis, the magnitude of the benefit-cost ratio is not as important as the overall finding that the ratio is greater than one. Further refinements to the VMT and VHT values are possible using different traffic models and methods. However, this basic analysis indicates that the proposed build alternative is economically viable. Changes in project cost for the Preferred Alternative would not likely lower the benefit-cost ratio below 1.0.

E. Proposed Project Schedule

The following is a tentative schedule of activities for the project:

Action	Timeline
Publish EA for Review and Comment	June 2015
EA Public Hearing	July 2015
Complete Environmental Review Process	Summer-Fall 2015
Final Design	Fall 2015 to Winter 2016
Construction	2017-2019

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IV. SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS (SEE)

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website.[2] The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and 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 19.

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 the information, potential impacts that warrant further investigation and the need for an EIS.

A. Environmental Assessment Worksheet

1. Project Title

US 63 River Bridge and Approach Roadways Project

2. Proposer

Contact Person: Greg Paulson, PE
Title: MnDOT District 6 District Engineer
Address: 2900 48th Street NW
City, State, ZIP: Rochester, MN 55901
Phone: 507.286.7502
Fax: 507.281.7780
Email: greg.paulson@state.mn.us

3. RGU

Contact Person: Chad Hanson, PE
Title: MnDOT Project Manager
Address: 2900 48th Street NW
City, State, ZIP: Rochester, MN 55901
Phone: 507.286.7637
Fax: 507.285.7355
Email: chad.hanson@state.mn.us

4. Reason for EAW Preparation

Required:	Discretionary:
☐ EIS Scoping	☐ Citizen petition
☐ Mandatory EAW	☒ RGU discretion
	☒ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s): N/A

[2] http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm

5. Project Location

County: Goodhue (MN), Pierce (WI)
City/Township: City of Red Wing (MN), Town of Trenton (WI)
PLS Location (¼, ¼, Section, Township, Range): Minnesota portion: T113N, R14W, Sections 29 and 30;
Wisconsin portion: T24N, R18W, Sections 10, 11, 14
Watershed (81 major watershed scale): 38 (Mississippi River and Lake Pepin)
GPS Coordinates: N/A
Tax Parcel Number: N/A
At a minimum attach each of the following to the EAW:

- County map showing the general location of the project (See Figure 13 in Appendix A);
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable) (See Figure 13 in Appendix A); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan. (See Figures 14-16, 18-30, and 33-35 in Appendix A)

6. Project Description

a. Provide the brief project summary to be published in the EQB Monitor (approximately 50 words)

The US 63 River Bridge and Approach Roadways Project includes the Mississippi River bridge and the bridge approaches in Red Wing, Minnesota and Hager City, Wisconsin. The project will replace the existing Eisenhower Bridge river bridge with a new bridge structure. The Wisconsin approach includes a jughandle intersection at 825th Street and the Minnesota approach includes reconfiguration of the connection to US 61 as a buttonhook intersection.

b. 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 wastes, 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.

The project encompasses three components: the river bridge, the Wisconsin approach to the river bridge, and the Minnesota approach to the river bridge. See Figures 14-16 in Appendix A for project layouts.

- The Wisconsin approach to the river bridge would be constructed as a jughandle intersection at 825th Street. This design provides a four-legged intersection with a median on US 63.

- The Minnesota approach to the river bridge would be constructed as a buttonhook intersection with a slip ramp. This Preferred Alternative would include removing the existing US 61 overpass (Bridge 9103), which is a slab span bridge constructed in 1960, creating a new at-grade intersection of US 63 and US 61 east of downtown Red Wing approximately 1,100 feet east of Potter Street. The design allows southbound US 63 traffic to access downtown Red Wing and MN 58 along a new one-way slip ramp to 3rd Street.

The existing river bridge, Bridge 9040, is a two-lane structure constructed in 1960. The main three spans are a through-truss structure and the six approach spans are made up of steel plate girders for a total length of 1,632 feet. It will be replaced by a new steel box girder structure. The new river bridge will be

located immediately upstream of the existing river bridge. The proposed new structure will include two 12-foot wide lanes, two 6-foot shoulders, and a 12-foot wide pedestrian/bicyclist facility on the west side (upstream side) of the bridge. This results in a total width, including barriers, of 52 feet and 4 inches. Once the new structure is complete, the existing river bridge will be removed. It was decided to design the project to allow for potential expansion to a four-lane facility if at some point in the future traffic levels warrant capacity expansion.

It is proposed that a bypass and temporary bridge carrying US 63 over US 61 be constructed to facilitate traffic movement while the new permanent slip ramp over US 61 is constructed. A temporary bypass facility could be constructed to the east of the existing US 61 overpass such that it does not impact the limits of historic Barn Bluff and also provides for reasonably unconstrained bridge removal operations. With comparable costs compared to a staged construction, the utilization of a bypass and temporary bridge would eliminate movements of traffic lanes for construction operations, reduce driver confusion, and improve constructability. See Figure 17 in Appendix A for additional proposed temporary bypass and temporary bridge proposals for the Minnesota approach to the river bridge.

Construction is anticipated to begin in 2017, with substantial completion by the end of 2019. Because the existing bridge will remain open during construction of the new bridge, substantial traffic disruption to users is not expected. Additional construction information is presented below.

Construction: Potential Staging Areas

See Figure 18 in Appendix A for potential construction staging locations.

Construction staging totaling approximately 3.5 acres on the Minnesota portion of the project will potentially be located within several areas near the proposed US 61 overpass. The interior of the loop space that will ultimately hold a stormwater pond is a potential staging area. A parcel acquisition adjacent to the proposed intersection of US 63 and US 61 will also be utilized.

Construction staging on the Wisconsin portion of the project will potentially focus on the southeastern area of the approach roadway, extending northwest toward the project terminus. Construction staging is anticipated to avoid more sensitive ecological areas in the western portions of the Wisconsin approach. These potential construction staging areas in Wisconsin consist of approximately 7.7 acres. Within Wisconsin, staging and access will likely all take place in the floodway. A contingency plan will be in place for removal and temporary structures for the high water events that may occur during the course of the project.

In addition, two temporary construction causeways are recommended to be utilized during construction. These causeways help facilitate the construction of the new river bridge structure and demolition of the existing bridge structure. The construction causeways would be built within the floodplain of the Wisconsin approach and above the 10-year flood elevation. They would function as rock roads and generally extend from the proposed north abutment to Pier 3 and be approximately 20 feet wide and approximately 750 feet long. Per the Wisconsin DNR (WDNR), NR 116 Floodplain Management standards must be met and the causeway must be clearly marked for safety as coordinated and approved by the U.S. Coast Guard.

Construction staging details will be developed in the final design stages. Maintenance of traffic (MOT) plans are currently under development. Final MOT plans will address construction phasing, maintenance of traffic, traffic signal operations, work zone access, lane closures, and traffic detours. Safe access for non-motorized users during the construction phases will also be included in phasing and MOT plans.

Construction: River Impacts

Due to the need to get construction materials and construction equipment into or onto the river to build the bridge, river impacts are expected including dredging, building temporary cofferdams around piers, dewatering, fill, and removal of cofferdams after construction. In addition, two crane benches or dock walls within the river are anticipated to assist with construction staging. Any necessary environmental permits will be obtained prior to construction.

Construction would involve temporary interruption to the navigational channel, including a reduced channel width and/or short-term closures, at various stages of construction to allow for pier construction, launching of materials, and construction of the superstructure. These temporary interruptions would need to be coordinated with the U.S. Army Corps of Engineers, the U.S. Coast Guard, and barge operators. Recreational boating activities may also be temporarily impacted, and notification would be provided at local marinas and public access. The timing and duration of temporary interruptions would vary.

Demolition plans for the existing river bridge will need to be consistent with requirements of the Minnesota and Wisconsin DNR. For example, WisDOT in correspondence that existing bridge demolition should adhere to Wisconsin's STSP 203-020, *Removing Old Structure Over Water With Minimal Debris*.

See Section IV.A.11.b.iii (Water Resources) for information regarding dewatering. Dewatering may be required during construction.

Construction: Noise, Vibration, and Dust

Pile driving and other components of project construction would result in noise, vibration, and dust impacts, as would heavy equipment (dozers, front-end loaders, backhoes, and vibratory rollers) for these activities. Noise impacts related to the operation of construction equipment would vary in location and duration. MnDOT would require that construction equipment be properly muffled and in proper working order. Advanced notice would be provided to the affected communities prior to any planned loud construction activities. It is anticipated that night construction may sometimes be required to minimize traffic impacts and to improve safety. However, construction would be limited to daytime hours as much as possible.

The location and magnitude of construction vibration will be assessed further during final design. In areas where there is a potential for vibration impacts, susceptible structures would be monitored by performing pre-construction assessment of existing buildings, susceptibility of vibration analysis of these buildings, coordination with owners, monitoring during the vibration-causing activity, and post-construction assessment of buildings. Vibration impacts to structures in the project area are not anticipated to result from the project. Construction methods and existing geological conditions are anticipated to help lower the risk of adverse impacts on historic structures within the downtown Red Wing area.

Any associated high-impact equipment noise, such as pavement sawing or jack hammering, would be unavoidable with construction of the proposed project. The use of jack hammers, pile drivers, and

pavement sawing equipment would be prohibited during nighttime hours. Pile-driving noise is typically associated with any bridge construction and sheet piling necessary for retaining wall or other construction activities.

Air quality impacts during construction could include increased dust and airborne particulates caused by grading, filling, building removals, and other construction activities. Dust impacts would be minimized through standard dust control measures such as watering.

Construction: Erosion

This project will result in some potential for erosion as existing ground cover will be disturbed. A NPDES Construction Storm Water Permit will be required for this project. Wisconsin's Trans 401 and NR 151 form the NPDES compliance requirements within the Wisconsin portion of the project. A Stormwater Pollution Prevention Plan (SWPPP) will be developed for the project. Erosion prevention and sediment control requirements will be followed in accordance with the NPDES permit, which includes both temporary and permanent erosion and sediment control plans as well as other BMPs to protect the resource waters. BMPs contained in MnDOT's standard specifications, details, and special provisions will be used. WisDOT standard specifications, details, and special provisions will be followed for work conducted on the Wisconsin side of the river.

Construction: Tree Removal

The proposed project would remove trees during construction. There are an anticipated 1.4 acres of tree removal impacts associated with the proposed project; approximately 1.1 acres on the Wisconsin side of the project and 0.3 acres on the Minnesota side of the project. Tree removal impacts are largely anticipated between the north abutment and the Wisconsin river bank.

Construction: Wetland Impacts

Construction of the new river bridge and demolition of the old bridge are expected to have some construction-related temporary wetland impacts and permanent wetland fill impacts. Temporary wetland impacts within construction staging areas are anticipated to total approximately 3.5 acres and may include temporary fill placed within wetlands in order to accommodate access by construction equipment or tree clearing. The recommended temporary construction causeways on the Wisconsin side of the project are anticipated to result in temporary wetland impacts.

Permanent wetland impacts are anticipated to total approximately 3.0 acres and would result from construction of new piers, abutments, and approaches. Wetland impacts, temporary or permanent, may have a fill impact component or a wetland functional impact component. See Section IV.A.11.b.iv.1 (Water Resources) for additional information on wetland impacts, including the sequencing process to avoid, minimize, and/or provide compensation for impacts.

Construction: Rail Coordination

Project coordination with Canadian Pacific Railway and Archer Daniels Midland Company is ongoing to ensure adequate construction staging and railroad compatibility on the Minnesota side of the project. Coordination has been ongoing throughout project development to conduct various surveys, including geotechnical boring analyses. In addition, preliminary design plans have been shared with Canadian Pacific

for review. It is anticipated construction equipment will need to be temporarily placed on railroad property to erect one or more bridge sections, requiring a temporary easement. Flaggers will be required. Temporary interruption of rail operations will likely be needed at various stages of construction. Construction staging plans will be coordinated with the railroad prior to letting the project to minimize disruption. The project will require a railroad agreement.

c. Project magnitude:

Total Project Acreage	28.4
Linear Project Length	US 63: Approx. 4,440 feet; US 61: 1,950 feet
Number and Type of Residential Units	N/A
Commercial Building Area (in square feet)	N/A
Industrial Building Area (in square feet)	N/A
Institutional Building Area (in square feet)	N/A
Other Uses – specify (in square feet)	N/A
Structure Height(s)	N/A

* Total project acreage encompasses preliminary construction limits

d. 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.

See Section II for the project's Purpose and Need. Beneficiaries of this project will include all roadway users of the proposed river crossing.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐ *Yes* ☒ *No*
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

Not applicable.

f. Is this project a subsequent stage of an earlier project? ☐ *Yes* ☒ *No*
If yes, briefly describe the past development, timeline and any past environmental review.

7. Cover Types

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

*Table 4: Cover Types (in acres)**

Cover Type	Before	After
Wetlands	3.0	0.0
Deep Water/Streams	3.0	3.0
Brush/Grassland	2.3	2.4
Lawn/Landscaping	12.1	11.1
Impervious Surface	8.0	11.3
Stormwater Pond	0.0	0.6
Total	28.4	28.4

* Impervious surface acreage is sourced from preliminary design/project layout. Wetland acreage is sourced from delineated wetlands. Remaining cover types determined visually via aerial photography. Minnesota Land Cover Classification System (MLCCS) is not available for project area. All estimates are approximate and subject to change throughout the final design process.

8. 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 review has been completed. See Minnesota Rules, Chapter 4410.3100.

Table 5: Permits and Approvals Required

Permit/Approval Type	Unit of Government	Action Required
Federal		
Environmental Assessment document	FHWA	Approval
EIS Need Decision	FHWA	Decision
Section 4(f)	FHWA	Determination
Section 106 (Historical/Archaeological)	FHWA (MnDOT CRU on behalf of FHWA)	Determination
Endangered Species Act (Section 7 Consultation)	FHWA (MnDOT OES/FHWA) USFWS	Determination of Affect, Not Likely to Adversely Affect Concurrence
Section 404 Permit – Individual Permit; Section 10 Permit	U.S. Army Corps of Engineers	Approval
Section 9 Permit	U.S. Coast Guard	Approval
Project Compatibility Determination	U.S. FWS	Determination
State		
EA/EAW Document	MnDOT/WisDOT	Approval
EIS Need Decision	MnDOT	Decision
Construction Plans – Bridge Preliminary Plan	MnDOT; WisDOT	Approval
Construction Plans – Roadway/Geometric Layout	MnDOT; WisDOT	Approval
MN Wetland Conservation Act (No Loss)	MnDOT	
Design Exceptions	MnDOT	Approval
WDNR/WisDOT Cooperative Agency Agreement	WDNR, WisDOT	Concurrence
Public Waters Work Permit (General Permit 2004-0001)	MnDNR	Permit
Water Appropriations Permit for Temporary Projects (Construction Dewatering; General Permit 1997-0005)	MnDNR	Permit
Notice of Demolition and/or Removal and Application for Permit Exemption	WDNR	Approval
State Historical Preservation Office Review (Historic/Archaeological)	MnSHPO; WisSHPO	Consultation
Threatened and Endangered Species Take Permit (mussels)	MnDNR; WDNR	Permit, if required
Incidental Take Authorization	MnDNR; WDNR	Authorization (if required)

Permit/Approval Type	Unit of Government	Action Required
Section 401 Water Quality Certification	MPCA; WDNR	Certification
NPDES Construction Stormwater Permit; Trans 401 and NR 151 compliance	MPCA; WDNR	Permit
Local		
Municipal Consent	City of Red Wing	Approval

9. Land Use

a. Describe: i) Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands; ii) Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency; iii) Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Land Use and Development

The Minnesota portion of the project area contains a diverse mix of land uses typical of urban locations. Zoning details are located within the zoning section below. Land uses within the City of Red Wing portion of the project vicinity include recreational (Levee Park and Barn Bluff), industrial (Archer Daniels Midland facility), commercial (downtown area and Red Wing Shoes facilities), residential single family, and residential multi-family parcels. The Mississippi River shoreline of the Minnesota approach contains the CP rail line. See Figure 19 in Appendix A for additional City of Red Wing land use information.

Compared to the Minnesota portion of the project area, the Wisconsin side is more rural. This is primarily because all land within the Wisconsin approach to the river crossing is within a Special Flood Hazard Area according to Flood Insurance Rate Maps (FIRMs). Commercial and recreational land uses exist within Wisconsin's project area Mississippi River shoreline. Businesses offering boat slips, camping, and food service are located at the base of Bridge 9040. See Figure 20 in Appendix A for additional Pierce County land use information.

Prime or Unique Farmlands

No agricultural land will be acquired, no farmland will be severed or triangulated. The project will not have any adverse effect upon agricultural production in Goodhue County or Pierce County. Therefore, the proposed project would not cause any adverse impact to agricultural land or operations.

While the Natural Resources Conservation Service's Web Soil Survey indicates the presence of prime farmland soils within the Minnesota portion of the project area in the City of Red Wing, the entire area is currently developed with urban land uses. The Wisconsin portion of the project is located within a Special Flood Hazard Area and is not suited for agricultural land uses. According to the Natural Resources Conservation Service's Web Soil Survey, no prime farmland soils exist within the Wisconsin portion of the project area.

See Figure 21 in Appendix A and Appendix E for additional soil information.

Parks and Trails

City-designated parks within or near the project area in the City of Red Wing include Levee Park, Barn Bluff, Red Wing Gateway Garden Park (Del Dankers Park), and Bluff View Park.[3] City-designated recreational trails exist within Barn Bluffs and Levee Park. Goodhue County's Cannon Valley Trail extends into downtown Red Wing near the project area.[4] The city is also in the planning phase for developing a riverfront trail that would connect the Cannon Valley Trail with these three parks. No parks or trails will be affected by the proposed project.

See Figure 22 in Appendix A for additional parks and trails information.

The Mississippi River within the project area is part of the Mississippi River State Water Trail, a designated Minnesota state water trail (formerly termed a Canoe and Boating Route). The river bridge will not affect canoe and recreational boat use. Although there may be temporary impacts to recreational boating access during construction (see Section IV.A.6.b (Project Description) for additional information), there would not be any permanent impacts.

Zoning

The Minnesota approach encompasses several zoning districts within the City of Red Wing. The buttonhook ramp and intersection is within the RM 1-Residential Multi-Family One zoning district. The slip-ramp is adjacent to RF-Riverfront, B3-Central Business, I1-Light Industrial and 12-General Industrial zoning districts consisting of Barn Bluff, Red Wing Shoes parcels and ADM facilities.

The Red Wing Commercial Historic District, Red Wing Mall Historic District, Red Wing Residential Historic District, and the St. James Hotel Complex Historic District are all located west of the Minnesota approach within the City of Red Wing. These districts are National Register-Listed or National Register-Eligible.

The Wisconsin approach is located within Pierce County's Commercial and General Rural Flexible zoning districts. The Rural Residential-20 zoning districts are located east and west of the existing approach.

Shoreland Districts

The Minnesota side of the project is within a Goodhue County Shoreland District per the Goodhue County Zoning Ordinance[5]. Language related to public roads and parking areas is located within Article 30, Section 11, Subsection 3. These zoning regulations address considerations such as erosion control measures, compatibility with natural vegetation and topography, and structure setbacks. Although MnDOT is not subject to local zoning ordinances, efforts to minimize erosion and vegetation impacts will be considered in the project design development.

Per the Floodplain Zoning Ordinance for Pierce County, Wisconsin[6], floodplain zoning regulations apply to the Wisconsin side of the project because it is located within a Special Flood Hazard Area. However, the floodplain zoning ordinances pertain to site developments and do not apply to bridge or road approach projects that cross public waters.

[3] Source: http://www.red-wing.org/media/files/departments/public_works/City_Parks_Map.jpg
[4] Source: http://cannonvalleytrail.com/images/CVT_MAP_2006_2.pdf
[5] Source: http://www.co.goodhue.mn.us/DocumentCenter/View/2428
[6] Source: http://www.ecode360.com/9818396

Wild and Scenic Rivers and Nationwide Rivers Inventory

No rivers exist within the project limits that are designated as part of the National Wild and Scenic Rivers System or the Nationwide Rivers Inventory.

Floodplain Finding

The most recent Federal Emergency Management Agency (FEMA) FIRMs have been examined for this project (Map number 27049C0185E in Goodhue County, MN dated September 25, 2009 and map number 55093C0383E in Pierce County, WI dated November 16, 2011). In addition, the *Waterway Analysis Memo* authored by MnDOT's Bridge Office and dated October 16, 2014 contains detailed information about flood level information and other hydraulics analyses.

The project will span the Mississippi River, connecting Red Wing in southeast Minnesota to Hager City, Wisconsin. The project area encompasses the river crossing itself and the bridge approaches in both states. The project will replace the existing Eisenhower Bridge with a new and structurally sound river crossing structure and approach roadways. The proposed bridge has six piers, two piers in the main channel and four piers in the floodplain.

The project will transversely encroach on the Mississippi River floodplain. The river bridge itself and the entire Wisconsin approach roadway will encroach the floodplain. Approximate encroachment length is 1,600 feet. See Figure 23 in Appendix A for details regarding Special Flood Hazard Areas (SFHAs) subject to inundation by the 1 percent annual chance flood and regulatory floodways. The floodplain is currently designated as Zone AE with a defined regulatory floodway.

Improvements to 825th Street on the Wisconsin side of the bridge and extending under the bridge will require work within the FEMA designated SFHA (1 percent floodplain). This area is also designated as Floodway for the Mississippi River on the Wisconsin side of the channel. If any areas of fill were within the Floodway, it would trigger the need for floodplain related permitting to ensure compliance with FEMA National Flood Insurance Program regulations along with the need to demonstrate no impacts to the floodplain/floodway elevations and certification of no-rise conditions.

This project will not result in any significant floodplain impacts for the following reasons.

There will be no significant interruption or termination of a transportation facility needed for emergency vehicles or providing a community's only evacuation route.

- All roadway grades would be designed above the 100-year flood elevation. The 100-year flood elevation at the Mississippi river is 683.94 feet (1988 NAVD datum).

- There is no recorded evidence of flooding or overtopping of the existing bridge or roadways at the river crossing.

No significant adverse impact on natural and beneficial floodplain values should result from this project.

- No substantial fisheries impacts are anticipated. Construction operations that may impact the river bed would not occur during fish spawning and migration periods without approval from WDNR and MnDNR. Exact dates and allowable work in the river during this time period would be subject to DNR permit conditions.

- No changes in public access (boat or canoe) would result from the project.

- The Wisconsin approach and associated modifications would require fill in wetlands surrounding the roadway system. Impacts would be minimized to the greatest extent practicable. See Section IV.A.11.b.iv.1 (Water Resources – Wetlands) for additional information.

- Section IV.A.13.b (Fish/Wildlife/Ecological Resources) describes the potential impacts to fish and wildlife from the project. No substantial impacts have been identified.

No significant increased risk of flooding will result.

- A "No-Rise Certificate" was issued on October 16, 2014 by a Hydraulic Design Engineer from the MnDOT Bridge Office. This verifies the proposed project will not impact the floodway width or 100-year flood elevation (will not raise or lower by more than 0.00 feet) on the Mississippi River at published sections in the Flood Insurance Study or at unpublished cross-sections in the vicinity of the proposed project.

- Any temporary stage increase as a result of construction staging, like the anticipated temporary construction causeway, will have to be analyzed for compliance with the 100-year flood stage requirement.

The project should not result in any incompatible floodplain development.

- No new access to a floodplain area is being created.

- Pierce County, Wisconsin and Goodhue County, Minnesota maintain floodplain and shoreland ordinances that regulate floodplain development.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The proposed improvements support nearby land uses, zoning, and local plans in the project area.

Coordination with local government planning has occurred to ensure the bridge and approaches are compatible with existing land uses. The Minnesota approach, in particular, has received increased consideration because of its location in downtown Red Wing, which includes historic districts. While state highways are not subject to local plans, ensuring the project's compatibility with local planning efforts has resulted in ongoing collaboration with the City of Red Wing and the general public.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

The proposed action is compatible with nearby land uses, zoning, and local plans in the project area.

As part of the Mississippi River State Water Trail (Minnesota designation), the river within the project area is used by recreational boat traffic. As noted within Section IV.A.20 (Other Potential Environmental Effects), construction would involve temporary interruptions to the navigational channel at various stages of construction to allow for pier construction and work on the bridge structure. These closures would also impact recreational water users. The timing and duration of closures would vary and will be coordinated

with the DNR as well as the U.S. Army Corps of Engineers, U.S. Coast Guard, and other relevant stakeholders as required by rules and regulations.

10. Geology, Soils and Topography/Land Forms

a. 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.

Additional geological and soil information can be found in the *Subsurface Investigation Memo*. Summary information is provided below.

Surficial soils on the south end of the project are underlain by Paleozoic Bedrock of the St. Lawrence Formation, an intermixed Siltstone and Sandstone with some dolomitic zones. The Saint Lawrence ranges from 5 feet to almost 20 feet thick. Below the St. Lawrence is the Franconia Formation. The Franconia Formation is a variably glauconitic, fine to medium grained Sandstone with thin seams of Shale and has zones where the Sandstone has become cemented with dolomite.

Bedrock depths become deeper just north of Red Wing within the scoured river valley of Glacial River Warren. Borings within the river for Pier 2 are approximately 7 feet to 30 feet of sand overlaying a marly organic silty clay ranging 20 feet to 45 feet thick. Below the organic zone is a 10-foot to 20-foot zone of sand and gravel with bedrock of the Franconia Formation below.

Bedrock depths become progressively deeper as you head into Wisconsin ranging from 85 feet to over 145 feet below ground/water surface (approximately 588 feet to 537 feet in elevation).

According to the MPCA website[7], the City of Red Wing and the project area is likely located within a karst area. However, though the MPCA identifies the project area as a potential karst area, approximately 50 feet of sedimentary deposit is located on top of limestone bedrock. In addition, no signs of sinkholes or karst features have been identified in the project area as supported by test borings drilled for the subsurface investigation. As a result, karst-related susceptibility is not anticipated.

b. Soils and Topography – Describe the soils on the site, giving NRCS (SCS) classifications and description, 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 11.b.ii.

A Unified Soil Classification System soils report of the approximate project area can be found in Appendix E. In addition, Figure 21 in Appendix A highlights soil erodibility information for the project area. Substantial soils and topographic limitations are not anticipated.

[7] Source: http://www.pca.state.mn.us/index.php/water/water-types-and-programs/groundwater/groundwater-basics/karst-in-minnesota.html

Surficial soils within the project area consist of coarse sand and gravel alluvial deposits from Glacial River Warren and modern river channel deposits of sand and gravel with areas of silt, clay, and organics. Surficial soils on the south end of the project, within the City of Red Wing, are relatively shallow, 4 feet to 10 feet thick, and consist of loamy sand and gravel with some Sandstone colluvium.

Table 6 below summarizes soil type information within the project area. According to the NRCS Soil Survey, the Wisconsin side of the project area consists of fine sandy loam and loamy fine sand soils with high permeability.

On the Minnesota side of the project, approximately 16,000 cubic yards of excavation and 47,000 cubic yards of fill will be required. On the Wisconsin side of the project, approximately 2,600 cubic yards of excavation and 57,000 cubic yards of fill will be required.

Table 6: Project Area USCS Soil Types

Symbol	Location	Name	Texture	Permeability
1658A	WI	Algansee-Kalmarville complex	Fine sandy loam	High
656A	WI	Scotah loamy fine sand	Loamy fine sand	High
N608C2	MN	Malardi loam	Loam	Moderately high
N640G	MN	Lacrescent, flaggy-Frontenac-Rock outcrop complex	Flaggy silt loam	Moderately high
N638G	MN	Brodale	Channery loam	Moderately high
N586D2	MN	Ridgeton, sandy substratum-Eden Prairie Complex	Loam	Moderately high
N607A	MN	Meridian silt loam	Silt loam	Moderately high
N518C2	MN	Lindstrom silt loam	Silt loam	Moderately high

As noted in Section II.A (Purpose and Need), settlement issues have developed over time with the river bridge structure. The existing north abutment has settled approximately 3.5 feet and Pier 8 has settled approximately 2.5 feet over the structure's lifetime. To address potential settlement issues, final design considerations will include the feasibility of a surcharge with wick drains to accelerate the settlement of the Wisconsin approach prior to constructing the road surface and the north abutment. In addition, recommended pile lengths will extend through the layer of poor soil down to sandstone.

11. Water Resources

a.i. Describe surface water features on or near the site – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 miles of the project. Include DNR Public Waters Inventory number(s), if any.

The Minnesota Public Waters Inventory (PWI) identified the following surface waters as being located within one mile of the project:

No.	Name	PWI ID/Assessment Unit	Public Water	303d Impaired Water	Other Special Designation
1	Mississippi River	07040001-531	Yes	Yes	N/A

The Mississippi River is ultimately the receiving water body for the proposed project area. The MPCA has identified this portion of the river as impaired for mercury, PCB in fish tissue and TSS. A Total Maximum Daily Load (TMDL) Plan is approved for mercury in fish and mercury in water column impairments. Although impaired for mercury, the MPCA does not require additional design or construction measures to be taken because mercury is not generally associated with stormwater discharges from roadway construction projects. The MPCA would require that an NPDES permit be obtained for this project and all design and construction would follow the NPDES permitting requirements including additional measures relating to the TSS impairment. In addition, Wisconsin's Trans 401 and NR 151 form the NPDES compliance requirements within the Wisconsin portion of the project. Therefore, the project would not negatively impact the quality of receiving waters.

a.ii. Describe groundwater – aquifers, springs, seeps. Include 1) depth to groundwater; 2) if project is within a 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.

Depth to groundwater is approximately 10 feet near the project site. There are no wellhead protection areas within two miles of the project area.

b.i. Wastewater: Describe effects from project activities on water resources and measures to minimize or mitigate the effects of 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.

1) 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.

2) 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.

Not applicable.

3) 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.

No impacts to existing wastewater treatment or conveyance systems are anticipated.

b.ii. Stormwater: Describe effects from project activities on water resources and measures to minimize or mitigate the effects of stormwater. Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

The project will result in a net increase of approximately 3.2 acres of new impervious area across the entire project. The portion of existing and new impervious areas in Minnesota and Wisconsin is summarized in Table 7.

Table 7: Project Impervious Areas Summary (in acres)

Area	Minnesota			Wisconsin		
	Existing	Future	Net Increase	Existing	Future	Net Increase
Roadway	4.6	6.0	1.4	2.0	3.3	1.3
Bridge	0.3	0.4	0.1	1.2	1.6	0.4
Totals	4.9	6.2	1.5	3.1	5.1	1.7

This added impervious surface will increase the rate and volume of runoff. To mitigate for runoff rate/volume increases, BMPs will be installed on both the Minnesota and Wisconsin sides of the project. There will not be any substantial changes to the current drainage patterns. Drainage from the high point on the bridge to the north will route to the Wisconsin side and to the south will route to the Minnesota side.

On the Minnesota side, a filtration basin would be installed as part of the Minnesota roadway improvements just south of US 61 and east of the bridge approach. This BMP will provide for rate control and the removal of total suspended solids (TSS), phosphorous and other pollutants. If underlying soils are suitable for infiltration, the basin would be constructed in that manner. If poor soils, contaminated soils or shallow bedrock exist, the system would function as a filtration basin with an under drain. The outlet from the filtration basin would route to the storm sewer tunnel system located just under Bluff Street. The basin would treat both existing and new impervious areas to a level necessary to meet the MPCA NPDES Stormwater Permit requirements.

Runoff from the main bridge deck on the Minnesota side cannot be routed to this basin due to physical constraints. However, pretreatment devices such as sump manholes or other BMPs will be installed to

capture large sediment and debris prior to discharge into the river. Storm sewer from most of the roadway improvements will be routed to the basin for treatment.

On the Wisconsin side, runoff from the bridge deck will be routed through pretreatment devices prior to discharge into the grassed swales in the roadway loops between US 63 and north and south sections of the 825th Street connections. Grassed swales will provide for removal of TSS to at least a 40 percent removal level to meet the requirements of the Wisconsin post-construction performance standards. Specific erosion control, sediment control and site stabilization measures will comply with the WDNR Stormwater Rules.

b.iii. Water Appropriation: Describe effects from project activities on water resources and measures to minimize or mitigate the effects of 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. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

Temporary dewatering may be required during construction. While dewatering is not expected to exceed more than 10,000 gallons of water per day or 1 million gallons per year, a Temporary Water Appropriations General Permit 1997-0005 will still be required. Dewatering will comply with Wisconsin State Regulations (Trans 401 and NR 151) and the MPCA and WDNR NPDES Construction Stormwater Permit, and shall be discharged in a manner that does not create nuisance conditions or adversely affect the receiving water or downstream properties.

b.iv.a 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. 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.

See Figures 24 and 25 in Appendix A for the wetland delineation boundaries and wetland impacts in the project area.

Wetlands are afforded federal protection (the Clean Water Act – Section 404, Executive Order 11990 – Protection of Wetlands), and state protection (Minnesota Wetland Conservation Act (WCA) in Minnesota and Chapters 30, 31, 281, 282 of Wisconsin Statutes and Chapter NR 103, Wisconsin Administrative Code, among others in Wisconsin) that mandate a “no net loss” concept of wetland functions and values. In Minnesota, MN Rule 6115 affords further protection to Public Waters, including the Mississippi River. These laws further require that projects seek to avoid, then minimize, and finally mitigate any potential impacts (referred to as “sequencing”). The following information summarizes the project’s anticipated wetland impacts and mitigation processes taken into consideration throughout the project’s development.

Wetland Delineation, Assessment, and Classification

The project site was examined on August 21, 2014 for areas meeting the technical wetland criteria in accordance with the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Midwest Region* (USACE 2012). Field notes, samples, and photographs were taken at representative locations in each wetland basin. One transect of two sampling pits (an upland sampling pit and a wetland sampling pit) was established perpendicular to the edge of all delineated wetlands in the project area. Wetland boundaries were located and marked with pin flags to allow for field review. The wetland edge is considered the highest extent of the wetland basin; areas above the boundary fail to meet the three required wetland parameters while areas below the edge meet the wetland parameters required by the field delineation methodology.

Soils were also observed for hydric soil characteristics. Soils were examined in cores taken with a soil probe and soil profiles were observed at a depth necessary to confirm hydric soil characteristics. In addition, primary and secondary indicators of hydrology were identified in the field to determine the presence or absence of wetland hydrology. Subsurface wetland hydrology indicators were examined using the soil cores and/or soil pits as deep as 24 inches to confirm soil saturation in the 12 inches of the soil profile.

Wetland classification follows the methods described in the Wetlands and Deepwater Habitats of the United States (Cowardin, et al. 1979). Wetland classification is also provided following Wetland Plants and Plant Communities of Minnesota & Wisconsin (Eggers and Reed 2011) and the Wisconsin Wetland Inventory (WWI) classification system.

Antecedent precipitation data from the Minnesota Climatological Working Group (University of Minnesota), analyzed using prescribed methods, show the project area to have received a normal amount of precipitation. However, 5.95 inches of rain fell in the vicinity of the project area in the first 21 days of August 2014. Approximately 5.56 inches of rain fell on August 18, 2014, just three days prior to fieldwork. All vegetation was identifiable, including all dominant species. Two wetlands and one ditch was identified, delineated, and classified. See following sections for summary information.

Wetland Impacts

See Table 8 below for a summary of wetland impacts. Additional information is depicted in Figures 24 and 25 in Appendix A. Two of the three delineated wetlands (Wetlands #1 and #2 in Wisconsin) have measurable impacts pursuant to the Wisconsin's Administrative Code Natural Resources (NR) 103 and 299. An additional wetland in Minnesota, a roadside ditch (Ditch #1) is potentially considered a Water of the United States. This determination will be made by the U.S. Army Corps of Engineers within the permitting phase. Of these three wetlands, approximately 3.0 acres are of permanent wetland impacts are anticipated. In addition, approximately 3.5 acres of temporary wetland impacts are anticipated due to construction staging area. Total wetland impacts are anticipated to exceed five acres. Due to the multistate nature of the project, a Section 404 individual permit will be required regardless of total wetland impact average. Section 404 general permits carry no provisions for multistate work. Final wetland impacts will be determined during the permitting process.

Construction of the new river bridge and demolition of the old bridge are anticipated to have some construction-related temporary wetland impacts and permanent wetland fill impacts. Permanent wetland

impacts may result from construction of new piers, abutments, and approaches. Temporary wetland impacts may include temporary fill placed within wetlands in order to accommodate access by construction equipment or tree clearing.

Table 8: Wetland Impacts Summary

Wetland ID	Cowardin Type	C-39 Type	Wetland Type	Est. Perm. Impact (acs)	Est. Temp. Impact (acs)	Est. Total Wetland Size (acs)
1	PABG	4	Deep marsh	0	1.7	Contiguous w/ vast Miss. River floodplain
1	PF01C	7	Hardwood wetland	0	0.3	Contiguous w/ vast Miss. River floodplain
2	PEM1F	3	Shallow marsh	0.6	0.1	Contiguous w/ vast Miss. River floodplain
2	PEM1C	3	Shallow marsh	1.0	0.9	Contiguous w/ vast Miss. River floodplain
2	PF01/SS1C	7	Hardwood wetland/Shrub wetland	0.5	0.5	Contiguous w/ vast Miss. River floodplain
2	PABG	4	Deep marsh	0.02	0.02	Contiguous w/ vast Miss. River floodplain
2	PF01C	7	Hardwood wetland	0.5	0.02	Contiguous w/ vast Miss. River floodplain
Ditch 1	PEMA/PEMC	2	Fresh (wet) meadow	0.3	0	0.40 acres
Piers	N/A	N/A	N/A	0.05	0	N/A
			Total Impact	**3.0***	**3.5***	

Notes: * = Individual permanent and temporary impacts do not equal "Total Impact" sum due to rounding

Based on the overlay of preliminary construction limits and delineated wetland boundaries, the following provides an estimate of potential wetland fill impacts associated with the bridge replacement and roadway approaches.

On the Minnesota side, a potential jurisdictional wetland area (Ditch #1) is located in a ditch that runs along the north side of US 61 below Barn Bluff. See Figure 24 in Appendix A for location information. The high end of the ditch is 59 feet above the normal pool elevation of the river and the low end is 37 feet above the normal pool elevation. Portions of the ditch are vegetated limestone. Other portions have accumulated some soil and have small patches of cattail growing in them. The ditch flows to a point just east of the bridge approach, at which point it drains into a culvert under US 61 where it joins an underground storm water tunnel that parallels the bridge before emptying into the river. Because the ditch was created in uplands to convey roadway drainage, it is outside of the scope of the Wetland Conservation Act and its conversion to an urban section will constitute a "No Loss" situation under the Wetland Conservation Act. This ditch may be considered jurisdictional per the U.S. Army Corps of

Engineers because of its intermittent hydrologic connection with the Mississippi River. If the ditch is determined to be a Water of the United States per the U.S. Army Corps of Engineers, it will be incorporated into the Section 404 permitting process. Permanent impacts to the potential jurisdictional wetland area of Ditch #1 is approximately 0.3 acres.

Total permanent wetland impacts in Wisconsin are mostly associated with the bridge approach and are estimated to be 2.6 acres to Floodplain Forest/Type 1L/PF01C/T3RW wetland. Wetlands #1 and #2, as shown on Figures 25, are frequently flooded by the Mississippi River. The dominant tree and sapling species is silver maple. A majority of the wetland impacts on the Wisconsin side are within a single wetland, identified as Wetland #2 within Figure 25 of Appendix A. These wetland impacts result from roadway embankment fill. Total temporary wetland impacts in Wisconsin are partly associated with anticipated temporary construction causeways described in Section IV.A.6.b (Project Description). The portion of the temporary construction causeways within Wetland #1 will result in approximately 2.0 acres of temporary wetland impact. Two temporary construction causeways would be built within the floodplain of the Wisconsin approach above the 10-year flood elevation. They would function as rock roads and extend from the proposed north abutment to Pier 3 and be approximately 20 feet wide and approximately 750 feet long. Other temporary wetland impacts in Wetland #2 would result from staging areas. See Figure 25 within Appendix A for additional information.

Sequencing: Avoidance Alternatives

No Build: The No Build Alternative would not impact wetlands; however, it does not address the project purpose and need.

Sequencing: Potential Bridge Alignment Alternatives

Early in the planning process several bridge crossing locations were evaluated with respect to potential environmental impacts. These included upstream relocations of the US 63 crossing at Bench Street and downtown alignments at Plum Street, Bush Street, and Broad Street.

Of the four bridge location alternatives that were evaluated, the Bench Street location had potential wetland impacts that were considerably larger than the other proposed bridge location alternatives. The remaining bridge location alternatives (e.g. Broad Street, Bush Street, and Plum Street) each had similar potential wetland impacts. The downtown bridge location alternatives each had potential wetland impacts greater than impacts associated with the preferred bridge location, just upstream from the existing US 63 bridge.

Given the ubiquity of wetlands in the Mississippi River floodplain, complete avoidance of wetland impacts is not feasible with any proposed bridge location alternative. However, the preferred new bridge location has the least potential for wetland impacts.

Sequencing: Bridge Type and Wetland Impacts

Several bridge types for the proposed location alternative were evaluated in the planning process with respect to potential environmental impacts. The three bridge types carried forward and evaluated were the tied arch, concrete segmental box girder, and steel box girder. The preferred bridge type is the steel box girder. For all proposed bridge types the footprint of each pier would be similar. However, the number of piers within wetlands or the designated 100-year floodplain would be six for the steel box girder and

concrete segmental girder design and five for the tied-arch design. Thus, as a result of the number of required piers for each type, the preferred steel box girder bridge type would have a negligibly higher wetland footprint impact than the tied-arch design. Each of the three primary bridge concepts would have one in-stream pier below the normal pool elevation of 666.64 feet (NAVD 1988).

Sequencing: Preferred Alternative Minimization

The project will attempt to minimize potential wetland footprint impacts through the use of several structural and non-structural BMPs. While bridge pier and abutment footprints are dictated by structural requirements, bridge approaches can, to some extent, be minimized through embankment slope steepening. Embankment slopes are also dictated by road design guidelines and safety considerations. For the purpose of estimating impacts in this EA, standard design features and preliminary construction limits were assumed. Possible minimization measures will be explored in final design and permitting.

Mitigation and Regulatory Context

Unavoidable wetland impacts resulting from bridge demolition and construction of the proposed river bridge, associated roadway approaches, construction staging activities, heavy equipment access, and tree clearing will be mitigated through the purchase of wetland mitigation credits (as in Minnesota) or debited from existing mitigation bank sites (as in Wisconsin) from an existing bank as near to the impacts as possible. Wetland acreage impacts resulting from fill, shading effects, changes in hydrology, and tree clearing will be mitigated at a maximum ratio of 2:1 (mitigated:impacted). It is assumed that the purchased mitigation credits would be of a wetland type and quality that would sufficiently compensate for wetland functional impacts. As noted above, wetland impacts mostly occur on the Wisconsin side of the Mississippi River. However, impacts to the ditch on the Minnesota side running along the north side of US 61 may also require mitigation. Appropriate wetland mitigation credits will be purchased or debited within appropriate bank service areas in Wisconsin and Minnesota. Wetland impacts in Wisconsin will be mitigated as described in the WDNR/WisDOT Wetland Mitigation Technical Guideline. It is anticipated that required mitigation credits on the Minnesota side would derive from the MnDOT Wetland Mitigation Bank located near Hokah, Minnesota. If necessary, it is anticipated a purchase of private mitigation credits from a variety of banks in Minnesota and Wisconsin could be utilized to satisfy wetland mitigation requirements. More details on wetland mitigation requirements will be known as the project proceeds into final design and wetland impacts can be more accurately quantified, and disclosed in required wetland permits.

The intent of the wetland mitigation plan will be to replace lost wetland functions and restore wetland area to fulfill the regulatory mitigation requirements. 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 (Minnesota Wetland Conservation Act, Wisconsin State Statutes and Administrative Code, etc.).

b.iv.b Other surface waters -- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) 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. 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 of type of watercraft on any water body, including current and projected watercraft usage.

No substantial water body impacts are anticipated as a result of the project. Other than piers in the Mississippi River, described in Section IV.A.6.b (Project Description), there are no other anticipated permanent physical alterations to surface water features such as lakes, streams, and ponds. The temporary construction causeways will temporarily impact river backwaters surfaces in Wisconsin.

For in-stream pier work, the proper installation of silt curtains can potentially control sediment plumes. Curtailing in-stream work when river flow velocities exceed a pre-defined threshold can minimize the extent of silt plumes. For pier work within wetlands and floodplains, measures to rapidly stabilize disturbed soils can minimize the potential for sediment-related water quality impacts to the Mississippi River. Temporary sedimentation basins can be used during construction to settle runoff before entering receiving water bodies. BMPs will be coordinated with MnDNR and WDNR, as appropriate, during final design to determine the best methods for minimizing the project's effects on water quality.

Work in the Mississippi River below the ordinary high water mark will comply with all stormwater permits and WDNR and MnDNR water permits by providing appropriate sediment control BMPs and perimeter control methods.

The project will not change the number or type of watercraft on any waterbody. See Section IV.A.6.b (Project Description) and Section IV.A.20 (Other Potential Environmental Effects) for information on temporary construction impacts to the Mississippi River navigation channel.

12. Contamination/Hazardous Materials/Waste

a. 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.

Potential environmental hazards were reviewed both on existing bridge structures and within the surrounding project area. Summaries of these reviews are provided below. The complete Limited Phase I Environmental Site Assessment is available upon request from the MnDOT Project Manager.

Existing Contamination or Potential Environmental Hazards on Existing Bridge Structures

On the existing river bridge there is potential for asbestos to exist, particularly on its underside. Approximately 7,000 linear feet of wiring and 10 junction boxes may contain asbestos. This wiring must be tested prior to being disturbed for the demolition of the structure. If found to contain asbestos, it must be removed by a licensed asbestos-abatement control from OES's list of Certified Contractors. Any Transite pipe found along guardrail must be handled in the same manner.

The existing river bridge also contains lead materials that must be handled per rules and regulations. 45 lead sheets are located under the spans and 436 lead sheets are located under the guardrail posts. These materials must be separated out and taken to a lead smelter or other recycling facility for proper handling. Documentation is required showing the recycler received the material.

In addition, 20 square feet of lead paint was found on the angles and seams of the trusses. The peeling lead paint must be encapsulated by contractors with an elastomer product that meets the U.S. Environmental Protection Agency's definition as "barrier coating."

Additionally, there are approximately 121 creosote-treated timbers on the guardrail leading to the existing river bridge. Treated wood must be disposed of at an MPCA-approved sanitary or industrial waste landfill. Documentation of proper wood disposal must be kept on file.

On the existing US 61 overpass, there is potential for asbestos to exist, particularly on its underside. Approximately 500 linear feet of wiring and 3 junction boxes may contain asbestos. This wiring must be tested prior to being disturbed for the demolition of the structure. If found to contain asbestos, it must be removed by a licensed asbestos-abatement control from OES's list of Certified Contractors. Any Transite pipe found along guardrail must be handled in the same manner.

The existing US 61 overpass also contains lead materials that must be handled per rules and regulations. 96 lead sheets are located under the spans and 86 lead sheets are located under the guardrail posts. These materials must be separated out taken to a lead smelter or other recycling facility for proper handling. Documentation is required showing the recycler received the material.

Existing Contamination or Potential Environmental Hazards within Surrounding Project Area

As part of the Limited Phase I Environmental Site Assessment, 32 sites of potential concern were identified in the project vicinity and ranked into three risk categories based on the potential for contamination from site/use activities, without regard to proposed construction activities. Additional site assessment for specific locations will be conducted, as necessary, when site access becomes available in final design stages. Seven of these 32 sites are existing contamination or potential environmental hazards within preliminary construction limits of the project. Resources used to identify the sites include the Environmental FirstSearch™ database, the MPCA's "What's In My Neighborhood" web application[8], the WDNR's Remediation and Redevelopment Program "RR Sites Map" web site[9], MPCA files, city records, and well records. Information on these 32 sites can be found in Table 9 below.

[8] Source: http://pca-gis02.pca.state.mn.us/wimn2/index.html
[9] Source: http://dnr.wi.gov/topic/Brownfields/rrsm.html

Table 9: Environmental Sites of Concern Summary

Site ID	Site Name	Site Address	Site Description	Ranking
▲ 1	Former Red Wing Gas Manufacturing	Bluff St and E 4th St	VCP, NFRAP, Fed Brownfied	High
2	AC DC Industrial Inc	412 Potter St	Former Filling Station	Medium
▲ 3	Archer Daniels Midland (ADM)	118 Main St	Large AST Facility, LUST, Spills	High
4	Behrens Supply Co.	211 Main St	RCRAGN	Low
5	Busy B Cleaners	425 Plum St	Dry Cleaners	Medium
6	Gernentz Auto Service	328 Bush	UST, Auto Repair	Medium
7	Colvill Family Center	269 East 5th St	RCRAGN	Low
8	Kask Electric Co.	436 West 3rd St	Former Auto Garage	Medium
9	Nelson Printing Co.	313 West 5th St	RCRAGN	Low
10	Noesen George, Dr.	210 Bush Ste 301 St	RCRAGN	Low
12	Red Wing Fire Station	420 Plum St	Closed LUST	Medium
13	Red Wing Publishing Co.	433 West 3rd St	RCRAGN	Low
■ 14	Red Wing Shoe Co	129 Main St	RCRAGN	Low
15	The Sherwin Williams Co.	305 Bush St	RCRAGN	Low
16	Valliant, Dennis DDS	316 Bush St	RCRAGN	Low
■ 18	WTD Enviornmental Drilling	East 3rd and Bluff St	Closed Spill Site	Low
19	WWTP - Creosote	230 Levee St	Open Spill Site	Medium
● 20	F and D Supply Co Inc	4th and Bluff St	Removed UST	Medium
21	Abandoned UST	213 East Ave	Open LUST, UST	High
22	Johnson Tire	420 Main St	UST/AST	Medium
24	Red Wing City Hall	315 West 4th St	Removed UST	Medium
● 25	Former Red Wing Manufacturing	109 Main St	Closed in Place USTs	Medium
26	Red Wing YMCA	Main and Broad St	Closed LUST	Medium
29	Riester Refridgeration	503 Bush St	Closed LUST	Medium
30	Siewert Construction	419 Plum St	Closed LUST	Medium
31	Red Wing Blocks 23 and 24	Plum St and 4th St	VCP, Closed LUST	High
73	Former Red Wing Iron Works	406 Main St	Industrial Land Use	Medium
74	Taco Johns	604 Main St	Former Filling Station	Medium
75	American Thermal Imaging	301 Plum St	Former Filling Station	Medium
76	Former Standard Oil Company	404 Bush St	Former Filling Station	Medium
77	Econofoods Parking Lot	609 Main St	Former Auto Garage	Medium
▲ 78	North Bridge Approach Area	NA	Suspect Dumping	High

Notes: Triangle = High risk site located within potential construction area; Circle = Medium risk sites located within potential construction area; Square = Low risk site located within potential construction area

Five high risk sites were identified within the project area, three of which (sites 1, 3, and 78 within Table 9) are located within preliminary construction limits. High risk sites are summarized below and depicted in Figure 26 of Appendix A.

Site 78: North Bridge Approach – During construction within the river bottom area adjacent to the north approach of the Hastings Bridge Project, dump debris was discovered requiring management as solid waste. The north approach of the river bridge presents the same physiographic and demographic scenario: a largely undeveloped river bottom area located directly across the river from an urban center. Based on the minor solid waste observed during site reconnaissance, the potential for solid waste and potential regulated waste within the north approach area of the river bridge is considered high.

Site 3: Archer Daniels Midland – ADM and its predecessors feature prominently in the history of industrial land use adjacent to the river bridge. Continuous industrial agribusiness on the ADM property predates construction of the original High Bridge in 1895. A laundry and dry cleaning facility formerly operated adjacent to the river bridge, at the approximate site of ADM's existing AST area. Active railroad tracks

(Canadian Pacific Railway) are also located along the southern bank of the Mississippi River through the project area. The rail line serves the ADM facility.

Site 1: Former Red Wing Gas Manufacturing Plant (GMP) – The former Red Wing (GMP) operated within the project area southeast of the US 61 overpass for approximately 77 years. The contaminant legacy of MGP processes was substantial in soil and groundwater both on and off the property. Although the site was remediated as a federal brownfield under the direction of the EPA and closed with No Further Remedial Action Plan (NFRAP), residual soil contamination may be encountered during construction adjacent to buried facilities and within nearby buried utility corridors. During implementation of remedial actions, tarry materials removed from the site were disposed as hazardous waste.

Eighteen medium risk sites were identified within the project area, two of which (sites 20 and 25 within Table 9) are located within potential construction areas. Medium risk sites are summarized below and depicted in Figure 27 of Appendix A. These sites consist primarily of petroleum related properties including closed LUST sites, UST/AST sites, and former filling station properties. One dry cleaning facility and an historical railroad site present a medium risk for CERCLA-regulated substances (i.e., non-petroleum products) to impact construction.

Nine low risk sites were identified within the project area, two of which (sites 14 and 18 within Table 9) are located within potential construction areas. A depiction of low risk sites can be found in Figure 28 Appendix A.

Measures to Avoid, Minimize, or Mitigate Adverse Effects

Further evaluation of properties identified within the preliminary construction limits of the project is in the process of being completed, to inform the final design for the identified Preferred Alternative and right-of-way acquisition. The results of this investigation would be used to determine whether the impacted property can be designed around or whether the construction activities on these properties can be minimized. Findings of any necessary further evaluation, like a Phase II Environmental Site Assessment, could result in the need to prepare a response action plan or to include special provisions in construction specifications for properly handling contaminated materials during construction. Any soil and groundwater handling activities would be coordinated with appropriate local, state, and federal regulatory agencies.

b. 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 solid waste including source reduction and recycling.

Other than demolition debris resulting from the two bridge structures and their approaches, there would not be substantial generation of solid waste from project construction. Most of the bridge/approach structural components (steel, concrete, etc.) can be recycled, substantially reducing the amount of material that would need to go to a landfill.

c. 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 above or below ground tanks to store petroleum or other materials. 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.

The proposed project involves limited use of contaminants, primarily for refueling. Therefore, there is limited potential for soil contamination from project construction. Appropriate safety measures will be followed during construction to avoid spills. Leaks, spills, or other releases will be responded to in accordance with MPCA and/or WDNR spill, containment and remedial action procedures.

d. 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 or hazardous waste including source reduction and recycling.

Any regulated wastes encountered during the project's construction phase will be handled and disposed of according to applicable state, federal, and MnDOT policies and regulations. As discussed in Section IV.A.12.a above, bridge demolition and other removals will require the removal and disposal of asbestos-containing waste, lead, treated wood, or other hazardous materials. These will be handled in accordance with MnDOT and/or WisDOT guidelines.

13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

a. Describe fish and wildlife resources as well as habitats and vegetation on or near the site.

Aquatic Species

The project area lies within Pool #4 of the Mississippi River between Lock and Dam #3 near Hager City, Wisconsin and Lock and Dam #4 at Alma, Wisconsin.

A SCUBA-based mussel survey was completed within the project area by MnDNR staff during the week of August 5, 2013. A total of 18 live mussel species and 12 additional dead mussel species were identified in the survey. A total of 162 live specimens were recovered and identified. See Appendix A Figure 29 for location information of the identified live listed mussel species. Information about identified state-listed threatened or endangered species in the survey is discussed later within this section. See Section IV.B.13 (Additional Federal Issues) for information regarding federal threatened and endangered species documentation.

Generally, the mussel survey revealed that mussels were most abundant in relatively shallow waters upstream, under and downstream of the existing bridge on the Minnesota and Wisconsin side of the bridge. Habitat is not suitable for mussels in deeper portions of the Mississippi River.

Approximately 66 species of fish have been documented from Pool #4 based on annual sampling since 1993.

Wildlife

Birds

Over 300 species of birds migrate along the Mississippi River Flyway annually through the project area. Intact and diverse habitats within the Mississippi River Flyway provide important feeding and nesting habitat for neotropical migratory songbirds, raptors and waterfowl. As noted in the Part a Vegetation section below, only the Mississippi River bottomlands and backwaters on the Wisconsin side of the river contain relatively undisturbed habitat.

Mammals

The urbanized landscape of much of the project area is attractive to habitat generalists such as white-tailed deer, raccoon, red fox, gray fox, coyote, gray squirrel and opossum. Aquatic habitat associated with the Mississippi River is attractive to beaver, otter, and muskrat.

A bat population could potentially exist near the existing river bridge (see WDNR correspondence in Exhibit 1 of Appendix C). WDNR noted the existing bridge structure will need to be inspected and surveyed for bats and bat roosting habitat. If the survey identifies a roosting bat population on the bridge, MnDOT will work with WDNR (and other agencies, if applicable) to ensure that appropriate measures are taken to minimize impacts to any roosting population.

Vegetation

Specific Habitats within the US 63 Bridge Project Area

Generally, habitats on the Minnesota side of the river bridge are highly urbanized and include city streets, infrastructure, residences and manicured lawns. Areas adjacent to the Mississippi River are occupied by railroad tracks and steeply sloped rip-rap and concrete rubble. Some disturbed shrubland is present under the existing river bridge upslope from the railroad tracks. Disturbed urban plant communities are present on the Minnesota side of the Mississippi River and are attractive to common habitat generalist animal species.

Habitats on the Wisconsin side of the existing river bridge include developed land built on fill such as the campground and marina and the elevated US 63 and associated embankment. Floodplain forest (Type 1L) wetland and fresh (wet) meadow (Type 2 wetland) are abundant in backwater areas of the Mississippi River that are not developed. The mosaic of natural habitats in the Mississippi River bottoms (Type 1L and Type 2 wetlands) provide important habitat for a wide variety of animals.

b. Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota County 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-722) and/or correspondence number (ERDB 20100712) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

Potential State-Listed Species That May Be Present within the Project Area

Correspondence from the Minnesota and Wisconsin DNR agencies contains detailed information on listed species as documented in the Natural Heritage Information System (NHIS). Table 10 summarizes specific listed state-species identified in project documentation that have the potential to be in the project area. In addition to those species identified within Table 10 below, the WDNR notes the known occurrence of 13 state-listed fish species in the project area or its vicinity. The Minnesota DNR also notes the known occurrence of a state-listed endangered plant in the project area or its vicinity.

Table 10: Identified State-Listed Species Potentially within the Project Area

Classification	Scientific Name	Common Name	Listed Status		State Rank	Global Rank
			Minnesota	Wisconsin		
Birds	*Falco peregrinus*	Peregrine falcon	SPC	END	S3B	G4
Mussel	*Arcidens confragosus*	Rock pocketbook	END	THR	S1	G4
Mussel	*Quadrula nodulata*	Wartyback	THR	THR	S2	G4
Mussel	*Quadrula*	Mapleleaf	N/A	SPC	S3	G5

Notes: END = Endangered; THR = Threatened; SPC = Special concern; State and Global Ranks utilize NatureServe/Natural Heritage Program system

See Section IV.B.13 (Additional Federal Issues) for information regarding federal threatened and endangered species documentation.

Wildlife

Peregrine falcon: The peregrine falcon is a state-listed threatened species in Minnesota that has been documented in the vicinity of the existing US 63 river bridge during the breeding season and have nested on a grain elevator in Red Wing (see MnDNR correspondence, Exhibit 2 in Appendix C). Typically the nesting season is roughly from May to July. Prior to bridge demolition, the bridge will be inspected for falcon nests. If the survey identifies falcon nesting on the bridge, MnDOT will work with the Minnesota and Wisconsin DNR agencies to identify measures to avoid falcon nesting impacts. See Part d in this section for a discussion of peregrine falcon identification and mitigation measures.

Aquatic Species

As noted in the response to Section IV.A.13.a a SCUBA-based mussel survey was completed by the MnDNR within the project area in the week of August 5, 2013. Of the live mussel species identified in the project area, two species are state-listed in Minnesota and Wisconsin; *Arcidens confragosus* (rock pocketbook) – Minnesota Endangered (Wisconsin Threatened) and *Quadrula nodulata* (wartyback) – Minnesota Threatened (Wisconsin Threatened).

Generally, the mussel survey revealed that mussels were most abundant in relatively shallow waters upstream, under and downstream of the existing bridge on the Minnesota and Wisconsin side of the bridge. Habitat is not suitable for mussels in deeper portions of the Mississippi River. Additional information about the two identified and listed live mussel species is described below.

Rock pocketbook: The rock pocketbook mussel favors a slow current and substrates that vary from silt to sand. Measures to minimize impacts to the rock pocketbook include an effort to relocate individuals to suitable habitat away from where construction may have footprint impacts or water quality impacts.

Wartyback: The wartyback mussel prefers a slow to moderate current with fine or coarse substrates. Measures to minimize impacts to the rock pocketbook include an effort to relocate individuals to suitable habitat away from where construction may have footprint impacts or water quality impacts.

A WDNR review of the NHIS also indicated the presence of thirteen state-listed fish species that are threatened, endangered, or of special concern. Minimization strategies for protected fish species is provided in Part d below.

Vegetation/Sites of Outstanding Biodiversity Significance

Several outstanding remnants of plant communities such as Dry Bedrock Bluff Prairies and Sugar Maple – Basswood forest have been identified in various locations on Barn Bluff. These remnants plant communities provide a refuge for several listed plant species. Since project construction avoids impacts to Barn Bluff, there would not be any impacts to these communities.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. 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.

Invasive Species

The Mississippi River is designated as 'infested' with aquatic invasive species (zebra mussels – *Dreissena polymorha* and Eurasian watermilfoil – *Myriophyllum spicatum*). MnDOT will incorporate into the project specifications all appropriate Wisconsin and Minnesota DNR rules for controlling the spread of invasive species.

Fish

In order to minimize the potential for impacts to fishery resources, MnDOT will continue to work with the Minnesota and Wisconsin DNRs to identify practices and/or work restrictions to minimize fishery impacts. Additional discussion is located in Part d below.

Wildlife

Birds

The Mississippi River Flyway is an important route for bird migration including waterfowl and neotropical migratory songbirds. Therefore, resource agencies and the National Audubon Society recommend consideration of migratory birds in bridge design, including use of lower profile bridge types (like the proposed steel box girder) and lighting design. See Appendix C Exhibit 2 for additional information.

Some types of bridge lighting elements appear to disorient migratory birds and disrupt feeding patterns. Several BMPs have been developed to minimize potential lighting impacts to migratory birds. The

proposed bridge is recommended to have LED lighting wired such that all non-essential lighting can by switched off during spring migration and the mayfly hatch, consistent with National Audubon Society recommendations. The City of Red Wing will maintain the capability to control non-essential lighting. In addition, the LED lighting will be white and recent studies have indicated white LED lighting does not tend to attract birds.

Vegetation

Approximately 0.3 acres of Fresh (Wet) Meadow (Ditch #1 on the Minnesota side of the Mississippi River) would be directly impacted through placement of fill on the Minnesota side and 2.6 acres of Floodplain Forest would be impacted through fill placement on the Wisconsin side. These are anticipated to be permanent wetland impacts.

Additional temporary construction-related impacts would occur as a result of staging areas, heavy equipment access, and tree clearing beneath the existing and proposed river bridge. Temporary wetland impacts are anticipated to be approximately 3.5 acres. Wetland tree clearing can lead to a temporary or permanent conversion of wetland type. Soils disturbed from earthmoving can provide conditions suitable for infestations of invasive plant species. Temporary fill needed for heavy equipment access for bridge construction would be removed to original grade and re-planted with appropriate plant species soon after construction is complete.

See Section IV.A.11.b.iv.a (Water Resources – Wetlands) for additional information.

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

Fish

Demolition and construction associated with bridge replacement projects often conflicts with fish spawning dates. In order to avoid/minimize impacts to fish spawning, MnDOT will work with Wisconsin and Minnesota DNR staff to identify practices and/or work exclusion dates to incorporate into the project specifications.

Construction techniques that can help to minimize water quality impacts and, therefore, minimize fishery impacts, include:

- Installation of silt curtains around coffer dams or in-stream piers modified appropriately for anticipated streamflow velocity
- Proper installation of silt fences at construction limits of bridge approaches can prevent silt from entering the Mississippi River during high water events.

- Avoiding the use of explosive practices during demolition of the existing river bridge

Wildlife

Part c above discusses bridge design elements that can minimize potential impacts to migratory birds, and how they have been incorporated into the project design.

The existing bridge will be inspected for evidence of past migratory bird nesting on the existing structure. Under the U.S. Migratory Bird Treaty Act, destruction of swallows and other migratory birds or their nests is unlawful unless a permit has been obtained from the U.S. Fish and Wildlife Service. Therefore, if evidence of past nesting on the bridge structure is observed, the project would either utilize measures to prevent nesting (e.g., remove unoccupied nests during the non-nesting season and install barrier netting prior to May 1), or bridge removal would occur only between August 30 and May 1 (non-nesting season). If netting is used, it will be properly maintained and removed as soon as the nesting period is over. If these measures are not practicable, then the U.S. Fish and Wildlife Service will be contacted to apply for a depredation permit.

In addition, as noted in Part a above, the existing structure will need to be inspected and surveyed for bats and bat roosting habitat. Depending on the survey results, there may be a need for additional coordination with DNR staff to develop strategies to minimize potential nesting season impacts. See WDNR correspondence, Exhibit 1 in Appendix C, for additional information.

Vegetation

Minimizing the construction footprint to the extent practicable including construction staging areas and heavy equipment access routes will diminish potential impacts to plant communities in the project area. Rigorous weed control in construction areas will help to minimize the potential for infestations of invasive plant species. Post-construction re-grading and rapid establishment of appropriate native vegetation will minimize potential impacts. At areas adjacent to Public Waters, disturbed soils will be revegetated with native plant species suitable to the local habitat. In addition, weed-free mulch will be used.

Per the WDNR, if burning brush will occur as part of this project, the contractor will be informed that it is illegal to burn materials other than clean wood. In addition, a permit may be required to burn any material during the wildland fire season. Contractors would be required to follow MnDOT Standard Specification 2572.3.A.9, which says that wounding of trees during April, May, June, and July should be avoided to prevent the spread of oak wilt. If it is determined that work must take place near oak trees during those months, the resulting wounds will immediately be treated with a wound dressing material consisting of latex paint or shellac.

Invasive Species

Adequate precautions will be taken to prevent transporting or introducing invasive species and/or aquatic diseases via construction equipment as required by Wisconsin and Minnesota DNR regulations. For example, MnDNR BMPs include draining all water from equipment where water may be trapped and removing all visible aquatic remnants prior to transportation along roads into or out of any worksite, or between water bodies. On-site precautions also include removal of invasive species by handscraping or powerwashing all accessible areas and killing invasive species via hot water, air drying, freezing, or crushing.

Threatened and Endangered Species

As noted in Part b above, the existing river bridge will be inspected prior to demolition for falcon nests. If the bridge is determined to be actively used by peregrine falcons for nesting during the year of demolition, MnDOT will work with Minnesota and Wisconsin DNR agencies to identify measures to avoid nesting impacts.

The aforementioned mussel survey completed in August 2013 may need to be revised dependent on construction start date. The existing mussel survey expires in 2018. In addition, a revised mussel survey would also be required if potential areas of impact defined for the original survey change. MnDNR and WDNR are coordinating efforts to address mussel mitigation as appropriate.

See Section IV.B.13 (Additional Federal Issues) for information on determinations of effect for federal threatened and endangered species.

14. 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.

The project has undergone extensive historic properties assessment and coordination to help make decisions that meet objectives outlined in the project's Purpose and Need identified in Section II. The project is being reviewed pursuant to Section 106 of the National Historic Preservation Act of 1966 and Section 4(f) of the Department of Transportation Act of 1966 (Section 4(f) may apply if a historic property is adversely affected by the project). A Section 106 Programmatic Agreement (PA) has been drafted and the final agreement will be included the Findings of Fact and Conclusions later in the environmental review documentation process. A draft PA is located within Appendix D Exhibit 10. The review includes findings related to archaeological, historic, and architecturally significant properties (i.e., properties listed or eligible for listing on the National Register of Historic Places (NRHP)). Preliminary findings are discussed in the sections that follow.

Technical studies that informed the identification of historic properties and/or evaluation of impacts included:

- *Red Wing Bridge and Route Improvement Project Phase I Architecture-History Investigation, US Hwy 63, Bridge 9040, Goodhue County, Minnesota and Pierce County, Wisconsin (SP 2515-21)*
- *Red Wing Bridge Project Phase II Architecture – History Investigation, US Hwy 63, Goodhue County, Minnesota and Pierce County, Wisconsin (SP 2515-21)*
- *Bridge 9103 Rehabilitation Study, Final Report, Red Wing, Minnesota TH 63 Red Wing Bridge Project, Phase I Archaeological Study, Goodhue County, MN and Pierce County, Wisc (SP 2515-21)*
- *Pre-Evaluation Study for the Archaeological Potential for the Trunk Highway 63 Red Wing Bridge Project, Goodhue County, Minnesota and Pierce County, Wisconsin*
- *Geomorphic Investigation of State Trunk Highway 63 Bridge over the Mississippi River, Red Wing, MN (SP 2515-21)*
- *Programmatic Section 4(f) Evaluation – US 63 River Bridge and Approach Roadways Project*

Appendix D includes correspondence related to historic and cultural resources.

Archaeology

Archaeological investigations performed for the project to date include a pre-evaluation archaeology study (Terrell and Vermeer, 2012) that identified portions of the project area of potential effect (APE)

having the potential to contain intact archaeological resources; a geomorphological investigation in conjunction with the pre-evaluation archaeology study to assess the potential for deeply buried archaeological resources within the APE (Foth Infrastructure and Environment, 2011); and Phase 1 archaeological investigations (Terrell and Vermeer, 2015) which included geomorphological deep site testing. However, not all of the archaeological resources within the APE could be assessed due to lack of landowner permission and physical constraints. Archaeological survey of some of the areas will not be possible until the properties can be acquired, so assessment of potential project impacts to archaeological resources cannot be completed until the investigations are complete. Therefore, MnDOT proposed and the SHPOs concurred that the archaeological assessment and determinations will be addressed through a process defined in a PA among the agencies (FHWA, MnDOT, WisDOT, MnSHPO and WisSHPO) for this project. A draft PA is included in Appendix D Exhibit 10.

Historic Properties

The information below focuses on two primary historic property considerations that helped direct the alternatives decision-making process. A complete list of these properties and districts are identified within the *Red Wing Bridge Project Phase II Architecture-History Investigation* document's "Summary of Findings" chapter. See Figure 30 in Appendix A for a map of identified historic properties (i.e., listed or eligible for listing on the National Register of Historic Places) within the greater project APE.

In addition to the two historic properties – Bridge 9103 (the US 61 overpass) and the downtown Red Wing Historic Districts – discussed in detail below, there are other properties listed or eligible for listing on the NRHP within the project APE (see Figure 30 in Appendix A). These properties include:

- Barn Bluff: Listed on the NRHP; this property will not be impacted by the proposed project. Avoiding impacts to this property was a key consideration in the development of project alternatives, as discussed in Section III (Alternatives).

- Red Wing Shoe Company property: Eligible for listing on the NRHP; the project is located adjacent to the property but will not acquire this property.

- CMSTPP Railroad Corridor Historic District: Eligible for listing on the NRHP; the project will span over this corridor.

- Mississippi River 9-Foot Channel: Eligible for listing on the NRHP; the project will span over this resource.

Because some of these properties are located adjacent to the project, the potential for project impacts will continue to be considered as project plans are developed/refined, consistent with the terms of the PA described above. A draft PA is included within Appendix D Exhibit 10.

It should be noted that the existing river bridge over the Mississippi River was determined to not be a historic resource, based on a review/evaluation of 1955-1970 bridges for MnDOT completed in 2011. The evaluation concluded:

> *The bridge does not have a direct and significant association with an important historic transportation system, program, or policy identified through contextual research, nor does it illustrate the evolution of a bridge type or represent an important variation in the design,*

fabrication, and construction of a bridge type. Additionally, it is not a distinguishable representation of a master's work and does not possess high artistic value as identified through contextual research. There, this bridge is recommended not eligible for the National Register under Criterion A and C.

While the bridge provides an important connection between Red Wing and Wisconsin, the existing river bridge was not the original bridge at the crossing, but is a replacement bridge that maintained the crossing rather than creating it.

From the State of Wisconsin perspective, the existing river bridge is also ineligible for the National Register. This was most recently reviewed in August 2011 when the Wisconsin State Historic Preservation Office and the Wisconsin Department of Transportation concurred that the bridge does not meet National Register eligibility criteria. The bridge does not have historical significance and is not considered a contributing resource. Therefore, it is not subject to federal Section 106 regulations.

The sections below focus on two primary historic resource considerations that influenced the alternatives development and decision-making process.

Historic Properties: Bridge 9103

The existing US 61 overpass, Bridge 9103, carries US 63 over US 61 as part of the Minnesota approach to the existing river crossing.

The existing US 61 overpass, including related approach features, has a State level of significance. It has a period of significance of one year, 1960. It is eligible for the National Register under Criterion C (design and construction) in the area of Engineering. Character-defining features include a continuous and horizontally curved concrete slab structure, the only curved continuous concrete slab bridge in the state from the subject period of 1955-1970. The horizontal curve of 14 degrees is the greatest degree of curve for any extant bridge in Minnesota from the period of 1955-1970. The bridge is exceptionally long when compared to other similar structures and demonstrates the complex design issues the engineers faced to meet the site challenges and road requirements for a bridge at this location. The bridge does not exhibit physical alterations and it retains its history integrity of location, design, materials, workmanship, setting, feeling and association.

The bridge's approach roadway qualities are also considered character-defining features. The 220 feet long southern approach was comprehensively designed and built with the bridge. The approach roadway's smooth vertical retaining walls with curved coping and ornamental railing are contributing resources.
Because the existing US 61 overpass has a State level of significance and is determined to be eligible for listing within the NRHP, further analysis was undertaken to assess a range of alternatives for the Minnesota approach of the proposed new river bridge. Per Section 4(f) legislation, the FHWA may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning minimize harm to the property resulting from such use.[10] The proposed action of removing the US 61 overpass and replacing it with a buttonhook signalized intersection and slip ramp would result in an "adverse effect" under Section 106 (see the determination letter dated February 23, 2015 in Appendix D) and, therefore,

[10] Source: 23 CFR 774.3

a Section 4(f) "use." The Programmatic Section 4(f) Evaluation, located in Appendix F, determined there is no feasible and prudent alternative to the use (i.e., the removal) of the US 61 overpass (Bridge 9103) and its approaches. See the Programmatic Section 4(f) Evaluation for a more detailed discussion of Section 4(f) process decision-making and findings.

Although the Minnesota approach of the MN-3 Preferred Alternative results in an adverse effect to Bridge 9103 under Section 106 and results in a Section 4(f) use, the parties with jurisdiction over this resource have agreed that adequate measures were taken to minimize harm to the resources (to the extent possible), and that the mitigation measures are acceptable compensation for impacts. See the SHPO letter of concurrence in Appendix D Exhibit 4 for additional information.

Mitigation measures for impacting the existing US 61 overpass will be documented in a PA among the SHPOs, FHWA, WisDOT, and MnDOT (see the draft PA in Appendix D Exhibit 10).

Historic Properties: Downtown Red Wing

An architecture-history investigation was performed within a 490 acre Modified Environmental Site Assessment Investigation Area (MESAIA). The MESAIA formed an intensive-level survey area that inventoried all properties except those built after 1970. Within a larger Visual APE that surrounds the MESAIA, only those properties that were listed on, or potentially eligible for, the National Register and were geographically situated such they might experience substantial visual effects from the undertaking were inventoried. All but two of the 291 inventoried properties are located entirely within the City of Red Wing. Of these 289 properties, many are located within downtown Red Wing.

The City of Red Wing maintains four local historic districts. These are the Downtown District, the Historic Mall District, the Historic West Residential District, and the St. James District. There are three historic districts listed within the NHRP. These are the Red Wing Mall District, the Red Wing Residential Historic District, and the St. James Hotel Complex. These three NRHP-listed historic districts have boundaries similar but not identical to three of the local historic districts. See Figure 30 within Appendix A for the locations of these Districts. The fourth local district, the Downtown Historic District, has boundaries similar but not identical to the National Register eligible Red Wing Commercial Historic District (see Figure 30 in Appendix A) whose boundaries were established, as were the contributing and non-contributing status of each resource, during the Phase II historic structures investigation for this undertaking. The MnSHPO has concurred with the determination that the Red Wing Commercial Historic District is eligible for the NRHP; therefore, this District is considered to be a historic resource, subject to Section 106 regulations.

The Red Wing Commercial Historic District has a state level of significance and is also important locally. The district's period of significance is 1858-1945, a span of about 87 years. Architecturally the district includes excellent examples of historic architectural styles and construction techniques.

The Red Wing Commercial Historic District has particular significance because it is a district, or a collection of resources, rather than a single structure. National Register historic commercial districts are rarer than individual historic commercial buildings and, because of the depth and breadth of their historic fabric, can provide particularly strong connections with our past. This complex historic fabric helps a historic district convey appearance, associations, and significance in a way that an individual building often cannot.

The Red Wing Commercial Historic District is an exceptionally rich cultural resource. The collection of buildings, encompassing six square blocks, were mostly built between the 1850s and 1930s and illustrate

the work of local architects and contractors who used local sawmills, stone quarries, brickyards, terra cotta factories, and metal foundries in construction. Many buildings have been skillfully rehabilitated so the storefronts once again display recessed entrances, cast iron lintels, large display windows, transom lights, and paneled bulkheads. The District is unique in the state for its very early resources, including two of Minnesota's oldest commercial buildings built in 1858 and 1859. In addition, very few secondary buildings and utility structures such as fences, walls, steps, and street furnishings are located in the area, enhancing the quality of the District. Collectively, the resources create one of the most well-preserved historic central business districts in Minnesota. Public involvement and agency coordination throughout the project development process emphasized the need to preserve the character of this Historic District. Project components, like the recommended Minnesota approach alternative, were driven in part by the need to preserve the Historic District's character for motorized and non-motorized users of the area.

As described in the Programmatic Section 4(f) Evaluation (see Appendix F) and in Table 2 within Section III.A.2 (Alternatives Analysis), two of the Minnesota Approach Build alternatives considered – Alternatives MN-1A and MN-2A – were dismissed from further consideration because they would have resulted in Section 106 "adverse effects" to the Red Wing Commercial Historic District.

Preferred Alternative MN-3 (the buttonhook intersection with slip ramp) would not physically impact any of the downtown Red Wing Historic Districts. However, due to the proximity of the project to these Districts and their contributing resources, the potential for project impacts will continue to be considered as project plans are developed/refined, consistent with the terms of the PA described above.

15. 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 impacts.

The project area spans across the Mississippi River and weaves through a range of sensitive natural and historic built environments between Red Wing, Minnesota and Wisconsin. There are dozens of scenic views and vistas both looking toward and away from the project area. The context surrounding the project ranges from the very natural, wooded floodplains and backwaters at the Wisconsin approach, to the scenic Mississippi River, the steeply sloped Barn Bluff, and historic downtown Red Wing and residential neighborhoods at the Minnesota approach. Due to the presence of these scenic features within and adjacent to the project area, a Visual Quality Advisory Committee (VQAC) was established for this project to provide input regarding the visual resources, potential impacts, and to recommend project features to address visual concerns. The Committee's assessment of potential impacts is the basis for the discussion that follows.

A "Context Settings Map" was developed by project staff and the VQAC to analyze the existing context of the project and identify vantage points outside of the immediately adjacent context settings. Figures 31A, 31B, and 31C in Appendix A contain the context settings map and photos of context settings. Figures 32A and 32B in Appendix A contain various draft renderings of the proposed project components (river bridge, Wisconsin approach, and Minnesota approach).

<u>Visual Effects: River Bridge</u>

The proposed river crossing bridge replaces an existing bridge and therefore the project does not introduce a new river crossing where none existed. The bridge type over the Mississippi River will change

from the existing truss bridge (structural support is visible above the roadway) to a new steel box girder bridge (structural support beams are all below the roadway) located immediately upstream from the existing bridge. The new bridge roadway surface would be approximately 9 feet higher than the existing bridge roadway surface to accommodate the additional thickness required to support it from below while also maintaining vertical clearance over the Mississippi River required by the U.S. Coast Guard. However, without a truss overhead, the new bridge will be at least 20 feet lower than the peak of the existing truss, with the exception of proposed vertical spires recommended by the visual quality committee that would reach approximately the same maximum height as the existing truss. The new bridge will include the addition of bike and pedestrian facilities and will be wider than the existing bridge. The existing bridge will be removed after the new bridge is constructed, although a potential future parallel bridge may be built in that vacated location.

The lighting concept for the bridge includes careful consideration of cultural and natural resources surrounding the project area, and strives to avoid light pollution and context-degrading elements. The fixtures will be lower and more frequent than typical highway lighting in order to provide a more comfortable, pedestrian-friendly lighting environment. Bridge piers in the main river channel will be identified with red and green lights according to U.S. Coast Guard requirements. Additional aesthetic lighting has been recommended through the visual quality committee that includes: linear fixtures in the fascia to provide a soft light wash on the face of the steel box girders, additional illumination at overlooks, and illuminated writing within the spires. These and other aesthetic features identified by the committee are recommendations, rather than required project features (e.g., requirements under Section 106, Section 4(f), etc.), and these recommended features will be included only if adequate funding is available.

Visual Effects: Minnesota Approach

At the Minnesota approach, the roadways will be reconfigured into a buttonhook with slip ramp and a new US 63 intersection with US 61. Where the existing US 63 alignment curves into downtown today will become a slip ramp onto 3rd Street with a new Red Wing Shoe Company driveway access bridge. The proposed reconfiguration of the Minnesota approach will be noticeably different than the current configuration and will require the taking of several buildings, grade changes, and retaining walls.

There will be no glare from intense lights on the approach to the river bridge, or at the ramps/intersection for the US 58/61 intersection. There is the potential to introduce vehicle headlight glare from the new Minnesota Approach buttonhook ramp onto the Bluff Neighborhood residents. Densely planted landscape improvements of varying heights and species are recommended throughout the approach area to screen out potential sound, light, and visual impacts to surrounding areas. The VQAC has been involved in aesthetic considerations of the Minnesota approach throughout the project development process, including consideration of potential for visual impacts to historic properties under Section 106.

Aesthetic components will be integrated into the proposed Minnesota approach alternative to ensure Section 106 compliance with the adjacent and NRHP-eligible Red Wing Shoe Company building. Aesthetic design considerations of the Minnesota approach (e.g., retaining wall surface, landscaping, railing heights, etc.) will integrate recommendations of the VQAC to complement the simple and modern context of the Red Wing Shoe Company building. Design details of Section 106 compliance will be addressed as discussed within the Programmatic Agreement noted in Section IV.A.14 (Historic Properties). Final Minnesota approach design components related to Section 106 compliance will be implemented as address

Visual Effects: Wisconsin Approach

The Wisconsin approach will be realigned slightly and the intersection with 825th Street will be reconfigured into a jughandle design that will realign 825th Street and introduce an access road on the east side of US 63 where it currently does not exist today. This would not include any ramps or high structural elements that would be strong visual elements.

Visual Impacts During Construction

Visual impacts associated with construction would include the introduction of construction equipment and disruption of the landscape and waterway. These impacts would be noticeable to drivers traveling through the area; Riverfront visitors, businesses, and residents; and boaters and barge traffic on the river.

Role of the Visual Quality Advisory Committee

The proposed project will alter scenic views and vistas. A Visual Quality Management Process involving the VQAC documented, studied and recommended how best to avoid, minimize, and mitigate potential adverse effects to visual resources. The last scheduled meeting of the VQAC was held in April 2015. However, it is anticipated that ongoing design refinements occurring during final design may have visual quality impacts that could benefit from the review and feedback of the committee. All of the committee members have volunteered to reassemble as needed and offer additional feedback. A Visual Quality Manual that documents the Visual Quality Management Process through April 2015 was completed in spring of 2015 and will be posted to the project website.

16. Air

a. 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 pollution, and any greenhouse gases. Discuss efforts to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used to 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 sources emissions.

This project will not have stationary source air emissions concerns because all of the emission sources are mobile.

b. 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.

National Ambient Air Quality Standards (NAAQS) – Criteria Pollutants

Motorized vehicles affect air quality by emitting airborne pollutants. Changes in traffic volumes, travel patterns, and roadway locations affect air quality by changing the number of vehicles and the congestion levels in a given area. The air quality impacts from the project are analyzed by addressing criteria pollutants, a group of common air pollutants regulated by the EPA on the basis of criteria (information on health and/or environmental effects of pollution). The criteria pollutants identified by the EPA are ozone,

particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. Potential impacts resulting from these pollutants are assessed by comparing projected concentrations to National Ambient Air Quality Standards (NAAQS).

In addition to the criteria air pollutants, the EPA also regulates air toxics. The FHWA provides guidance for the assessment of Mobile Source Air Toxic (MSAT) effects for transportation projects in the NEPA process. A qualitative evaluation of MSATs has been performed for this project as documented below. The scope and methods of the analysis performed were developed in collaboration with MnDOT and the MPCA.

Ozone

Ground-level ozone is a primary constituent of smog and is a pollution problem throughout many areas of the United States. Exposures to ozone can cause people to be more susceptible to respiratory infection, resulting in lung inflammation, and aggravating respiratory diseases, such as asthma. Ozone is not emitted directly from vehicles but is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react in the presence of sunlight. Transportation sources emit NOx and VOCs and can, therefore, affect ozone concentrations. However, due to the phenomenon of atmospheric formation of ozone from chemical precursors, concentrations are not expected to be elevated near a particular roadway.

The MPCA, in cooperation with various other agencies, industries, and groups, has encouraged voluntary control measures for ozone and has begun developing a regional ozone modeling effort. Ozone concentrations in the lower atmosphere are influenced by a complex relationship of precursor concentrations, meteorological conditions, and regional influences on background concentrations. MPCA states in *Air Quality in Minnesota: 2013 Report to the Legislature*[11] that:

> *All areas of Minnesota currently meet the federal ambient 8-hour standard for ozone but Minnesota is at risk for being out of compliance. In 2008, EPA tightened the federal eight-hour ambient air standard for ozone to 75 parts per billion (ppb). EPA plans to propose a revised ozone standard in September 2013, with a final standard planned for 2014. Preliminary documents indicate that EPA believes the scientific evidence on the health impacts of ozone shows that the current ambient standard is insufficient to protect public health. EPA's Clean Air Scientific Advisory Committee has recommended that a new ambient standard be set in the range of 60-70 ppb to ensure public health protection with an adequate margin of safety. In 2010, EPA proposed a revised ozone standard in the range of 60-70 ppb but withdrew the proposal in fall 2011. Many areas of Minnesota would not meet the revised standard if the EPA sets the standard at the lowest end of the advisory committee's recommended range.*

The project is located in an area that has been designated as an unclassifiable/attainment area for ozone. This means that the project area has been identified as a geographic area that meets the national health-based standards for ozone levels, and therefore is exempt from performing further ozone analyses.

[11] Source: http://www.pca.state.mn.us/index.php/view-document.html?gid=18909

Particulate Matter

Particulate matter (PM) is the term for particles and liquid droplets suspended in the air. Particles come in a wide variety of sizes and have been historically assessed based on size, typically measured by the diameter of the particle in micrometers. $PM_{2.5}$, or fine particulate matter, refers to particles that are 2.5 micrometers or less in diameter. PM_{10} refers to particulate matter that is 10 micrometers or less in diameter.

Motor vehicles (i.e., cars, trucks, and buses) emit direct PM from their tailpipes, as well as from normal brake and tire wear. Vehicle dust from paved and unpaved roads may be reentrained, or re-suspended, in the atmosphere. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds. $PM_{2.5}$ can penetrate the human respiratory system's natural defenses and damage the respiratory tract when inhaled. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including[12]:

- Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing;
- Decreased lung function;
- Aggravated asthma;
- Development of chronic bronchitis;
- Irregular heartbeat;
- Heart attacks; and,
- Premature death in people with heart or lung disease.

On December 14, 2012, the EPA issued a final rule revising the annual health NAAQS for fine particles ($PM_{2.5}$). The EPA website states[13]:

> *With regard to primary (health-based) standards for fine particles (generally referring to particles less than or equal to 2.5 micrometers (mm) in diameter, $PM_{2.5}$), the EPA is strengthening the annual $PM_{2.5}$ standard by lowering the level to 12.0 micrograms per cubic meter ($\mu g/m^3$). The existing annual standard, 15.0$\mu g/m^3$, was set in 1997. The EPA is revising the annual $PM_{2.5}$ standard to 12.0$\mu g/m^3$ so as to provide increased protection against health effects associated with long- and short-term exposures (including premature mortality, increased hospital admissions and emergency department visits, and development of chronic respiratory disease), and to retain the 24-hour $PM_{2.5}$ standard at a level of 35$\mu g/m^3$ (the EPA issued the 24-hour standard in 2006). The EPA is revising the Air Quality Index (AQI) for $PM_{2.5}$ to be consistent with the revised primary $PM_{2.5}$ standards.*

The EPA also retained the existing standards for coarse particle pollution (PM_{10}). The NAAQS 24-hour standard for PM_{10} is 150 $\mu g/m^3$ which is not to be exceeded more than once per year on average over three years.

The Clean Air Act conformity requirements include the assessment of localized air quality impacts of federally-funded or federally-approved transportation projects that are located within $PM_{2.5}$

[12] Source: http://www.epa.gov/air/particlepollution/health.html
[13] Source: http://www.epa.gov/pm/actions.html

nonattainment and maintenance areas and deemed to be projects of air quality concern. The project is located in an area that has been designated as an unclassifiable/attainment area for PM. This means that the project area has been identified as a geographic area that meets the national health- based standards for PM levels, and therefore is exempt from performing PM analyses.

Nitrogen Dioxide (Nitrogen Oxides)

Nitrogen oxides, or NO_x, are the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels. The *MPCA's Air Quality in Minnesota: 2013 Report to the Legislature* indicates that:

> *On road gasoline vehicles and diesel vehicles account for 44% of NO_x emissions in Minnesota. In additions to being a precursor to ozone, NO_x can worsen respiratory irritation, and increase risk of premature death from heart or lung disease.*

Nitrogen dioxide (NO_2), which is a form of nitrogen oxide (NO_x), is regularly monitored. Minnesota currently meets federal nitrogen dioxide standards, according to the *2013 Annual Air Monitoring Network Plan*[14]. A monitoring site meets the annual NAAQS for NO_2 if the annual average is less than or equal to 53 parts per billion (ppb). The 2011 Minnesota NO_2 monitoring site averages ranged from 5 ppb to 9 ppb; therefore, Minnesota currently meets the annual NAAQS for NO_2." The EPA's December 1999 regulatory announcement, EPA420-F-99-051[15], describes the Tier 2 standards for tailpipe emissions, and states:

> *The new tailpipe standards are set at an average standard of 0.07 grams per mile for nitrogen oxides for all classes of passenger vehicles beginning in 2004. This includes all light-duty trucks, as well as the largest SUVs. Vehicles weighing less than 6000 pounds will be phased-in to this standard between 2004 and 2007.*
>
> *As newer, cleaner cars enter the national fleet, the new tailpipe standards will significantly reduce emissions of nitrogen oxides from vehicles by about 74 percent by 2030. The standards also will reduce emissions by more than 2 million tons per year by 2020 and nearly 3 million tons annually by 2030.*

Within the project area, it is unlikely that NO_2 standards will be approached or exceeded based on the relatively low ambient concentrations of NO_2 in Minnesota and on the long-term trend toward reduction of NO_x emissions. Because of these factors, a specific analysis of NO_2 was not conducted for this project.

Sulfur Dioxide

Sulfur dioxide (SO_2) and other sulfur oxide gases (SO_x) are formed when fuel containing sulfur, such as coal, oil, and diesel fuel is burned. Sulfur dioxide is a heavy, pungent, colorless gas.

[14] Source: http://www.pca.state.mn.us/index.php/view-document.html?gid=17855
[15] Source: http://www.epa.gov/tier2/documents/f99051.pdf

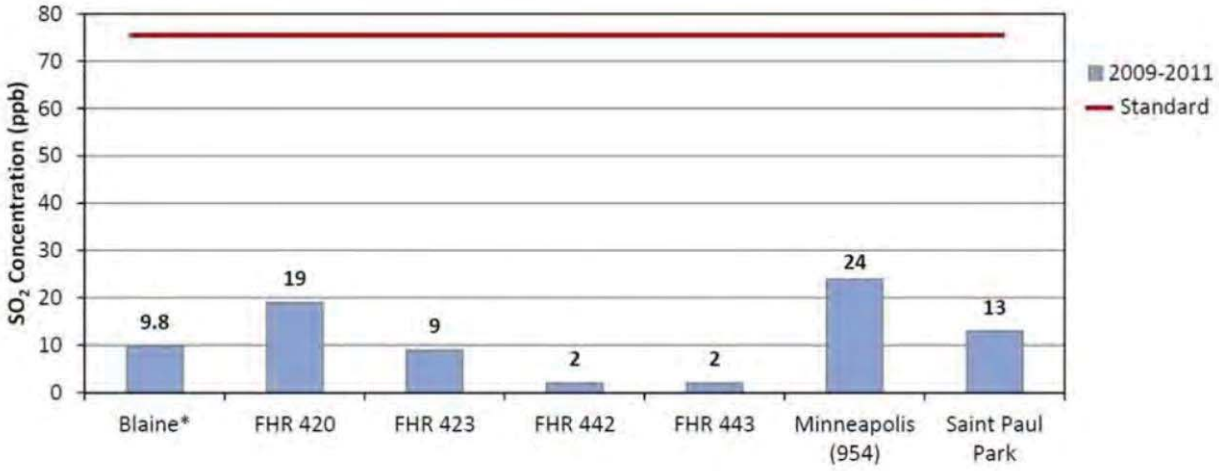
Elevated levels can impair breathing, lead to other respiratory symptoms, and at very high levels aggravate heart disease. People with asthma are most at risk when SO_2 levels increase. Once emitted into the atmosphere, SO_2 can be further oxidized to sulfuric acid, a component of acid rain. Emissions of sulfur oxides from transportation sources are a small component of overall emissions and continue to decline due to the desulphurization of fuels.

According to *Air Quality in Minnesota: 2013 Report to the Legislature*, MPCA monitoring shows ambient SO_2 concentrations at 32 percent of federal standards in 2011, in other words consistently below state and federal standards. MPCA also states that about 70 percent of SO_2 released into the air comes from electric power generation. Therefore a much smaller proportion is attributable to on-road mobile sources. The MPCA has concluded that long-term trends in both ambient air concentrations and total SO_2 emissions in Minnesota indicate steady improvement. In the *2013 Annual Air Monitoring Network Plan for Minnesota,* it states the following with regard to SO_2:

> *On June 2, 2010, the EPA finalized revisions to the primary SO_2 NAAQS. EPA established a new 1-hour standard which is met if the three-year average of the annual 99th percentile daily maximum 1-hour SO_2 concentration is less than 75 ppb. In addition to creating the new 1-hour standard, the EPA revoked the existing 24-hour and annual standards. Figure 24 [Figure 2 below] describes the 2009-2011 average 99th percentile 1-hour SO_2 concentration and compares them to the 1-hour standard. Minnesota averages ranged from 2 ppb at FHR 442 and FHR 443 to 24 ppb in Minneapolis (954); therefore, all Minnesota sites currently meet the 1-hour NAAQS for SO_2.*

Because of these factors, an analysis for sulfur dioxide was not conducted for this project.

Figure 2: One-Hour SO2 Concentrations Compared to the NAAQs



* The monitoring site did not meet the minimum completeness criteria for design value calculations. A site meets the completeness requirement if 75% of required sampling days are valid for each calendar quarter included in the design value calculation. SO2 at Duluth was part of a one year assessment and not intended to collect 3 years of data for design value calculations.

Lead

Due to the phase out of leaded gasoline, lead is no longer a pollutant associated with vehicular emissions.

Carbon Monoxide

This project is not located in an area where conformity requirements apply, and the scope of the project does not indicate that air quality impacts would be expected. Furthermore, the EPA has approved a screening method to determine which intersections need a carbon monoxide (CO) hotspot analysis. The results of the screening procedure demonstrate that traffic volumes are below the threshold of 79,400 ADT and do not require a detailed hotspot analysis. Therefore, no further air quality analysis is necessary.

Improvements in vehicle technology and in motor fuel regulations continue to result in reductions in vehicle emission rates. The EPA MOVES 2010b emissions model estimates that emission rates will continue to fall from existing rates through year 2030. Consequently, year 2030 vehicle-related CO concentrations in the study area are likely to be lower than existing concentrations even considering any increase in development-related and background traffic.

Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) 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[16] , and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS).[17]

In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National-Scale Air Toxics Assessment (NATA).[18] These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), 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)

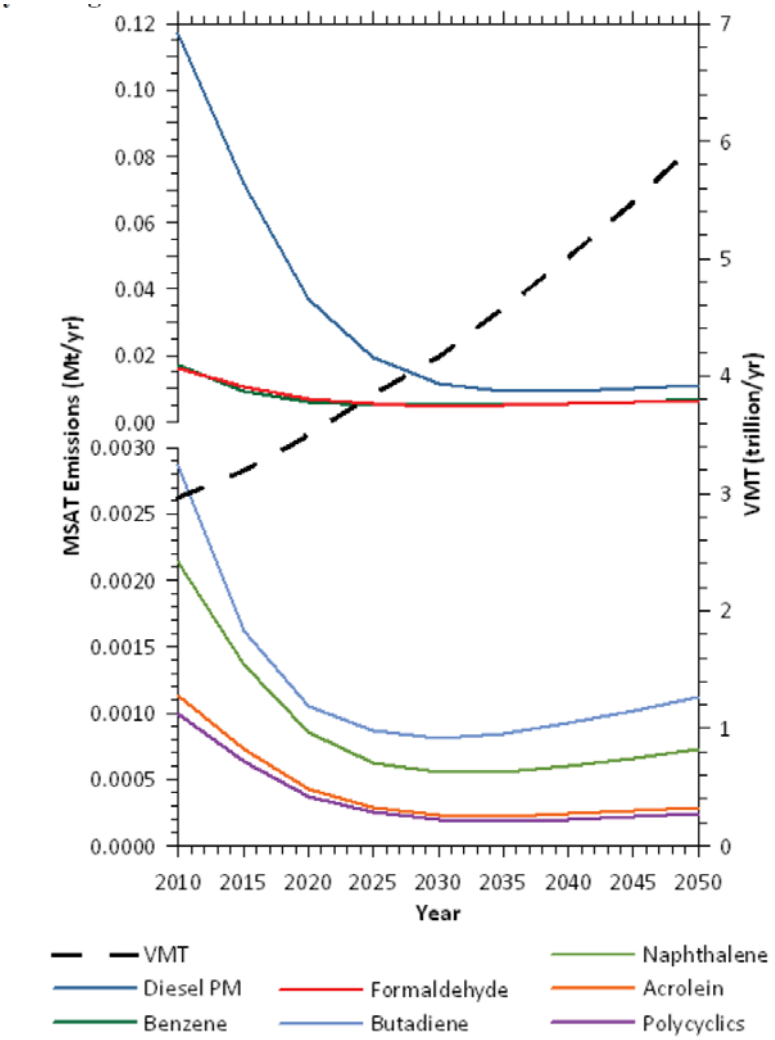
According to EPA, MOVES improves upon the previous MOBILE model in several key aspects: MOVES is based on a vast amount of in-use vehicle data collected and analyzed since the latest release of MOBILE, including millions of emissions measurements from light-duty vehicles. Analysis of this data enhanced EPA's understanding of how mobile sources contribute to emissions inventories and the relative effectiveness of various control strategies. In addition, MOVES accounts for the significant effects that vehicle speed and temperature have on PM emissions estimates, whereas MOBILE did not. MOVES2010b includes all air toxic pollutants in NATA that are emitted by mobile sources. EPA has incorporated more recent data into

[16] Source: Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007; http://www.gpo.gov/fdsys/pkg/FR-2007-02-26/pdf/E7-2667.pdf
[17] Source: http://www.epa.gov/iris/
[18] Source: http://www.epa.gov/ttn/atw/nata1999/

MOVES2010b to update and enhance the quality of MSAT emission estimates. These data reflect advanced emission control technology and modern fuels, plus additional data for older technology vehicles.

Based on an FHWA analysis using EPA's MOVES2010b model, as shown in Figure 3 below, even if vehicle-miles travelled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 3: National MSAT Emissions Trends 1999-2005 for Vehicles Operating on Roadways Using EPA's MOVES2010b Model



Source: EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.
http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

The implications of MOVES on MSAT emissions estimates compared to MOBILE are: lower estimates of total MSAT emissions; significantly lower benzene emissions; significantly higher

diesel PM emissions, especially for lower speeds. Consequently, diesel PM is projected to be the dominant component of the emissions total.[19]

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 be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

NEPA Context

The 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. The NEPA also requires Federal agencies to use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment. The NEPA requires and FHWA is committed to the examination and avoidance of potential impacts to the natural and human environment when considering approval of proposed transportation projects. In addition to evaluating the potential environmental effects, we must also take into account the need for safe and efficient transportation in reaching a decision that is in the best overall public interest. The FHWA policies and procedures for implementing NEPA are contained in regulation at 23 CFR Part 771[20].

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

[19] Source: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm
[20] Source: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title23/23cfr771_main_02.tpl

posed by air pollutants. They maintain the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects."[21] 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.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's *Interim Guidance Update 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[22] 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[23]. 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 and the HEI have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

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.

[21] Source: EPA, http://www.epa.gov/iris/

[22] Source: Health Effects Institute, *Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects*, 2007; http://pubs.healtheffects.org/view.php?id=282.

[23] Source: Health Effects Institute, *Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects*, 2007; http://pubs.healtheffects.org/view.php?id=282.

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 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.

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

For the Preferred Alternative, the amount of MSAT emitted would be proportional to the average daily traffic, or ADT, assuming that other variables such as fleet mix are the same. The ADT estimated for the Preferred Alternative does not differ from that for the No Build Alternative because the proposed project is intended to provide a structurally sound bridge crossing and provide acceptable mobility conditions, not to increase capacity. Since no change in ADT is expected through the project corridor, or along parallel routes, no changes in MSAT emissions are expected compared to the No Build Alternative. There is a potential for lower MSAT emission rates due to increased speeds and reduction in congestion/delays in downtown Red Wing; according to EPA's MOVES2010b model, emissions of all of the priority MSAT decrease as speed increases. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA- projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The Minnesota approach to the proposed bridge will have the effect of moving some traffic closer to nearby residential development; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher under the Preferred Alternative than the No Build Alternative. The localized increases in MSAT concentrations would likely occur within proximity of the Minnesota approach. However, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, with the operational efficiencies and realignment of the Minnesota approach, the localized level of MSAT emissions for the Preferred Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion

(which are associated with lower MSAT emissions). However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

c. 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 16a). 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 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 MnDOT specification in place at the time of project construction. After construction is complete, dust levels are anticipated to be minimal because all soil surfaces exposed during construction would be in permanent cover (i.e., paved or re-vegetated areas).

17. Noise

A summary of the traffic noise analysis report is included below. The complete *Traffic Noise Analysis Report* dated December 2014 is on Appendix B's supplemental CD.

a. 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.

Noise During Construction

The construction activities associated with implementation of the proposed project will result in increased noise levels relative to existing conditions. These impacts will primarily be associated with construction equipment and processes.

Table 11 shows peak noise levels monitored at 50 feet from various types of construction equipment. This equipment is primarily associated with site grading/site preparation and project construction.

Table 11: Typical Construction Equipment Noise Levels at 50 feet[24]

Equipment Type	Manufacturers Sampled	Total Number of Models in Sample	Peak Noise Level Range (dBA)	Peak Noise Level Average (dBA)
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

[24] Source: United States Environmental Protection Agency and Federal Highway Administration

Any associated high-impact equipment noise, such as pavement sawing, pile driving, or jack hammering, will be unavoidable with construction of the proposed project. High-impact noise construction activities will be limited in duration to the greatest extent possible.

Traffic Noise Analysis Requirement

This project is a federal Type 1 noise project requiring a traffic noise analysis. The *Traffic Noise Analysis Report* includes background information on noise, information regarding traffic noise regulations (i.e., federal and Minnesota traffic noise regulations, standards, and criteria), a discussion of the traffic noise analysis methodology, documentation of the traffic noise impacts associated with the proposed project, and an evaluation of noise abatement measures. Information is summarized below.

Federal and State Noise Regulations

The FHWA's traffic noise regulation is described in 23 CFR 772 of the Code of Federal Regulations[25]. 23 CFR 772 requires the identification of highway traffic noise impacts and the evaluation of noise abatement measures, along with other considerations, in conjunction with the planning and design of a federal-aid highway project.

Under federal rules, traffic noise impacts are determined based on land use activities and predicted worst hourly L10 noise levels under future conditions. For example, for residential land uses (Activity Category B), the Federal Noise Abatement Criterion is 70 dBA (L10). Receptor locations where noise levels are "approaching" or exceeding the criterion level must be evaluated for noise abatement feasibility and reasonableness. See Table 12 below for federal noise abatement criteria details.

In Minnesota and Wisconsin, "approaching" is defined as 1 dBA or less below the Federal Noise Abatement Criteria. A noise impact is also defined as a "substantial increase" in the future modeled noise levels over the existing modeled noise levels. In Minnesota, a "substantial increase" is defined as an increase of 5 dBA or greater from existing to future conditions. In Wisconsin, a "substantial increase" is defined as an increase of 15 dBA from existing to future conditions.

In Minnesota, noise standards have been established for daytime and nighttime periods. The MPCA is the state agency responsible for enforcing state noise rules. The MPCA defines daytime as 7:00 a.m. to 10:00 p.m. and nighttime as 10:00 p.m. to 7:00 a.m. The state noise standards for daytime and nighttime periods are based on land use activities such as residential uses, commercial uses, or industrial uses. See Table 13 below for Minnesota state noise standards. Minnesota state noise standards apply to the outdoor environment (i.e., exterior noise levels). Because state noise standards apply to trunk highway facilities, they apply to this project.

[25] Source: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title23/23cfr772_main_02.tpl

Table 12: Federal noise abatement criteria

Activity Category	Activity Criteria [1][2] L_{eq} (dBA)	L_{10} (dBA)	Evaluation Location	Activity Description
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve and important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B[3]	67	70	Exterior	Residential
C(3)	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E(3)	72	75	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	--	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources water treatment, electrical), and warehousing
G	--	--	--	Undeveloped lands that are not permitted

(1) In Minnesota, traffic noise impacts are determined using the hourly L10 value. In Wisconsin, traffic noise impacts are determined using the hourly L_{eq} value.
(2) The $L_{eq}(h)$ and $L_{10}(h)$ Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
(3) Includes undeveloped lands permitted for this activity category.

Table 13: Minnesota state noise standards

Land Use	Code	Daytime (7 a.m. – 10 p.m.) dBA		Nighttime (10 p.m. – 7:00 a.m.) dBA	
Residential	NAC-1[1]	L10 of 65	L50 of 60	L10 of 55	L50 of 50
Commercial	NAC-2[2]	L10 of 70	L50 of 65	L10 of 70	L50 of 65
Industrial	NAC-3[3]	L10 of 80	L50 of 75	L10 of 80	L50 of 75

(1) NAC-1 includes household units, transient lodging and hotels, educational, religious, cultural entertainment, camping, and picnicking land uses
(2) NAC-2 includes retail and restaurants, transportation terminals, professional offices, parks, recreational, and amusement land uses.
(3) NAC-3 includes industrial manufacturing, transportation facilities (except terminals), and utilities land uses.

Traffic Noise Analysis Methodology

Traffic noise impacts are evaluated by modeling the traffic noise levels during the hours of the day and/or night that have the loudest traffic scenario. Traffic noise modeling uses existing and forecast traffic volumes, as well as characteristics of the roadway and surrounding environment, to predict traffic noise

levels at representative receptor locations. In the Minnesota portion of the project, modeled traffic noise levels at receptor locations along a project corridor are then compared to state daytime and nighttime standards. If modeled traffic noise levels are projected to exceed state daytime and/or nighttime standards with the future Build Alternative, then an impact is identified and noise abatement measures (e.g., noise barriers) are considered. In the Minnesota portion of the project, modeled, traffic noise levels are also compared with federal NAC criteria (L10) in order to determine impacts. Additionally, if the difference between existing and future builds (no mitigation) traffic noise levels equals, or exceeds, the prescribed "substantial increase" criteria an impact exists.

Noise modeling for the Wisconsin portion of the project was done using the FHWA noise prediction program Traffic Noise Model (TNM) version 2.5. TNM is similar to the MINNOISE model described below in that it also uses traffic volumes, speed, class of vehicle, and the typical characteristics of the roadway being analyzed (e.g., roadway horizontal and vertical alignment). Traffic data input in the TNM noise model input files for the proposed project included existing year (2010) and future year (2042) Preferred Alternative forecast traffic volumes.

For Minnesota portions of the project, traffic noise levels were modeled for existing (2010) conditions, the future (2040) No Build Alternative, and the future (2042) Build Alternative using the "MINNOISEV31" model, a version of the FHWA "STAMINA" model adapted by MnDOT. Traffic noise levels were modeled at 112 representative receptor locations along the project corridor. These modeled receptor locations represent residential, commercial, and industrial land uses.

Traffic Noise Analysis Results

See Tables 14 and 15 below for a summary of Wisconsin and Minnesota noise analysis results. Discussion follows after the tables. See the complete *Traffic Noise Analysis Report* within the Appendix B supplemental CD.

Table 14: Wisconsin Noise Analysis Results Summary

Criteria[26]	Total Number of Receptors	Existing (2010) Condition Receptors Approaching/Exceeding Criteria	Future (2042) Preferred Alternative Receptors Approaching/Exceeding Criteria
Federal	20	0	0

Table 15, the Minnesota noise analysis results summary, is located on the following page.

[26] In Wisconsin, "approaching" is defined as 1dBA or less below the Federal Noise Abatement Criteria. Independent State standards are not utilized.

Table 15: Minnesota Noise Analysis Results Summary

Standard[27]	Total Number of Receptors	Existing (2010) Condition Receptors Exceeding Standard	Future (2042) No Build Condition Receptors Exceeding Standard	Future (2042) Preferred Alternative Condition Receptors Exceeding Standard
State L10 Daytime[28]	92	8	21	27
State L50 Daytime	92	0	1	10
State L10 Nighttime	92	67	67	69
State L50 Nighttime	92	61	67	68

Existing (2010) modeled noise levels at receptor locations in the Wisconsin portion of the project area range from 50.5 dBA (Leq) to 65.9 dBA (Leq). Modeled noise levels do not approach or exceed Federal Noise Abatement Criteria under existing conditions (≥ 66 dBA, Leq for Activity Category B).

Future (2042) modeled noise levels under the river crossing bridge for the Preferred Alternative range from 51.7 dBA (Leq) to 59.9 dBA (Leq). In general, most modeled receptor locations (50 feet to 500 feet on each side of the bridge in the marina) are projected to experience an increase in traffic noise levels from existing conditions to the future Preferred Alternative. This change is predicted to range from -6.5 dBA to 1.5 dBA. Some receptor locations are expected to experience a decrease in traffic noise levels as traffic shifts from the existing bridge to the proposed bridge under the Preferred Alternative.

Traffic noise levels at modeled receptor locations at the Wisconsin approach to the river crossing bridge do not approach or exceed Federal Noise Abatement Criteria for Activity Category B with the future Preferred Alternative. Modeled traffic noise levels are projected to range from 7.1 dBA to 15.3 dBA less than the Federal Noise Abatement Criteria for Activity Category B (67 dBA, Leq). In addition, none of the modeled receptor locations within Wisconsin are projected to experience a substantial increase in traffic noise levels from existing conditions to the Preferred Alternative. As such, WisDOT procedures for evaluating noise barrier feasibility and reasonableness are not discussed within this document. Descriptions of noise model results below are for Minnesota receptors only.

Existing (2010) daytime modeled noise levels at receptor locations in the Minnesota portion of the project range from 57.2 dBA (L10) to 70.1 dBA (L10) and 51.7 dBA (L50) to 59.3 (L50), whereas nighttime modeled noise levels range from 55.9 dBA (L10) to 68.9 dBA (L10) and 43.3 dBA (L50) and 57.8 dBA (L50).

Modeled daytime traffic noise levels for existing conditions exceed State daytime L10 standards at 8 of the 92 modeled receptor locations and State daytime L50 standards at 0 of the 92 modeled receptors; whereas modeled nighttime traffic noise levels for existing conditions exceed State nighttime L10

[27] In Minnesota, state noise standards have been established by the Minnesota Pollution Control Agency independent of the Federal Noise Abatement Criteria. Information on Minnesota state noise standards is found in Table 13.
[28] One receptor approaches Federal Noise Abatement Criteria (receptor ID 22 located at Potter Street and Main Street)

standards at 67 of 92 modeled receptor locations and State nighttime L50 standards at 61 of the 92 modeled receptors.

Future (2042) daytime modeled noise levels under the No Build Alternative are predicted to range from 58.3 dBA (L10) to 72.7 dBA (L10) and 53.4 dBA (L50) to 62.4 dBA (L50), whereas nighttime modeled noise levels range from 56.3 dBA (L10) to 69.5 dBA (L10) and 50.1 dBA (L50) to 58.1 dBA (L50). In general, modeled daytime traffic noise levels are predicted to increase by 0.1 dBA to 2.7 dBA under the No Build Alternative compared to existing conditions.

Modeled traffic noise levels are predicted to exceed State daytime L10 standards at 21 of 92 modeled receptor locations and State daytime L50 standards at 1 of 92 modeled receptor locations with the No Build Alternative. Modeled nighttime traffic noise levels are predicted to exceed State nighttime L10 standards at 67 of 92 modeled receptor locations and State nighttime L50 standards at 67 of 92 modeled receptors with the No Build Alternative.

Daytime modeled noise levels are predicted to range from 58.7 dBA (L10) to 74.4 dBA (L10) and 53.6 dBA (L50) to 65.6 dBA (L50) under the future (2042) Preferred Alternative. Nighttime modeled noise levels are predicted to range from 56.5 dBA (L10) to 71.1 dBA (L10) and 44.4 dBA (L50) to 60.9 dBA (L50) under the future Preferred Alternative. In general, modeled daytime traffic noise levels are predicted to change by -9.8 dBA to 6.7 dBA compared to existing conditions, whereas modeled nighttime traffic noise levels are predicted to change by -9.0 dBA to 4.7 dBA compared to existing conditions.

Some modeled receptor locations are projected to experience a decrease in traffic noise levels with the Preferred Alternative. These decreases were generally observed at locations where the new ramp alignment will shift traffic volumes to different routes. Modeled noise levels are predicted to exceed State daytime L10 standards at 27 of the 92 modeled receptor locations and State daytime L50 standards at 10 of the 92 modeled receptors under the future Preferred Alternative. Modeled noise levels are predicted to exceed State nighttime L10 standards at 69 of the 92 modeled receptor locations and State nighttime L50 standards at 68 of the 92 modeled receptors under the future Preferred Alternative.

Modeled future L10 noise levels for the Preferred Alternative are projected to approach Federal Noise Abatement Criteria for Activity Category B (Residential) at one modeled receptor location (receptor ID 51 located at East 3rd Street and Sanderson Road in Appendix A Figure 33). Receptor ID 55 located on East 4th Street immediately adjacent to the existing community garden is also projected to experience a substantial increase in traffic noise levels from existing conditions to the future Preferred Alternative. Two residential noise receptors (receptor IDs 46 and 47 located on East 3rd Street in Figure 33 of Appendix A) are proposed for acquisition related to right-of-way needs.

Commercial land uses are located in downtown Red Wing, Minnesota. Commercial land uses fall under Federal Activity Category E. The Federal Noise Abatement Criterion for Activity Category E is 75 dBA (L10) (see Table 12). None of the modeled noise levels at receptor locations representing commercial land uses were identified to approach or exceed Federal Noise Abatement Criteria under existing and future No Build conditions. One modeled noise receptor representing commercial land uses was identified to approach or exceed Federal Noise Abatement Criteria with the future Preferred Alternative (receptor ID 22 located at Potter Street and Main Street in Figure 34 of Appendix A) . One commercial noise receptor (receptor ID 45 located on East 3rd Street in Figure 33 of Appendix A) is proposed for acquisition related to right-of-way needs.

Evaluation of Noise Abatement Measures

Noise abatement measures were evaluated along the proposed project corridor adjacent to receptor locations, where modeled traffic noise levels are projected to: 1) exceed state standards; 2) approach or exceed Federal Noise Abatement Criteria; or 3) increase substantially (i.e., increase by 5 dBA or greater from existing to future Build Alternative conditions).

As described under "Noise Model Results", none of the modeled receptor locations in the Wisconsin portion of the project are predicted to experience a traffic noise impact as a result of the project. Modeled traffic noise levels under the future Preferred Alternative are predicted to be below the Federal Noise Abatement Criteria for Activity Category B uses, and increases in traffic noise levels from existing to future conditions are predicted to be less than 15 dBA. Noise abatement measures are not required for the Wisconsin portion of the project.

Based on the traffic noise analysis, one potential noise barrier on the Minnesota portion of the project meets "feasibility" and "reasonability" criteria outlined in Chapter 5 of the MnDOT Highway Noise Policy (Analysis of Noise Abatement Measures). This potential 20 feet high noise barrier is approximately 1,290 feet long and was modeled along the south side of US 61 beginning immediately east of the newly proposed US 61/US 63 intersection. See Figure 33 within Appendix A for additional information. Receptors adjacent to the potential noise barrier for the Preferred Alternative show increased noise levels ranging from 0.0 to 1.1 dBA compared to the No Build condition. However, final noise abatement measures will be subject to final design considerations, potential impacts on the feasibility and reasonability criteria, and input from benefited residents and property owners, as ascertained by the voting process.

See Figures 33-35 in Appendix A for maps relating to the noise study, including the location for the identified potential noise barrier within Minnesota on Figure 33.

Statement of Likelihood

The traffic noise analysis described above is based upon preliminary design studies completed to-date. Final mitigation decisions will be subject to final design considerations and the input from benefited residents and property owners, as ascertained by the voting process. If it subsequently develops during the final design stage that conditions have substantially changed, noise abatement measures may or may not be provided. Affected benefited receptors and local officials will be notified of plans to eliminate or substantially modify a noise abatement measure prior to the final design process. This notification will explain any changes in site conditions, additional site information, any design changes implemented during the final design process, and noise barrier feasibility and reasonableness. A final decision regarding barrier installation will be made upon completion of the project's final design and the public involvement process.

18. Transportation

The *Red Wing Bridge Traffic Report* dated March 25, 2014 (see the supplemental CD in Appendix B) contains detailed information on traffic and transportation impacts. Selected information from this memo is included below.

a. 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 estimates, and 5) availability of transit and/or alternative transportation modes.

Adverse parking impacts are not anticipated with the Preferred Alternative. Parking is a critical component of the economic vitality of the downtown Red Wing area and played an important role in evaluating the positive and negative attributes of the considered alternatives. The buttonhook with slip ramp Preferred Alternative was chosen in part because of no adverse parking impacts and the preservation of existing parking within the vicinity of the project. It is likely that additional on-street parking will be provided along 3rd Street as part of the recommended alternative. Other considered alternatives would have had adverse parking impacts within the Red Wing Commercial Historic District area.

Estimated total average daily traffic generated is not applicable. Traffic is not generated by the proposed project. However, a primary need of the project is to improve motorized and non-motorized traffic mobility on trunk highways within the Red Wing Commercial Historic district. Identified secondary needs of the project include adequate bridge capacity and maximum maintenance of traffic. In addition, MnDOT and the City of Red Wing were contacted to determine if any new developments would substantially change any forecast assumptions. No developments were noted. However, an increase in truck traffic resulting from potential growth in the region's silica sand industry was incorporated into traffic forecast models.

Three Rivers Community Action is a nonprofit human service organization that provides transit service throughout the Red Wing area. The Three Rivers Community Action Hiawathaland Transit service includes Red Route, Green Route, and Blue Route services through downtown Red Wing.[29] The Blue Route currently utilizes Potter Street between West 4th Street and West 5th Street and West 5th Street/East 5th Street between Potter Street and Centennial Street. The Blue Route runs adjacent to the location of the proposed buttonhook and slip ramp facilities but it is not expected to impact the route as it currently operates. Transit service is not available in the project area in Wisconsin's Pierce County. The proposed project would not adversely impact the use of existing transit services.

b. 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.

The Minnesota approach to the river bridge is a complex component of the overall project and received substantial attention related to traffic congestion impacts and traffic operations. The Preferred Alternative includes the buttonhook with slip ramp option for the Minnesota approach. Compared to other alternatives, the buttonhook with slip ramp option shows a substantial reduction in traffic along Plum Street and 3rd Street at the Plum Street and 3rd Street intersection. Along US 61, there is only a slight increase in demand west of Plum Street. East of Plum Street there is a large increase in traffic between

[29] Source: http://www.threeriverscap.org/sites/default/files/new_red_wing_brochure_0.pdf

Plum Street and the buttonhook intersection. Additional information is provided in the section immediately below.

Though traffic increases in certain locations with this option, the major benefit to the roadway network comes in the form of reduced turning traffic at each intersection. Left and right turning traffic proceed through an intersection at a much slower speed than a through vehicle. This is especially true with large trucks. The improved speeds make better use of the green time provided for each approach at the intersections, making the intersection more efficient.

See Figure 36 in Appendix A for additional information on anticipated traffic reductions under the Minnesota approach preferred alternative.

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

By constructing the proposed buttonhook with slip ramp Minnesota approach alternative, it is estimated turning traffic will be reduced by 50 percent in the AM peak hour and 30 percent in the PM peak hour at the main intersection of US 61 and Plum Street. At the intersection of Plum Street and 3rd Street there is a major reduction in turning traffic of 75 percent in the AM peak hour and 53 percent in the PM peak hour. See Figure 36 in Appendix A. This alternative targets the identified primary need to improve motorized and non-motorized traffic mobility on trunk highways within the downtown Red Wing commercial and historic district.

Because closure either of the existing US 63 bridges over the Mississippi River and US 61 necessitates a detour of approximately 58 miles for travelers between Red Wing and Pierce and Pepin Counties in Wisconsin, the existing crossings of the Mississippi River and US 61 will remain open throughout construction, with the possibility of a limited number of short-term closures to facilitate construction activities.

19. Cumulative Potential Effects

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

Cumulative effects are defined as "the impact on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency or persons undertakes such actions." [30] The planning efforts and potential projects discussed within this section are consistent with the Minnesota State Supreme Court ruling regarding cumulative potential effects inquiry under state statute, i.e., the projects: 1) are either existing, actually planned for, or for which a basis of expectation has been laid; 2) are located in the surrounding area; and 3) might reasonably be expected to affect the same natural resource. The findings below pertain to both cumulative potential effects and cumulative impacts; the term "cumulative potential effects" is interchangeable with "cumulative impacts."

Cumulative potential effects are not casually linked to the project and related improvements, but are the total effect of all known actions (past, present, and future) in the vicinity of the proposed action with similar impacts to the proposed action. The purpose of a cumulative potential effects analysis is to look for impacts that may be minimal, and therefore, neither significant nor adverse when examined within

[30] Source: 40 CFR 1508.7, http://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol34/pdf/CFR-2012-title40-vol34-sec1508-7.pdf

the context of the proposed action, but that may accumulate and become significant and adverse when combined with other actions.

The geographic areas considered are those within the City of Red Wing in Minnesota and Hager City in Wisconsin. Planning documents utilized to identify applicable projects include Minnesota's final 2015-2018 State Transportation Improvement Plan (STIP), Wisconsin's final 2014-2017 STIP, and existing city and county comprehensive plans and capital improvement plans. The City of Red Wing Planning Department and Pierce County Land Management and Zoning were contacted to identify reasonably foreseeable future projects included within this analysis.

b. 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.

See Tables 16 and 17 below for identified projects within state STIPs.

Table 16: Red Wing Projects within Minnesota's Draft 2015-2018 STIP[31]

Sequence #	Project #	Year	Route	Length (mi)	Primary Work	Cost Estimate
815	*156-122-008	2015	MSAS 122	0.6	Pavement resurface and rehabilitation	$1,894,000
824	156-591-002	2015	Ped/Bike	N/A	Grade and surface	$49,083
825	156-591-003	2015	Ped/Bike	N/A	Grade and surface	$479,492
843	*2514-122	2015	US 61	0.7	Grade and surface	$5,390,000
844	2513-93	2015	US 61	1.0	Grade and surface	$1,193,323
845	*2514-120	2015	US 61	7.7	Mill and overlay	$4,484,800
883	*TRS-7284-16C	2016	Three Rivers	N/A	Transit	$146,000

Notes: * = located within downtown area and in close proximity to project

Table 17: Hager City Projects within Wisconsin's Final 2014-2017 STIP[32]

Project #	Year	Route	Length (mi)	Primary Work	Cost Estimate
7650-01-62	2017	STH 35	10.0	Construction/roadway maintenance	$2,000,000 to $2,999,999

Within the City of Red Wing, Projects 156-122-008, 2514-122, 2514-120, and TRS-7284-16C are located in close proximity to or are in the downtown area and therefore require additional consideration. Projects are currently scheduled to be completed before the proposed river bridge replacement. Therefore, it is important to consider cumulative potential effects given the importance of maintaining downtown Red Wing's mobility and economic vitality.

[31] Source: http://www.dot.state.mn.us/planning/program/pdf/STIP/For%20Public%20Review%202015-2018%20Draft%20STIP%20for%20Web2.pdf
[32] Source: http://www.dot.state.wi.us/localgov/highways/docs/stip.pdf

- 156-112-008 will reconstruct Levee Road from Broad Street to Jackson Street and implement an intersection improvement.

- 2514-122 will include total roadway reconstruction, including utility replacements, signal modifications, median construction, streetscape improvements, and pedestrian safety improvements from Potter Street to Old West Main Street.

- 2514-120 will include a mill and overlay on US 61 NB and SB from the Ready Mix entrance south of Red Wing to the easterly termini of the US 61 reconstruction planned as part of this project (2515-21) and from Old West Main Street to MN 19.

- TRS-7284-16C includes the purchase of one Class 500 bus for transit needs

The *City of Red Wing Comprehensive Plan*[33] calls for redevelopment efforts that further enhance the pedestrian-oriented downtown district with attractive streetscapes and historic preservation and restoration.

The *City of Red Wing Bicycle and Pedestrian Master Plan*[34] highlights future multi-use paved trails and future on-street bike routes, several of which are within or near the project area. Specific project names are not identified but are located within the downtown and Barn Bluff areas.

In addition, the City of Red Wing and the Red Wing Port Authority have received state bonding funding to construct the first phase of a two-phase dock improvement project in Levee Park. Phase I of this dock improvement project will consist of marina improvements to accommodate large excursion riverboats. Riverboat dockage will include 10 mooring piles and fender system, gangways, safety ladders, fire protection, and other improvements. In addition to riverboat dockage, Phase I will also include improvements for transient dockage. Transient dockage improvements include a 540 foot floating pier to accommodate approximately 14 boats plus small excursion boats. Phase I is planned to be constructed in 2015.

Pierce County and the Pierce County Parks Committee are completing a Trenton Island Boat Ramp Improvement Project in 2015 at the existing boat ramp site on Trenton Island. This project will construct an additional ramp and provide a small increase in area parking. The project will enhance the usability of the existing boat launch providing access to the Wisconsin channel of the Mississippi River.

Pierce County and the Pierce County Land Management Committee also issued a conditional use permit of January 2015 to Wisconsin Industrial Sand Company, LLC to build a silica sand washing facility located at the intersection of State Trunk Highway (STH) 35 and 770th Street, approximately 1.25 miles from the project area. This washing facility will provide direct access to rail connections located on the property.

c. 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.

Impacts from the Preferred Alternative for the US 63 River Bridge and Approach Roadways Project have been discussed previously. The main project impacts are wildlife/vegetation, wetlands, stormwater,

[33] Source: http://www.red-wing.org/comprehensiveplan.html
[34] Source: http://www.red-wing.org/comprehensiveplan.html

cultural resources, contaminated properties, and noise. Cumulative impacts to these resources from the proposed project and anticipated future projects listed above are discussed in the following sections.

Wetlands

Existing Conditions and Impacts from Proposed and Future Actions

Existing wetland conditions consist of floodplain and drainage way wetlands. Impacts to wetlands within the project area are described in Section IV.A.11.b.iv.1 (Water Resources – Wetlands). Wetlands in the project vicinity may be affected by the foreseeable future actions. However, these impacts will be mitigated, as required by state and federal regulations.

Cumulative Potential Effects

Wetlands are protected by Federal and State laws that mandate "no net loss" of wetland functions and values. These Federal and State laws require the avoidance of wetland impacts when possible, and when avoidance is not possible, impacts must be minimized and compensated. Both Federal and State laws require permits. As a result of these laws and regulations, no substantial cumulative wetland impacts are anticipated to result from the river bridge and approach roadways project.

Stormwater

Existing Conditions and Impacts from Proposed and Future Actions

Under current conditions, stormwater on the existing river bridge drains directly to the Mississippi River, to land adjacent to the Mississippi River, or to municipal storm sewer without treatment. Impacts to stormwater from the proposed action are described in Section IV.A.11.b.ii (Water Resources – Stormwater). Identified foreseeable actions may result in increased impervious surfaces and stormwater effects. However, these projects will be required to provide mitigation in conformance with NPDES and/or watershed regulations, minimizing surface water impacts.

Cumulative Potential Effects

Federal, state, and local surface and groundwater regulations require mitigation be provided in conjunction with proposed actions. Given the design standards and management controls available for protecting the quality of surface waters, it is likely that potential impacts of the project, along with other future actions, will be minimized or mitigated to a substantial degree. Therefore, substantial adverse cumulative effects on stormwater are not anticipated.

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

Existing Conditions and Impacts from Proposed and Future Actions

See Section IV.A.13 (Fish/Wildlife/Ecological Resources) for the existing conditions and impacts from the proposed action. Impacts from identified foreseeable actions include substantial in-river work related to the dock improvement project in the City of Red Wing. Less intense in-river work will occur to complete the Trenton Island boat ramp improvement project. Fisheries and other aquatic species may be impacted. None of the foreseeable future actions are anticipated to result in substantial impacts to other wildlife,

including birds and their migration routes. Identified foreseeable future roadway projects are improve existing facilities and do not expand capacity or substantially change existing alignments, thus limiting anticipated impacts to wildlife habitats.

Cumulative Potential Effects

Impacts to fisheries and other aquatic species resulting from in-river work of foreseeable future actions will be minimized through project coordination with the U.S. Army Corps of Engineers. Substantial cumulative effects to wildlife are not anticipated.

Contamination/Hazardous Materials/Waste

Existing Conditions and Impacts from Proposed and Future Actions

Existing conditions and impacts from the proposed action can be found in Section IV.A.12 (Contamination/Hazardous Materials/Waste). Hazardous materials are present on the existing river bridge and will be disposed of per all rules and regulations upon bridge demolition. Several sites carrying risk of contamination are also located within the project area. Construction activities related to the foreseeable future actions listed above in Section IV.A.19.b may encounter existing hazardous materials, regulated waste, or contaminated properties.

Cumulative Potential Effects

Any hazardous materials and regulated waste encountered as part of the proposed and future actions would be handled and disposed of according to applicable state and federal rules and regulations. As a result, substantial cumulative effects resulting from hazardous materials or regulated waste are not anticipated within the project area.

Cultural Resources

Existing Conditions and Impacts from Proposed and Future Actions

Cultural resources in the project area include several historic structures like the Red Wing Shoe Company and the existing US 61 overpass. See Section IV.A.14 (Historic Properties) and Appendix F (Programmatic Section 4(f) Evaluation) for additional information. No substantial impacts to cultural resources are anticipated to result from the identified foreseeable future actions.

Cumulative Potential Effects

Impacts to existing cultural resources resulting from the proposed river bridge and approach roadways project are identified in Section IV.A.14 (Historic Properties) and Appendix F (Programmatic Section 4(f) Evaluation). Substantial cumulative impacts to cultural resources are not anticipated in conjunction with the identified foreseeable future actions. If federal funds, licenses, or permits are required on future actions, the Section 106 process and associated federal requirements would apply.

Transportation

Existing Conditions and Impacts from Proposed and Future Actions

Existing and projected traffic conditions resulting from the proposed river bridge and approach roadways project is discussed in Section IV.A.18 (Transportation). Impacts from identified foreseeable future transportation projects in downtown Red Wing are anticipated to improve traffic operations of motorized and non-motorized users. The identified silica sand washing facility in Pierce County may increase heavy truck traffic across the proposed river bridge. However, the adjacent rail connection on the washing facility site is expected to play a central role in its operations, minimizing potential for substantially increased heavy truck traffic within the project area.

Cumulative Potential Effects

The proposed river bridge and approach roadways project, in conjunction with identified foreseeable transportation projects in downtown Red Wing, are expected to complement the City's ongoing efforts to improve the vitality of the downtown core. A portion of the bridge project layout is immediately adjacent to the western terminus of the US 61 reconstruction.[35] Likewise, the pedestrian and bicyclist improvements resulting from better traffic operations and the construction of a shared use facility on the proposed river bridge will meet objectives identified within City of Red Wing planning documents.

Noise

Existing Conditions and Impacts from Proposed and Future Actions

See Section IV.A.17 (Noise) for detailed existing noise conditions. In summary, the Preferred Alternative results in one potential noise barrier within the Minnesota portion of the project meeting the feasibility and reasonability criteria for the installation of a noise barrier. The Wisconsin portion of the project does not approach or exceed noise standards warranting the consideration of a noise barrier.

Impacts from proposed actions could include increases in truck traffic, particularly related to the silica sand washing facility on the Wisconsin side of the project. Other proposed actions are not anticipated to substantially increase traffic noise levels.

Cumulative Potential Effects

Roadway projects identified within the Wisconsin and Minnesota STIPs are reconstruction and/or maintenance and preservation projects not anticipated to generate additional traffic volume. The adjacent rail connection on the washing facility site is expected to play a central role in its operations, minimizing potential for substantially increased heavy truck traffic and relate noise within the project area. In addition, traffic noise levels are predicted to decrease in areas on the Minnesota side of the project where the new slip ramp alignment will shift existing traffic volumes to different routes. Adverse cumulative potential effects on noise are not anticipated.

[35] A final roadway layout for the US 61 reconstruction project is located on the City of Red Wing website at http://www.red-wing.org/media/files/departments/engineering/TH_61_Reconstruction/08-15-14%20-%20Level%202%20Layout.pdf

Conclusion

The potential impacts to resources identified can be avoided or minimized through existing regulatory controls, as described above. During the development of this EA/EAW, no potentially substantial cumulative potential effects to the resources affected by this project have been identified.

20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

Navigational Channel

Coordination is ongoing with the U.S. Coast Guard and U.S. Army Corps of Engineers regarding the Mississippi River channel. Per the U.S. Coast Guard approval dated November 27, 2013, vertical clearance has been approved at a minimum of 60 feet above normal pool at each channel pier due to the haunch in the girder for 35 feet at either end of the channel span. A clearance of 62 feet above normal pool is required for the remaining 362 feet at the center of the span. This approval serves as a relaxation of the existing vertical clearance of 64.7 feet above normal pool. The total clearance envelope of the navigational span will be 432 feet.

The U.S. Coast Guard also provided input on bridge replacement locations early in the project development process. These bridge replacement locations are discussed within Section III.A.1 (River Bridge Alternatives). Per a May 14, 2012 U.S. Coast Guard correspondence, the proposed new river crossing locations were deemed unacceptable from a navigational standpoint due to the proximity of the bend in the river west of downtown Red Wing. As a result, the U.S. Coast Guard recommended a bridge replacement location immediately upstream of the existing river bridge to satisfy reasonable needs of navigation.

Construction would involve temporary impacts to the navigational channel, including a reduced channel width and/or short-term closures, at various stages of construction to allow for pier construction, work on the new bridge superstructure, and removal of the existing river bridge. These closures would need to be coordinated with the U.S. Army Corps of Engineers, U.S. Coast Guard, and barge operators, and would impact commercial and recreational water users. The timing and duration of closures would vary.

All construction impacts to the navigational channel will be coordinated with the U.S. Army Corps of Engineers, U.S. Coast Guard, and other relevant stakeholders as required by rules and regulations.

Aviation Coordination

MnDOT's Office of Aeronautics has participated in project coordination. The Office of Aeronautics generally seeks to ensure project compatibility with airport operations. Given the proximity to the Red Wing Regional Airport in Bay City, Wisconsin, the MnDOT Office of Aeronautics has noted if cranes will be used for construction, the Federal Aviation Administration will need to be notified to complete an airspace obstruction analysis and FAA Form 7460-1 will be required. Terrain height will factor into whether projects affect the navigable airspace.

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: _____ Date: 6/11/15

Title: Chief Environmental Officer

B. Additional Federal Issues

1. Right-of-Way and Relocation

Consideration of potential for right-of-way impacts played an important role throughout the alternatives development process. In some instances, substantial right-of-way acquisition requirements influenced the decision to eliminate an alternative from further consideration. In general, design development attempted to minimize right-of-way acquisition (especially full acquisition) to the extent possible.

The project would require the acquisition of five properties totaling approximately 2.9 acres for highway right-of-way. Four property acquisitions are anticipated on the Minnesota side of the project within or adjacent to the proposed buttonhook intersection with slip ramp approach. An additional acquisition is located on the Wisconsin side of the project.

In Minnesota, one of the four properties is classified as commercial. This property is approximately 0.7 acre in size.

The City of Red Wing also holds the deed to an impacted property. This property is classified as tax exempt and has an area of approximately 1.4 acres.

The two remaining properties in Minnesota are classified as residential and will include relocations. These properties total approximately 0.3 acre.

The single acquisition on the Wisconsin side is an approximate 0.5 acre partial commercial acquisition of the marina/campground property. This acquisition will not affect the overall business operation.

Temporary easements are also anticipated to be required for project construction. Potential temporary easements totaling approximately 0.7 acre may be required for temporary construction causeways on the Wisconsin side of the river. Potential temporary easements on railroad property totaling approximately 0.5 acre may be required on the Minnesota side of the river. Additional minor temporary easements may be needed adjacent to the Minnesota approach's buttonhook facility.

See Figure 18 in Appendix A for a map depicting parcel acquisition information.

The acquisition and relocation of property due to the proposed project would be conducted in accordance with the Uniform Relocation and Real Property Acquisition Act of 1970, as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987 and 49 Code of Federal Regulations, Part 24, and effective April 1989 (revised January 2005). Relocation resources are available to all relocates without discrimination.

Two booklets titled *Relocation Assistance: Your Rights and Benefits*[36] and the *Guidebook for Property Owners*[37] have been produced by MnDOT to provide information to potential displaces on their rights and benefits under the Relocation Assistance Program. These documents are available to provide information on programs and benefits and to develop individual relocation plans to relocates. Relocation resources are available to all residential relocates without discrimination.

[36] See http://www.dot.state.mn.us/row/pdfs/relo-booklet.pdf
[37] See http://www.dot.state.mn.us/row/pdfs/property-owners-guide-graphics.pdf

Those whose housing is displaced as part of the project are entitled to reimbursements for certain expenses such as moving costs, replacement housing costs, appraisal fees, and relocation assistance services. Replacement housing units must be "decent, safe, and sanitary" and must be at least functionally equivalent to the present dwelling with respect to the number of rooms and living space, location, and general improvements. Although an adequate supply of comparable replacement housing sites can generally be found, an administrative process called Last Resort Housing is available to address situations where the supply of replacement sites is inadequate. MnDOT is committed to Last Resort Housing, which guarantees that comparable housing would be provided before the owner is required to move.

2. Economics

The permanent loss of tax base associated with property acquisitions is negligible and Minnesota impacts are anticipated to be offset by future development in downtown Red Wing. As noted above, the partial Wisconsin property acquisition will not affect the overall business operation. Overall, the proposed project is expected to provide positive economic benefits to the project area and surrounding communities by facilitating traffic flow for local and interstate commerce.

3. Social Impacts

Community facilities and resources typical of urban downtowns are located in downtown Red Wing immediately adjacent to the project's Minnesota approach. These facilities include, but are not limited to, institutional buildings like the Red Wing Public Library, the Red Wing Fire and Police Departments, and the Goodhue County Justice Center, worship-related facilities like the Cornerstone Community Church and the Landmark Missionary Baptist Church, and recreational facilities like the Red Wing Family YMCA.

These types of community facilities help create the vitality of the downtown Red Wing area. As noted in Section II (Purpose and Need), the need to improve motorized and non-motorized traffic mobility on trunk highways within the downtown Red Wing area is a primary need of the project. The proposed river bridge replacement and accompanying Minnesota approach was selected as the Preferred Alternative, in part, to benefit the downtown area by re-routing traffic out of core pedestrian-based economic areas. Based on input from the City of Red Wing, the proposed project is expected to provide positive social impacts throughout downtown Red Wing by decreasing vehicular/pedestrian conflicts within the downtown area.

A community garden is located at the corner of Bluff Street and East 4th Street in the East End neighborhood. This community garden resides on a parcel owned by the City of Red Wing and identified for acquisition in order to construct the bridge approach. MnDOT and the City of Red Wing are aware of the garden and will continue to investigate options for its relocation during the right-of-way acquisition process.

The proposed project requires severing 3rd Street between Sanderson Street and Bluff Street in Red Wing. This local street alternative will require four residential parcels that front on 3rd Street to access and egress their neighborhood via 4th Street whereas today they have the option of either 3rd or 4th Street, a maximum one-block increase in travel distance for motorized and non-motorized travel. Otherwise, the neighborhood access to/from the downtown area will not change. Access to the Red Wing Shoe Company property will be maintained via Bluff Street underneath the proposed Bridge 25035.

Community facilities on the Wisconsin side of the project are located within Hager City north of the proposed project area. The proposed project is not anticipated to substantially impact these facilities, which include a recreational playing field and postal office.

4. Transit

See Section II.A.18.a (Transportation) for transit information.

5. Considerations Relating to Pedestrians and Bicyclists

Bicycle and pedestrian considerations are contained within the primary and secondary needs of the Purpose and Need Statement. Listed as a primary need is "the need to improve motorized and non-motorized traffic mobility on trunk highways within the downtown Red Wing commercial/historic district." As this primary need states, the primary crossing locations include US 61 at Bush Street, US 61 at Broad Street, and Plum Street at 3rd Street. Each of these locations is adversely impacted by the high traffic volumes and turning traffic. The impacts to non-motorized mobility are compounded because signal cycle lengths are typically increased and signal phases are added to accommodate the high volume of vehicular traffic. In addition, as motorized traffic increases, pressure to remove on-street parking and to widen intersections to facilitate truck turning movement increases in an effort to improve mobility. These factors contribute to a reduction in the quality of the pedestrian experience in the downtown Red Wing area.

Listed as a secondary need is "the need to maintain or improve pedestrian/bicycle facilities on the river bridge and US 61 overpass." Existing pedestrian and bicyclist accommodations are not adequate. The existing bridges provide 2.5-foot sidewalks on both sides of the bridges, which does not meet the current MnDOT standard of a minimum 6-foot width for pedestrian use, or a minimum 10-foot width for a combined bicycle/pedestrian facility. The existing right shoulders on US 61 underneath the existing US 61 overpass are the width of the gutter (approximately 2 feet), which does not meet MnDOT standards. Bicyclists are currently forced to ride in the through lanes of US 61. This secondary need as described highlights the objective to meet or exceed bicycle and pedestrian accommodation standards given the popularity of biking and walking to access businesses in the downtown commercial district and other destinations in the project area. Bicycle and pedestrian facilities are being designed per rules and regulations at various levels of government, including Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, MnDOT's *Public Rights of Way Accessibility Guidance*, and MnDOT's *Minnesota Bikeway Facility Manual*.

Red Wing is also one of the cities on a popular circular on-road biking route around Lake Pepin. From Red Wing, the route crosses US 63 to Wisconsin's TH 35, follows TH 35 until it crosses TH 25 to enter back into Minnesota, and then follows Minnesota's US 61 on the return, ultimately ending back in Red Wing. US 61 is also the Minnesota Great River Road National Scenic Byway and TH 35 is Wisconsin's Great River Road. In addition, the Mississippi River Trail (MRT), a 10-state bicycle route from the Mississippi Headwaters to the Gulf of Mexico, is routed on US 61 in Red Wing. Wisconsin's MRT follows TH 35, which intersects with US 63 in Hager City. The Cannon Valley Regional Trail, originating in Cannon Falls, Minnesota connects to waterfront bike routes in the downtown Red Wing area. The City is currently in the planning phase to develop a riverfront trail connecting three parks, including Barn Bluff, to the Cannon Valley Regional Trail. The Goodhue-Pioneer State Trail is also planned to connect with the Cannon Valley Regional Trail.

The relatively high pedestrian and bicycle traffic in the downtown Red Wing area was taken into account when developing alternatives throughout the project process and have resulted in substantial bicycle and pedestrian design components in the project layout. A shared pedestrian and bicycle facility will be included on the river crossing and approach structures, offering a fully accessible 12 feet wide shared use facility with two scenic overlooks on the bridge. This shared facility will extend from 825th Street in

Wisconsin to the 3rd Street and Plum Street intersection in Red Wing. The project will ultimately enhance the safety, usability, and connections of trail systems throughout the area.

6. Section 4(f) Resources

Section 4(f) legislation, as established under the Department of Transportation Act of 1966, provides protection for publicly owned parks, recreation areas, historic sites, wildlife and/or waterfowl refuges from conversion to transportation use. The FHWA may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and/or waterfowl refuge, or any significant historic site unless a determination is made that there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning to minimize harm to the property resulting from such use.

The proposed action of removing the US 61 overpass and replacing it with a buttonhook signalized intersection and slip ramp would result in an 'adverse effect' under Section 106 and, therefore, a Section 4(f) 'use'. The Programmatic Section 4(f) Evaluation, located in Appendix F, determined there is no feasible and prudent alternative to the use (i.e., the removal) of the US 61 overpass Bridge 9103 and its approaches. See the Programmatic Section 4(f) Evaluation for a more detailed discussion of Section 4(f) process decision-making and findings.

7. Section 6(f) Resources

The project has been reviewed for potential Section 6(f) involvement.[38] The project will not cause the conversion of any land acquired, planned, or developed with funds from the Land and Water Conservation Fund (LAWCON). Therefore, there is no Section 6(f) involvement on this project.

8. Section 106 Process

See Section IV.A.14 (Historic Properties) for information regarding the Section 106 process and project impacts to historic resources and SHPO coordination regarding determination of effects and other Section 106 process issues.

9. Environmental Justice

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations," dated February 1, 1994, requires that environmental justice be addressed in all federal planning and programming activities. The purpose of EO 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and low-income populations. The proposed project has potential federal permit requirements and will utilize federal funding. As such, it is considered a federal project for the purpose of compliance with this Executive Order. EO 12898 requires that the proposed actions be reviewed to determine if there are "disproportionately" high or adverse impacts on minority or low-income populations. "Disproportionate" is defined in two ways: the impact is "predominantly borne" by the minority or low-income population group, or the impact is "more severe" than that experienced by non-minority or non-low-income populations. The steps for defining environmental justice impacts include the following:

[38] Source: MnDNR, "Grant-Funded Parks and Natural Areas Subject to Permanent Grant Program Requirements," Page 6, 7.18.2014, http://files.dnr.state.mn.us/aboutdnr/lawcon/lawcon_1.pdf

- Step 1: Determine if an identifiable low income and/or minority population exists in the project area;

- Step 2: Determine if there are potentially high and adverse environmental impacts disproportionately borne and appreciably greater for the low income and/or minority populations;

- Step 3: If the determination in Step 2 is 'Yes", then determine if further mitigation is possible to avoid or reduce the adverse effect to the population; or are other alternatives to avoid or reduce impacts practicable?

Step 1: Assessment of Project Area Demographics

The first step in the environmental justice determination process is to determine whether any minority and/or low-income populations are present within the project area. For the purposes of environmental justice, a low-income population or minority population is defined as a population of people or households located in close geographic proximity meeting the racial or income criteria set forth in EO 12898.

Information on population characteristics of the project area was obtained from 2010 Census Redistricting data and the 2008-2012 American Community Survey data. For purposes of this analysis, data were examined at the following geographic levels: the Block Group level for 2010 Census Redistricting data and the Census Tract level for the 2008-2012 American Community Survey data.

For this project, Census Tracts and Block Groups were included in the environmental justice analysis if the proposed project layout intersected Census Tract or Block Group boundaries. This results in two Census Tracts and three Census Block Groups. Of the three Census Blocks, two are within Pierce County, Wisconsin and one is within Goodhue County, Minnesota. See Figure 37 in Appendix A for Census Tract and Block Group locations.

a. Identification of Minority Populations

The term "minority" is defined using race and ethnicity definitions from the 2010 Census. Minority populations are identified when the percentage of minority persons in a given block group exceeds the percentage of minority persons in the county. For this analysis, the presence of minority populations was assessed using block group level data. Table 18 outlines population and race information for the three Census Block Groups.

According to the minority criteria definition outlined above, Census Block Group 1, Census Tract 802 within the City of Red Wing (see Figure 37 in Appendix A) indicates minority populations are located in the project vicinity. Within the Census Block Group in the City of Red Wing, data indicates 14 percent of the population is minority and 10 percent of the population is Hispanic/Latino. These percentages are higher than the total Goodhue County minority and Hispanic/Latino population percentages of 5 percent and 3 percent, respectively. Based on this data, for the purpose of this environmental justice assessment, it is assumed that a minority population is in the vicinity of the proposed Minnesota approach portion of the project.

Within the Wisconsin portion of the project area (Town of Trenton, Pierce County), 99 percent and 98 percent of Census Tract 9606 Block Groups 1 and 2 are white, respectively. This is a higher percentage

than the total Pierce County population that is 97 percent white. No minority populations exist within the Wisconsin portion of the project area.

b. Identification of Low-Income Populations

For the purposes of this study, the term "low-income" is defined as persons with income below the 2012 poverty level. Data for Table 19 came from the 2008-2012 American Community Survey five-year estimates. Because this data is not available at the block group level, data from the census tracts within the project area are reported. Low-income populations are identified when the percentage of low-income persons in a given census tract exceeds the percentage of low-income persons in the county.

Census Tract 802 in Red Wing, Goodhue County is the only location in the project area where the percentage of low-income persons (12.2 percent) exceeds Goodhue County's total percentage of 9.9 percent. In addition, City staff were contacted to determine if more detailed information on the Bluff Neighborhood, the residential area in the vicinity of the Minnesota approach, was available. Information provided by the City indicated that the neighborhood is primarily single family residential units, with some multi-dwelling units; and that there are a number of rental properties in the neighborhood.

Given the data presented above, it is reasonable to conclude that minority and/or low-income populations exist in the Bluff Neighborhood in the vicinity of the project in Red Wing. Outreach was coordinated within this area. Project staff met with residents of the City of Red Wing's Bluff Neighborhood (i.e., the neighborhood adjacent to the project) on September 22, 2012. This meeting functioned as a targeted listening session focused on discussing alternatives that could directly affect the neighborhood and learn about the specific questions and concerns of the area residents. Seven individuals signed in at the meeting; no comment cards were submitted at or following the meeting.

Step 2: Determination of Effect

The determination of effect includes two steps:

- Is the anticipated adverse impact high?
- Is the high and adverse impact anticipated to fall disproportionately on low income or minority populations?

If no high levels of adverse impacts are anticipated the consideration of potential disproportionate impacts does not apply.

a. Is the anticipated adverse impact high?

This EA documents the range of beneficial and adverse impacts associated with the Preferred Alternative along with proposed mitigation measures to address adverse effects. The following subject areas were considered when determining whether the collective adverse impacts to the identified minority and low income populations are high:

- Right-of-Way and Relocation
- Noise
- Transportation/Access

Right-of-Way and Relocation – The Preferred Alternative requires acquisition of two residential properties, one commercial/industrial structure, and one vacant tax forfeited property within the City of Red Wing, and one commercial partial acquisition within Pierce County. These acquisitions are required

to accommodate the proposed Minnesota approach roadway configuration and the new river bridge. Both residential property impacts are located in the Bluff Neighborhood (adjacent to the proposed buttonhook). However, given the size of the neighborhood (approximately 309 parcels within an area bounded by Bluff Street, 7th Street East and US 61), two residential acquisitions is not considered a proportionately "high" adverse impact. The properties acquired are located on the northwestern corner of the Bluff Neighborhood. As a result, the proposed right-of-way acquisitions will not bisect or sever the neighborhood. Furthermore, commitments to address these adverse effects, including the provisions of the Uniform Relocation and Real Property Acquisition Act of 1970, as amended, mitigate the effects on these residents.

Noise – A detailed traffic noise analysis was conducted for the Preferred Alternative (see Section IV.A.17 – Noise). Analysis concluded that numerous residential properties in the Bluff Neighborhood currently experience noise levels that exceed state and federal standards. However, the analysis concludes these exceedances are linked to growth in traffic along US 61 that will occur regardless of the build or No Build options. The proposed project could benefit this neighborhood because it provides an opportunity for the residents to determine if they want a noise wall included with the Preferred Alternative to mitigate the increases in traffic noise levels that will occur regardless of whether the proposed project is constructed.

In accordance with the Minnesota Statewide Highway Noise Policy implemented in May 2011, MnDOT will engage the property owners and residents of those parcels with noise standard exceedances to inform them of the process for determining whether to build a noise wall and specifically solicit their preference through a formalized voting process. The process will conclude with majority consensus from property owners and residents to construct *(or not)* the noise wall segment along US 61 as defined in the technical noise analysis. Affected benefited receptors and local officials will be notified of plans to eliminate or substantially modify a noise abatement measure prior to the final design process. This notification will explain any changes in site conditions, additional site information, any design changes implemented during the final design process, and noise barrier feasibility and reasonableness. A final decision regarding barrier installation will be made upon completion of the public voting process. Since mitigation is proposed, the noise impact would not be considered a high impact to the adjacent population.

Transportation/Access – The Preferred Alternative, specifically the buttonhook with slip ramp, requires severing 3rd Street between Sanderson Street and Bluff Street. This local street alteration will require four parcels that front on 3rd Street to access and egress their neighborhood via 4th Street whereas today they have the option of either 3rd or 4th Street. This effect was determined to be non-substantial because the trip distance on average for the four parcels is nearly equidistant via 3rd Street and 4th Street.

Based on consideration of the direct and indirect impacts (both beneficial and adverse), the net adverse impact of the Preferred Alternative on the identifiable minority and low income populations is not "high." Given this conclusion, the remainder of Step 2 as well as Step 3 does not need to be addressed.

Environmental Justice Finding

The proposed action will not introduce high levels of adverse impacts that would have disproportionately high and adverse human health or environmental effects to any minority population or low income population.

The proposed action is not anticipated to result in disproportionately high and adverse human health or environmental effects to minority or low-income populations.

Table 18: Population and Race

County/City Totals

Demographic Group	Pierce County	% of Population	Goodhue County	% of Population	City of Red Wing	% of Population
Households	15,190	N/A	18,623	N/A	7,017	N/A
Population	41,019	100%	46,183	100%	16,459	100%
White	39,614	97%	43,684	95%	15,064	92%
Minorities	1,405	3%	2,499	5%	1,395	8%
African American	232	1%	445	1%	312	2%
AIAN (1)	151	0%	533	1%	366	2%
Asian	301	1%	274	1%	129	1%
NHPI (2)	7	0%	17	0%	5	0%
Some other	201	0%	511	1%	198	1%
Two or More	513	1%	719	2%	385	2%
Hispanic / Latino (3)	632	2%	1,318	3%	607	4%

Census Block Group Totals within Project Area

Demographic Group	Pierce County: Census Tract 9606, Block Group 1	% of Population	Pierce County: Census Tract 9606, Block Group 3	% of Population	City of Red Wing: Census Tract 802, Block Group 1	% of Population
Households	654	N/A	619	N/A	428	N/A
Population	1,633	100%	1,590	100%	947	100%
White	1,611	99%	1,552	98%	812	86%
Minorities	22	1%	38	2%	135	14%
African American	6	0%	5	0%	46	5%
AIAN (1)	3	0%	15	1%	21	2%
Asian	5	0%	3	0%	12	1%
NHPI (2)	2	0%	0	0%	0	0%
Some other	2	0%	1	0%	36	4%
Two or More	4	0%	14	1%	20	2%
Hispanic / Latino (3)	15	1%	3	0%	93	10%

Source: P1, PH12H - 2010 Census Redistricting data

(1): American Indian or Alaska Native

(2): Native Hawaiian & Other Pacific Islander

(3): Those of Hispanic Origin may also consider themselves white or of another race; therefore, population totals and percentages will be greater than 100 percent.

Table 19: Income and Poverty

County Totals

Demographic Group	Goodhue County, MN	City of Red Wing, MN	Pierce County, WI
Total Households	18623	7024	15190
Total Families	12648	4236	9935
Median Household income (2012 inflation adjusted dollars)	$55,047	$51,290	$57,586
Median family income (2012 inflation adjusted dollars)	$62,345	$66,143	$74,481
Per Capita income in 2012 (dollars)	$28,412	$27,924	$27,263
Percentage of Families whose income in the past 12 months is below the povery level	6.2%	7.3%	6.5%
Percentage of People whose income in the past 12 months is below the povery level	9.9%	10.6%	13.2%

Census Tract Totals within Project Area

Demographic Group	Goodhue County: Census Tract 802	Pierce County: Census Tract 9606
Total Households	2886	1983
Total Families	1808	1493
Median Household income (2012 inflation adjusted dollars)	$54,017	$69,963
Median family income (2012 inflation adjusted dollars)	$66,059	$77,054
Per Capita income in 2012 (dollars)	$26,856	$30,023
Percentage of Families whose income in the past 12 months is below the povery level	9.1%	3.8%
Percentage of People whose income in the past 12 months is below the povery level	12.2%	4.2%

Source: Census Tract - Table DP03 American Community Survey 5-Year Estimates

10. Air Quality

See Section IV.A.16 (Air) for information about air quality.

11. Traffic Noise Analysis

See Section IV.A.17 (Noise) for information about traffic noise impacts.

12. Construction Impacts

See Section IV.A.6.b (Project Description) for information regarding construction impacts.

There will be noise and dust associated with the construction activities. No unique concerns have been identified. Standard noise and dust specifications will be followed. Substantial traffic detours (i.e., river crossing closures), are not anticipated. Any existing river bridge closures would be limited in number and short-term operations to facilitate construction activities. Disposal of excess material will be in compliance with guidelines listed in the standard specifications, and will not occur in wetlands, floodplains, or other sensitive areas. Erosion and sedimentation will be controlled in accordance with an erosion control plan and MnDOT and WisDOT standard specifications.

13. Federal Threatened and Endangered Species

Section 7 of the 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 affect listed critical habitat.

See Appendix C Exhibit 3 for Section 7 correspondence from MnDOT to the U.S. Fish and Wildlife Service dated February 4, 2015 that describes MnDOT's determinations made on behalf of FHWA, and the rationale for those determinations, including:

- A determination that project impacts are not of a magnitude that would result in jeopardizing the continued existence of the northern long-eared bat, a species proposed for federal listing as endangered at the time of EA/EAW publication;
- Determination of No Effect for the dwarf trout lily and prairie bush clover since there are no known occurrences of these species in the project area; and
- A determination that the proposed project may affect, but is not likely to adversely affect, the Higgins eye pearlymussel, spectaclecase, and the snuffbox mussels, since none of these species was found alive or recently deceased during the mussel survey conducted for this project by the MnDNR [Note: old weathered dead shells of the federal-listed Higgins eye pearlymussel (Lampsilis higginsii) and winged mapleleaf (Quadrula fragosa) were identified during the survey. However, given the weathered appearance of their shells they likely died decades ago and, therefore, their presence alive is in the project area is unlikely].

MnDOT requested U.S. Fish and Wildlife Service concurrence with these determinations, and USFWS concurred in correspondence dated March 10, 2015 (see Appendix C Exhibit 4).

Since the correspondence between MnDOT and USFWS in early 2015, the northern long eared bat (NLEB) has been officially listed by the USFWS (effective May 4, 2915). The USFWS is still accepting public comments on the interim 4(d) rules regarding activities in NLEB habitat through July 1, 2015. MnDOT is working with USFWS to update the determination based on the change in species status.

14. Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal activities contribute to the unnecessary and irreversible conversion of agricultural land to nonagricultural uses. The policy also seeks to ensure that federal policies are administered in a manner that will be compatible with state, local, and private policies that protect farmland.

The project is not anticipated to cause any adverse impact to agricultural land or operations. No agricultural land will be acquired; no farm will be severed or triangulated. The project will not affect agricultural production in Goodhue County or Pierce County. See Section IV.A.9 (Land Use) for additional information.

15. Accessibility Requirements

The proposed project must comply with provisions set by the Americans with Disabilities Act of 1990 or by state or local access codes if they contain more stringent requirements. The future project would comply with the required accessibility provisions.

See Section IV.B.5 (Considerations Relating to Pedestrians and Bicyclists) for additional information on the new bridge's fully accessible shared used facility.

16. Indirect Effects and Cumulative Impacts

See Section IV.A.19 (Cumulative Potential Effects) for information regarding cumulative impacts.

Because this project would provide infrastructure improvements that allow for continued functioning of US 63 between Red Wing, Minnesota and Pierce County, Wisconsin, and therefore, would not introduce any new roadways that would affect/induce development patterns in the project vicinity, no potential indirect effects have been identified.

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V. PUBLIC AND AGENCY INVOLVEMENT (AND PERMITS/APPROVALS)

A. Public Involvement Plan

A public involvement plan (PIP) was developed and implemented early in the project development process. This plan has helped establish guidance and expectations of communications between MnDOT and the public. It has also given MnDOT a better understanding of concerns the public and other agencies have about the project. The document outlines project goals, public involvement goals, and the methods in which these goals can be achieved. It includes a stakeholder involvement matrix that highlights involvement tools that can be utilized to serve stakeholder populations and their interests in the project. These stakeholder groups, including the general public, government bodies, permitting agencies, the business community, and emergency service providers have many unique interests and perspectives to include within the project development process. The plan identifies a series of open houses, listening sessions, business and neighborhood organization meetings, and communications efforts to inform the public on the project development process. Additional information about these efforts is discussed throughout this section.

A shared interest between these groups is the establishment of public trust throughout the project development process. Successful public involvement is about building trust, understanding and consensus. Public involvement is necessary to reach a broad consensus on public infrastructure investments. This requires a process that is characterized by technical competence, honesty, integrity, transparency, and good listening. These principles created the framework within which public involvement occurred for the US 63 River Bridge and Approach Roadways Project.

The fundamental objectives of the public involvement plan are to ensure that the concerns and issues of those with a stake in the US 63 River Bridge and Approach Roadways Project are identified; that stakeholders are given opportunities to review and comment on findings of the study; and that stakeholder concerns are reflected in the analysis process.

B. Agency Coordination

1. Technical Advisory Committee (TAC) and Project Advisory Committee (PAC)

The Technical Advisory Committee (TAC) consists of professional and technical staff from MnDOT, the consulting team, WisDOT, the City of Red Wing, Goodhue County, FHWA, and others. The Project Advisory Committee (PAC) consists primarily of regulatory agency representatives and external stakeholder group representatives (i.e., Chamber of Commerce), and local elected officials. Participating agencies include, but are not limited to, MnDOT, WisDOT, City of Red Wing, Goodhue County, Pierce County, FHWA, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, MnDNR, WDNR, Red Wing Manufacturing Association, Red Wing Downtown Main Street, the Town of Trenton, Prairie Island Indian Community, and Live Healthy Red Wing. The purpose of PAC involvement was to maintain good communication channels to interested parties throughout project development and to keep key constituency group representatives updated regarding project schedule and development.

The PIP described that the TAC would be responsible for reviewing and commenting on technical aspects of the project development process (i.e. Purpose and Need review, traffic analysis and projections, alignment concept development, etc.) and would meet approximately every-other month. The PIP further

envisioned that the PAC would function as the venue to vet key decisions prior to presenting information to the general public and also serve as a communications medium in between major public information meetings and newsletter releases. As the process progressed, it became evident that the groups functioned more effectively and efficiently as a joint-committee. As a result, joint PAC-TAC meetings occurred regularly through the alternatives development and analysis process and into the EA process.

2. Federal Highway Administration

In addition to participating in the PAC/TAC meetings, the FHWA has been actively engaged throughout the process to discuss ongoing federal considerations, share relevant information, and ensure all Federal regulations and guidelines were appropriately accounted for and incorporated into the project development process.

3. Other Agency and Stakeholder Coordination

Environmental Agency Workshop

An Environmental Agency Workshop was held on April 30, 2012. The purpose of the workshop was to engage federal and state regulatory agencies early in the study process to inform them about the project, provide a project area tour, and learn about their respective priorities and concerns. Issues discussed included bridge location feasibility, downtown traffic operations, and cultural resources considerations.

City Council Meetings

Project staff attended and presented at three City of Red Wing City Council meetings. The dates of these City Council meetings were:

- August 26th, 2013
- November 12th, 2013
- February 24th, 2014

Emergency Service Providers Meeting

In addition, project staff met with emergency service providers on October 22, 2012 to discuss how to best accommodate emergency service and public safety agency needs within recommended alternatives and throughout the construction phase of the project. Attendees of this meeting included representatives from various Minnesota and Wisconsin county sheriff's offices, emergency management departments, utility companies, police departments, fire departments, and others.

Tribal Coordination

Indian tribes and associated Tribal Historic Preservation Offices (THPOs) in Wisconsin and Minnesota have been involved in project planning and development. Tribal consultation letters were distributed by MnDOT's Cultural Resources Unit in February of 2011 to solicit comments about historic, cultural, and archaeological resources potentially located within the project area. Of these Indian tribes, the Prairie Island THPO responded with an interest in further involvement and, as a result, has participated in project development and planning. Wisconsin tribal consultation letters were also distributed to request project comments. None of the tribes responded with concerns regarding their tribal interests in the proposed project area. See Appendix D for applicable tribal consultation correspondence.

United States Coast Guard

U.S. Coast Guard coordination is discussed within Section IV.A.20 (Other Potential Environmental Effects).

Purpose and Need Refinement

A project purpose and need statement was developed early in the project (in 2012). However, subsequent traffic studies performed in conjunction with concept feasibility analyses detailed a network mobility problem in the downtown Red Wing area previously believed to be a more confined intersection mobility problem. Building from this technical analysis, MnDOT met with City of Red Wing staff to discuss these issues and to ensure the community's perspectives and concerns regarding traffic mobility were clearly understood. Through this coordination, City staff indicated that in addition to the motorized traffic issues, non-motorized travel is a major challenge in the downtown area. The trunk highway segments (e.g., Main Street and Plum Street) are substantial impediments to pedestrian and bicyclist circulation.

Thorough review of this information led to discussions centered on refining the purpose and need to better account for motorized and non-motorized mobility issues. In addition, mobility issues and concerns identified in technical studies were consistent with public input received through the project's public engagement process.

Given this information, MnDOT and FHWA concurred that the need to improve motorized and non-motorized traffic mobility should become a primary need. Project stakeholders were given an opportunity to comment on these changes to the purpose and need through ongoing public engagement efforts. Stakeholders were supportive of mobility being designated as a primary need. The Purpose and Need statement in Section II of this EA/EAW reflects the issues defined during this additional traffic analysis and stakeholder engagement.

C. Public Participation

1. Open Houses

Three public open houses were conducted to provide an opportunity for attendees to view display boards and graphics and talk one-on-one with project staff. Presentations were also conducted to provide project updates. Attendees had the opportunity to submit concerns, suggestions, comments, and any other information in written form on comment cards. The input obtained through the conversations and comment cards at these open houses provided guidance and direction throughout the design process.

The dates of the public open houses were:

- April 12th, 2012
- July 25th, 2013
- October 1st, 2014

2. Listening Sessions

Five listening sessions have been held to date. This forum provided an informal opportunity for the public, business community, and other stakeholders to visit with project staff. Project materials including graphics and alternatives options were displayed, and attendees were invited to submit written comments on cards.

The dates of the listening sessions were:

- May 17th, 2012
- September 20th, 2014
- February 21st, 2013
- November 11th, 2013
- May 27th, 2014

3. Other

Project staff met with residents of the City of Red Wing's Bluff Neighborhood on September 22, 2012. This meeting functioned as a targeted listening session focused on discussing alternatives that could directly affect the neighborhood and learn about the specific questions and concerns of the area residents. Project staff have also made presentations to several local groups throughout the project, including the Red Wing Heritage Preservation Commission, Red Wing Lions Club, and the Red Wing Kiwanis.

D. Ongoing Communication

1. Website

A project website was established and maintained on the MnDOT website.[39] Website materials include a project overview and schedule, updated status reports, maps, graphics, design concepts, PAC/TAC meeting notes and presentations, opportunities for public comment, and other elements as appropriate to build understanding of the proposed project. The City of Red Wing also has a webpage about the project on their home site, which also has links to the MnDOT website.

2. Newsletters, Project Updates, and Fact Sheets

Project updates in the form of e-newsletters, printed newsletters, and fact sheets were provided to key stakeholders, the media, and general public. Newsletters were made available through the project website, the project Constant Contact database, PAC/TAC members, Red Wing City Hall, and other public locations where they could be posted for viewing. These documents educated stakeholders about the need and goals of the project, kept stakeholders apprised of new information and milestones, announced upcoming project meetings and events, and shared project conclusions and decisions.

E. Permits and Approval Requirements

See Section IV.A.8 (Permits and Approval Required) for information.

F. Public Comment Period and Public Hearing

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. A combined public informational meeting/public hearing will be held after this EA 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 ask questions and express their comments, ideas and concerns about the

[39] Source: http://www.dot.state.mn.us/d6/projects/redwing-bridge/index.html

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 project record.

G. Report Distribution and EA Notices

Notices of EA availability and copies of this document have been sent to agencies, local government units, libraries, and others as per requirement in federal 23 CFR 771.119 and Minnesota Rule 4410.1500 (Publication and Distribution of EAW).

H. Process Beyond the EA Public Comment Period

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 Environmental Impact Statement (EIS), by revising the Environmental Assessment, or clarification in the Findings of Fact and Conclusion (FOFC), whichever is appropriate.

When the environmental documentation is determined adequate, if an EIS is not necessary as currently anticipated, MnDOT would prepare the FOFC as the basis for a "Negative Declaration" for the state environmental requirements. MnDOT would also prepare a request for a "Finding of No Significant Impacts" (FONSI) that would be submitted to the FHWA. If the FHWA agrees that this finding is appropriate, it would 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 (EAW) distribution list and publish notices in local newspapers announcing the environmental and project alternative decisions that were made.

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