

ENVIRONMENTAL ASSESSMENT

Winona Bridge Project
State Project: 8503-46
Minnesota Project: TBD
Trunk Highway 43

From 4th Street to the north end of Latsch Island
In City: Winona, in County: Winona of Minnesota
Section(s), Township(s), Range(s): 22 and 23 of 107N, 7W

Submitted pursuant to 42 U.S.C. 4332 and M. S. 116D

By the
U.S. Department of Transportation
Federal Highway Administration and
Minnesota Department of Transportation
for
Winona Bridge over the Mississippi River

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I. REPORT PURPOSE

This Environmental Assessment (EA) provides background information including:

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

This EA was prepared as a part of the National Environmental Policy Act (NEPA) process and state environmental review process to fulfill requirements of both 42 USC 4332 and M.S. 116D. 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, the EA is used to provide sufficient environmental documentation to determine the need for a state EIS or that a Negative Declaration is appropriate.

At the state level, this document also serves as an Environmental Assessment Worksheet (EAW). Minnesota Rules 4410.1300 allows the EA to take the place of the EAW form, provided that the EA addresses each of the environmental effects identified in the EAW form. This EA includes each of the environmental effects identified in the EAW form.

The Minnesota Department of Transportation (MnDOT) is the proposer and Responsible Governmental Unit (RGU) for this project. Preparation of an EAW is considered discretionary under Minnesota rules 4410.4500.

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.

II. PURPOSE AND NEED FOR PROJECT

The proposed project is located in the City of Winona, located on the Mississippi River in Winona County, Minnesota. Trunk Highway (TH) 43 is a two-lane highway where it crosses the Mississippi River back channel at the Minnesota-Wisconsin state line over Bridge No. 5930 and the main channel over Bridge No. 5900. TH 43 continues through the City of Winona and connects to U.S. 61. See Figures 1 and 2 in Appendix A.

The main channel bridge (Bridge No. 5900) has stood as a distinctive element in the community since 1942. Concerns about the structural stability of bridges following the Interstate 35W (I-35W) bridge collapse triggered a closure of the bridge in 2008 while gusset plate repairs were made. In addition, the Minnesota Legislature required that all “fracture critical” bridges be addressed to minimize risk of future collapse; the Winona Bridge was among these bridges. The Winona Bridge project has been undertaken to address the condition of the bridge to meet the transportation needs and other objectives described in this Section.

Unless otherwise noted, references within this EA to the “Winona Bridge”, “existing bridge” or “historic bridge” denote Bridge No. 5900, the historic deck truss and through truss bridge over the Mississippi River main channel between downtown Winona and Latsch Island.

A. NEED FOR PROJECT

The primary need for the project is to provide a structurally sound bridge crossing of the Mississippi River Main Channel at Winona.

Also described below are secondary needs that must be given consideration in the development and evaluation of alternatives for this project. The river crossing should continue to connect to Wisconsin State Trunk Highway (WI STH) 54 and provide access to Latsch Island. Maintenance of traffic (MOT) — both across the river and on the river — should be maximized during construction (i.e., total closure of the crossing or interference with river navigation should occur for as short an amount of time as possible). Opportunities for addressing existing and future safety and operational issues within the project area should be considered. The existing level of pedestrian-bicycle accommodation at the crossing should be maintained, at a minimum, and opportunities for improvement should be considered. Any actions taken to address problems at the crossing must meet the critical regulatory requirements to protect historic resources, parkland, water quality, and river navigational clearances.

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

Primary Need: A Structurally Sound Bridge

The primary reason for undertaking this project is to address the condition of the existing bridge structure. Additional details regarding the structural issues identified to date are provided below.

Rehabilitation, Maintenance, and Inspection History

Construction of the existing bridge was completed in 1942, and currently has maintenance needs that will require extensive ongoing investment. In 1985, a major rehabilitation project was performed that re-decked the bridge to address concrete pavement deterioration and widened it by adding a cantilevered walkway off the east truss, to provide more roadway width between the trusses for vehicular traffic. The bridge underwent a partial painting in 1992 and 1993. In 2001, a gusset plate was observed to have corroded to the point where the deterioration of the plate thickness was of concern. Back-up plates were installed over the deteriorated area.

In 2008, an in-depth inspection found deterioration of gusset plates progressing to the point that the bridge needed to be closed to traffic and emergency repairs were made to 15 more gusset plates. Rating of the gusset plates upon completion of the repairs found them to be of adequate capacity but to have little reserve capacity at certain locations. The concrete walkway was also found to be bowing upwards, no longer bearing on its steel support and repairs were made to the walkway at the same time as repairs were made to the gusset plates.

The 2008 inspection also found that most steel members with faying surfaces (areas where surfaces connect) have pack rust with some areas having rust between plates that has caused major distress at the connection. (The inspection report noted that all connections were still functioning.) There were scattered areas of deterioration (corrosion) on most steel members that had been cleaned and painted over, or that occurred after the last painting. Foundation stability issues (scour) were found to be critical at the pier, which means high river flows have the potential to cause undercuts to the pier foundations. A routine, “Snooper” inspection was performed in May 2009 where typical problems were noted as well as major concerns such as corrosion of steel truss members. The 2009 inspection also noted that the bearings of Pier 21 should be considered for replacement and rehabilitation due to active corrosion and loss of section, which is not allowing the bearing to function as designed and that the bearings at Pier 23 should be replaced due to active corrosion and inability to move in rotation, only sliding free along the bottom plate. Under-deck delaminations (portions of concrete becoming loose) over driving and pedestrian areas were highlighted for extra attention in future inspections. A June 2010 visit to the bridge revealed gusset plates in need of immediate repair. Repairs were conducted throughout the summer of 2010 and the bridge was “posted,” limiting vehicle loads to 40 tons (legal loads).

A routine and fracture critical inspection was conducted in June 2012. It identified maintenance, monitoring and counter measure recommendations, but no emergency repair recommendations.

Condition Summary

Overall the bridge is currently functional. Necessary monitoring of the bridge will continue to look at any new developments in the condition of the bridge. Strain gauges have been placed on the truss spans to monitor structural response to loads. Although repair projects over the last few decades have assisted in extending the life of the bridge, it is time for a higher level of investment in the structure as further deterioration is expected to take place over the next several years.

The gusset plate repairs were sufficient to address the spot deterioration, but further deterioration is expected to continue into the future and develop at other locations. Plating over corroded areas creates inaccessibility to the “sandwiched” original plate for inspection of further deterioration.

The existing foundations consist of timber piles varying from 26 to 41 feet long with an assumed bearing capacity of 20 to 25 tons. There is not a practical means to directly determine the current load-carrying capacity of the existing timber pile foundations.

In 2010, the deck rating was downgraded to “fair” due to extensive cracking, leaching and areas of under-deck delamination. In addition, the superstructure was downgraded to “poor” due to severe deterioration of steel truss members in the main and deck trusses and spans with section loss in the range of 20-50 percent. Numerous repairs were completed in 2010; however no change in these ratings were recommended following the 2012 routine fracture critical inspection.

The bridge is also scour critical, which means high river flows have the potential to cause undercuts to the pier foundations due to previous scour history and shallower than normal piling relative to foundations that would be designed today in this reach of the Mississippi River. The Winona Bridge is monitored for scour by MnDOT.

Loading Capacity

This river crossing has also been identified as an important route for large truck traffic (e.g., farm-to-market; traffic to Winona port; and trucks from Arcadia, WI destined for westbound I-90). The bridge is currently posted with a legal maximum 40-ton weight limit. Heavier loads are not permitted on the bridge.

Secondary Needs

Maintain Connection to WI STH 54

The Minnesota TH 43 to Wisconsin State Trunk Highway (WI STH) 54 connection is an important regional and interstate route. The Winona Bridge provides the only roadway access to STH 54 from Winona. STH 54 connects to STH 35, which is a designated System-Level Priority Corridor in *Connections 2030*, the Wisconsin Department of Transportation's long-range multimodal transportation plan. The crossing is also critical for the rural communities in Wisconsin to reach Winona, the nearest regional destination for smaller towns such as Marshland and Fountain City. The crossing provides an important connection to emergency services for communities in western Wisconsin, as discussed below.

Maximum Maintenance of Traffic (MOT)

The Winona Bridge provides the only access across the Mississippi River between Wabasha (approximately 35 miles northwest) and the I-90 Dresbach Bridge (approximately 25 miles southeast). Closure of the Winona Bridge necessitates a detour of approximately one hour per trip for travelers between the City of Winona and Buffalo and Trempealeau Counties in Wisconsin.

Stakeholders have stated that the bridge crossing plays an important role for the communities on both sides of the river with people using the bridge to commute between home and work, as well as for shopping and other personal trips. The bridge also serves as a regional crossing to move goods and provide roadway access to two river ports in Winona. Continuous access is necessary to meet community and economic needs. Winona area businesses and residents have requested that the existing bridge remain open during any construction to the maximum extent practicable.

The communities on both sides of the river rely on the Winona 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 Winona live in Wisconsin.

The Mississippi River accommodates barge and other river traffic. According to the City's economic development staff, the Winona harbor receives 790 to 1,400 barges a year, not including through service to ports upstream. It is economically important to ensure that the river remains open to navigation to the maximum extent possible during construction as well. The U.S Coast Guard, which has jurisdiction over structures spanning the navigational channel, also requires this.

Need for Access to Latsch Island

The Winona Bridge provides access to Latsch Island – which is part of the City of Winona in the state of Minnesota – including access to Dick's Marine, Latsch Island Park, and a boathouse community. No other direct roadway connection from the south side of the river to Latsch Island exists; therefore, maintaining vehicular access to Latsch Island is critical, including minimizing disruption of access to the island during project construction. Emergency fire, ambulance, and law enforcement services need to access Latsch Island via the Winona Bridge, and the roadway connection provides access to Winona County Sheriff's watercraft stored at the marina. The only access to Aghaming Park (located in Wisconsin but owned by City of Winona, adjacent to the Trempealeau National Wildlife Refuge) is via the old "wagon bridge" that crosses over the back channel of the Mississippi River, which must be accessed via Latsch Island. The wagon bridge road does not connect to the Wisconsin STH system on the other side.

Approximately 75 boathouses lease spaces at Latsch Island, and most are used as seasonal recreational dwellings. The boathouses are not mobile, and cannot easily be transported to another location. Therefore, maintaining vehicular access to Latsch Island is critical to access the boathouses. See Figure 2 in Appendix A for a map showing Latsch Island.

Improve Roadway Capacity, Traffic Operations, and Design Safety

River Crossing Capacity

Under future No-Build conditions, forecast traffic volumes exceed the capacity of the existing bridge, based on planning-level thresholds. The two-lane Winona Bridge carried an average daily traffic (ADT) of 11,100 vehicles per day in 2009, which is within the theoretical design capacity of a two-lane undivided rural road (15,000 vehicles per day).

Traffic forecasting was completed to determine future roadway capacity needs. The year 2038 was selected to represent 20 years following a potential project completion date. A 50-year horizon, represented by the year 2068, was also analyzed in consideration of the long-term investment represented by a major bridge project.

The forecast for year 2038 is 15,300 vehicles per day, which is slightly over the theoretical capacity of a two-lane road. An operational analysis was conducted to better understand the ability of the existing bridge and approach roadways to carry the forecast level of traffic. As detailed in the following section, operational issues are expected under future No-Build conditions.

The 50-year forecast anticipates a traffic volume of 19,700 vehicles per day, significantly over the capacity of a two-lane roadway. If additional capacity were not provided, traffic delays and potential related safety issues would be anticipated.

Approach Roadway Intersection Operation Deficiencies

Results of traffic operations analysis found that under existing conditions, traffic in the project area operates at an acceptable LOS C or better.¹

With no improvements (i.e., No Build conditions), year 2038 traffic forecasts show that the intersection of Fourth and Winona Streets at the south approach to the bridge will operate at an overall unacceptable LOS F during the p.m. peak hour (Exhibit 1).

The factor controlling operations at this intersection is the volume exiting the intersection to the north into a single lane on the bridge. This geometric deficiency results in queue lengths which are projected to spill back into adjacent intersections and degrade adjacent intersection operations as well. Due to the proximity of the Fourth Street/Winona Street intersection to the Winona Bridge touchdown, there is a need to consider the relationship between the bridge and potential opportunities to address intersection operational issues when considering bridge alternatives for this project.

Approach Intersection Geometric Deficiencies

Due to the proximity of the Fourth Street/Winona Street intersection to the Winona Bridge touchdown, there is also a need to consider the relationship between the bridge and potential opportunities to address existing intersection geometric deficiencies (described below) when considering bridge alternatives for this project.

The existing Fourth Street and Winona Street intersection has a geometric deficiency that could result in driver expectation issues. The profile grade from the bridge to the north approach of the intersection does not provide a flat landing after the downward slope of the southbound lane as specified in Section 5-2.03 of the Road Design Manual and Chapter 9 of AASHTO's *A Policy on Geometric Design of Highways and Streets*. This creates safety concerns because drivers must anticipate both slowing down and planning turn movements, which are particular concerns in slippery conditions. A house constructed on the west approach to the Fourth and Winona intersection blocks sight lines, exacerbating the safety issue.

¹ Capacity analysis results identify a Level of Service (LOS), which indicates how well an intersection is operating. The LOS results are based on average delay per vehicle. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. LOS E indicates that the intersection is operating at, or very near, its capacity and that drivers experience substantial delays. The goal for this project is a stable LOS D, i.e., delay per vehicle is less than or equal to 40 seconds on a consistent basis and no traffic modeling results in LOS E or worse.

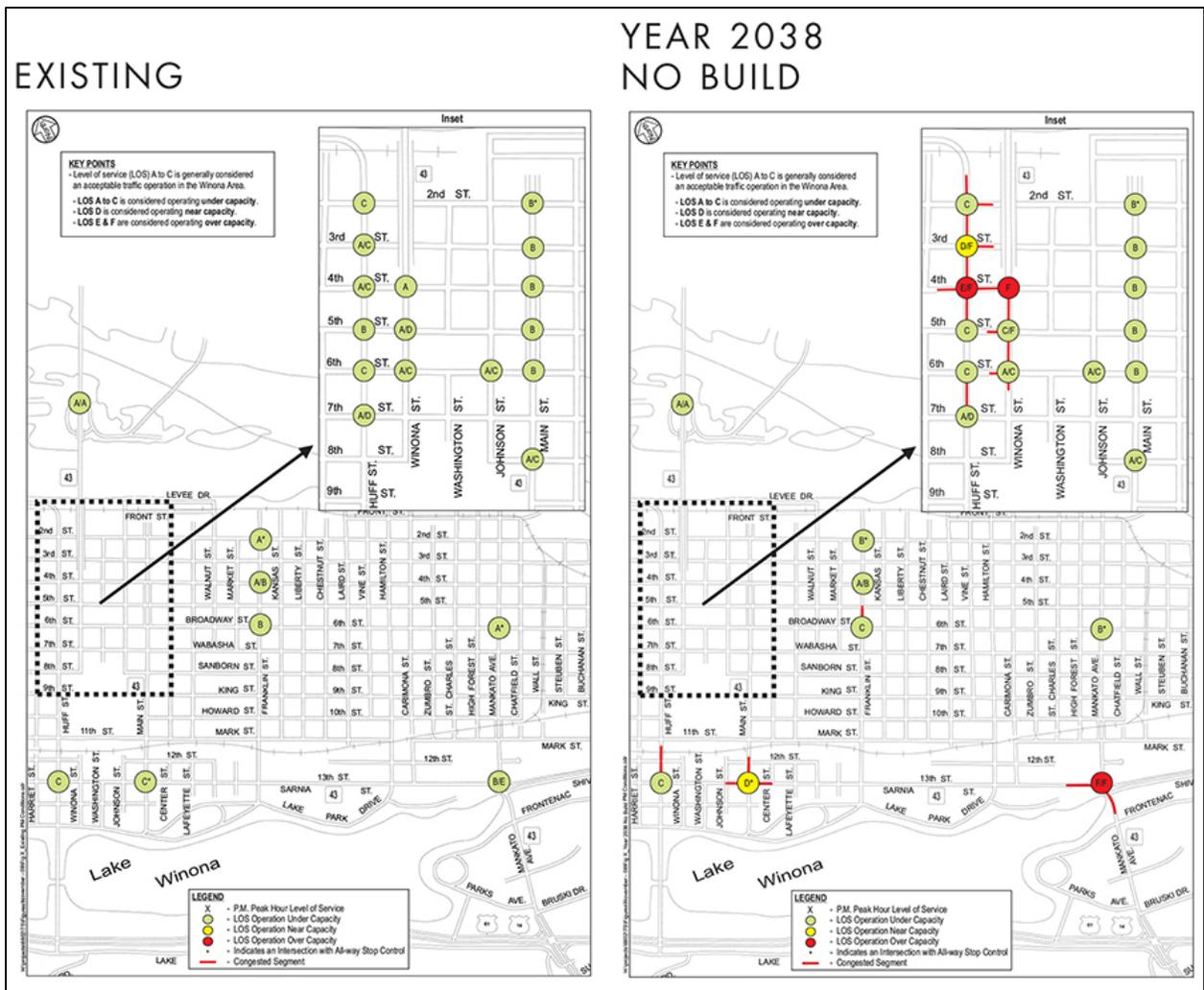


Exhibit 1. Existing and No Build Intersection Operations

Southbound traffic exiting the bridge does not stop, while the other approaches are stop-controlled. This situation goes against driver expectation and increases the complexity of navigating this intersection. This intersection has a crash rate of 0.73 per million entering vehicles (critical crash rate² of 0.64), which is higher than the MnDOT District 6 average crash rate for similar intersections (0.40), indicating a safety problem. Many of the collisions at this intersection are right angle/left turn, which is typical of a three-way stop condition.

² The critical crash rate determines the statistical significance of the calculated crash rate based on a 95th percentile confidence. If the rate is above the critical crash rate it is considered to be statistically significant and a definitive problem. If the rate is below the critical crash rate but above the average crash rate it is considered to be a potential issue but not one that is statistically significant, and the observed problem may be due to chance circumstance.

Maintain Pedestrian-Bicycle Accommodation

The existing Winona Bridge provides a 4.5-foot wide walkway. This path is used by pedestrians and bicyclists – including students at Winona State University, visitors to Latsch Island and others crossing the river between Wisconsin and Minnesota. Therefore, there is a need to at least maintain this existing level of non-motorized transportation accommodation in the river crossing corridor.

Meet Critical Regulatory Requirements

The Winona Bridge 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 requirements to gain approval.

Historic Resources

The existing bridge is eligible for listing on the National Register of Historic Places (NRHP). In addition, there are other NRHP-eligible and listed properties in the project area. The project 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. The project also needs to comply with Section 4(f) of the Department of Transportation Act of 1966 which requires avoidance of direct impacts (e.g., demolition) to an historic resource unless no prudent and feasible alternative exists.

Parkland

In addition to protecting historic resources as described above, Section 4(f) provides protections for publicly owned parks, recreational areas, and wildlife and waterfowl refuges. As noted, 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 Winona Bridge include Latsch Island Park, Waterfront Trail, Trempealeau National Wildlife Refuge, Upper Mississippi River National Wildlife Refuge, and Levee Park.

Navigational Channel

The U.S. Army Corps of Engineers (USACE) maintains a navigational channel on the Mississippi River beneath the Winona Bridge. As noted above, the U.S. Coast Guard (USCG) has jurisdiction over structures spanning the navigation channel. The USCG has determined that the project will need to maintain adequate horizontal and vertical clearances. The existing vertical clearance is 64.2 feet over the normal pool. The USCG has approved a clearance of 62.5 feet over the navigational channel portion of the crossing, with 60 feet allowed adjacent to the

piers. The existing horizontal clearance is approximately 434 feet, which is the clear distance between the inside faces of the existing piers flanking the navigation channel. The USCG requires a clear navigational channel width of 420 feet.

Stormwater

Under current conditions, stormwater on the Winona Bridge drains directly to the Mississippi, to land adjacent to the Mississippi River, or to municipal storm sewer without treatment. Furthermore, 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. These existing conditions do not meet current stormwater management practices.

Other Considerations

The following describes needs that would be desirable to address:

Improve Pedestrian/Bicycle Accommodation

The existing Winona Bridge provides a 4.5-foot wide sidewalk/bike path 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 adjacent roadway network includes bicycle facilities and trails, but connection to these facilities via the bridge are lacking. Opportunities for improving pedestrian/bicycle accommodations at the crossing should be considered in conjunction with this project.

Structural Load Path Redundancy

The Winona Bridge is a fracture critical bridge with a non-redundant design. Current MnDOT practice is to utilize bridge designs that 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 Winona Bridge is classified as a Tier 1 bridge, which means that if it is repaired but not replaced, an explanation of the reasons for the repair instead of replacement is required.

Improve Bridge Geometrics

The geometric design of the bridge does not meet current standards. The roadway width is 31 feet, which includes two 3.5-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 40 mph, which falls in the low speed range. The inadequate shoulders do not allow for snow storage and effectively close a lane of traffic during bridge inspections, 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. This deficiency is attributable to lack of available shoulder width.

Minimize Impacts To Local Roadway Network (Cross-Streets)

The project may affect clearance over the local roadway system underneath the bridge. Currently, Second Street and Third Street run perpendicular to the bridge beneath the bridge approaches and are open to traffic. The City would like to see Second, Third and Fourth Streets remain open to local traffic.

Minimize Truck Routing Impacts

TH 43 is a designated truck route, and appropriate connections to local truck routes are needed. Multi-modal facilities lie both to the east and the west of the river crossing. It is desirable to facilitate truck connections to these facilities, while avoiding or minimizing impacts to residential neighborhoods.

B. PURPOSE STATEMENT

The purpose of the project is to provide a structurally sound bridge-crossing of the Mississippi River Main Channel at Winona, Minnesota that maintains access to Latsch Island and the Wisconsin highway system, with adequate capacity to safely accommodate existing and future transportation needs within the design life of the bridge, while maintaining traffic to the maximum extent possible during construction.

III. ALTERNATIVES

The Recommended Alternative for the Winona Bridge project is a “two-bridge solution” that rehabilitates the existing bridge to carry two lanes of northbound traffic and builds a permanent new girder-type bridge immediately upstream of the existing bridge to carry two lanes of southbound traffic. The new bridge would also include improved bicycle and pedestrian accommodations.

This section describes the alternatives development and evaluation process, the alternatives considered but rejected, and the details of the recommended Build alternative.

A. ALTERNATIVES DEVELOPMENT AND EVALUATION PROCESS

This section describes 1) the five factors that were most influential in the development and evaluation of alternatives and 2) the five inter-related major decisions that led to identification of the recommended alternative. Technical reports and memoranda that informed the alternatives development and decision-making process are listed in Appendix C and incorporated by reference to this EA.

1. Alternatives Evaluation Framework

Alternatives were developed and evaluated primarily with respect to five factors, as to how well they would:

- Meet the project primary and secondary needs
- Comply with Section 4(f) regulations
- Comply with National Environmental Policy Act (NEPA) requirements,
- Reflect the views of the public and other affected stakeholders
- Be fiscally responsible.

Meeting Project Need

Section II.A describes the project purpose and need (primary and secondary) and articulates other considerations (additional project objectives) for the development and evaluation of alternatives for the Winona Bridge project.

Alternatives which would not meet the primary need for the project – to provide a structurally sound bridge crossing of the Mississippi River Main Channel at Winona – were rejected from further consideration.

The extent to which alternatives would meet each of the secondary needs described in Section II.A – connection to WI STH 54; maximum MOT; access to Latsch Island; improved traffic operations and safety; maintenance of pedestrian/bicycle access; and compliance with key regulations (historic resources, parkland, navigational channel, and stormwater) – was given strong consideration in the development and evaluation of alternatives.

The extent to which alternatives achieve the objectives articulated as other considerations in Section II.A – improving pedestrian/bicycle accommodation; structural redundancy; improved bridge geometrics; minimized local roadway impacts; and minimized truck routing impacts to residential areas – were also given consideration in the development and evaluation of alternatives. The other considerations that were discriminating factors were improving pedestrian/bicycle connections, improving bridge geometrics, and minimizing traffic and truck routing impacts.

Section 4(f) Compliance

As described in Section II.A above, the Winona Bridge is eligible for the National Register of Historic Places (NRHP) and as such is subject to protection under Section 4(f) of the Department of Transportation Act of 1966. “Use” is the term for adverse effects to Section 4(f) properties. In addition to the requirements that apply to all types of Section 4(f) properties (i.e. parks, wildlife refuges, historic sites), the Federal Highway Administration (FHWA) has a specific process for the use of historic bridges. The Section 4(f) requirement that use of the historic bridge be avoided unless there is no prudent and feasible alternative was a critical factor in the development and evaluation of alternatives.

The determination of Section 4(f) use of historic properties is informed by the determination of effect on such properties that is made by FHWA as part of its review authority under Section 106 the National Historic Preservation Act. Avoiding an adverse effect under Section 106 also avoids a use under Section 4(f). As described in Section III.B, the recommended alternative resulting from the alternatives development and evaluation process has achieved this avoidance goal.

Avoidance of impacts to other historic properties in the project area, which are also protected to Section 4(f) and Section 106 requirements, as well as to park properties, which are protected by Section 4(f), was also important to ensure that the development and evaluation of alternatives was consistent with Section 4(f) process requirements.

NEPA Compliance

Finally, the alternative evaluation process reflects NEPA guidance to first avoid, then minimize, and then mitigate for impacts to social, economic and environmental resources. FHWA Technical Advisory T 6640.8A (October 30, 1987), *Guidance For Preparing and Processing Environmental and Section 4(F) Documents*, lists the potentially significant impacts most commonly encountered by highway projects.

Appendix D includes tables that present the potential for impacts among the range of Build alternatives that were considered for the Winona Bridge project. Based on those findings, Table 1 below notes whether or not each of these topics would pose the potential for a substantive difference in impacts among those alternatives. Those topics marked “Yes” were important considerations in evaluating alternatives.

**TABLE 1
ENVIRONMENTAL CONSEQUENCES TOPICS - RELEVANCE TO WINONA
BRIDGE PROJECT ALTERNATIVE EVALUATION**

FHWA T6640.8a Environmental Consequences Topics	Potential for Substantive Difference in Impacts among Build Alternatives?*
Land Use Impacts	Yes.
Farmland Impacts	No. The project area does not include farmland.
Social Impacts	Yes. (Community character, community cohesion, on-street parking).
Environmental Justice	No. No identified low income or minority population.
Relocation Impacts	Yes.
Economic Impacts	Yes.
Joint Development	No. No joint development proposed.
Considerations Relating to Pedestrians and Bicyclists	Yes.
Air Quality Impacts	No. Traffic operations vary, but do not result in significant air quality impacts.
Noise Impacts	Yes, but minor difference compared to other relevant topics.
Water Quality Impacts	No. Water quality requirements will be addressed, regardless of alternative.
Permits	No. Permitting informs all alternatives, but does not differentiate.
Wetland Impacts	Yes. The decision whether or not to construct a parallel bridge affects wetlands. Wetland impacts do not substantially differ between temporary or permanent bridge, or between the alignment alternatives considered for a parallel bridge.
Water Body Modification and Wildlife Impacts	Yes. Migratory birds.

FHWA T6640.8a Environmental Consequences Topics	Potential for Substantive Difference in Impacts among Build Alternatives?*
Floodplain Impacts	No. Project will comply with flood stage requirements regardless of alternative.
Wild and Scenic Rivers	No. Not a W&S River.
Coastal Barriers	No. Not coastal barrier.
Coastal Zone Impacts	No. Not a coastal zone.
Threatened or Endangered Species	No.
Historic and Archeological Preservation	Yes.
Hazardous Waste Sites	Yes. One high and several medium contamination potential sites.
Visual Impacts	Yes. Sensitive viewsheds.
Construction Impacts	Yes.
*See Appendix D for tables detailing the differences among Build Alternatives	

Public Involvement

Section VI details the public and agency involvement conducted for the project. Community and agency interests were represented through a Policy Advisory Committee (PAC) that meets periodically as part of the project development. Public input on the range of alternatives that should be considered, evaluation of specific alignment alternatives, and the Recommended Alternative was specifically solicited during the public meetings in the City of Winona. The public was also encouraged through press releases, newsletters and the project website, to comment at any time through direct email or telephone contact of project representatives. Public and agency input was particularly important to assessment of the potential for community and environmental impacts during the alternatives evaluation process.

Cost

With many needs and limited financial resources, FHWA and MnDOT must be responsible stewards of public funds and maximize value in public infrastructure investments. Cost is not the only consideration in selecting an alternative and design, but it is an important one.

2. Major Alternative Development Decisions

The framework for alternatives evaluation described above has resulted in the following interrelated, but generally sequential, set of major decisions that resulted in the identification of a Recommended Alternative. This section details the alternatives that were considered and the rationale for each of the recommended decisions. The decisions/recommendations are briefly summarized here:

- Decision 1: Should the existing bridge (Bridge 5900) be rehabilitated or replaced? Recommendation: The existing bridge should be rehabilitated.
- Decision 2 (interrelated with Decision 3): What should the major components of the rehabilitation concept for the existing bridge be? Recommendation: The rehabilitation

concept should include replacement in-kind of the approach spans³, rehabilitation of the through truss, replacement in-kind of the deck trusses, and removal of the existing non-historic walkway and a more comprehensive rehabilitation of the existing bridge (possible with a permanent parallel bridge).

- Decision 3 (interrelated with Decision 2): How can maintenance of traffic during the rehabilitation of the existing bridge be achieved? Recommendation: Maintenance of traffic can be achieved by constructing a parallel bridge that is a permanent structure that includes a pedestrian/bicycle facility meeting current design standards. This makes possible the removal of the walkway from the existing bridge and a more comprehensive rehabilitation of the existing bridge, as well as providing future benefits for bridge maintenance and repairs and related MOT needs.
- Decision 4: On what alignment should a permanent parallel bridge be located? Recommendation: The permanent parallel bridge should be located on the Winona Street West alignment (upstream of Bridge 5900).
- Decision 5: What bridge type should the permanent parallel bridge located on the Winona Street West alignment be? Recommendation: The permanent parallel bridge located on the Winona Street West alignment should be a girder type bridge.

Decision 1. Rehabilitate or Replace Existing Bridge

Replacement (and assumed demolition) of the existing bridge would constitute the most severe “use” of the historic bridge under Section 4(f). The *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* directs that three options for avoidance of use of historic bridges be evaluated. Evaluation of those three avoidance options as pertains to the Winona Bridge project is summarized below:

- *Option #1: Do Nothing/No Build.* The Do Nothing/No Build alternative (described in III.C below) would not meet the primary need for a structurally sound crossing of the Mississippi River at Winona. It does not correct the situation that causes the bridge to be considered structurally deficient or deteriorated. Normal maintenance is not adequate to cope with the structural condition of the existing bridge. The No Build alternative would very likely result in bridge closure, extraordinary maintenance costs, and intolerable restriction on transport and travel. The No Build alternative is included in this EA for comparison purposes only.
- *Option #2: Build on New Location Without Affecting the Historic Integrity of the Old Bridge.* As discussed under Decision 2 (Rehabilitation Concept) and Decision 3 (MOT) below, investigations were conducted to construct a bridge parallel to and operating as a one-way pair with the existing bridge which would be rehabilitated. This construction on a new location has been evaluated for effect on the historic integrity of the old bridge and determined to result in no adverse effect.

³ Throughout this document, the term approach spans refers to all spans except the through and deck trusses. References to approach spans include the girder spans.

- *Option #3: Rehabilitation Without Affecting the Historic Integrity of the Bridge.* Extensive technical analysis was conducted to inform the concept options that were considered for rehabilitation. These rehabilitation concept options differ in terms of the extent of rehabilitation versus replacement of various bridge components as described under Decision 2 (Rehabilitation Concept) below. A rehabilitation concept was identified that has been determined to result in no adverse effect.

A listing of rehabilitation study documents is provided in Appendix C. Rehabilitation would meet the primary need for the project and meet the secondary needs for the project. A feasible rehabilitation option was identified in compliance with Section 4(f) requirements. Therefore, rehabilitation of the existing bridge was selected, rather than replacement.

Decision 2. Rehabilitation Concept

As described above, based on extensive studies of the existing bridge condition, rehabilitation strategies were developed to address the deterioration of the entire existing bridge structure which includes the through truss, deck truss and approach spans. These analyses were completed to address rehabilitation design goals and identify methods to preserve the physical characteristics that make the Winona Bridge eligible for the NRHP. For ease of analysis and description of the rehabilitation options, the existing bridge and approaches were divided in to eight segments, including three approach segments and five bridge structure segments. See Exhibit 2.



Exhibit 2. A, B and H are approach segments. C and D are the girder spans. E and G are deck truss spans. F is the through truss.

Each of the rehabilitation concept options was evaluated for effect/consistency with the Secretary of Interior (SOI) Standards for the Treatment of Historic Properties (SOI Standards) by MnDOT’s Cultural Resources Unit (CRU, on behalf of FHWA). CRU consulted with the Minnesota State Historic Preservation Office (SHPO) during the development and evaluation of the rehabilitation concept alternatives (See Section IV.B.X for additional discussion of the Section 106 consultation process.) See Appendix E for Section 106 correspondence.

Initial Rehabilitation Concepts – Existing Bridge Carries All Traffic / Existing Bridge Retains the Existing Walkway

Rehabilitation packages were initially developed for three main concepts which differ from one another as to extent of rehabilitation versus replacement of components and whether the replaced

segments of the bridge and approaches would be widened to improve traffic operations. The initial rehabilitation options that were reviewed with project stakeholders include the following:

- Rehabilitation Option 1-A. All spans of the existing structure would be rehabilitated to the degree feasible and strengthened as necessary. All spans would be re-decked and the current pedestrian cantilevered walkway retained. The existing roadway width would be retained and no intersection changes would be made at the intersection of 4th Street and Winona Street. This alternative may have resulted in a No Adverse Effects finding; however, the retention of the sidewalk would have required more extensive rehabilitation of the through truss than the other alternatives where the walkway is removed and placed on the parallel structure.
- Rehabilitation Option 4-A. All spans of the existing steel truss structure (Segment F) would be rehabilitated and strengthened. The southerly concrete girder approach spans (spans 1-15, Segment C and D) would be replaced and widened. All spans would be re-decked and the current walkway retained.
- Rehabilitation Option 6-A. All spans of the existing steel through truss structure (Segment F) would be rehabilitated and strengthened. The southerly concrete girder approach spans and the deck truss portions of the bridge (Segments C, D, E and G) would be replaced and widened. Replacement of the deck truss would also require replacement of the piers. All spans would be re-decked and the current walkway retained.

Revised Rehabilitation Option – Existing Bridge and Parallel Bridge Operate as a One-Way Pair for Motor Vehicle Traffic; Pedestrian and Bicycle Traffic Carried on Parallel Bridge; Existing Walkway Removed from the Existing Bridge

During the consideration of rehabilitation options, alternative means of achieving maintenance of traffic (MOT) were also being evaluated. These are discussed under “Decision 3” below. The Rehabilitation Concept decision and the MOT decision became interrelated due to the beneficial effect that having a second crossing would have on the rehabilitation required for the existing bridge.

A second crossing available during construction would allow for a more time to carry out the rehabilitation activities without MOT disruption, which would benefit the rehabilitation effort and the Winona community.

The extent of rehabilitation that would be required is affected by the loading on the bridge particularly as relates to decisions about the bridge deck and the existing walkway. When originally constructed, the Winona Bridge carried a two-lane roadway and a pedestrian walkway on the deck slab inside the trusses. As part of a 1985 project to install a new concrete deck on the bridge, the walkway was removed from the deck slab, allowing the roadway to use the full width available between truss lines. A new walkway was cantilevered from the exterior of the south truss line for both the approach deck trusses and the main span thru trusses. This new walkway is therefore not a part of the historic character of the bridge.

Three separate load cases were examined to determine the magnitude of repairs that would be required for the through trusses: (1) replacing the existing deck with a new normal weight concrete deck and maintain the existing walkway; (2) replacing the existing deck with a new normal weight concrete deck and remove the existing walkway; and (3) replacing the existing deck with a lightweight deck system and remove existing walkway. Only the third option – the lightweight deck system and removal of the existing walkway – eliminated the need for further rehabilitation work for the main span through trusses. In addition, removing the non-historic walkway contributes to the restoration of the historic integrity of the bridge.

Removing the walkway without providing an alternative crossing for pedestrians and bicyclists would not meet the secondary need to maintain pedestrian-bicycle access. However with consideration of a permanent parallel bridge for maintenance of traffic (MOT), as discussed under sections ‘Decision 3’ and ‘Decision 2 and 3’ below, a rehabilitation option that would result in a better rehabilitation of the existing bridge with regard to its historic character and meet all of the secondary needs for the project, was found to be feasible. Rehab Concepts 1-A, 4-A and 6-A all of which retained the existing walkway, did not meet these objectives.

Rehab concepts removing the existing walkway (and assuming a parallel bridge with pedestrian/bicycle facility) were then developed and evaluated as follows:

- Rehab Option 1-C. All spans of the existing structure would be rehabilitated to the degree feasible and strengthened as necessary. All spans would be re-decked and the current walkway removed. While this option would meet the primary need for the short term, it would not provide a 20 year service life, which is the expected return on investment for projects utilizing federal funds. Also, the bridge’s rating would have remained “poor” (National Bridge Inventory [NBI] condition rating 4).
- Rehabilitation Option 4-C. All spans of the existing steel through truss and deck truss structure (Segments E, F and G) would be rehabilitated and strengthened. The deck trusses (Segments E and G) would be maintained as much as possible, replacing certain components of the trusses as necessary. The southerly girder approach spans (spans 1-15, Segment C and D) would be replaced. All spans would be re-decked and the current walkway removed. The evaluation of this option found that the cost of repairs would be excessive compared to the design life that would be achieved and expected to be significantly greater in cost than Option 6-C. In addition, since the vast majority of the historic fabric would likely have to be replaced, the current conditions precludes repair as defined by the Secretary’s Standards.
- Rehabilitation Option 6-C. All spans of the existing steel through truss structure (Segment F) would be rehabilitated and strengthened. The southerly girder approach spans and piers (spans 1-15, Segment C and D) and the deck truss spans (Segment E and G) and piers would be completely replaced with replicas spans that match the material types, form, design, and workmanship of the original elements. All spans would be re-decked and the current walkway removed. This replacement would meet the SOI Standards and was therefore found to be a No Adverse Effect under Section 106 (see Appendix E). This approach also meets MnDOT’s Bridge Preservation, Improvement and Replacement Guidelines.

Decision 3. Maintenance of Traffic (MOT)

As discussed above, the Rehabilitation Concept decision and the MOT decision became interrelated due to the effect that having a second crossing would have on the rehabilitation required for the existing bridge. The benefit of the second crossing for the rehabilitation effort is described under Decision 2. The discussion below relates to the MOT aspect of the project.

Maximizing maintenance of traffic (MOT) is a secondary need for the project, and an important consideration with respect to potential for community and economic impacts. Rehabilitation of the existing bridge would require that the bridge be closed to traffic for several months. Alternatives were developed and evaluated for their ability to maximize MOT across the river during the rehabilitation of the existing bridge. See Appendix C for a listing of project studies related to MOT. MOT alternatives evaluated included the following.

- *Detour Only:* As discussed in Section II. Purpose and Need, closure of the Winona Bridge would necessitate a detour of approximately one hour per trip for travelers between Winona and Buffalo and Trempealeau Counties in Wisconsin for the duration of the project, affecting the people that use the bridge to commute between home and work, as well as for shopping and other personal trips, and also adding travel time and cost for goods movement across the river to access destinations in Winona, including the two river ports. Through public input to the Winona Bridge project development, city leaders and the general public have continually emphasized the importance to the community of maintaining a crossing of the river at Winona and of not subjecting the community to the disruption resulting from the lengthy detour option. In addition, as the communities on both sides of the river rely on the Winona Bridge to provide access for fire, law enforcement, and emergency medical vehicles, a detour only option would need to include provisions to ensure that timely emergency service is still accessible to the service area. The detour only option does not meet the secondary need to maximize MOT and, as described above, has substantial community and economic impacts; therefore, detour only as an MOT alternative was rejected.
- *Short-term Closures:* Short term closures were not analyzed in detail, but were considered and dismissed as they would lengthen the time needed for the rehabilitation work to be completed and would still result in community disruption.
- *Ferry Service:* An option to provide ferry service across the Mississippi River in Winona during the time that the existing bridge would be closed for rehabilitation was analyzed. Traffic analysis indicates that a ferry service would only accommodate a small percentage of crossing demand. Remaining travelers would need to detour resulting in the same impacts noted for the detour only option. The ferry service option does not meet the secondary need to maximize MOT and has substantial community and economic impacts; therefore, ferry service as an MOT alternative was rejected.
- *Temporary Parallel Bridge:* This alternative would involve constructing a temporary bridge parallel to the existing bridge to carry traffic during the time that the existing bridge is closed for rehabilitation. A temporary low profile bridge and a temporary high profile bridge were both considered, with only the high profile bridge found to be feasible because of the secondary need to maintain navigation on the river.

The temporary parallel bridge would meet the secondary need to maximize MOT for the duration of this project, however would not have the additional benefit of providing MOT during future maintenance/rehabilitation projects (as described in the *Permanent Parallel Bridge* discussion below).

The temporary parallel bridge would only meet the secondary need to improve traffic operations if it were combined with a rehabilitation option that widens the approaches on the existing bridge, which would result in an adverse effect to the bridge and would have made it no longer eligible for NRHP listing compared to rehabilitation options that do not widen the approaches.

The temporary parallel bridge would only meet the secondary need to maintain pedestrian-bicycle accommodation if it were combined with a rehabilitation option that retains the existing walkway, which would result in greater impact to the historic character of the bridge than a rehabilitation option that removes the existing walkway, as described above under Decision 2: Rehabilitation Concept.

The temporary parallel bridge would result in social, economic and environmental effects including land use and relocation impacts (and associated visual impacts), impacts to wetlands⁴, and likelihood of encountering contamination sites. These impacts would be similar in extent to those of a permanent parallel bridge and would be basically permanent in nature, in that the previous condition could not be restored in kind following removal of the temporary bridge and, therefore, the temporary bridge impacts would be very similar to the impacts of a permanent bridge.

The temporary parallel bridge would also result in construction impacts, including noise and dust, erosion and sedimentation, and potential traffic detours on nearby streets, that would be very similar to the construction impacts of a permanent bridge.

Once constructed, and in use, the temporary parallel bridge would result in noise and visual impacts due to the bridge itself but these impacts would be temporary in nature, i.e. the previous condition would be restored in kind following removal of the bridge. Removal of on-street parking would also be required for a temporary bridge but could be restored following removal of the bridge.

Impacts of the temporary bridge would be offset by the benefits of meeting the secondary MOT need and allowing for a more comprehensive rehabilitation of the existing bridge.

⁴Note that under Section 404, impacts to jurisdictional wetlands require a finding by the U.S. Army Corps of Engineers that the action is the “Least Environmentally Damaging Practicable Alternative” (LEDPA) in consideration of other impacts to other environmental resources in addition to wetlands. While a temporary or permanent bridge would affect wetlands, the impacts are expected to be non-significant and able to be mitigated, and the benefit of the second bridge in relation to meeting the secondary project need and additional considerations and in minimizing impacts to historic and community resources would be considered in the Section 404 LEDPA determination.

A temporary bridge would have a lower construction cost than a permanent bridge; however it provides no on-going benefit following completion of the project since it will be removed.

The temporary bridge MOT alternative was rejected because the temporary bridge did not compare favorably with the MOT option of the permanent parallel bridge (discussed below) in achieving the secondary MOT need, the secondary traffic operation and safety improvement need, and the secondary pedestrian-bicycle access need; it would have had an adverse effect to the point of making the bridge no longer eligible for listing on the NRHP due to the widening; nor were the environmental impacts of the temporary bridge substantially less than the environmental impacts of a permanent parallel bridge.

- *Permanent Parallel Bridge:* This alternative involves construction of a two-lane bridge parallel to the existing bridge. Traffic would be maintained on the existing bridge while the new bridge is constructed. The new bridge would then carry two lanes of traffic while the existing bridge is rehabilitated. Upon completion of the rehabilitation, the existing and new bridge would operate as a one-way pair with the existing bridge carrying two lanes of traffic and the new bridge carrying two lanes of traffic. Parallel bridge location is discussed under Decision 4.

As discussed under Decision 2, this alternative results in a two-bridge project that allows for a more comprehensive rehabilitation of the existing bridge and meets the secondary project need to maintain traffic not only during the currently-proposed rehabilitation of the existing bridge, but also during future maintenance/rehabilitation of the historic bridge.

In addition, a permanent parallel bridge also meets the secondary need to improve traffic safety and operations at the Winona Street/4th Street intersection, as well as by providing the additional two lanes of capacity on the bridge itself. A permanent parallel bridge meets the secondary need to maintain pedestrian/bicycle accommodations, and also has benefit with respect to the additional consideration of improving pedestrian/bicycle connections because it allows for including a facility designed to current standards. Finally, the permanent parallel bridge allows for removal of the walkway from the existing bridge, which improves the ability to maintain the bridge's historic character.

The permanent parallel bridge would result in social, economic and environmental effects including land use and relocation impacts, visual impacts due to the land use change, removal of on-street parking, impacts to wetlands⁵, likelihood of encountering contamination sites, visual impacts, and potential for noise impacts (based on proximity to noise receptors), and construction impacts, including noise and dust, erosion and sedimentation, and potential traffic detours on nearby streets. These impacts would be very similar to the impact of a temporary bridge, except for those noise and visual impacts due to the bridge itself that would be permanent in nature.

⁵See previous footnote.

Impacts of the permanent bridge would be offset by benefits of meeting the secondary MOT need and allowing for rehabilitation of the existing bridge that better meets the SOI standards, and by providing additional MOT benefit for future projects, meeting the secondary traffic operations and safety need, and meeting the secondary pedestrian/bicycle accommodation need and providing improved pedestrian/bicycle connections.

A permanent bridge would have a higher construction cost than a temporary bridge, however it would result in continued benefits (e.g., traffic operations, pedestrian/bicycle accommodation, ability to maintain the existing bridge, etc.) that a temporary bridge would not.

Decision 2 and 3: As discussed, the rehabilitation concept and the MOT solution are interdependent. The permanent parallel bridge allows a rehabilitation of the existing bridge that better meets the SOI Standards than would be practicable without the permanent parallel bridge. Providing a parallel bridge during construction would allow for more time to perform the rehabilitation activities without MOT disruption, which would benefit the rehabilitation effort. Removal of the walkway from the existing bridge is advantageous in minimizing the impact of rehabilitation to the historic character of the bridge. Construction of a permanent parallel bridge that includes a pedestrian/bicycle crossing allows the walkway on the existing bridge to be removed while still meeting the secondary need of maintaining pedestrian/bicycle access. Construction of a permanent parallel bridge also meets the secondary need of improving traffic safety and operations, without widening the existing bridge, and fulfills the other considerations of improving bicycle/pedestrian connections and bridge geometrics.

With these benefits, Rehab Option 6-C and construction of a permanent parallel bridge were selected, rather than other rehab options or other MOT options. (Note that, because the selected rehabilitation concept is a combination of rehabilitation and replacement/reconstruction activities, the remainder of this EA refers to the work on Bridge 5900 as “replacement/reconstruction.”)

Decision 4: Permanent Parallel Bridge Alignment.

A range of potential new bridge alignments that would be expected to meet the primary need of providing a structurally sound crossing of the Mississippi River were developed during the scoping meetings described in the Section VI Public Involvement. See Exhibit 3 for the initial range of alternatives developed.

As described in the framework discussion presented at the beginning of Section III.B.1, alternatives considered at each decision point were evaluated as to (1) whether they would meet the primary need; (2) the extent to which they would meet the secondary needs; (3) the extent to which they would address other considerations (other project objectives); (4) how they would comply with Section 4(f) (avoiding/minimizing impacts to parks, refuges and historic sites); and how they would comply with NEPA (avoiding/minimizing impacts to a range of social, economic and environmental resources.) Appendix D details the comparison of river crossing alignments within this framework. The discussion below identifies the key factors regarding the decision for a new river crossing alignment.

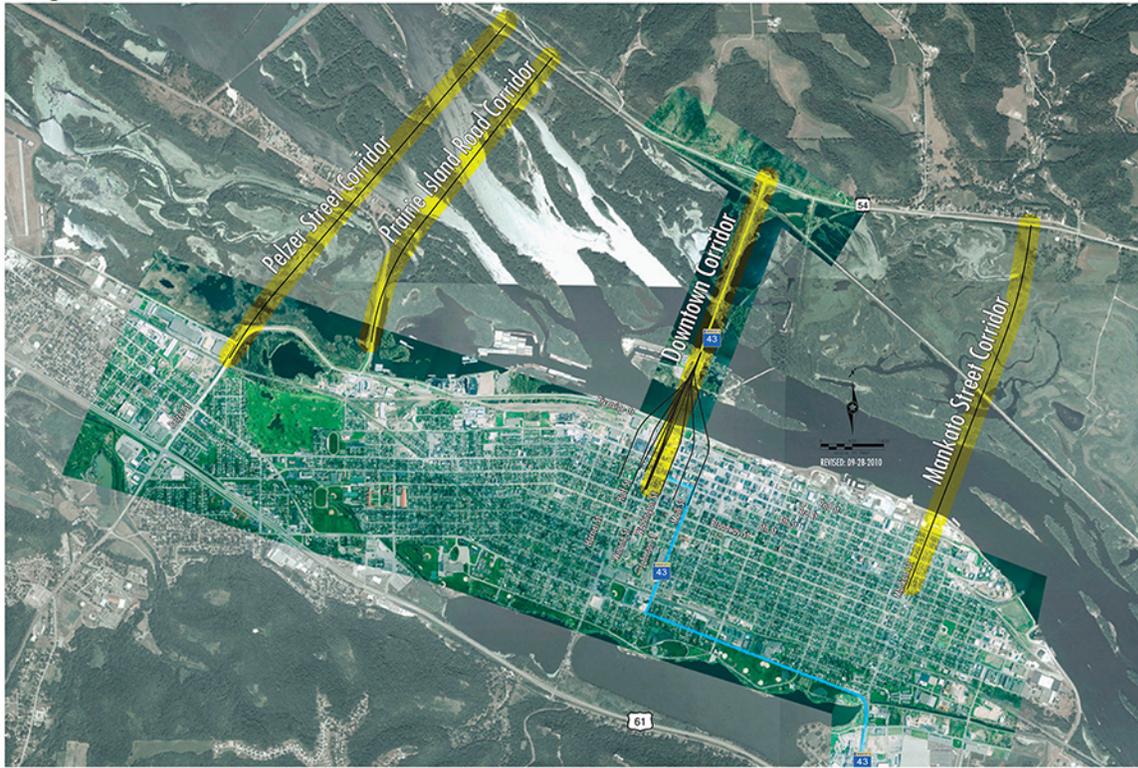
Early in the process the following new river crossing alignments were dismissed from further consideration:

- *Pelzer Street Corridor*. Rejected because it would not meet the secondary need to connect to Latsch Island and because it would impact the Upper Mississippi River National Wildlife Refuge.
- *Prairie Island Corridor*. Rejected because it would not meet the secondary need to connect to Latsch Island and because it would impact the Upper Mississippi River National Wildlife Refuge.
- *Mankato Street*. Rejected because it would not meet the secondary need to connect to Latsch Island and because it would impact the Trempealeau National Wildlife Refuge.
- *Harriet Street*. Rejected because it had high probability for impacts to historic properties and residences.
- *Mid-Block*. Rejected because it would result in impacts to traffic operations at adjacent intersections.
- *Washington Street*. Rejected due to the severity of impacts to the historic County Courthouse, high probability for impacts to historic districts, high potential for permanent impacts to Levee Park, and lack of space between the alternative bridge alignment and adjacent buildings.
- *Johnson Street*. Rejected due to high probability for impacts to historic districts, high potential for permanent impacts to Levee Park, and lack of space between the alternative bridge alignment and adjacent buildings.
- *Main Street*. Rejected due to the severity of impacts to the downtown historic district.

Three downtown alignments (Winona Street East, Huff Street [including three variations for Huff Street], and Winona Street West), described below, were further evaluated. See Exhibit 4.

These alignments were presented to the community during a public information open house and reviewed by the Project Advisory Committee.

Alignment Alternatives



Downtown Alignment Alternatives

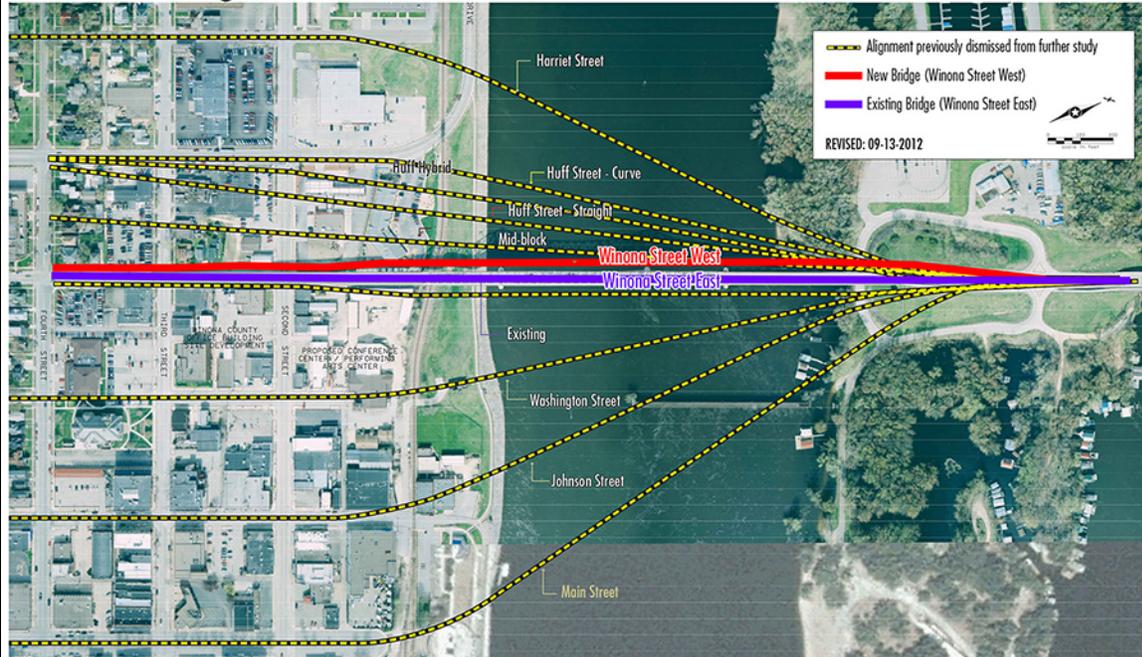


Exhibit 3. Range of Alternatives

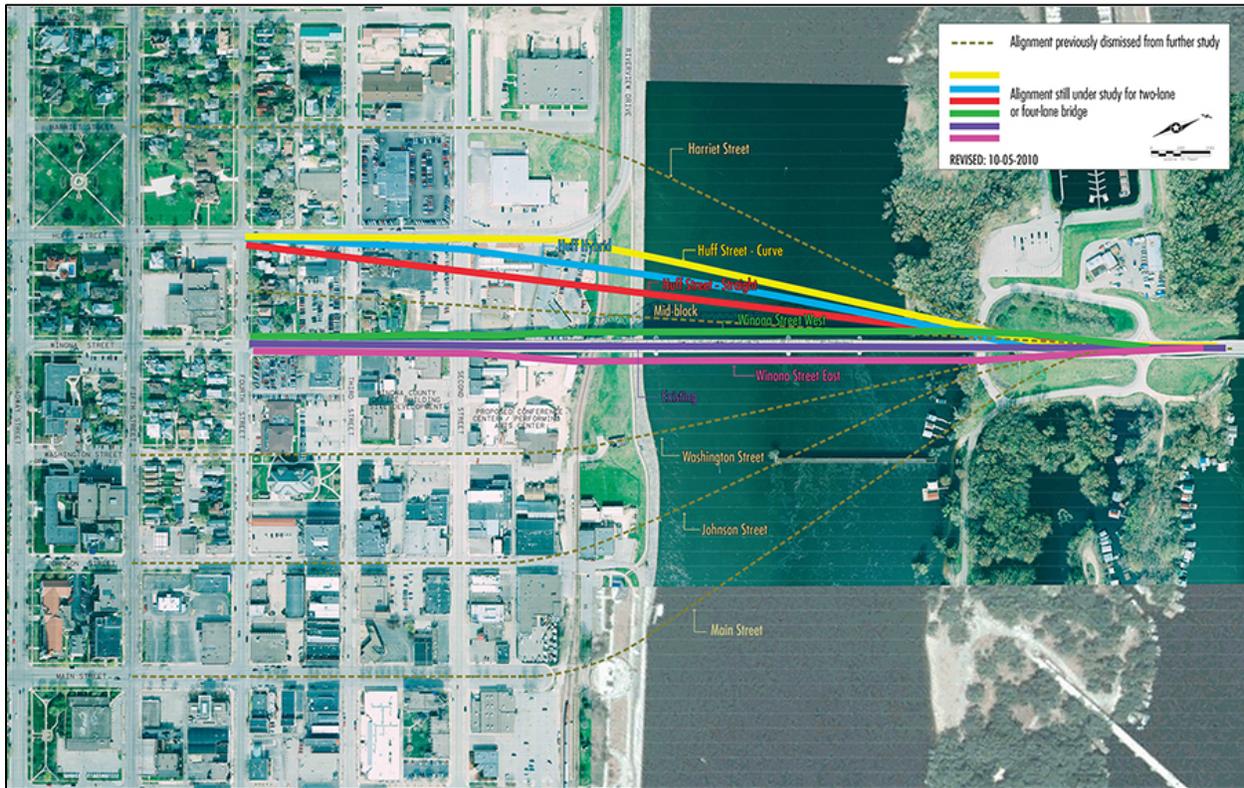


Exhibit 4. Downtown Alignments

Table D-2 in Appendix D compares these alignments. In summary, as part of a “two bridge” project and assuming similar bridge types, each of these three downtown alignments would perform similarly, i.e. with no or minor differences, with regard to the following criteria, which therefore were not further considered in the permanent parallel bridge alignment decision.

- The primary need for a structurally sound bridge.
- The secondary needs to connect to WI 54; provide access to Latsch Island; meet traffic capacity, operations, and design needs; and maintain a pedestrian/bicycle crossing of the river.
- The secondary regulatory requirement needs, except with regard to historic resources (see below).
- The other considerations relating standard geometrics; minimizing local roadway network impacts; and general traffic circulation changes.
- Impacts to the natural environment, specifically to migratory birds and wetlands⁶.
- Bridge construction cost⁷.

⁶ Wetlands impacts, based on concept-level footprints of the alignment options, ranged between 0.4 and 1.2 acres. See EAW Item 12 for additional information.

Also as part of a “two bridge” project and assuming similar bridge types, the three downtown alignments would differ with regard to the following criteria; these differences were considered in the permanent parallel bridge alignment decision.

- The secondary regulatory requirement need relative to historic properties, i.e. the effect on the NRHP-eligible Bridge 5900 and other NRHP-eligible properties.
- The other considerations of pedestrian/bicycle connections, potential for change in traffic downtown and in residential neighborhoods, and truck routing impacts.
- Impacts to the community environment, specifically community facilities, land use/relocation, economic impacts, potential to encounter contamination, visual impacts, proximity to residential noise receptors, and on-street parking impacts.

The discussion below further describes the three alignments and the most relevant findings in the evaluation process.

- *Winona Street East.* This alignment closely parallels the existing bridge on its east side and ties into the Winona Street-4th Street intersection on the south and TH 43 on the north.

The main reason for rejecting the Winona Street East alignment is that, being downstream of the existing bridge, it would intrude on views of the existing historic bridge from the downtown Winona historic district as well as pose a potential Section 106 impact on the historic district due to noise/visual impacts.

It would also have a direct impact to Winona County office property and, compared to one or more of the other alternatives, would result in more commercial property relocations, though fewer residential relocations. It would also have greater impact on boathouses on Latsch Island than the other alignments. See Table D-2 in Appendix D.

- *Huff Street.* This alignment is west of the existing bridge and diverges to tie into the Huff Street-4th Street intersection one block west of the existing bridge touch-down intersection at Winona Street-4th Street. The Huff Street alignment ties into TH 43 at the north in generally the same location as the Winona East and Winona West alignments. Three variations of the alignment were developed, however all would tie into the 4th Street intersection on the south and TH 43 on the north in the same configuration. Many of the impacts of these variations are the same, but they do differ from one another in right of way and contamination impacts, as detailed in Table D-2 in Appendix D.

The main considerations for rejecting the Huff Street alignment include its direct impact on the YMCA, a community facility and historic property (and, therefore, Section 106 and Section 4(f) impacts) and its impact to a property with high potential for contamination (a former coal gasification plant).

⁷Costs associated with right of way, contamination clean-up and potential mitigation for impacts to historic properties would likely be higher for the alignments that have greater impacts on those resources; however these costs themselves were not a determining factor in the alignment decision.

The Huff Street alignment would also result in increased traffic on Huff Street, 4th Street and Harriet Street, truck impacts and loss of parking in neighborhoods, and relocation of an existing bike lane. It would also bring traffic closer to more noise receptors as compared to the Winona Street alignments. The Huff Street alignment options would impact more homes than the Winona Street East alignment (the same or fewer homes than the Winona Street West alignment).

- *Winona Street West.* This alignment closely parallels the existing bridge on its west side and ties into the Winona Street-4th Street intersection on the south and TH 43 on the north.

As the Winona Street West alignment is upstream from the existing bridge, it minimizes visual effect to the historic downtown as compared to the Winona Street East alignment. It avoids impacts to the Winona County office facility (impacted by Winona Street East) and the YMCA (impacted by Huff Street) and it affects no other community facilities. It has no direct impact to historic properties. It avoids properties with high potential for contamination. It avoids the traffic and bike lane impacts that would be associated with the Huff Street alignment and is also further from noise receptors than the Huff Street alignment.

Relocation impacts differ in specifics from the other alternatives, with the Winona Street West alignment having two to four more residential relocations than the other downtown alignments, and from two fewer to three more commercial relocations than the other downtown alignments. See Table D-2 in Appendix D.

In summary, of the downtown alignments, the Winona Street West best balances impacts to social, cultural and environmental resources. While the Winona Street West alignment would have greater residential relocation impacts than some other alignments, this is offset by the alignment's advantage over the other alignments in that it avoids impacts to the historic resources of the bridge, the downtown historic district, and the YMCA, avoids community facilities, avoids properties with high potential for contamination, and minimizes neighborhood traffic impacts. The Winona Street West alignment is also generally supported by the City of Winona. For these reasons, it is proposed as the Recommended Alternative.

Decision 5: Bridge Types.

Specific detailed bridge types for the Winona Bridge project were not developed during the alternatives evaluation process; however the project considered three generic types of bridges for their performance in meeting project objectives. The three generic types included:

- *Girder Type:* A bridge supported by girders underneath the roadway rather than by structure above the roadway.
- *Arch Type:* A bridge whose main support structure is an arch.
- *Cable Stayed:* A variation of suspension bridge in which the tension members extend from one or more towers at varying angles to carry the deck.

Exhibits 5 through 10 provide preliminary visualizations of the three bridge types in relation to the existing bridge.

Exhibit 5. Girder Bridge Type. Preliminary Visualization looking Upstream.



Exhibit 6. Arch Bridge Type. Preliminary Visualization looking Upstream.



Exhibit 7. Cable Stayed Bridge Type. Preliminary Visualization looking Upstream.



Exhibit 8. Girder Bridge Type. Preliminary Visualization looking Downstream.



Exhibit 9. Arch Bridge Type. Preliminary Visualization looking Downstream.



Exhibit 10. Cable Stayed Bridge Type. Preliminary Visualization looking Downstream.



Each bridge type would meet the primary need for the project and would have similar performance on most of the secondary needs and other considerations. All types would have similar impacts to most social and environmental resources, differing only in the potential for impact to migratory birds and visual effect (including visual effect on historic properties).

The Mississippi River is part of a migratory corridor for migratory waterfowl and shore birds that is known as the Mississippi Flyway. Migratory bird species are protected by the Migratory Bird Treaty Act of 1918. The potential for bird/bridge structure collisions is an issue for consideration in a bridge type evaluation. Arch type and cable stayed type bridges have superstructure above the deck and therefore would introduce an additional obstacle within the Mississippi River flyway corridor. The U.S. Fish and Wildlife Service (USFWS) was consulted regarding the project's overall potential for impacts to migratory birds, and the specific impact of the various bridge design components. The USFWS advised that a bridge with less above-deck structure would minimize the potential for impacts to migratory birds.

The superstructure above the deck also introduces additional mass and complexity that compete visually with the existing historic truss bridge, interfering with views of the existing bridge from vantage points on the river and land, and posing potential for adverse effect to the historic character of the bridge. The girder type bridge also has a visual effect, but the effect is minimized due to the lack of above deck structure members, allowing the existing bridge to be the dominant visual feature. Exhibits 11-16 provide preliminary visualizations of the three bridge types from the Winona County Courthouse (located at the westernmost edge of the downtown historic district) and from the intersection of Winona Street and Broadway Avenue (located at the northernmost edge of the Broadway historic district).

It is noted, however, that the girder type bridge would have a deeper deck and therefore the roadway profile would be higher in relation to the deck of the existing bridge than the arch or cable stayed types. Exhibits 17-19 provide concept cross sections that illustrate the deck heights of the three bridge types in relation to the existing bridge deck height, as well as providing concept elevations.

The three bridge types also vary in cost of construction. As part of the alternatives evaluation process, cost estimates for various structure types were developed, with the finding that the girder type would have the lowest construction cost. See Appendix C for a listing of studies related to this topic, including the Bridge Type Study.

Because the arch and cable stayed bridge types have greater potential for impacts to migratory birds due to more above-deck structure, greater visual effect to the historic downtown and the existing bridge, these two bridge types were rejected in favor of the girder type, which is recommended as the bridge type for the new permanent parallel bridge. The girder type bridge also would have the public benefit of a lower cost for the same transportation benefit.

Exhibit 11. Girder Bridge Type. Preliminary Visualization from Court House (3rd floor) – Downtown Historic District.

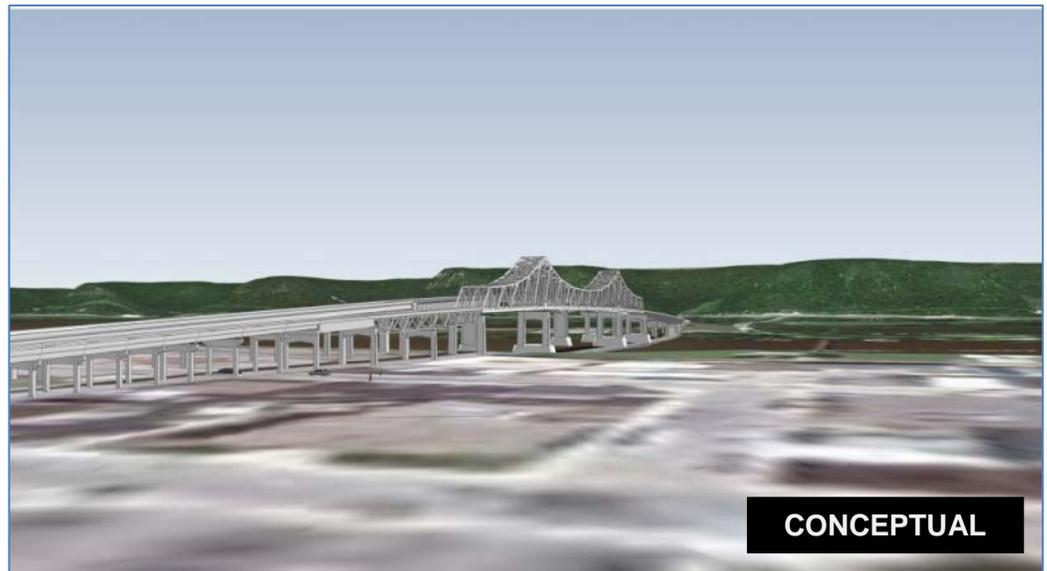


Exhibit 12. Arch Bridge Type. Preliminary Visualization from Court House (3rd floor) – Downtown Historic District.

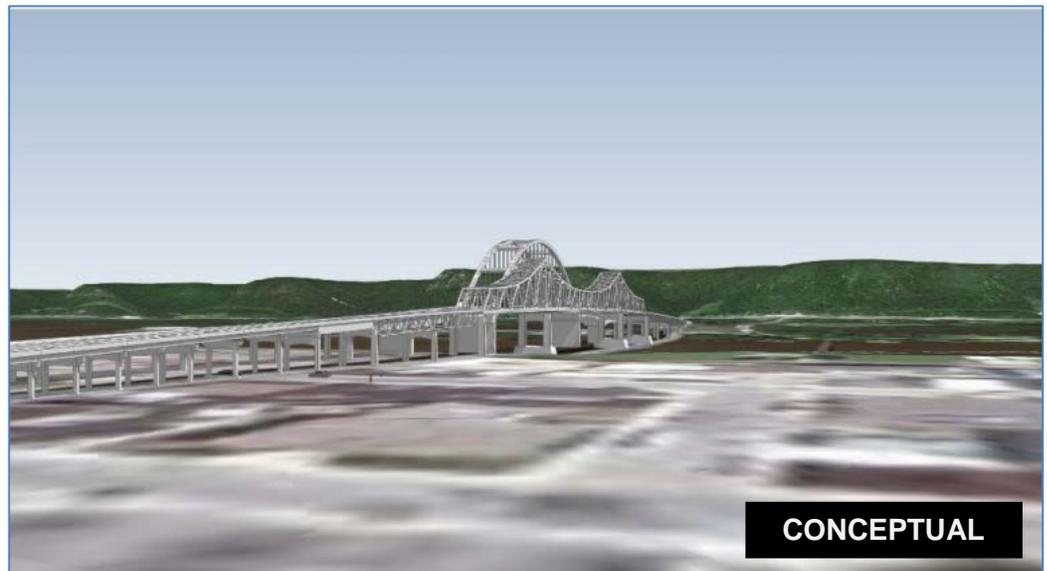


Exhibit 13. Cable Stayed Bridge Type. Preliminary Visualization from Court House (3rd floor) – Downtown Historic District.



Exhibit 14. Girder Bridge Type. Preliminary Visualization from W. Broadway and Winona St. – Broadway Historic District.



Exhibit 15. Arch Bridge Type. Preliminary Visualization from W. Broadway and Winona St. – Broadway Historic District.

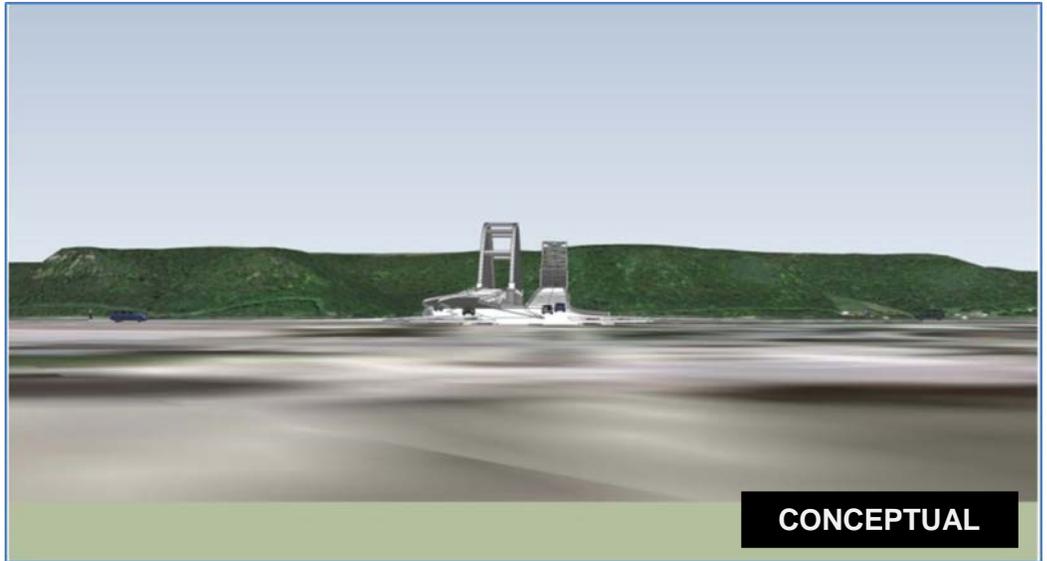


Exhibit 16. Cable Stayed Bridge Type. Preliminary Visualization from W. Broadway and Winona St. – Broadway Historic District.

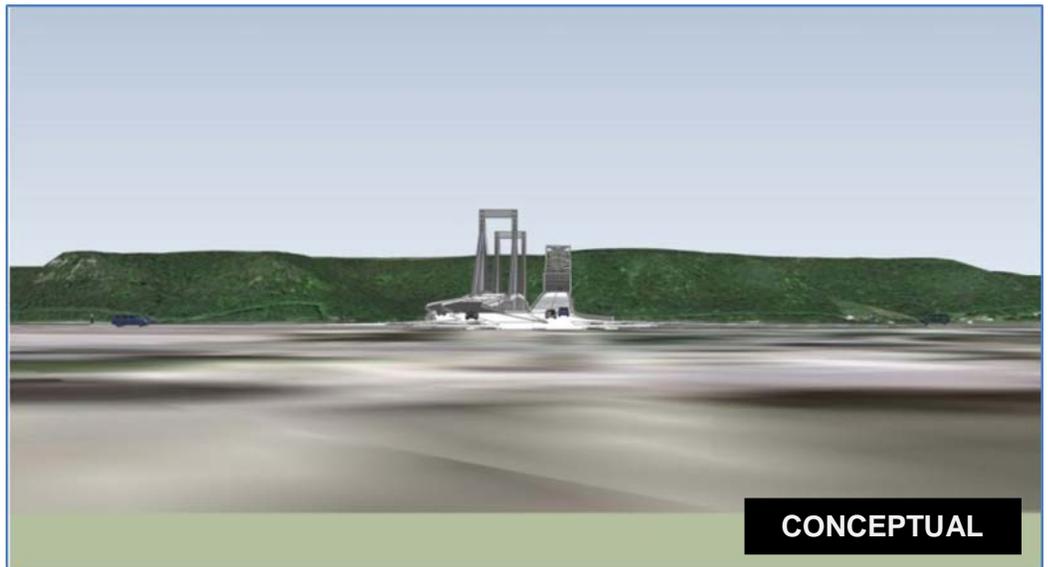


Exhibit 17. Girder Bridge Type. Concept Elevations and Cross Sections in Relation to Existing Bridge.

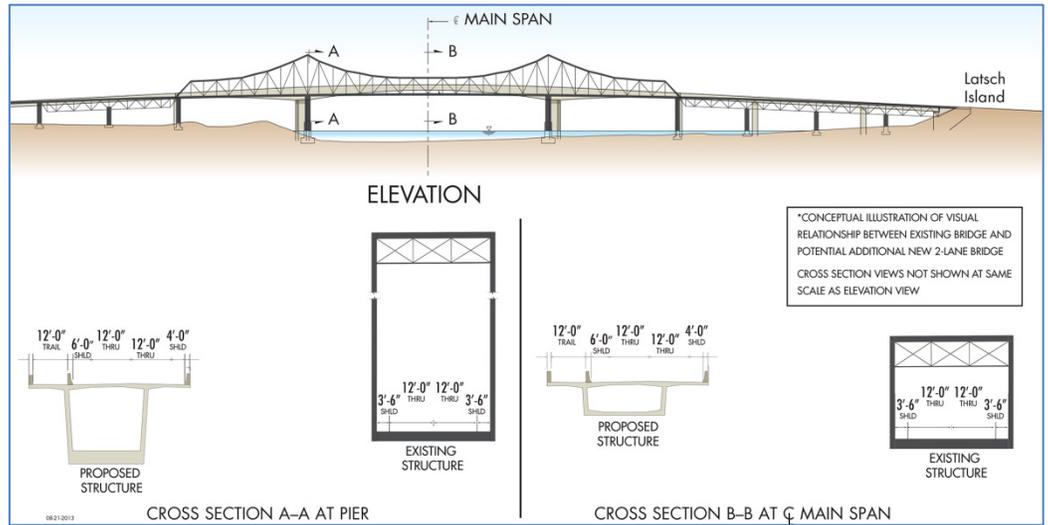


Exhibit 18. Arch Bridge Type. Concept Elevations and Cross Sections in Relation to Existing Bridge.

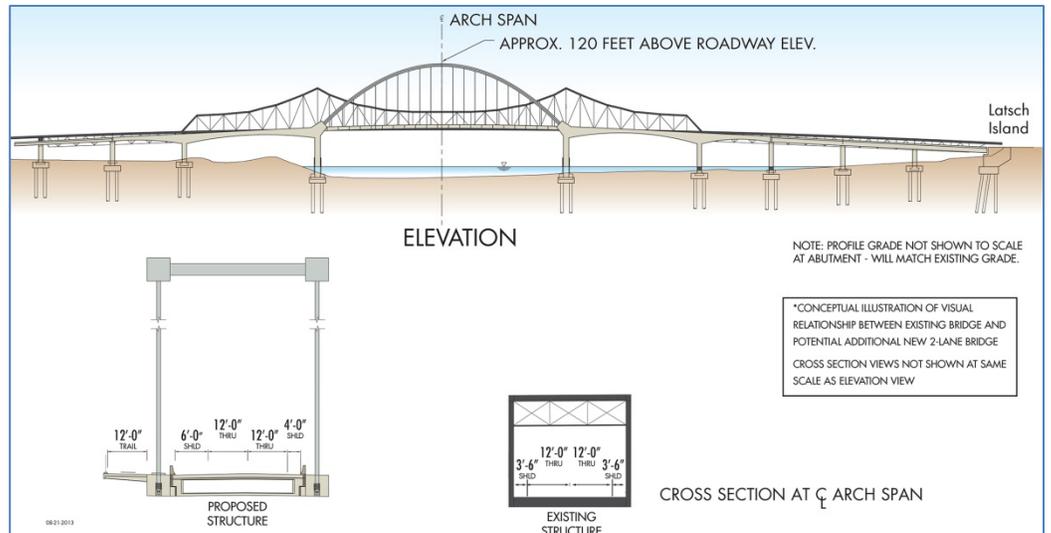
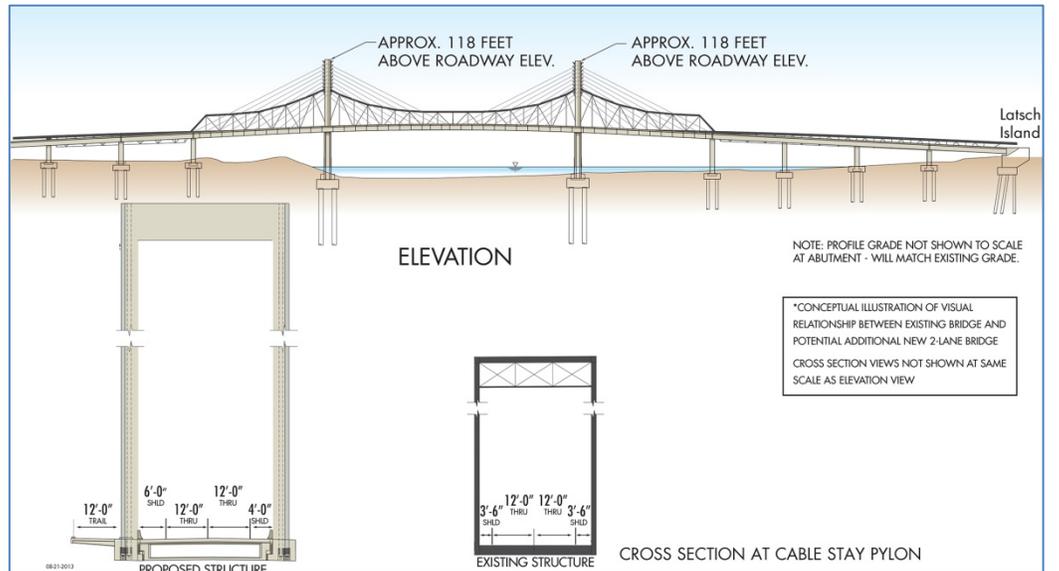


Exhibit 19. Cable Stayed Bridge Type. Concept Elevations and Cross Sections in Relation to Existing Bridge.



B. ALTERNATIVES CONSIDERED BUT REJECTED

Section III.A above describes the process for identifying alternatives, including the rationale for rejecting alternatives. In summary, the rejected alternatives include

- Replacement of the existing Winona Bridge.
- Rehabilitation options that retain the existing walkway.
- Rehabilitation options that would not meet the Secretary of Interior's Standards for rehabilitation of historic bridges.
- Rehabilitation options that do not include a permanent parallel bridge. This includes MOT options of detour only, ferry service, and temporary bridge.
- Rehabilitation options that do not replace the approach spans.
- Alignments for the new bridge at Pelzer Street, Prairie Island Road, Mankato Street, Harriet Street, Mid-Block, Washington Street, Johnson Street, Main Street, Huff Street and Winona Street East.
- Cable stayed and arch bridge types.

C. ALTERNATIVES UNDER CONSIDERATION

The following alternatives are addressed in this EA.

No Build Alternative

The No Build Alternative is a maintenance alternative. It proposes that no major rehabilitation be undertaken, and that the in-place bridge be maintained as long as feasible. The No Build Alternative also proposes that no replacement bridge be constructed. Under the No Build alternative, necessary routine repairs would continue to be made as long as possible, however the bridge would continue to deteriorate and the bridge load posting would likely remain in effect, unless significant major repairs were made.

Build Alternative

The Build Alternative (recommended alternative) is depicted in Exhibits 20 and 21 and includes:

Rehabilitation/reconstruction of existing bridge including

- full deck removal and replacement with a light-weight concrete deck⁸
 - removal of the pedestrian cantilevered walkway on the existing bridge
 - removal and replacement of the approach spans and piers
 - replacement in kind of the deck truss spans and piers based on detailed study of condition and ability to retain historic integrity
 - repair, cleaning and painting of the main through truss and piers
- Construction of a new bridge parallel to existing bridge, with the following features.
 - girder-type⁹
 - on the Winona Street West alignment
 - including a 12- foot wide pedestrian/bike way on the upstream (west) side.
 - Improvements to the Winona Street-4th Street intersection including turn lanes, signalization, and pedestrian improvements.
 - Reconstruction of portions of 2nd and 3rd Streets.
 - Reconstruction of the TH 43-Latsch Island road access intersection including turn lanes and trail connections.

Upon completion of the project, the existing bridge would carry two lanes of traffic in the northbound direction and the new bridge would carry two lanes of traffic in the southbound direction.

The recommended Build Alternative includes staging that constructs the new bridge first while traffic continues to be carried on the existing bridge, then moving traffic to the new bridge while rehabilitation/reconstruction of the existing bridge is completed. Upon project completion, the two bridges would operate as a one-way pair, tying into the improved Winona Street-4th Street intersection at the south terminus and tapering to tie into the two lane TH 43 section at the north terminus. The staging plan is depicted in Exhibit 22.

Additional description of the Build Alternative is included in Section IV.A.6.

⁸ The preliminary design assumptions that dictate the level to which rehabilitation is needed on the through truss will be further evaluated in the final design phase. As final design progresses, if these initial assumptions are found to require modification, further coordination and collaboration will be conducted with MnDOT CRU, SHPO, and FHWA.

⁹ Specific girder bridge type to be determined; Section IV. Social, Economic and Environmental Impacts describes impacts based on generic girder-type bridge.

RECOMMENDED ALTERNATIVE: TWO-BRIDGE SOLUTION

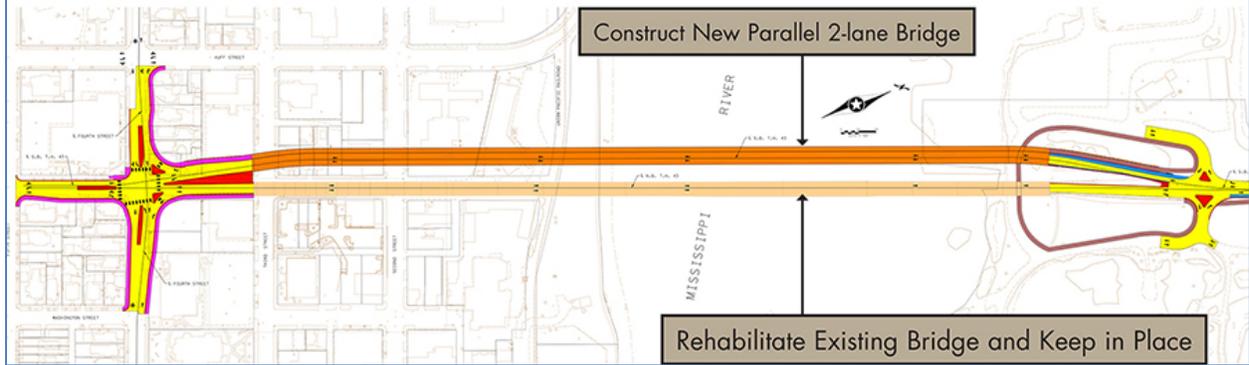


Exhibit 20. Build Alternative Concept.

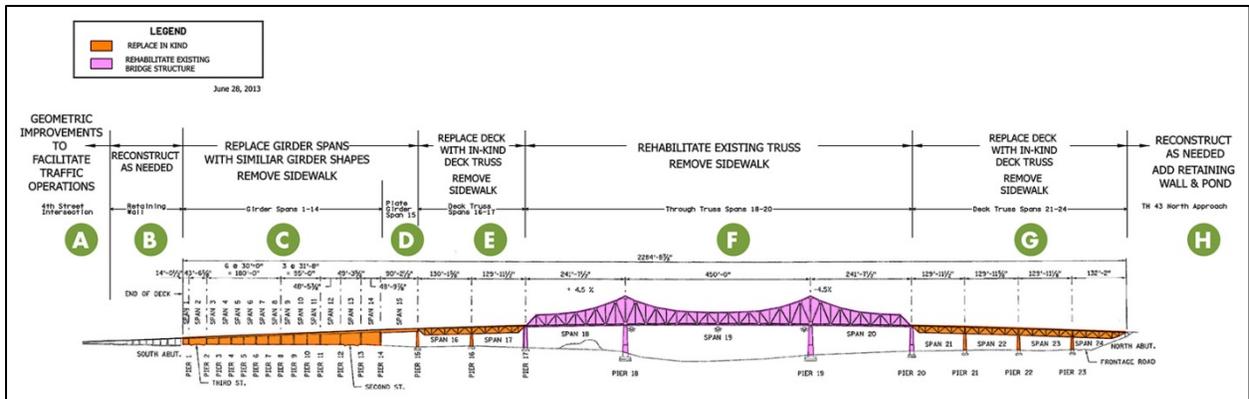


Exhibit 21. Existing Bridge Rehabilitation/Reconstruction.

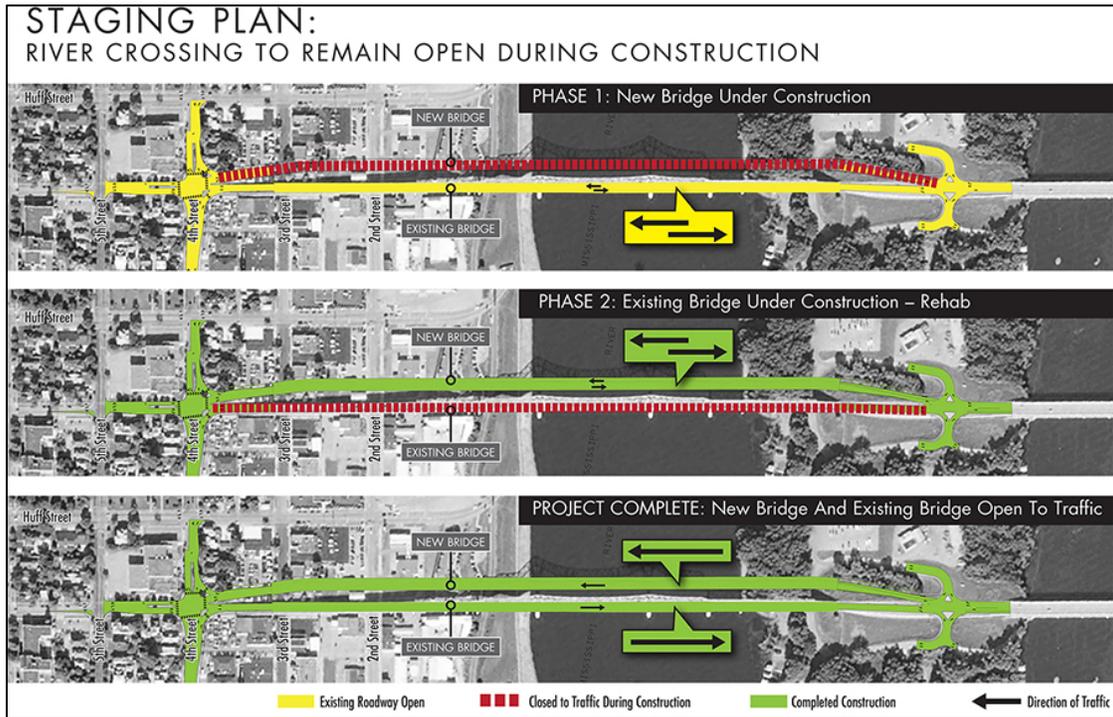


Exhibit 22. Staging Plan.

D. COST AND FUNDING

The estimated construction cost (in 2015 dollars) for the Recommended Alternative is as follows (ranges are listed to account for risk allocation and inflation):

Bridge 5900 rehabilitation/reconstruction costs: \$56-\$63 million
Bridge 85851 new bridge costs: \$52-\$59 million
Roadway costs: \$7-\$9 million
Total construction costs: \$115- \$131 million.

State of Minnesota Chapter 152 bond and Federal Aid will cover the majority of the construction costs, while local municipal cost participation will cover other miscellaneous construction costs. The project funding cap is set at \$142 million, not including property acquisition costs which are estimated to total \$12 to 20 million and which will be funded with state construction funds. The funding cap includes project development and design costs. The project is listed in the State Transportation Improvement Program.

E. PROPOSED PROJECT SCHEDULE

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

EA/EAW released for public comment:	Fall 2013
Public hearing:	Fall 2013
EIS Need Decision:	Spring 2014
Preliminary and final design:	Summer 2013 – Fall 2014
Right of way acquisition:	Summer 2013 – Spring 2015
Start of construction:	Summer 2014 – Spring 2015
Construction complete:	Spring 2020

New Bridge 85851 is anticipated to open in Fall 2016. The rehabilitation/reconstruction of Bridge 5900 will occur from Fall 2016 to Spring 2020.

IV. SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS (SEE)

This section discusses environmental impacts of the No Build Alternative and the Recommended Alternative identified in Section II.C. It contains two sub-sections;

- State Environmental Assessment Worksheet (EAW)
- Additional Federal Issues

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

A. ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to preparers: This form is available at www.mnplan.state.mn.us. The Environmental Assessment Worksheet (EAW) provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit (RGU) or its agents to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer must supply any reasonably accessible data for – but should not complete – the final worksheet. If a complete answer does not fit in the space allotted, attach additional sheets as necessary. The complete question as well as the answer must be included if the EAW is prepared electronically.

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

1. Project Title

Winona Bridge Project

2. Proposer

Contact person: Greg Paulson
Title: Assistant District Engineer
Address: 2900 48th Street NW
City, state, ZIP: Rochester, MN 55901
Phone: 507/286-7502
Fax: 507/285-7355
E-mail: greg.paulson@state.mn.us

3. RGU

Contact person: Terry Ward
Title: Project Manager
Address: 2900 48th Street NW
City, state, ZIP: Rochester, MN 55901
Phone: 507/286-7688
Fax: 507/285-7355
E-mail: terry.ward@state.mn.us

4. Reason for EAW Preparation (Check One)

EIS scoping Mandatory EAW Citizen petition
 RGU discretion Proposer volunteered

If EAW or EIS is mandatory give EQB rule category subpart number and subpart name:

5. Project Location

County: Winona
City/Township: Winona
Section 22, 23 Township 107N Range 7W

GPS Coordinates: N/A
Tax Parcel Number: N/A

Attach each of the following to the EAW:

- County map showing the general location of the project;
See Figure 1 in Appendix A.
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);
See Figure 2 in Appendix A.
- Site plan showing all significant project and natural features.
See Figures 3 through 9 in Appendix A.

6. Description

a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.

The project would rehabilitate the existing Winona Bridge and construct a new two-lane girder bridge upstream of the existing Winona Bridge. The project also includes improvements to the 4th Street/Winona Street intersection.

b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

Project Description

The Recommended Alternative is described in detail in Section II.C and is illustrated in Figures 3 through 9 in Appendix A. Refer to Figure 10 in Appendix A for the Bridge 5900 rehabilitation summary.

The proposed project would first construct a new two-lane box girder bridge upstream of the existing bridge. The next stage would reconstruct local road connections (on the north side of 4th Street and Latsch Island) to the new bridge; this stage would be completed under construction while the lanes not under construction and the existing bridge carry traffic.

The new bridge would carry two-way traffic during the next stage of the project while the existing bridge is rehabilitated. Work on the existing bridge would include rehabilitation/reconstruction of the through truss portions of the bridge, reconstruction of approach spans, and replacement in kind of deck truss spans. Portions of 2nd Street, 3rd Street, and the south half of 4th Street would be reconstructed/resurfaced during that stage as well. Medians between the new bridge and existing bridge would be constructed last in order to accommodate traffic staging.

When complete, the rehabilitated bridge would carry two lanes of northbound traffic and the new bridge would carry two lanes of southbound traffic, with the two bridges operating as a one-way pair.

Construction of the new bridge would last from Summer or Fall 2014 through fall 2016. The rehabilitation/reconstruction of the existing bridge would last from approximately Fall 2016 through Spring 2020. Some overlap in the phases may occur (such as work that could be performed to begin the rehabilitation/reconstruction of the existing bridge while it still carries traffic, etc.).

The existing bridge carries a 4.5-foot walkway for bicycle and pedestrian traffic. The new bridge would include a 12-foot shared use bicycle and pedestrian facility on the west side of the new bridge. The walkway on the existing bridge would be removed.

The construction limits include all permanent components of the project. The project limits include areas of temporary and construction impacts, including acquired properties where permanent components of the project would not be constructed.

The proposed project would require acquisition of permanent right of way, and permanent and temporary easements. The project would also require acquisition of adjacent parcels for the project construction that would not be required by MnDOT as permanent right of way after construction is complete. Remnant parcels would be given or sold to other parties in accordance with MnDOT policy regarding surplus or excess right of way. Properties may be offered to or sold to public or private entities for a variety of future uses; these future uses would not be considered part of the project. This document considers impacts to these properties resulting from the project itself, such as property acquisitions and building demolitions, and the construction activities of the project. Future redevelopment on these parcels may include public facilities such as open space or private uses subject to City of Winona development approval processes. Any such future uses would not be part of the Winona Bridge Project. This document assesses the impacts related to the activities needed to construct the project and return remnant parcels to a stable condition (for example reseeding to prevent erosion) until they are converted to other uses.

The area under the bridge would include stormwater treatment ponds and may include a bicycle/pedestrian facility connecting the bridge to the existing trail facility along the riverfront underneath the bridge. The specific design of these amenities would be coordinated with City of Winona.

Construction Methods

The project would utilize a construction manager/general contractor (CM/GC) process. In a typical design-bid-build process, MnDOT develops final design plans and requests contractor bids for a specific design. In a CM/GC process, the contractor is brought in earlier in the design process and bids on portions of the project, which may begin construction before all design work is completed for other portions of the project. With this integrated approach, MnDOT, the designer, and contractors would work collaboratively to optimize the design, improve quality, and manage costs as the project moves through final design to construction.

Construction is anticipated to begin between Summer 2014 and Spring 2015. The duration of construction is generally expected to take six years. A brief summary of the key construction features for each bridge is described below, followed by a discussion of the construction-related impacts that would be encountered for the newly constructed bridge and the rehabilitated existing bridge.

Construction of approach spans and local roads would be done under traffic, one lane at a time. Temporary lane closures and short-term detours may be utilized to accomplish the roadway construction. Other construction staging methods would be determined in the field.

Construction staging would occur on parcels directly west of the existing bridge and between 2nd Street and the Mississippi River (see Figure 8 in Appendix A). This area would be used for storage of construction materials and equipment and vehicle access to the south portion of the project site.

Staging areas would also be needed in the Mississippi River for equipment storage and placement of barges and other uses as described below. The in-river staging areas are shown on Figure 8 in Appendix A. In-river staging areas would be accessed from a land staging area on Latsch Island on existing MnDOT property immediately adjacent to the existing bridge. This area may require tree removal or grading to allow construction vehicles to access the project site. This area would be restored to existing conditions with tree planting after construction is complete. The land staging area would also be mitigated with a withdrawal from an established wetland mitigation bank.

The area directly under the existing and proposed bridge on the south side of Latsch Island would be deforested and graded to accommodate construction activities. The acreage of this wetland construction impact will be mitigated with a withdrawal from an established wetland mitigation bank.

New Bridge (Bridge 85851)

The proposed new bridge (Bridge 85851) to be constructed parallel to the existing bridge is shown in the Recommended Alternative drawing (Figure 3 in Appendix A). The new bridge would become southbound TH 43.

Main Span Structural Construction Methods

For the main river spans, the bridge would consist of a girder type bridge. The construction method that follows describes a cast in-place concrete box utilizing a balanced cantilever construction method (see Figure 11 in Appendix A), but a steel box girder may also be considered. If a steel structure is selected, construction methods may vary from what is described below, but the overall environmental impacts from the project, as described in subsequent sections of this EA document, would be similar.

A concrete box section would likely be built in approximately 10 to 20 foot long sections using a form traveler, which is a type of moveable support structure. Construction would begin from the main span river piers and move outward from these piers in both directions. It is expected that constructing the superstructure would take eight to ten months.

Using the form traveler construction method would result in less navigational obstruction, would not impact the levee, and require less coordination than using other construction methods requiring in-river support structures such as false work. This is because the form traveler is suspended above the navigational channel by attaching to previously constructed segments.

The north approach area on Latsch Island would be used as a staging area to move equipment, materials, and labor from land to barges. A construction staging area has also been identified near 2nd Street which could be used for this purpose (See Figure 8 in Appendix A). This document addresses impacts resulting from the construction and staging areas identified to date. If a contractor proposed to affect areas outside of those addressed in this EA, additional environmental review analysis and documentation would need to be performed by the contractor.

Pier Construction Methods

The two main span piers would be located west of the existing bridge and in line with the existing main span piers. The footings for these piers would likely be constructed with deep foundations such as drilled shafts or piling. They would likely be constructed with cranes on barges and crane operations utilizing a temporary cofferdam¹⁰ around the pier. Barges and crane operations, cofferdams, launching of materials, and tugboats all cause temporary navigational obstructions. These temporary navigational obstructions could be in place for hours (a barge utilizing the channel) or up to nine months (cofferdam around the pier extending into the channel). The contractor would be required to coordinate such obstructions with the USCG, USACE, and river navigation operators. Coordination also is anticipated to include radio communication, a helper boat, and buoys in the construction work areas. If the river construction activities cause silting of the river, the contractor would be responsible for removal of silt material.

Approach Spans Construction Methods

The approach spans consist of approximately 830 feet on the south side and 525 feet on the north side. The approach spans would be constructed using precast concrete “I” beams. This bridge type would consist of fabricating a standard MnDOT Prestressed/Precast concrete “I” girder shape at a certified fabrication facility and shipping it to the construction site. The girders would be installed with conventional cranes located at ground level. A cast-in-place deck would be cast on false work supported by the precast beams. This type of bridge is typical for most of the bridges constructed in Minnesota. This bridge type also avoids constructing additional false work supports in the river and on the levee.

¹⁰ A temporary enclosure that allows water to be pumped out, creating a dry work area.

Bridge 5900 (Northbound TH 43) Rehabilitation and Replacement

The existing Bridge 5900 would become the new northbound TH 43. Construction would consist of rehabilitating the main through-truss spans, replicating (replacing in kind) the deck truss spans and replacing the south approach spans with precast concrete beams similar in shape and size to the existing cast-in-place T-beams. The riveted steel “I” girder span would be replaced with a steel “I” girder similar in size to the existing. The two “I” girder spans over 3rd Street would be replaced with a post-tensioned cast-in-place concrete flat slab. Construction time is estimated to be approximately three and a half years. See Figure 10 in Appendix A for a summary schematic of the rehabilitation/reconstruction activities.

Through Truss Spans Structural Construction Methods

The rehabilitation/reconstruction of the through truss spans would consist of removing and replacing the concrete deck, strengthening and/or replacing truss members and repainting the truss. This work would be performed after the new bridge is completed and traffic is moved from the existing bridge to the new bridge.

The deck removal would most likely consist of using jackhammers with the rubble falling onto barges below. This work would require temporary navigational restrictions and would need to be coordinated with the USACE, USCG, and navigational barge operators in a manner similarly described for bridge pier construction. The deck removal plan would be the responsibility of the contractor and would need to be submitted to the USACE, USCG, and Minnesota Department of Natural Resources (DNR) for their approval.

The truss strengthening would consist of adding plates to the gusset plate connections and potentially replacing some of the deck stringers and floor beams. This work would be carried out from deck level and with cranes mounted on river barges. This work would also need to be coordinated with the USACE, USCG, and barge operators as mentioned above.

Painting of the existing through truss would consist of both removing the existing lead paint and repainting the through truss. The Minnesota Pollution Control Agency (MPCA) has developed regulations with procedures that the contractor must follow in both removing lead paint and applying new paint to exterior surfaces. The contractor would be required to use overlapping, impermeable tarpaulins to prevent lead particles from contaminating the water. Painting and all associated work would need to be conducted to prevent waste materials from falling into the river. Waste from the removal of lead paint must be evaluated and disposed of according to MPCA regulations.

Deck Truss Replication Construction Methods

The existing deck trusses would be removed and replaced in-kind. The old trusses would be removed in pieces using ground mounted cranes. Once removed, select portions of the deck trusses would be tested to characterize their condition as a means to provide additional guidance for future bridge rehabilitation projects. The new trusses would be fabricated in pieces and assembled at the site with ground mounted cranes. A cast-in-place deck would be installed on temporary false work between stringers.

As part of this process it is anticipated that some or all of the piers supporting the deck truss spans may need to be completely removed and reconstructed. This determination would be made during final design. The contractor would need to coordinate the disassembly and erection of trusses with the Union Pacific Rail Road as to not disrupt rail traffic.

South Approach Replacement Spans Construction Methods

The south approach spans would consist of either a cast-in-place post-tensioned concrete flat slab, a special design pre-stressed/pre-cast concrete rectangular girder, or steel "T" girder bridge. All are similar to the original design. The girders would be fabricated off site at a fabrication shop and shipped to the site by truck and installed with conventional cranes located at ground level. The cast-in-place flat slab for spans 1 and 2 would be poured on false work supports on the ground. A cast-in-place deck would be cast on false work supported by the girders. During construction of span 2, 3rd Street would be closed for several months. To construct span 13, 2nd Street would be closed to traffic for a short period of time, most likely at night for several hours.

Demolition of the Existing South Approach Spans

A demolition plan is the responsibility of the contractor and would need to be submitted to MnDOT for approval. It is expected that deck demolition would utilize jackhammers from the top and rubble would fall to the ground. The concrete T-beams and piers would most likely be removed by saw cutting, bucket cranes and jackhammers. Provision would be required of the contractor to protect surrounding properties and streets. Second and 3rd Streets would be closed to traffic during these removal operations and would only be closed for a short time, approximately two to three days for each location.

Construction Impacts

Mississippi River Impacts

Due to the need to get construction materials and construction equipment into or onto the river to build the bridge, there would be river impacts, including dredging,

building temporary cofferdams around piers, dewatering, fill, and removal of cofferdams after construction.

Dredging

Dredging is the process of removing sediment from the bottom of the river to create adequate water depth for barge activity. Dredging would also be needed to construct the concrete seal, footing, and stem for the pier structures. It is expected that dredging could occur along the shoreline of the staging area at Latsch Island. It is expected a mechanical dredging process would be used in this area of the river. Mechanical dredging uses a backhoe on a barge. The backhoe arm extends over the barge and scoops sediment off of the river bottom. The sediment is placed into the barge and transported to shore for disposal. The barge is equipped with drainage ports that allow some water to drain from the barge.

Dredging in this portion of the river requires coordination with the DNR and the MPCA. The contractor would be required to coordinate as needed and perform such dredging as necessary for the contractor's preferred construction method.

Access to River Construction Areas

Fill would be needed for construction vehicles to access barges in the river staging and construction areas. Areas of fill and sheet pile would be used to access the southernmost river piers and from Latsch Island. A floating silt fence would be required around these areas area to capture silt. Construction of the fill areas would require permitting through the DNR and USACE. The contractor would be required to obtain permits for its preferred construction method.

The fill would need to be removed at the conclusion of the project. The fill would be removed using heavy equipment and trucks. The river bottom and surrounding area would be restored to its original or permitted condition. This would likely include restoring the wing dams¹¹ to an accepted condition and removing the floating silt fence.

Navigation Channel

Construction would involve temporary interruption to the navigation channel at various stages of construction to allow for pier construction, launching of materials, and construction of the superstructure with form travelers. Helper tugboats would be used by the contractor during these operations. These temporary interruptions would need to be coordinated with the USACE, USCG, and barge operators. Recreational boating activities would also be impacted and notification would be provided at local marinas and public accesses. The timing and duration of temporary interruptions would vary.

¹¹ Wing dams in this case refer to manmade fill in the river placed to slow water flow near the river banks.

River Pier Construction

River pier construction would use cranes working on barges and require use of a temporary cofferdam and temporary dewatering. This work would take approximately six to nine months. The appropriate coordination, including permits, would need to be completed for dewatering prior to construction. Dewatering is not anticipated to have an adverse effect on groundwater levels in the area.

Temporary sheeting may be installed along the edge of the staging area to allow tug boats and barges to dock temporarily along the shore for loading and unloading of materials, equipment, and workers; this may require some dredging to create adequate depth for barges. In addition, construction of the south main span pier would use fill and sheet pile on the levee. Due to concerns with vibrations in removing the sheeting in the levee, they would remain in place and would be cut off below the ground line. Coordination with the DNR and USACE would be required for this activity. Pier construction would require a USCG permit.

Dewatering

Some dewatering may be required for constructing land footings, retaining walls, stormwater systems, dry ponding basins, or other utilities. The amount of dewatering required has not been determined. The appropriate permits and coordination with the DNR would be acquired prior to construction. Dewatering would be needed but will be temporary, for construction only, and is not anticipated to have adverse effects on groundwater levels in the area.

Vibrations, Dust, and Noise

Pile driving and other components of project construction (stormwater treatment facilities) would result in noise, vibration, and dust impacts, as would use of 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 of 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 vibrations will be assessed further during final design. Vibration impacts 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.

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 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. Pile-driving equipment results in the highest peak noise level. Pile-driving is anticipated with the proposed construction of the new bridge.

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. Air quality impacts may also result from emissions from construction equipment and possible from traffic stopped at intersecting roadways. These impacts are expected to be minimal and of short duration.

Erosion

There is potential for erosion during construction where stabilized surfaces such as ground cover and pavement are disturbed. All vegetated areas would be reseeded or sodded where appropriate and slopes protected using staked wattles (erosion control stakes which catch material). Shoreline disturbance would be minimized to the extent feasible and shoreline vegetation would be preserved where practical. Best Management Practices (BMPs) as identified in the MPCA's National Pollutant Discharge Elimination System (NPDES) permit for construction sites would be implemented to minimize erosion and water quality impacts. Refer to EAW Items 16 and 17 for more information.

Tree Removal

The proposed project would remove trees during construction, such as at the on land staging area on MnDOT property at Latsch Island. In addition, there would also be temporary tree impacts in the staging area along the riverbank. During final design, as mitigation for any trees removed during construction of the project, a Tree Replacement plan would be developed. Trees removed would be subject to Emerald Ash Borer special provisions, as Winona County and Wisconsin are considered infested.

Trees cut in wetland areas would be replaced in accordance with U.S. Army Corps of Engineers (USACE) requirements (0.25 to 1) as detailed under EAW Item 12.

Protection of Vegetation

In order to prevent the spread of invasive species, no untreated ash or walnut wood can be brought into Minnesota from Wisconsin, including timber mats, without a compliance agreement from the Minnesota Department of Agriculture (MDA). The contractor must follow all MDA quarantine requirements.

Additionally, the contractor would be responsible for limiting the spread of state listed noxious weeds. If infested soils are removed from the project site and not brought to an approved facility, the contractor would be responsible for obtaining a permit from the MDA for disposal.

During final design, a vegetation plan would be required that determines mitigation for vegetation impacts from the proposed project. The plan would include efforts to avoid and/or minimize these impacts during both the design and construction phase. Vegetation protection measures would be part of the construction plan. These vegetation protection measures would be based on MnDOT Standard Specification for Construction 2572 (Protection and Restoration of Vegetation). In order to protect vegetation that lies outside of the construction limits, mitigation measures such as the use of temporary fence for tree protection would be used. These areas should be identified in the plan and Standard Detail Sheets that are available for these items included in the plan package.

Vegetation Replacement

Vegetation replacement would follow a required vegetation plan. MnDOT would require that replacement follow the agency's recommended replacement guidelines. The guidelines for re-vegetation of these areas recommend use of indigenous/native plant materials in the most cost effective manner that mitigates for the impacts of construction. A potential exception to the use of native plants is surrounding new stormwater treatment ponds, where specific plant species would be used if requested to prevent bird collisions with aircraft, due to the proximity to the Winona Airport.

Re-vegetation within the project area would attempt to control invasive species. Particular concern would be given to top soil brought to the site. The contractor would be required to control state listed noxious weeds.

Potential Contaminated Substance Spills/Leaks

Any contaminated substance spills or leaks that occur during construction would be responded to according to MPCA containment and remedial action procedures. Refer to EAW Item 20 for more information.

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

See Project Purpose and Need, Section II.

- d. **Are future stages of this development including development on any other property planned or likely to happen?** ___ Yes X No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

- e. **Is this project a subsequent stage of an earlier project?** Yes X No

If yes, briefly describe the past development, timeline and any past environmental review.

7. Project Magnitude Data

Total project acreage:

Based on project limits (Figure 3 in Appendix A) – 26.9 acres

Based on construction limits (Figure 7 in Appendix A) – 20.6 acres

Note: The project limits and construction limits areas exclude temporary in-water staging and in-water construction areas outside of project and construction limits. These are discussed in appropriate impact categories in this EA.

Number of residential units: None

Commercial, industrial or institutional building area (gross floor space): None

8. Permits and Approvals Required

List all known local, state and federal permits, approvals 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.*

See Section V.C. for a list of permits and approvals. See Section II.D for public funding information.

9. Land Use

Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

Land Use Compatibility

Land uses surrounding the Winona Bridge on the downtown (south) side include private and public office, commercial, industrial, and residential uses. The Waterfront Trail is located underneath the bridge adjacent to the Mississippi River on open space land. Land uses on Latsch Island on the north side of the river include park uses and a public marina. Boathouses are moored along Latsch Island, including five boathouses located downstream of the existing bridge.

The *City of Winona Comprehensive Plan (2007)*¹² (Plan) identifies the need for an additional bridge to carry traffic, and states the new bridge will be constructed to the west of the existing bridge, followed by “rebuilding” (i.e. rehabilitating) the existing bridge. The Plan also calls for a safer and more pleasant crossing for bicyclists and pedestrians.

The project would bring about land use changes in the immediate project area. Remnant parcels would be transferred to other public and private property owners and may be redeveloped. Future redevelopment would be addressed by City plan review requirements.

While the project would result in some land use conversion, it is generally compatible with adjacent and nearby land uses as it is the site of the existing bridge. The bridge project is also consistent with local comprehensive plans, as noted above.

Contaminated Properties

The presence of potentially contaminated properties (defined as properties at which soil and/or groundwater is impacted with pollutants, contaminants or hazardous wastes) is a concern in the development of highway projects, because of the potential liabilities associated with ownership of such properties, the potential cleanup costs, and the safety concerns for construction personnel. Contaminated materials encountered during highway construction projects must be properly handled and treated in accordance with State and Federal regulations. Improper handling of contaminated materials can exacerbate their impact on the environment. Contaminated materials also cause adverse impacts to highway projects by increasing construction costs and causing construction delays.

¹² Available at <http://www.cityofwinona.com/city-services/planning-zoning/comprehensive-plan-2007/>

A Phase I Environmental Site Assessment (Phase I ESA) provides information on potentially contaminated properties. Potentially contaminated properties are identified through review of historic land use records and aerial photographs, federal EPA (Environmental Protection Agency), state MPCA (Minnesota Pollution Control Agency), state MDA (Minnesota Department of Agriculture), and county/city records, as well as through reconnaissance of current property conditions. MnDOT categorizes sites of potential concern identified by the Phase I ESA into high, medium, and low environmental risk levels. In general, sites with high environmental risks are properties that have documented releases of chemicals or hazardous or regulated substances (e.g., active and inactive state and federal cleanup sites, active and inactive dump sites, and active leaking underground storage tank sites), strong evidence of contamination (e.g., soil staining, stressed vegetation), or storage of large volumes of petroleum or other chemicals (e.g., bulk storage tank facilities). Sites of medium environmental risk are properties at which smaller volumes of petroleum, chemicals, or hazardous materials are frequently stored and used (e.g., registered underground and aboveground storage tanks, vehicle repair facilities, metal working shops), but at which no evidence of spills or releases exists, or properties with documented releases that have been “closed” (signifying no further cleanup actions deemed necessary) by the Minnesota Pollution Control Agency (MPCA). Closed sites, such as closed leaking underground storage tank sites, are considered medium risks because residual soil or groundwater contamination may exist. Low environmental risk sites include properties at which minor volumes of chemicals or hazardous materials have been used or stored (e.g., hazardous waste generators, and possibly some farmsteads and residences).

A Limited Phase I ESA was completed in April 2010 covering a study area for potential alignments, prior to selection of the Recommended Alternative. . A Phase I ESA Update was completed in July 2013 which focused on the project corridor of the Recommended Alternative. A copy of the entire Limited Phase I ESA report and the Phase I ESA Update will be on file and available for review at the MnDOT Office of Environmental Stewardship at 395 John Ireland Boulevard in St. Paul, Minnesota.

The purpose of the Phase I ESA was to identify all known or potentially contaminated properties in the project corridor. As part of the project design process, these properties will be evaluated for their potential to be impacted by construction and/or acquired as right of way. Any properties with a potential to be impacted by the project will be investigated (through detailed review of MPCA/Minnesota Department of Agriculture project files and collection and laboratory analysis of soil and groundwater samples) to determine the extent and magnitude of contaminated soil or groundwater in the areas of concern. Contaminated properties with the potential to incur excessive cleanup costs or expose the purchaser to unacceptable environmental liability may need to be avoided during the design process, if possible.

The Limited Phase I ESA Update completed for this project in 2013 identified a total of 21 sites of environmental concern located within or adjacent to the project corridor. These sites are identified in Figures 12A-12C in Appendix A. Of these sites, one site was identified to have a high risk, 15 sites were identified to have a medium risk, and five

sites were identified to have a low risk for potential of contamination. Table 2 lists the sites with a high, medium or low potential for contamination.

**TABLE 2
SITES WITH LOW, MEDIUM, OR HIGH POTENTIAL FOR CONTAMINATION IN
OR NEAR PROJECT AREA**

Site ID ¹	Site Description	Site Address/ Location	Risk	Reason for Contaminated Soil/Ground Water Concern
1	Island Number 72 (Latsch Island)	1 and 101 Latsch Island	Medium	Past and current residential and commercial uses including boat repair and a marina. Occupant identified as a hazardous waste generator (no reported releases). Storage tank registered to site (no reported releases) and two additional tanks reportedly removed in 1989. Use and/or storage of hazardous substances or petroleum products.
2	Winona Port Authority	204 West Front Street	Medium	Past railroad uses. A pumping station located at the east end of site. Potential use and/or storage of hazardous substances or petroleum products and of past unreported releases.
3	AmericInn	60 Riverview Drive	Medium	Past railroad uses. Current use as a motel. Potential use and/or storage of hazardous substances or petroleum products and of past unreported releases.
4	Former Best Lumber (vacant)	1 Washington Street	Medium	Past railroad and foundry uses. Past use as a lumber yard. Potential use and/or storage of hazardous substances or petroleum products and of past unreported releases.
5	Sinclair	50 Riverview Drive	Medium	Past railroad uses. Current commercial use as a gasoline station/convenience store. Storage tanks registered to and currently present on the site. A closed spill and tank leak site. Use and/or storage of hazardous substances or petroleum products.
6	Downtown Recycling Co. and Unidentified Commercial Building	222 and 224 West 2nd Street	Low	Past railroad, commercial and residential uses. Potential use and/or storage of hazardous substances or petroleum products.
7	Winona Chrysler	121 Huff Street	High	Past commercial/industrial uses including railroad tracks, lumberyards and a gas plant. Current commercial uses by an automobile sales and service business. Occupants identified as hazardous waste generators (no reported releases). Storage tanks registered to site (no reported releases). A closed spills site. A CERCLIS and NFRAP site. Use and/or storage of hazardous substances or petroleum products.

**TABLE 2
SITES WITH LOW, MEDIUM, OR HIGH POTENTIAL FOR CONTAMINATION IN
OR NEAR PROJECT AREA**

Site ID ¹	Site Description	Site Address/ Location	Risk	Reason for Contaminated Soil/Ground Water Concern
8	Winona Leasing & Sales and U-Haul	252 and 275 West 2nd Street	Medium	Past residential and commercial uses including an auto repair business. Current commercial use including an automobile leasing and sales/U-Haul business. Gas cans observed in the Quonset structure. Use and/or storage of hazardous substances or petroleum products. No reported releases.
9	Timbers Restaurant	270 West 3rd Street	Medium	Past residential and commercial uses including a stone yard and a scrap yard. Current commercial use as a restaurant. Potential use and/or storage of hazardous substances or petroleum products. No reported releases at the site.
10	Commercial Building (Possibly Vacant)	260 West 3rd Street	Medium	Past residential and commercial uses including auto body repair and a taxi company. Current commercial uses. Occupant identified as a hazardous waste generator (no reported releases). Storage tank registered to the site (no reported releases). Use and/or storage of hazardous substances or petroleum products.
11	Residential Dwellings	119, 121 and 125 Winona Street	Low	Past and current residential uses. Potential use and/or storage of hazardous substances or petroleum products.
12	Winona County Environmental Services (with Household Hazardous Waste Drop-Off)	222 West 3rd Street and 225 West 2nd Street	Medium	Past residential and commercial uses including a cooper shop, a building material yard, auto sales and service, and a motor freight station. Current county use including a household hazardous waste drop-off. Occupant identified as a hazardous waste generator. A closed spills site. Storage tank registered to site (no reported releases). Use and/or storage of hazardous substances or petroleum products.
13	Dahl Express Sales and Service	267 West 3rd Street	Medium	Past residential and commercial uses including a foundry and a garage/machine shop with an underground gasoline storage tank. Current commercial uses an automobile sales and service. Storage tanks registered to site. A closed tank leak site. Use and/or storage of hazardous substances or petroleum products.

**TABLE 2
SITES WITH LOW, MEDIUM, OR HIGH POTENTIAL FOR CONTAMINATION IN
OR NEAR PROJECT AREA**

Site ID¹	Site Description	Site Address/ Location	Risk	Reason for Contaminated Soil/Ground Water Concern
14	Residential Dwellings	252-314 West 4th Street (even numbers); 166 Huff Street; and 167 Winona Street	Low	Past and current residential use. Potential use and/or storage of hazardous substances or petroleum products.
15	Dahl Chevrolet Buick	225 West 3rd Street	Medium	Past residential uses. Past and current commercial uses including automobile sales and service. Occupant identified as a hazardous waste generator (no reported releases). Storage tanks registered to the site (no reported releases). Use and/or storage of hazardous substances or petroleum products.
16	Winona County Law Enforcement Center	201 West 3rd Street	Medium	Past residential and commercial uses including an iron works business, a carriage manufacturer, and a county jail. Current county use. A generator and AST were observed on the south side of the structure. Storage tanks registered to the site (no reported releases). Use and/or storage of hazardous substances or petroleum products.
17	Winona County Courthouse	171 West 3rd Street	Medium	Past county uses including a former courthouse. Current county use. A generator was observed on the east side of the structure (a storage tank is likely associated with the generator). Storage tank registered to the site (no reported releases). Use and/or storage of hazardous substances or petroleum products.
18	Multi-Family Residential Dwelling (Lamberton House)	211 Huff Street	Medium	Past and current residential use. Site identified as a hazardous waste generator (no reported releases). A generator was observed on the north side of the structure (a storage tank is likely associated with the generator). Use and/or storage of hazardous substances or petroleum products.
19	Winona Family YMCA	207 Winona Street	Medium	Past residential use. Current commercial use. Occupant is a hazardous waste generator (no reported releases). A closed spills site. Possible fill port and vent pipe (evidence of a possible storage tank) observed on north side of structure. Use and/or storage of hazardous substances or petroleum products.

**TABLE 2
SITES WITH LOW, MEDIUM, OR HIGH POTENTIAL FOR CONTAMINATION IN
OR NEAR PROJECT AREA**

Site ID ¹	Site Description	Site Address/ Location	Risk	Reason for Contaminated Soil/Ground Water Concern
20	Residential Dwellings	226 and 253 West 5th Street; 208 Winona Street; 175-227 West 4th Street (odd numbers)	Low	Past and current residential uses. Past presence of a skating rink and opera house. Potential use and/or storage of hazardous substances or petroleum products.
21	Apartment Building (Former Junior High School)	218 West 6th Street	Low	Past residential use and use as a school. Current use as an apartment building. Occupant identified as a temporary generator of hazardous waste (no reported releases). Use and/or storage of hazardous substances or petroleum products.

Construction activities will likely encounter contaminated materials, soil, and/or groundwater within the project corridor based on the results of the Phase I ESA. Many properties to be acquired are likely contaminated.

In order to mitigate the potential for the project to incur excessive cleanup costs for property acquisition and construction, a Phase II Investigation is currently being completed. If the Phase II Investigation results indicate that liability protections are needed for an acquisition of a contaminated property or for handling contaminated materials during construction, MnDOT will enter the appropriate regulatory program(s), as necessary. The results of the Phase II Investigation will be used to develop a plan or plans for properly handling and treating contaminated materials, soil and/or groundwater during construction in accordance with applicable State and Federal regulations.

10. Cover Types

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

Cover types before and after construction (within project construction limits) are summarized in Table 3.

**TABLE 3
COVER TYPES**

Cover Type	Before Acres	After Acres
Types 1-8 wetlands	1.9	1.7
Wooded/forest	0.5	0
Brush/Grassland	0	0
Cropland	0	0
Lawn/landscaping	6.2	4.8
Impervious surface	13.7	6.1
Impervious surface (Bridges)	2.1	4.2
Other – River	4.5	4.5
Stormwater treatment ponds	0	0.5
Other – unknown cover type*	0	9.2
TOTAL	28.9	31.0
*Unknown cover types (could be lawn/landscaping or impervious surface) for remnant acquired parcels – may be converted to non-transportation uses.		

If **Before** and **After** totals are not equal, explain why:

The before and after totals are not equal due to the addition of the new bridge.

11. Fish, Wildlife and Ecologically Sensitive Resources

a. Are any state-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources on or near the site?

Yes **No**

The project area on the south side of the Mississippi River is a fully developed urban area that is in primarily residential and commercial use, and is dominated by impervious surface from roadways, parking lots and buildings (See EAW Item 10 Cover Types). Landscaped open space on the levee and few small patches of manicured lawns exist within the proposed project area south of the river. Wildlife in the area south of the river is limited to species adapted to living in developed areas. These species likely include squirrels, rabbits and bird species.

The Latsch Island portion of the proposed project is dominated by disturbed upland areas along the existing roadway embankment and wetlands that are characterized as floodplain forest (also discussed in EAW Item 12). Species likely to frequent this area include deer, raccoons, squirrels, rabbits, fox and various bird species.

The Mississippi River between the City of Winona and Latch Island is home to many species including fresh water mussels, various fish species, and other aquatic invertebrate species. Bird species and mammal species also frequent the river.

The proposed project would result in the removal of trees primarily on Latsch Island for staging purposes and for impacts associated with bridge construction. Tree removal would be done outside of the nesting season, when possible. USFWS would be coordinated with for any tree removal activities that may be scheduled during the nesting season due to special circumstances. The proposed project would also result in impacts to wetland habitat. Refer to EAW Item 12 for more information on project impacts to wetlands. The proposed project would include construction and staging activities in the Mississippi River, a habitat for aquatic species. Project construction activities would be conducted in accordance with the conditions of the Amended MnDOT Statewide General Public Waters Work Permit.

BMPs would minimize impacts to water quality during and after construction. In-water BMPs would be utilized to control turbidity within the Mississippi River. On-land erosion and sedimentation BMPs would be utilized to control sediment from entering the Mississippi River. The project includes provisions to treat stormwater from the roadway prior to discharge into the river. These water quality measures would also minimize impacts to aquatic species. Due to the presence of native mussel beds and other listed species in the river, stringent erosion and sediment control measures would be used, and other water quality protection measures would be used as described above.

The DNR requires contractors working in the river to follow their *Best Practices for Preventing Spread of Aquatic Invasive Species* for equipment going into and out of the water. Aquatic invasive species have been identified in the Mississippi River, including bighead carp, silver carp, Eurasian water milfoil, faucet snail, and other species.

Minnesota Rule 6216.0265 prohibits the transport of water from infested waters, except by permit. Currently, DNR General Permit to MnDOT (GP 2004-0001) authorizes work in infested waters and requires that all equipment, used in state waters that are known to contain aquatic invasive species and that are designated as infested waters, shall be inspected by MnDOT or its contractors and adequately decontaminated prior to being transported. The DNR is available to train MnDOT site inspectors and may be able to assist in these inspections.

Contractors will be made aware of the presence of invasive species in waters along the project, and suitable precautions will be taken to prevent their spread. This includes limiting the movement of excavated material from wet ditches or wetlands from one area to another, as well as not allowing water for local dust control to be pulled out of the lakes listed above or other designated infested waters.

The Mississippi River is part of a migration corridor for migratory waterfowl and shorebirds, known as the Mississippi Flyway. Migratory bird species are protected by the federal Migratory Bird Treaty Act of 1918. The USFWS was consulted during the project development and provided comments on potential bridge types, indicating that a bridge type with less above-deck structure would minimize the potential for

collisions, and also provided comments on bridge lighting in relation to migratory bird movement. The USFWS would continue to be consulted with during the detailed design of the project.

Cliff swallows and barn swallows, along with a few other species of migratory birds, often build their nests on bridges. The bridge will be inspected for the presence of nesting activity prior to the start of work on the existing bridge. If nesting activity is identified, appropriate measures would be taken in accordance with the provisions of the Migratory Bird Treaty Act.

In addition, MnDOT will continue to coordinate with USFWS staff regarding the measures to identify and address the potential for impacts to bald eagle nests throughout the duration of the project, which may include annual field surveys.

- b. If yes, describe the resource and how it would be affected by the project. Describe any measures that will be taken to minimize or avoid adverse impacts. Provide the license agreement number (LA-625) and/or Division of Ecological Resources contact number (ERDB _____) from which the data were obtained and attach the response letter from the DNR Division of Ecological Resources. Indicate if any additional survey work has been conducted within the site and describe the results.**

Based on Natural Heritage Information System (NHIS) queries completed in 2009 and 2013, the DNR identified multiple rare features within a one-mile radius of the proposed Winona Bridge Project (see correspondence in Appendix B). The area was evaluated for the presence of rare plants, animals, native plant communities, and other rare features using Geographical Information Systems (GIS) in conjunction with the DNR's Natural Heritage Information System (NHIS)¹³. The Natural Heritage data is provided by the DNR Division of Ecological and Water Resources and was current as of June 2013 (License Agreement 625).

Results

With respect to plant communities, one silver maple floodplain forest site ranked moderate for biodiversity by the Minnesota Biological Survey is located within the project area on Latsch Island. Impacts to wetlands are described in EAW Item 12; impacts to floodplain forest are anticipated. EAW Item 12 also describes wetland impact avoidance, minimization, and mitigation.

During early coordination for the project, DNR indicated concerns for potential project impacts to native mussel species. As a result, MnDOT contracted with the DNR to perform a mussel survey of the project area in August 2013. The survey report, dated August 2013, is available for review at:

<http://www.dot.state.mn.us/d6/projects/winonabridge/docs/mussel-survey-2013.pdf>

¹³ Copyright 2011 State of Minnesota, Department of Natural Resources

The survey effort revealed low mussel densities in the search area consisting of primarily common species. The exceptions being three individuals of *Pleurobema sintoxia* (round pigtoe), a state-listed special concern species. The report indicates that no federally-listed aquatic species were found. Based on these results, DNR staff have indicated that they have no further mussel-related concerns and the project can proceed without further surveys, mitigation and without the need for an State Endangered or Threatened Species Taking Permit.

Federally-listed species

Section 7 of Endangered Species Act of 1973, as amended, requires each Federal agency to review any action that it funds, authorizes or carries out to determine whether it may affect threatened, endangered, proposed species or listed critical habitat. Federal agencies, or their designated non-federal representatives (FHWA has delegated MnDOT) as their non-federal representative) must consult with the Service if any such effects may occur as a result of their actions.

As noted above, the August 2013 mussel survey conducted by the DNR found no federally-listed species within the search area. On behalf of FHWA, MnDOT has coordinated with the USFWS regarding the appropriate consultation path. The USFWS and MnDOT have agreed that a determination of “May affect, not likely to adversely affect” is the most appropriate under Section 7.

MnDOT will continue its coordination with USFWS to complete the consultation process, which will include MnDOT formally requesting concurrence from the USFWS on this determination and USFWS issuing of a concurrence letter in response.

12. Physical Impacts on Water Resources

Will the project involve the physical or hydrologic alteration — dredging, filling, stream diversion, outfall structure, diking, and impoundment — of any surface waters such as a lake, pond, wetland, stream or drainage ditch? Yes ___ No

If yes, identify water resource affected and give the DNR Public Waters Inventory number(s) if the water resources affected are on the PWI: Describe alternatives considered and proposed mitigation measures to minimize impacts.

The proposed project would impact the Mississippi River, a DNR public waterway (number 2P). Construction impacts associated with the Winona Bridge would include dredging in the Mississippi River for staging purposes and barge movement, placement of fill in the river, construction of in-water bridge piers, and site preparation including tree removal and grading of a wetland staging area and a wetland construction area. Appropriate BMPs would be utilized during any dredging or filling and construction operations and would be coordinated with agencies as described in EAW Item 6. A

temporary causeway was evaluated for construction purposes but was dismissed due to the large volumes of fill that would be needed in the river.

Wetland Analysis

The project area was analyzed for wetlands using a combination of on and off-site methods. Off-site resources included: recent high resolution aerial photography, Winona County Light Detection and Ranging (LIDAR) derived 2-foot contour lines and a one-meter Digital Elevation Model (DEM), Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) soil mapping, and the National Wetland Inventory (NWI). During September 2010 the south side of Latsch Island and the south bank of the Mississippi River adjacent to the project area were delineated using the 3-parameter method prescribed in the *1987 Army Corps of Engineers Wetland Delineation Manual*, specifically the Midwest Regional Supplement. The remaining portion of project area on Latsch Island was delineated in June 2013; the September 2010 delineation was also field verified at that time. The 2010 wetland delineation found one forested floodplain wetland on Latsch Island and the 2013 mapping efforts delineated additional portions of the large floodplain forest complex on Latsch Island (see Figure 13 in Appendix A).

Project Wetlands

Four wetlands (W-1, 2010; W-1, 2013; W-2 and W-3) were mapped within the project limits on Latsch Island (see Figure 13 in Appendix A). Wetland W-2 is a Type 2 (wet meadow) and the remaining wetlands are Type 1L,(floodplain forest) wetlands dominated by *Acer saccharinum*, *Fraxinus pennsylvanica* and scattered stands of *Salix exigua*. Figure 13A in Appendix A shows wetland areas that will be impacted through permanent fill placement and other wetland areas that will be permanently impacted as a result of tree cutting for use as staging areas and site preparation for construction.

Wetland Impacts

As proposed, the project would permanently fill 0.19 acres of wetland and temporarily impact 0.5 acres of wetland (Figure 13 in Appendix A). Permanent wetland impacts include, for purposes of this EA, fill impacts and impacts occurring as a result of tree cutting in wetland areas. Based on the nature of the project temporary wetland impacts and removal of vegetation and trees are assumed to occur within the project staging areas within Latsch Island. The total proposed wetland fill impacts are 0.19 acres. The total proposed wetland tree cutting impact, including the land staging area (0.54 acres) and the wetland construction area (1.15 acres), is 1.69 acres.

Purpose and Need

The project Purpose and Need is articulated in Section II.

Sequencing

Section II describes the alternatives development and evaluation process that resulted in the Recommended Alternative. The ability of alternatives to meet the project purpose and need, comply with Section 4(f) requirements, and comply with NEPA requirements made up the framework for alternative selection. Avoidance and minimization of wetland impacts was considered in this analysis.

Avoidance Alternatives

The No Build Alternative would avoid impacts to wetlands but was dismissed from further consideration because it would not meet the project purpose and primary need to maintain a structurally sound bridge by addressing the existing bridge structure.

Rehabilitation only, with no parallel bridge, would potentially avoid permanent impacts to wetlands, depending on the ability to avoid impacts due to construction staging, but was dismissed from further consideration because the parallel bridge option would allow a comprehensive rehabilitation/reconstruction of the existing bridge that better preserves the historic structure and because the parallel bridge option would meet secondary MOT, pedestrian/bicycle, and traffic improvement needs that a rehabilitation-only alternative (i.e. no permanent parallel bridge) would not.

Potential Bridge Alignments

All new bridge alignment options would result in wetland impacts. Seven alignments were dismissed early in the process because they would not meet the secondary need for the crossing to connect to Latsch Island and/or had potential for high community and environmental impacts. See Section III.A.2, Decision 4, and Appendix D, Table D-2 for details. Three downtown alignments were further analyzed. The Winona Street West alignment (Recommended Alternative) and the Huff Street alignment essentially touch down at Latsch Island on the same alignment, immediately west of the existing bridge. The Winona Street East alignment touches down on Latsch Island immediately east of the existing bridge. The wetland delineation in the touchdown area of each of these alignments is located at the Latsch Island access road (see Figure 13 in Appendix A). Wetland impacts were assessed at a scoping level for the three alignments described above. Using concept-level construction footprint assumptions, the Winona Street West alternative was estimated to result in 0.9 acres of wetland impact, and the Huff Street and Winona Street East alignments were estimated to result in 1.2 and 0.4 acres of impact respectively. These concept-level footprint impacts would include temporary and permanent impacts.

The wetland impacts for the Recommended Alternative have been reduced from the concept-level impacts estimated for the Winona Street West alignment due to refinements that have occurred through the preliminary design process, including wetland mitigation measures described below. The Huff Street and Winona Street East alignments would also have been refined in preliminary design, and therefore would likely have a similar

reduction in wetland impacts, had either of them been selected as the recommended alignment.

For all alignments, the permanent impact to wetlands would be at the pier locations; there would be the same number and location of piers in this area regardless of alignment. It is likely that the land construction staging area on Latsch Island would be the same regardless of alignment, since there are no better options. For these reasons, the wetland impacts associated with the new bridge would not be expected to differ substantially based on alignment, i.e., would be within a half-acre, particularly in relation to the extensive wetland area in which the impacts would occur.

Bridge Type

Three bridge types were considered. There would be no difference in wetland impacts between the three bridge types considered because the pier placement and staging areas would be the same.

Recommended Alternative Minimization

Impacts to wetlands were minimized through various design techniques. The new Bridge 85851 would tie into the existing roadway embankment on Latsch Island, minimizing the amount of fill/excavation required for construction of the bridge abutment and approach. In addition to using the existing upland embankment, impacts to wetlands were reduced by designing the roadway embankments as steep as design standards allow. The steepened side slopes minimize road embankment width; which reduces the footprint into the wetland.

Mitigation and Regulatory Context

Wetlands within the construction limits of the TH 43 Bridge and approach are potentially subject to the jurisdiction of the U.S. Army Corps of Engineers, the Wetland Conservation Act (WCA) Local Governmental Unit (LGU), and the Minnesota Department of Natural Resources). The Mississippi River and portions of associated wetlands in the project area are mapped as DNR Public Water – 2P. The DNR jurisdiction within the project area is below the Ordinary High Water (OHW) mark which is 650.6 feet (1929 National Geodetic Vertical Datum- NGVD). The OHW of 650.6 feet (1929 NGVD) roughly corresponds to the Mississippi River two-year flood event elevation. During July 2013 wetland delineation fieldwork the Mississippi River surface was at approximately 650 feet and the delineated wetland line for those wetlands in direct contact with the River was approximately 1 foot above the water surface (i.e. 651 feet). Wetland impacts that lie above the OHW of 650.6 feet are under the jurisdiction of the Wetland Conservation Act (WCA) and those that lie below the OHW would typically under the jurisdiction of the Minnesota DNR. The U.S. Army Corps of Engineers will have jurisdiction over all areas that meet the Corps wetland definition and are connected hydrologically to Waters of the United States.

Mitigation for wetland fill impacts and wetland tree cutting impacts will be accomplished through debiting of credits from an existing MnDOT wetland bank in Hokah, Minnesota. The Hokah Bank is located on the Root River and is anticipated to have sufficient acreage available to meet the mitigation requirements for the Winona Bridge project. See letter regarding wetland credits dated August 22, 2013 in Appendix B.

The total wetland fill impacts are 0.19 acres. Mitigation for fill impacts will likely occur at a 2:1 (mitigation:impact) ratio based on acreage of impacts; thus, 0.38 acres of mitigation would be required for fill impacts. The tree-cutting wetland impacts have two component areas; the wetland land staging area (0.54 acres) and the wetland construction area (1.15 acres) for a total 1.69 acres. Mitigation for tree-cutting wetland impacts will occur at a 0.25:1 mitigation ratio; thus 0.42 acres of mitigation would be required for wetland tree cutting impacts.

In addition, the wetland staging area would be restored to pre-construction conditions with appropriate tree planting. The wetland construction tree cutting area would be restored to pre-construction grade and planted with an appropriate wetland seed mix though trees would not likely be planted under the bridge.

13. Water Use

Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? Yes No

If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

Water Wells

A search of the Minnesota County Well Index (CWI) indicates no wells within the project limits or construction limits (Figure 14 in Appendix A). The County Well Index does not represent all wells in the state, but it is the most complete listing of state wells. If any unused or unsealed wells are discovered in the project area during construction, they would be addressed in accordance with Minnesota Rules Chapter 4725 or through an annual maintenance permit.

Public Water Supply Lines

Two City waterlines along 2nd and 3rd Street would be reconstructed for construction of bridge piers. No permanent impacts to water service would result from the relocation of waterlines.

Wellhead Protection Areas (WHPA)

The Minnesota Department of Health's (MDH) Wellhead Protection Area database was reviewed to determine if any WHPAs are located within the project area. The purpose of a WHPA is to protect the surface and subsurface area surrounding a public water supply from contaminants entering the public drinking supply. The project area is within two WHPAs (WHP IDs 37301 and 37302).

Drinking Water Management Supply Areas (DWMSA)

Drinking Water Supply Management Areas are areas that completely contain the WHPAs. These boundaries are delineated by identifiable physical features, landmarks, or political and administrative boundaries. One DWMSA surrounds the two WHPAs and the project site. Construction activities would be coordinated with the MDH to prevent drinking water contamination due to construction activities in accordance with any Wellhead Protection Plans in place for the project area.

Dewatering

Given the proximity of groundwater to the surface within the project area and fluctuation of the Mississippi River, it is likely that temporary dewatering may be needed during project construction. Dewatering may be required for construction of land footings, retaining walls, stormwater systems, dry ponding basins and or other utilities. The appropriate permits would be obtained from the DNR for any temporary dewatering activities.

14. Water-Related Land Use Management District

Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? Yes No

If yes, identify the district and discuss project compatibility with district land use restrictions.

Shoreland Zoning District

The City of Winona ordinances identify shoreland management policies and districts. The standards within the ordinance pertain to site developments and do not apply to bridge or road approach projects that cross public waters.

Floodplain Assessment

The Federal Insurance Administration Flood Insurance Rate Map for the City of Winona dated August 19, 1997 (Panel 2752500002D) includes the floodplain mapping for the Mississippi River. Base flood (100-year) floodplain boundaries are delineated on Figure 15 in Appendix A. An important element of Winona's floodplain management is the earthen levee system that extends the length of the waterfront. The U.S. Army Corps of

Engineers (USACE) constructed a temporary levee in 1965 after a major flood. The permanent levee, an USACE flood control project, was completed in 1980 and offers residents and businesses long-term flood protection by separating the 100-year floodplain from the downtown area.

The floodplain is currently designated as Zone AE, but without a defined regulatory floodway. The detailed modeling and mapping incorporated the protection provided by the levee. The proposed bridge abutment would be located within the area protected by the levee.

The existing bridge over the Mississippi River has six bridge piers within the 100-year floodplain, including three main span piers and smaller north approach piers. The piers are the only obstruction within the length of the crossing identified in the Table 4. The proposed project includes constructing a second bridge just upstream of the existing one and rehabilitating the existing bridge. The new bridge is anticipated to have piers in a similar alignment to the existing bridge to minimize hydraulic impacts.

**TABLE 4
FLOODPLAIN ENCROACHMENTS**

Floodplain	Type of Encroachment	Length
Mississippi River	Transverse	1150 ft.

Impact Analysis

This project would not result in any significant floodplain impacts for the following reasons:

No significant interruption or termination of a transportation facility which is needed for emergency vehicles or provides 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 reported as follows:

	<u>Elevation (ft.)</u>	<u>Datum</u>
100- Year Flood	658.5	1912 Adjustment
	660	1929 Adjustment
	657.96	1988 NAVD

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

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

- No fisheries impacts are anticipated. Construction operations that may impact the river bed would not occur during fish spawning and migration periods

(approximately April 15 to June 15) without approval from the MnDNR. Exact dates and allowable work in the river during this time period would be subject to DNR permit conditions.

- The new bridge structures would not increase the flow velocities in the river. Therefore, fish movements should not be affected.
- The bridges would be designed to accommodate canoe and recreational boat traffic during periods of normal river flows.
- The Latsch Island approach and associated roadway modifications would require some fill in wetlands surrounding the roadway system. Impacts would be minimized to the greatest extent practicable – see EAW Item 12 for additional discussion.
- Based on the August 2013 mussel survey, DNR staff have indicated that they have no further state mussel-related concerns and the project can proceed without further surveys, mitigation and without the need for an State Endangered or Threatened Species Taking Permit. In addition, the mussel survey found no federally-listed species within the search area and the USFWS and MnDOT have agreed that a determination of “May affect, not likely to adversely affect” is the most appropriate under Section 7. See EAW Item 11 for further discussion.
- Appropriate turf establishment and erosion control measures would be used. See EAW Item 16 for further discussion.

No significant increased risk of flooding will result.

The proposed bridge piers are expected to be in a similar alignment as the existing bridge, and as such no significant change in headwater or tailwater elevations would result. Once the bridge configuration is identified a detailed hydraulic analysis would occur with the most recent river model available. Properties upstream of the crossing impacted by any increase in water surface elevations would be identified and authorities responsible for floodplain management would be contacted to discuss the minor changes.

Construction of the new bridge and rehabilitation/reconstruction work on the existing bridge may also create temporary impacts to the river. See EAW Item 6 for a discussion on potential construction techniques being considered for this work. Impacts on flooding would be discussed with the regulatory agencies for these temporary impacts during final design.

This project should not result in any incompatible floodplain development.

Winona County has a floodplain ordinance that regulates floodplain development. The Winona County floodplain ordinance conforms to the DNR Floodplain Management Guidelines and applicable federal regulations. In addition, no new access to the floodplain is being created by this project.

Based on the above floodplain assessment, no significant floodplain impacts are expected.

Winona Levee

The Winona Levee protects the City from flooding and is managed by the USACE. Construction vehicles would need to park on the levee during construction. Construction of the south main span pier would use fill and sheet pile on the levee. The sheet pile would be cut off and abandoned rather than removed to prevent compromising the integrity of the levee. Fill on the land side of the levee would not be used. This construction method minimizes impacts to the levee compared to other construction methods by avoiding additional sheet pile into the levee structure. Any activities on the levee would be coordinated with the USACE.

15. Water Surface Use

Will the project change the number or type of watercraft on any water body?

Yes No

If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

The project would not permanently change the number or type of watercraft on the Mississippi River. The contractor would use barges for existing bridge rehabilitation/reconstruction and new bridge construction work. The contractor would be responsible for coordination with the USCG. The USCG would review plans for bridge construction to minimize impacts to river navigation during construction. The navigation channel would remain open during construction to the extent possible and no disruption is anticipated except for temporary short term interruptions to be coordinated with the USCG. These impacts would apply to barge and recreational boaters. Recreational boats may be subject to a “no wake” restriction during construction in lieu of closures. The USCG, USACE, and the contractor would coordinate construction activities with river users for safety of construction workers and boaters by using Navigational Safety Zones.

16. Erosion and Sedimentation

Give the acreage to be graded or excavated and the cubic yards of soil to be moved:

Acres: 20.6

Cubic yards (CY): Cut = 58,000 CY; Fill = 36,000 CY; **Total = 94,000 CY**

Describe any steep slopes or highly erodible soils and identify them on the site map.

Highly erodible and potentially highly erodible land was classified using the Winona County Natural Resources Conservation Service (NRCS) SSURGO soils data in

conjunction with the NRCS Winona County list of highly erodible land. The NRCS list is based on soil type and slope and takes into account erosion caused by both water and wind. Steep slopes are identified as slopes of 12 percent or greater. The NRCS highly erodible land list assigns each soil map unit a description of Not Highly Erodible Land (NHEL), Potentially Highly Erodible Land (PHEL), and Highly Erodible Land (HEL); Potentially Highly Erodible Land requires a field visit to determine if the soil map unit is HEL. Soil map units designated as HEL have a high potential for erosion when disturbed through activities such as development or construction. Particular attention should be paid to HEL areas as they can present unstable soil conditions that can result in erosion if not properly managed during construction activities.

The project does not pass through any NRCS mapped HEL or PHEL areas (see Figure 16 in Appendix A). The proposed roadway profile has been designed to tie in with the existing ground to the greatest extent practicable, thereby minimizing overall length of slopes and soil disturbance.

Describe any erosion and sedimentation control measures to be used during and after project construction.

Erosion and sedimentation of all exposed soils within the project area would be minimized by utilizing appropriate BMPs during construction. Implementation of BMPs during and after construction greatly reduces the amount of construction-related sedimentation and helps to control erosion and runoff. Ditches, dikes, siltation fences, riprap, sedimentation basins, hydraulic soil stabilizer and temporary seeding are examples of temporary control measures that may be utilized during construction grading. Temporary and permanent erosion control plans would be identified in the final site grading and construction plans as required by the National Pollutant Discharge Elimination System - State Disposal System (NPDES-SDS) permitting for construction sites in accordance to the Minnesota Pollution Control Agency (MPCA) standards. A Storm Water Pollution Prevention Plan (SWPPP) that includes erosion control and sediment management practices is required to be submitted in partial fulfillment of the NPDES permit. Erosion and sedimentation control measures would be in place and maintained throughout the entire construction period for on land and in water activities. Permanent erosion control measures would be implemented when disturbed areas have been stabilized.

17. Water Quality: Surface Water Runoff

a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.

Runoff from the project area drains to the Mississippi River. The south bridge approach discharges to City storm sewer and eventually to the river. The approach span south of the main span drains into a scupper system that conveys runoff in pipes attached to the piers. These pipes ultimately discharge to the ground beneath the

bridge and into the existing City storm sewer system. The main span of the bridge uses a series of scuppers that discharge stormwater runoff through the bridge deck and directly into the Mississippi River. The north approach either sheet flows or drains via storm sewer to grassed ditches and ultimately into the river. This includes the entrance roads that service the marina and boathouses. No dedicated BMPs are in place to treat stormwater runoff prior to discharge into the Mississippi River.

An existing levee located along the south bank of the river offers flood protection to the City of Winona. All stormwater runoff that currently falls on the south approach south of the levee is ultimately routed to City storm sewer that discharges to the river directly or via the Washington Street lift station. The lift station operates for river (flood) stages 13 feet and above.

The existing impervious area within the project drainage area is 13.7 acres. The proposed project would result in an increase in impervious area of 1.5 acres (15.2 acres total), primarily due to the addition of the new bridge and the tie-ins to the existing roadways. Note the stormwater treatment design used more detailed assumptions for future redeveloped parcels than the cover types information reported in EAW Item 10 to ensure stormwater design would provide treatment for a worst-case scenario impervious surface increase.

In order to mitigate for the additional impervious area, stormwater BMPs, such as wet basins and infiltration basins, would be constructed. The BMPs would provide water quality treatment and rate control and would be designed to meet NPDES standards. Runoff from the highpoints of the proposed and existing bridges to the south would be treated in one of two basin areas located beneath the bridge footprint, south of the existing levee (See Figure 15 in Appendix A). The basins would also provide treatment for portions of 4th Street. Because of grade limitations, it is unlikely that runoff on Winona Street between 5th Street and 4th Street can be treated in the proposed basins. To provide treatment for runoff from the existing bridge, it is assumed that a scupper system can be included in the existing bridge rehabilitation/reconstruction plan to carry stormwater to the proposed treatment basins.

The soils on the south side of the river are sandy and with moderate to high permeability. Therefore, the basin located between 2nd Street and 3rd Street was designed with an infiltration component. The use of infiltration ponds in Drinking Water Supply Management areas and Wellhead Protection areas must be coordinated with the MDH and local authorities. The practice of infiltrating stormwater into the subsurface reduces the volume of stormwater runoff, improves water quality, and recharges the groundwater. However, stormwater runoff often carries pollutants that in high concentrations may have adverse effects on groundwater supplies. If coordination with the MDH finds that infiltration methods are not appropriate for the site conditions, the stormwater treatment ponds would be modified as needed while providing the treatment necessary.

Stormwater runoff would be pre-treated prior to entering the infiltration area to reduce the potential for clogging. Pre-treatment would take place in a wet basin

adjacent to the infiltration area. Rate control is also an important component of the basin design. The proposed basins would discharge to existing storm sewers on 3rd Street and adjacent to the Union Pacific railroad (See Figure 5 in Appendix A). Proposed discharges to the lift station would be maintained at the existing rates or less so as not to overburden the pump systems.

The proposed drainage area from the highpoints on the bridges to Latsch Island would be treated in two basins located on the island adjacent to the back channel bridge (Bridge 5930). These basins would provide water quality treatment for approximately 5.1 acres. The west pond was designed as a wet pond, while the east pond was designed as a dry pond. Runoff from the entrance road on the island would be conveyed to grassed ditches along the roadway. The ditches would provide some water quality treatment by removing larger sediment prior to discharging to the river.

- b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.**

The Mississippi River is the receiving water body for the proposed project. The MPCA has identified this portion of the river as impaired for mercury. Although impaired, 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. Therefore, the project would not negatively impact the quality of receiving waters.

18. Water Quality: Wastewaters

- a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.**

The project would not generate wastewater.

- b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies (identifying any impaired waters), and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.**

The project would not generate wastewater.

- c. **If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.**

The project would not generate wastewater.

19. Geologic Hazards and Soil Conditions

- a. **Approximate depth (in feet) to ground water: 10' minimum, 30' average; to bedrock: <50' average.**

Sources:

- *Winona County NRCS SURGO soil survey.*
- *Minnesota Geological Survey's Geological atlas of Winona County, Minnesota, 1984.*
- *Limited Phase I Environmental Site Assessment, Braun Intertec Corporation, 2010*

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

The Minnesota Geological Survey (MGS) Geologic atlas of Winona County, Minnesota indicates a low probability of sinkholes. A review of the MnDNR GIS-based karst database indicates no-known occurrences of karst features within the project vicinity.

The uppermost bedrock units in the vicinity of the site are Upper Cambrian, Eau Claire Formation and Mt. Simon Sandstone (Mossler, et al., 1984). The Eau Claire Formation is described as very fine to finegrained sandstone and siltstone, of which some is glauconitic and interbedded with shale (Mossler, et al., 1984). The Mt. Simon Sandstone is described as fine- to very coarse-grained, poorly cemented sandstone that contains pebbles in basal at 20 to 40 feet. The sandstone is generally moderately to well sorted. Greenish-gray shale is mottled with grayish-red is basal third of formation. Basal contact is a major erosional surface (Mossler, et al., 1984). The depth to bedrock in the vicinity of the Site is likely less than 50 feet below land surface (Broussard, et al., 1975).

- b. **Describe the soils on the site, giving NRCS (SCS) classifications, if known. Discuss soil texture and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.**

Table 5 lists soil types within 200 feet of the proposed project limits along the corridor, according to the Soil Survey for Winona County (Figure 16 in Appendix A).

**TABLE 5
SOIL TYPES WITHIN 200 FEET OF PROJECT LIMITS**

Symbol*	Name	Texture	Permeability
606	Shiloh silt loam, ponded	Silt loam to silty clay	Moderate to moderately slow
840	Urban land- Finchford complex	Sandy loam to sand	Rapid to very rapid
1015	Psamments, fill	--	--
W	Water	--	N/A
* No prime or unique farmland soils exist within 200 feet of the proposed construction limits.			

According to the NRCS Soil Survey for Winona County, the project area is composed primarily of silt loam and sandy loam and sand soils with moderate to very rapid permeability ratings. Based on the permeability of the soils the MGS Geologic atlas for Winona County indicates a moderate to high ground water susceptibility to pollution. Potential for groundwater contamination in the project area is dependent on multiple factors; these factors are the properties of the contaminant itself, permeability of the soils above the water resource, and depth to groundwater. Areas with more permeable soils often have a higher susceptibility of pollution entering the groundwater.

The proposed project involves limited use of contaminants, primarily for refueling; therefore, limited potential for soil contamination exists. If a spill were to occur during construction, appropriate actions to remediate the spill would occur in accordance with the Minnesota Pollution Control Agency (MPCA) guidelines and regulations.

20. Solid Wastes, Hazardous Wastes, Storage Tanks

- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.**

Regulated wastes may be encountered during bridge rehabilitation/reconstruction and building demolition. Materials may include lead paint and asbestos. MnDOT is preparing an asbestos and regulated waste assessment. Hazardous materials would be handled and disposed of according to applicable state, federal, and MnDOT policies and regulations. Bridge painting may generate regulated waste materials such as spent abrasives, paint chips, waste paint solvents, and excess paint. Disposal of these materials would be properly conducted and documented.

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.**

Toxic or hazardous materials that would be present at the site include fuel and lubrication for construction equipment, and materials related to painting as mentioned above. Any spills or leaks of hazardous materials would be responded to in accordance with MPCA containment and remediation requirements.

- c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.**

No above or below ground storage tanks are planned for permanent use in conjunction with this project. Temporary storage tanks for petroleum products may be located in the project area for refueling construction equipment during bridge and roadway construction. Appropriate measures would be taken during construction to avoid spills that could contaminate groundwater or surface water in the project area. In the event that a leak or spill occurs during construction, it would be responded to in accordance with MPCA containment and remedial action procedures.

21. Traffic

Parking changes: 122 removed:

75 from under existing bridge
1 from 2nd Street
12 from 3rd Street
22 from 4th Street
12 from Huff Street

Estimated total average daily traffic generated: None generated – 15,300 ADT for 2038 (20 years after project completion)

Estimated maximum peak hour traffic generated and time of occurrence: None generated – 1,069 vehicles exiting the Winona Street/4th Street intersection onto the bridge during 2038 p.m. peak

Indicate source of trip generation rates used in the estimates. *Traffic Forecasts*, January 29, 2010, SRF Consulting Group.

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. Using the format and procedures described in the Minnesota Department of Transportation’s Traffic Impact Study Guidance (available at:

<http://www.oim.dot.state.mn.us/access/pdfs/Chapter%205.pdf>) or a similar local guidance, provide an estimate of the impact 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.

The proposed project would not generate traffic. The two bridges together would provide four lanes of traffic and would accommodate the forecast increase in vehicles (see Table 6 below).

**TABLE 6
PLANNING-LEVEL ROADWAY CAPACITIES BY FACILITY TYPE
COMPARED WITH WINONA BRIDGE FORECAST ADT**

Facility Type	Design Daily Capacity (ADT)
Two-lane undivided urban	10,000
2009 Winona Bridge volume	11,100
2018 Winona Bridge forecast volume	12,400
Two-lane undivided rural	15,000
2038 Winona Bridge forecast volume	15,300
Three-lane (un)divided urban	17,000
Four-lane undivided urban	22,000
Four-lane divided urban	32,000

Future traffic operations are described in detail in the *Winona Bridge Traffic Operations Report* and *Winona Bridge Roadway Capacity Needs Memorandum* available by request from MnDOT. With no improvements (i.e., No Build conditions), year 2038 (20 years after construction of new bridge is complete) traffic forecasts show that the intersection of 4th Street and Winona Street at the south approach to the bridge would operate at an overall unacceptable LOS F during the p.m. peak hour. Build conditions include the following improvements to this intersection:

- Eastbound left-turn lane and through/right-turn lane
- Westbound left-turn/through lane and right-turn lane
- Northbound left-turn lane and through/right-turn lane
- Southbound left-turn lane, through lane and right-turn lane (approximately 150 feet)
- Traffic signal with appropriate left-turn phasing
- Two lanes exiting the intersection to the north onto the bridge

In addition, all on-street parking is removed from 4th Street and Winona Street to maximize the existing roadway width for geometry.

Under Build conditions the 4th Street and Winona Street intersection would operate at LOS B or better during the a.m. and p.m. peak hours. Beyond this intersection, all study intersections would operate at LOS B or better during the a.m. and p.m. peak hours.

Initial traffic operations analyses indicated that a large geometric footprint would be required along 4th Street from Winona Street to Huff Street to accommodate the anticipated traffic volumes during the design year while maintaining safe and efficient operations for all movements. Both the Huff Street/4th Street and Winona Street/4th Street intersections would have increased in size from their current configuration.

Several iterations of geometric design and signal timing adjustments allowed for reduction of the intersection footprint to better fit the urban context and refine right of way impacts while maintaining acceptable traffic operations and improving safety and freight hauling capacity, both now and in the future. This was accomplished through restricting low volume movements at the Winona Street/4th Street intersection that could be readily accommodated at adjacent intersections/roadways and restricting on-street parking in non-critical areas.

22. Vehicle-Related Air Emissions

Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts.

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 U.S. Environmental Protection Agency (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 Federal Highway Administration (FHWA) provides guidance for the assessment of Mobile Source Air Toxic (MSAT) effects for transportation projects in the National Environmental Policy Act (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 the Minnesota Department of Transportation (MnDOT) and Minnesota Pollution Control Agency (MPCA).

NAAQS Criteria Pollutants

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 make people more susceptible to respiratory infection, result in lung inflammation, and aggravate preexisting respiratory diseases such as asthma. Ozone is not emitted directly from vehicles but is formed as volatile organic compounds (VOCs) and nitrogen oxides (NO_x) react in the presence of sunlight. Transportation sources emit NO_x 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* (January 2013) 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.

Additionally, the State of Minnesota is classified by the EPA as an "ozone attainment area," which means that Minnesota has been identified as a geographic area that meets the national health-based standards for ozone levels. Because of these factors, a quantitative ozone analysis was not conducted for this project.

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. PM₁₀ 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 re-entrained, 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 VOCs. 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:

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

Source: <http://www.epa.gov/air/particlepollution/health.html>

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:

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 (µg/m³). The existing annual standard, 15.0 µg/m³, was set in 1997. The EPA is revising the annual PM_{2.5} standard to 12.0 µg/m³ 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 µg/m³ (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.

Source: <http://www.epa.gov/pm/actions.html>

The agency also retained the existing standards for coarse particle pollution (PM₁₀). The NAAQS 24-hour standard for PM₁₀ is 150 µg/m³, 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} 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.

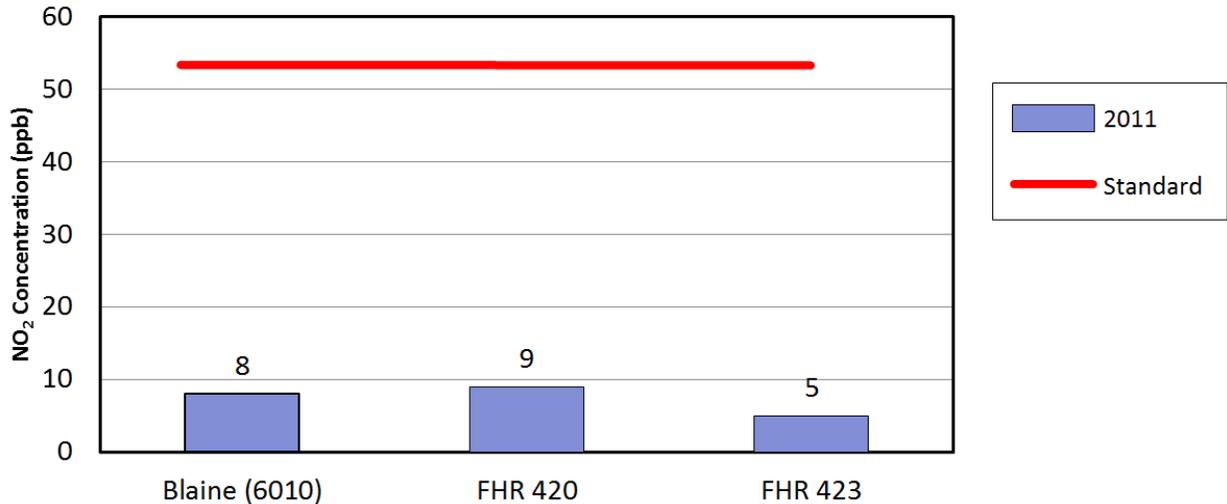
Nitrogen dioxide (Nitrogen oxides)

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* (January 2013) 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.

Minnesota currently meets federal nitrogen dioxide standards, as shown in Exhibit 23 from *2013 Annual Air Monitoring Network Plan* (July 2012). This document states: “A monitoring site meets the annual NAAQS for NO_2 if the annual average is less than or equal to 53 ppb. The 2011 Minnesota averages ranged from 5 ppb at FHR 423 to 9 ppb at FHR 420; therefore, Minnesota currently meets the annual NAAQS for NO_2 .”

Exhibit 23: 1-hour NO_2 concentrations compared to the NAAQS



The EPA's regulatory announcement, EPA420-F-99-051 (December 1999), 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 NO₂ standards will be approached or exceeded based on the relatively low ambient concentrations of NO₂ in Minnesota and on the long-term trend toward reduction of NO_x emissions. Because of these factors, a specific analysis of NO₂ was not conducted for this project.

Sulfur Dioxide

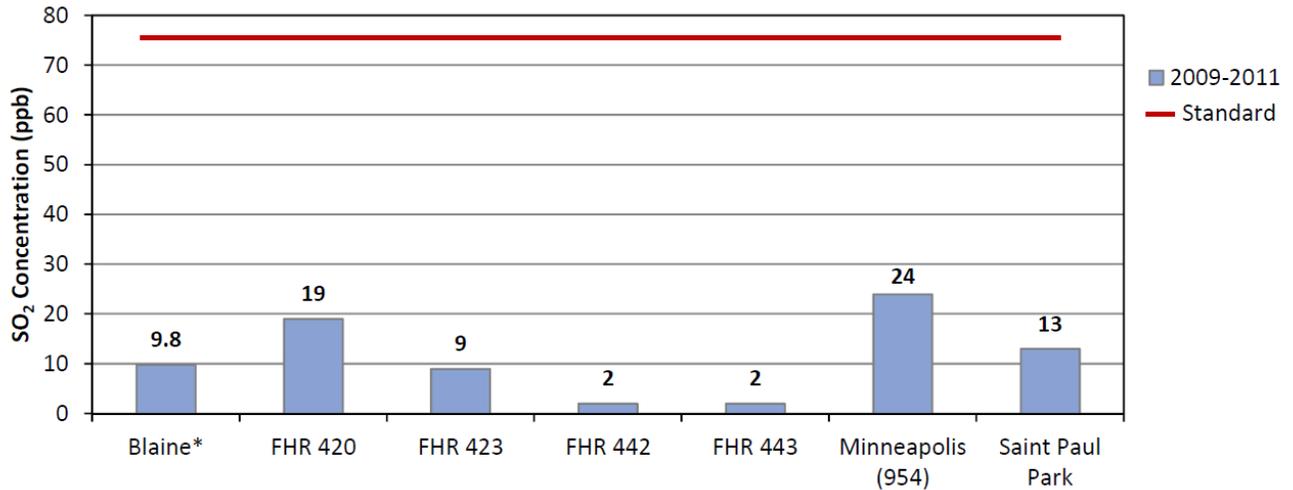
Sulfur dioxide (SO₂) and other sulfur oxide gases (SO_x) are formed when fuel containing sulfur, such as coal, oil, and diesel fuel is burned. Sulfur dioxide is a heavy, pungent, colorless gas. Elevated levels can impair breathing, lead to other respiratory symptoms, and at very high levels aggravate heart disease. People with asthma are most at risk when SO₂ levels increase. Once emitted into the atmosphere, SO₂ can be further oxidized to sulfuric acid, a component of acid rain.

MPCA monitoring shows that ambient SO₂ concentrations were at 32 percent of federal standards in 2011, in other words consistently below state and federal standards. (Source: *Air Quality in Minnesota: 2013 Report to the Legislature*, January 2013) MPCA also states that about 70 percent of SO₂ 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 SO₂ emissions in Minnesota indicate steady improvement.

In the “Annual Air Monitoring Network Plan for Minnesota, 2013”, it states the following with regard to SO₂:

On June 2, 2010, the EPA finalized revisions to the primary SO₂ 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 SO₂ 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. Exhibit 24 describes the 2009 -2011 average 99th percentile 1-hour SO₂ 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 SO₂.

Exhibit 24: 1-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.

Emissions of sulfur oxides from transportation sources are a small component of overall emissions and continue to decline due to the desulphurization of fuels. Additionally, the project area is classified by the EPA as a "sulfur dioxide attainment area," which means that the project area has been identified as a geographic area that meets the national health-based standards for sulfur dioxide levels. Because of these factors, a quantitative analysis for sulfur dioxide was not conducted for this project.

Lead

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

Carbon Monoxide

Carbon monoxide (CO) is the traffic-related pollutant that has been of concern in Minnesota. Significant areas of the Twin Cities, Duluth, and St. Cloud metropolitan areas have been designated by EPA as maintenance areas for CO. This means these areas were previously classified as nonattainment areas but have now been found to be in attainment. The project does not lie in any of these maintenance areas, so conformity requirements do not apply.

Evaluation of CO for assessment of air quality impacts is required for environmental approval in NEPA documents. Federally funded and state funded projects are subject to "hot spot" analysis requirements to demonstrate that no localized CO concentrations will exceed NAAQS limits.

Hot-Spot Analysis

CO “hot-spot” analysis is performed by evaluating the worst-operating intersections in the project area. The EPA has approved a screening method to determine whether detailed analysis is required for hot-spot intersections. The hot-spot screening method uses a traffic volume threshold of 79,400 entering vehicles per day. Intersections with traffic volumes above this threshold must be evaluated using EPA-approved emission and dispersion models. Intersections with traffic volumes below this threshold are not expected to result in CO concentrations that exceed state or federal standards, and detailed modeling is not required.

Entering traffic volumes at the highest-volume intersection expected to be impacted by the proposed improvements are shown in Table 7. The results of the screening procedure demonstrate that all intersection volumes are below the threshold and do not require detailed analysis.

**TABLE 7
PROJECT AREA INTERSECTION VOLUMES FOR YEAR 2038 BUILD
CONDITIONS**

Intersection	Year 2038 Daily Volumes				Total Entering
	North	East	South	West	
Winona Street & 4th Street	15,300	8,600	5,300	6,500	17,850
Main Street & 6th Street	9,200	12,200	10,100	11,100	21,300
Huff Street & 5th Street	9,600	8,300	10,300	7,500	17,850
Huff Street & 6th Street	10,300	10,300	10,200	8,700	19,750

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 the 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 U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/iris/>). 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 Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, 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.

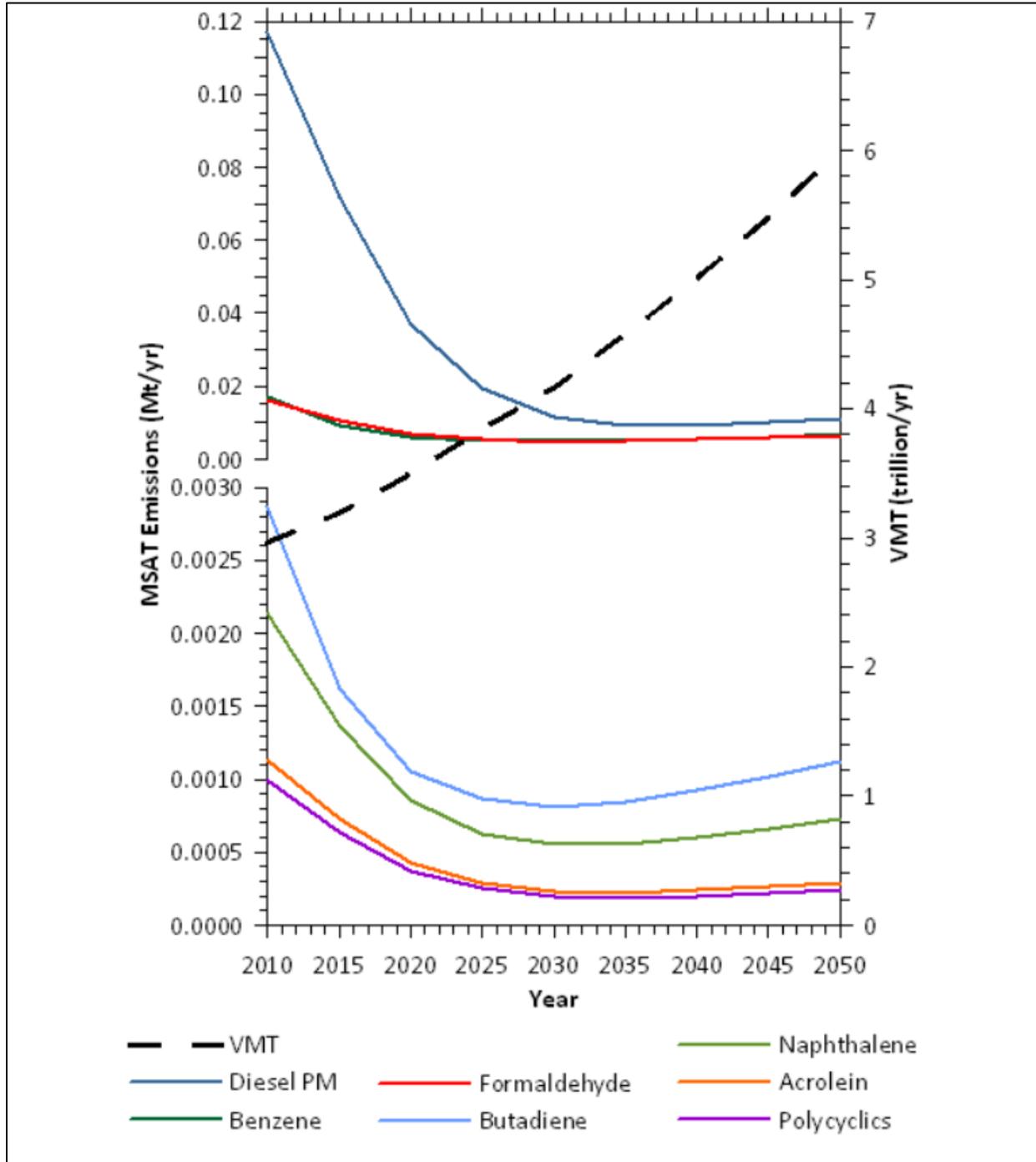
Motor Vehicle Emissions Simulator (MOVES)

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 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 Exhibit 25, 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.

Exhibit 25

National MSAT Emission Trends 1999 - 2050 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.

(Source:http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm)

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.

Incomplete or Unavailable Information for Project Specific MSAT Health Impacts Analysis

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking. The FHWA has prepared the following summary to demonstrate current limitations in evaluating MSAT effects.

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

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <http://www.epa.gov/iris/>). 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 (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

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 unsupported 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 (<http://pubs.healtheffects.org/view.php?id=282>). 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 (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.health effects.org/getfile.php?u=395>) 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. 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

FHWA has provided a tiered approach for the evaluation of MSAT effects in NEPA documents. The first tier includes “Projects with No Meaningful Potential MSAT Effects, or Exempt Projects” and does not require an evaluation of MSAT effects. The second tier includes “Projects with Low Potential MSAT Effects” which requires a qualitative analysis. The third tier includes “Projects with Higher Potential MSAT Effects” and requires a quantitative analysis of MSAT effects using EPA-approved modeling software. This project was determined to fit into the second tier, and the following qualitative evaluation was performed according to FHWA guidance.

For each alternative in this EA, 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 for each alternative. The ADT estimated for the Build Alternative is slightly higher than that for the No Build Alternative, because the additional capacity allows additional vehicles to cross the Mississippi River using this bridge. This increase in ADT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. There is a potential for lower MSAT emission rates due to increased speeds; 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 additional travel lanes contemplated as part of the Recommended Alternative will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher under the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the new bridge span and connecting roadway that would be built to the west of the existing bridge under the Build Alternative. 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, when a highway is widened, the localized level of MSAT emissions for the Build 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). Also, MSAT will be lower in other locations when traffic shifts away from them. 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.

23. Stationary Source Air Emissions

Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EA W Guidelines* for a listing) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

Not applicable.

24. Odors, Noise and Dust

Will the project generate odors, noise or dust during construction or during operation? X Yes ___ No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Odors and Dust During Construction

The proposed project would not generate substantial odors during construction. Potential odors would include exhaust from diesel engines and fuel storage. Dust generated during construction would 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 would be required to control dust and other airborne particulates in accordance with MnDOT specifications. 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).

Construction Noise

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

Table 8 shows peak noise levels monitored at 50 feet from various types of construction equipment. This equipment is primarily associated with site grading/site preparation, generally the roadway construction phase associated with the greatest noise levels.

**TABLE 8
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS AT 50 FEET**

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

Source: United States Environmental Protection Agency and Federal Highway Administration.

Elevated noise levels are, to a degree, unavoidable for this type of project. MnDOT requires that construction equipment be properly muffled and in proper working order. Advance notice would be provided to affected communities of any planned loud construction activities. It is anticipated that night construction would not be required for the proposed project. Construction would be limited to daytime hours as much as possible. The project is anticipated to be under construction for five construction seasons. Construction of the new bridge 85851 is anticipated to begin in Summer/Fall 2014, and the new bridge would open in Fall 2016. The rehabilitation/reconstruction of Bridge 5900 would occur from Fall 2016 to Spring 2020.

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 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. Pile-driving equipment results in the highest peak noise level, as shown in Table 8. Pile-driving is anticipated with construction of the proposed new bridge.

Traffic Noise Analysis

Traffic Noise Analysis Report

The traffic noise analysis report for the proposed project is included in Appendix F. This report includes background information on noise, a detailed discussion of the traffic noise analysis methodology, and documentation of the potential traffic noise impacts associated with the proposed project. Mitigation measures were evaluated at modeled receptor locations that are projected to exceed State daytime and/or nighttime conditions, and/or modeled receptor locations that are projected to approach, exceed, or experience a “substantial increase” under Federal Noise Abatement Criteria with the future Build Alternative.

Summary of Traffic Noise Analysis Findings

Traffic noise levels were modeled for existing (2009) conditions, the future (2038) No Build Alternative, and the future (2038) Build Alternative using the “MINNOISEV31” model, a version of the Federal Highway Administration (FHWA) “STAMINA” model adapted by MnDOT. Traffic noise levels were modeled at 89 representative receptor locations in the Winona Bridge Project area. These modeled receptor locations represent residential, commercial, industrial, and trail land uses along the project corridor.

Construction of the proposed Winona Bridge Project would result in increases in traffic noise levels compared to existing conditions. Daytime L₁₀ modeled noise levels are predicted to range from 59.4 dBA to 71.9 dBA under the future (2038) Build Alternative, whereas nighttime L₁₀ modeled noise levels are predicted to range from 56.9 dBA (L₁₀) to 68.2 dBA (L₁₀) under the future Build Alternative. Modeled daytime traffic noise levels are projected to increase by up to 2.4 dBA (L₁₀) from existing conditions to the future Build Alternative. In several locations, traffic noise levels are projected to decrease from existing conditions to future Build conditions due primarily to the shifting of southbound traffic from the existing bridge to the new bridge. Modeled daytime noise levels are predicted to exceed State daytime L₁₀ standards at 17 modeled receptor locations under the Build Alternative. Modeled daytime noise levels are predicted to exceed State daytime L₅₀ standards at nine modeled receptor locations. Modeled nighttime noise levels are predicted to exceed State nighttime L₁₀ standards at 51 modeled receptor locations under the Build Alternative. Modeled nighttime noise levels are predicted to exceed State nighttime L₅₀ standards at 50 modeled residential receptor locations.

Modeled L₁₀ noise levels are projected to approach or exceed the Federal Noise Abatement Criteria for Activity Category B (residential land uses) at seven modeled receptor locations with the future Build Alternative. None of the modeled receptor locations are projected to experience a substantial increase in traffic noise levels from existing conditions to the future Build Alternative.

Noise abatement measures were evaluated along the project area at modeled receptor locations that are projected to exceed State standards, approach or exceed Federal Noise Abatement Criteria, or experience a substantial increase in traffic noise levels from existing to future Build Alternative conditions. Noise barriers were modeled at five locations (See Appendix F). None of the barriers met MnDOT’s minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, none of the analyzed barriers are proposed.

25. Nearby Resources

Are any of the following resources on or in proximity to the site?

Archaeological, historical or architectural resources? Yes No

Prime or unique farmlands or land within an agricultural preserve?

Yes No

Designated parks, recreation areas or trails? Yes ___ No
Scenic views and vistas? Yes ___ No
Other unique resources? Yes No

If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.

Archaeological, historical, or architectural resources

The project is being reviewed pursuant to Section 106 of the National Historic Preservation Act of 1966. The review, when completed, would include findings related to archaeological, historic, and architecturally significant properties, i.e. properties listed or eligible for listing on the NRHP. A Programmatic Agreement (PA) between the FHWA and the State Historic Preservation Office (SHPO) is in development to seek to avoid any direct and indirect adverse effects to cultural resources. Correspondence related to the Section 106 review and the Draft PA are provided in Appendix E.

NRHP Eligible Bridge 5900

Existing Bridge 5900 is eligible for listing on the NRHP. See EAW Item 6b for descriptions of the rehabilitation/reconstruction plans for Bridge 5900. The proposed rehabilitation/reconstruction concept is representative of extensive coordination between MnDOT CRU, FHWA, and the SHPO. CRU has determined the project would have no adverse effect to the historic bridge, as the proposed design, replacement of deck truss spans, and approach span replacements in-kind are in compliance with the Secretary of Interior (SOI) standards. In addition, CRU has made a determination of no adverse effect regarding the new parallel girder type bridge. The SHPO has concurred with the determination of no adverse effect.

The Draft PA describes the review process as the rehabilitation/reconstruction design and new bridge plans move forward. FHWA, CRU, and SHPO would have opportunity to review design plans at 30, 60, and 90 percent completion milestones. PA is in process between FHWA and SHPO to define an ongoing consultation process to assess effects of the project on cultural resources and resolve adverse effects.

MnDOT CRU, on behalf of FHWA has identified that the project would not have an adverse effect (direct or indirect) on one or more of the identified historic properties. The SHPO has concurred. However, the rehabilitation/reconstruction plan design for Bridge 5900 and the design for Bridge 85851 are currently in process and as plans are developed, there is the potential to have an adverse effect (direct or indirect) on one or more of the identified historic properties. If the project is determined to have an adverse effect on historic properties that cannot be avoided, CRU on behalf of FHWA would work with SHPO and other signatories to the PA to develop and complete appropriate mitigation measures.

Historic Architecture

The APE for architectural history purposes was initially determined to be the two blocks on either side of the existing bridge alignment, extending south to Broadway Street on the south. The APE also included an area approximately two city blocks in size to either side of the existing bridge on Latsch Island. See Figure 17 in Appendix A.

Phase I and II architectural history studies were conducted in 2009 and 2010. During the 2009 field study, a portion of a proposed residential historic district along Broadway Street was identified. The district appeared to extend beyond the boundaries of the APE, and SHPO recommended the entire proposed district be surveyed as part of the project. The APE was expanded and additional field survey was completed in 2010.

MnDOT CRU determined the Broadway Historic District is eligible for listing on the NRHP, and the district includes properties that are individually eligible as well as those that contribute to the overall district.

During the 2009 field study, a total of 13 properties within the APE were previously determined eligible or are listed on the NRHP. The Phase I and II architectural history study evaluated 229 properties, including dwellings, commercial buildings, parks, a boathouse district, a marina, institutional buildings, and religious buildings. The 34 properties appearing to have potential significance for NRHP eligibility were evaluated at the Phase II level. An additional 137 properties were evaluated in 2010 after expanding the APE boundaries as described above.

As a result of these studies, 84 properties are recommended as contributing to the Broadway Historic District, in addition to properties previously listed or determined eligible, and outside the Broadway Historic District, eight properties are recommended as potentially eligible for listing on the NRHP. See Figure 17 in Appendix A.

NRHP Eligible or Listed Properties (Listed Properties Marked with *)

- Winona Bridge
- North Channel Bridge
- Municipal Marina
- Winona Monument Co.
- Peter F. and Anna Schmitt House
- William F. and Louisa Kohler House
- Winona Waterworks
- Segment of the C&NW Railroad
- Windom Park
- First Baptist Church
- Central Methodist Church
- First Congregational Church
- St. Paul's Episcopal Church
- Winona County Courthouse*

- Winona Lumber Exchange
- YMCA
- Chicago & North Western (C&NW) Railroad Bridge

Properties in the Winona Commercial District/3rd Street Commercial District individually listed in the NRHP

- Schlitz Hotel
- Winona Hotel

Properties within the Broadway Residential Historic District individually eligible for or listed in the NRHP (Listed Properties Marked with *)

- Winona Free Public Library*
- Winona Senior High School and Auditorium*
- Central Jr. High School*
- Huff-Lamberton House*
- Winona Masonic Temple*
- Hannibal Choate House
- William S. and Caroline Drew House
- Harry S. and Sadie Youmans House
- Peter and Edna Hallenbeck House
- Joseph A. and Rebecca Prentiss House
- Chauncey and Sarah Doud House
- Daniel and Melissa Sinclair House
- Central Methodist Church Chapel and Gym
- Joseph S. and Laura Hoard House
- First Congregational Church
- First Congregational Church Parsonage
- Eben M. and Clara Roberts House
- John R. and Mary Lamberton Mitchell House
- Herbert C. and Louise D. Garvin House
- Harry L. and Ida Buck House
- Moses C. and Julia Varney House
- Windom Park (First Ward)
- Franklin and Augusta Rising House
- First Baptist Church and Parsonage
- Samuel L. and Maude Prentiss House
- Emma Ball House
- Frank and Mary Youmans House
- Frederic and Frances Bell House
- Abner F. Hodgins House*
- St. Paul's Episcopal Church and Parish House
- Central Methodist Church Parsonage
- Allison W. and Anna Laird House
- Otis M. and Lucretia Botsford House

- Emory G. and Elizabeth Nevius House
- Leslie L. and Lulu Brown House
- George and Elizabeth Whitman House
- Walter and Emma Anderson House
- Dr. Linn A. and Abbie Kelly House

As noted above, a PA is in process between FHWA and SHPO to define an ongoing consultation process to assess effects of the project on cultural resources and resolve adverse effects. MnDOT CRU, on behalf of FHWA has identified that the project would not have an adverse effect (direct or indirect) on one or more of the identified historic properties, and the SHPO has concurred. However, the rehabilitation/reconstruction plan design for Bridge 5900 and the design for Bridge 85851 are currently in process and as plans are developed, there is the potential to have an adverse effect (direct or indirect) on one or more of the identified historic properties. If the project is determined to have an adverse effect on historic properties that cannot be avoided, CRU on behalf of FHWA would work with SHPO and other signatories to the PA to develop and complete appropriate mitigation measures. The draft PA is in Appendix E.

The project would require temporary construction impacts to the YMCA, Huff Lamberton House, and the C&NW Railroad (Union Pacific Railroad) parcels. These impacts are further described under Section B.6. MnDOT CRU has determined these impacts would not cause an adverse effect from a Section 106 perspective and the SHPO has concurred. See Appendix E for related correspondence.

Archaeology

The project APE for archeological purposes is shown on Figure 17 in Appendix A and was determined to be the downtown Winona area from Harriet Street to Johnson Street and the Mississippi River south to 5th Street. The APE also includes an area on Latsch Island approximately 720 feet to either side of the existing bridge. An area in Wisconsin was also included, extending 328 feet to either side of the back channel bridge and 150 meters inland from the river channel; this area was included initially in case the project included work on the back channel bridge (5930). Archaeological surveys conducted to date have identified no eligible or listed archaeological sites within the project APE.

Several areas with potential for archaeological sites that were not accessible during field studies due to lack of landowner permission identified in the draft PA. The PA includes requirements for archaeological testing of sites identified in the archaeology report as Parcels 67, 87, and 68 (possibly), and the avoidance, minimization, and mitigation of any impacts to eligible sites if identified during testing. This testing will be conducted when MnDOT has acquired these parcels.

Farmlands

There is no farmland within the project area.

Designated parks, recreation areas, or trails

City-designated parks and trails are shown on Figure 18 in Appendix A.

Latsch Island Park

The park makes up the eastern half of Latsch Island. Amenities include paths (not formally designated as trails) and a picnic area. There would be no direct impacts to the park. Temporary indirect impacts may include visual changes and construction-related inconveniences due to the presence of construction equipment. Access to Latsch Island Park would be maintained during construction. Permanent access would not change for vehicles. Pedestrians and bicyclists would access the park via the shared path on the new bridge (rather than the walk on the existing bridge), resulting in a slightly longer route. Overall, these indirect impacts to Latsch Island Park are expected to be minor.

The *City of Winona Comprehensive Plan* (August 2007) and the *City of Winona Riverfront Revitalization Plan* (August 2007) discuss plans to develop Latsch Island as regional recreation and tourism attraction. The plan notes that potential attractions could include canoe and kayak rental, fishing piers, boat tours, and trails and paths. The plan also indicates intent to incorporate the Municipal Harbor (described below) as part of the park. Based on the types of potential attractions envisioned in the City's plans and the physical characteristics of the land in the vicinity of the bridge right of way, it is not expected that the proposed project would interfere with future recreational development of Latsch Island. A City Limited Use Permit allows access to MnDOT right of way for Latsch Island users, which would need to be maintained.

Other recreation areas on Latsch Island

The Winona Municipal Harbor is located on the western half of the island and provides 24 docks, over 200 boat slips, and a store. Dick's Marine operates the marina under a lease agreement with the City. There would be no direct impacts to the harbor. Marina access would be maintained during project construction to the extent possible. Minor disruptions to access may occur during traffic staging transition periods. EAW Item 25a addresses indirect effects to the marina as a historic property.

As previously noted, there is a community of boathouses at Latsch Island. City staff advised that some residents live in the boathouses year-round and others use them primarily for seasonal recreation purposes. Impacts to the boathouses are discussed under *Unique Resources* and *Social Impacts* sections below.

Other nearby parks

Levee Park is a City park located east of the existing bridge along the south riverfront. The park is mostly manicured lawn and paved plazas, and provides views of the river. The *City of Winona Downtown Revitalization Plan* and *City of Winona Riverfront Revitalization Plan* (August 2007), discusses plans to improve Levee Park. Some of the

desired goals for the redesign include increasing docking facilities, enhancing the view of the river, and adding covered and uncovered picnic and seating areas. A committee has formed to plan improvements to Levee Park. Levee Park is outside the construction limits and would not be impacted by the project.

Windom Park is a two-acre City park located at the southwest corner of 5th Street and Huff Street, and features a fountain with a sculpture iconic to the community and an octagonal gazebo. The City of Winona Comprehensive Plan (August 2007) states that Windom Park should be protected from demolition during the bridge project. Windom Park is outside of the project construction limits and would not be directly impacted by the project. EAW Item 25a addresses indirect effects to Windom Park as a historic property.

Wildlife Refuges

Two national wildlife refuges are located near the study area. The Upper Mississippi River National Wildlife and Fish Refuge extends from Wabasha, Minnesota to near Rock Island, Illinois. The refuge comprises just over 240,000 acres of wooded islands, marshes, and backwaters and provides habitat for migratory birds along the Mississippi Flyway. Portions of the refuge (Pool 6) are scattered along the river near, but not within, the study area. The closest portions of the Refuge are located approximately 1000 feet north of Latsch Island.

Trempealeau National Wildlife Refuge is located in Wisconsin north of the Mississippi River and east of the Main Channel Bridge. This isolated backwater is separated from the Mississippi and Trempealeau rivers by dikes. The 6,226 acre refuge is also located within the Mississippi Flyway and provides resting and feeding areas for waterfowl and other birds.

USFWS staff were consulted during project and alternatives development and advised on avoiding impacts to the refuges and to migratory birds; see earlier discussion under EAW Item 18. USFWS is also a cooperating agency for the environmental review process.

No refuge properties would be directly impacted by the project. Indirect impacts include visual changes and a temporary increase in river activity during construction visible from refuge properties. These temporary impacts are anticipated to be minor. The permanent impacts include visual changes to the view of the bridge itself, since the view from upstream would be blocked by the new bridge.

Recreational Trails

Existing

Waterfront Trail runs from Levee Park to Riverview Drive underneath the existing bridge. The trail would be temporarily detoured during construction. MnDOT would acquire both temporary and permanent easements on the City-owned property on which

the trail is located. The City would continue ownership of the trail, and the permanent trail function would not be impacted. The property interest change is addressed in the Section IV.B. Federal Issues section of this document under Section 4(f) impacts. Plans to complete segments of the trail to the west of Riverview Drive are not moving forward at this time, but the project would not impact the ability to extend the trail as planned.

Huff Street has a shared shoulder for bicycle use. Huff Street and Riverview Drive provide the route for U.S. Bicycle Route System 45 for the Mississippi River Trail. Temporary impacts to this facility may occur during construction due to reconstruction of nearby streets and restriping of Huff Street, but the facility would not be permanently impacted by the project.

Planned Trails

According to the *City of Winona Comprehensive Plan* (August 2007), regional trail connections provide access from Winona to the existing Great River Trail and the Root River Trail. The *Plan* states that currently the main hindrance to the Great River Trail connection is the deficient pedestrian/bicycle lane on the existing bridge. On the Wisconsin side of the Mississippi River, an off-road trail is planned from Aghaming Park to the Trempealeau National Wildlife Refuge, the beginning of the Great River Trail. A trail connection to the Root River Trail along TH 43 south of US 61 is also part of Winona's future trail plans.

In addition to land-based trails, Winona's comprehensive plan and riverfront revitalization plan calls for the development of a system of water trails (i.e., canoe and kayak routes) within the Mississippi River. According to DNR staff, these routes are primarily for recreational boating navigational purposes, and the DNR defers to other agencies to maintain access to the navigational channel; see Appendix B for correspondence from the DNR. As previously noted, there would be temporary impacts to recreational navigation due to in-river construction.

There are also City designated canoe and kayak routes in the Mississippi River which extend from Prairie Island Park downstream to Aghaming Park. According to City staff, the City-designated routes are informal rather than a legal designation. As previously noted, there would be temporary impacts to recreational navigation due to in-river construction.

Scenic views or vistas

The project would have potential for impacts to the scenic Mississippi River valley, as well as views to and from the existing bridge. See EAW Item 26 for discussion of impacts to scenic views.

Other unique resources

Boathouses are docked along Latsch Island. Several boathouses are located immediately downstream from the existing bridge and may need to be relocated on a temporary basis during construction. Boathouses located on future MnDOT right of way would need to relocate. City of Winona staff have indicated there is room along the south shore of Latsch Island for temporary relocations during construction. Other boathouses docked along the north side of Latsch Island would not be affected by the project. Vehicle and river access to these units would be maintained during construction to the extent possible, though there may be temporary access closures limited in duration to allow for transitions for construction staging.

26. Visual Impacts

Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks?

Yes No

If yes, explain.

The existing bridge is a landmark structure along the Upper Mississippi River and is associated with the City of Winona's community identity. It is also a gateway between Minnesota and Wisconsin. As described in EAW Item 25, there are also a number of historical architectural resources in the project's area of potential effect. Additionally, the Mississippi River and its environs include high quality natural, cultural, and recreational areas.

The potential for adverse visual effects to properties listed on or eligible for listing on the NRHP is addressed under EAW Item 25a above. The discussion below addresses visual impacts more broadly.

Since the new bridge would parallel the existing bridge, it is not introducing an entirely new transportation element to the surroundings. The selection of an upstream alignment and a girder type bridge was based in part on minimizing the adverse visual effect of the new bridge on the existing bridge and historic downtown. However, the new bridge would change views from the existing bridge and views of the crossing from vantage points in the city, on Latsch Island, and on the river. Additionally, the south bridge approach widening would require acquiring and removing both residential and commercial properties, changing the view from the adjacent neighborhood.

A Visual Quality Review Committee (VQRC) comprising agency representatives and select public representatives is advising the project team on visual quality aspects of the design including any potential avoidance, minimization, or mitigation strategies. The level of potential effects to visual resources is summarized in Table 9 below. Viewsheds are shown in Figures 19 and 20 in Appendix A.

**TABLE9
POTENTIAL EFFECTS TO VISUAL RESOURCES**

VISUAL RESOURCE/ VIEW		POTENTIAL FOR EFFECT
Existing Bridge		
Views to bridge from downtown	Street level	Minimal Potential – any views to the bridge are blocked by the dense and multi-story building pattern.
	Taller buildings	High Potential – the singular and transparent visual quality of Bridge 5900 would appear altered when paired with a new parallel bridge as seen from the upper floors of taller buildings.
Views to bridge from nearby residential areas in Winona		Moderate Potential – the approach area would widen out to connect to both the existing and new bridges, but the portal to the Bridge 5900 through-truss would appear similar to the current condition.
Views to bridge from Mississippi River, riverfront, and Latsch Island		High Potential – the singular and transparent visual quality of Bridge 5900 would appear altered when paired with a new parallel bridge, since it would be partially blocked from some vantage points by the new bridge.
Views to bridge from surrounding bluff tops		Minimal Potential – from these high and distant vantage points, the project would not perceptibly alter the overall landscape patterns of the river and city below.
Views to bridge from Wisconsin approach		Moderate Potential – the approach area would widen out to connect to both the existing and new bridges, and southbound traffic would no longer pass through the Bridge 5900 through-truss.
Views from bridge	Upstream along river	High Potential – the new bridge to the west would block some views upstream with its deck profile set higher to achieve the required clearance below.
	Downstream along river	Minimal Potential – similar to existing conditions.
Downtown Winona near the bridge		
Downtown core		Minimal Potential
Downtown edge near bridge		Moderate Potential – several commercial buildings at the edge of the downtown area directly adjacent the bridge would be removed.
Nearby Residential Areas in Winona		
Properties along 4 th St.		Moderate Potential - the foreground to these properties at the northern edge of the district would be altered by the removal of a number of homes on the north side of 4 th St. and potentially views would be opened up to the bridge area that do not currently exist.
Other locations		Minimal Potential – visual connection to the project area would be blocked by buildings, topography, and vegetation to remain.

**TABLE9
POTENTIAL EFFECTS TO VISUAL RESOURCES**

VISUAL RESOURCE/ VIEW	POTENTIAL FOR EFFECT
Mississippi River, Riverfront, and Latsch Island	
Main channel and shoreline areas	Minimal Potential – the introduction of a new bridge would alter the overall appearance of the main channel, but its history is already an ever-evolving mix of natural and cultural resources.
Back channel areas	Minimal Potential - visual connection to the project area would be blocked by topography, and vegetation to remain.
Industrial areas along the south shoreline	Minimal Potential – the introduction of a new bridge would alter the overall appearance of the main channel, but its history is already an ever-evolving mix of natural and cultural resources.
Surrounding Bluff tops	
Minnesota bluffs	Minimal Potential - new bridge support structure would be below the deck and so would not obscure any views to distant bluffs.
Wisconsin bluffs	Minimal Potential – similar to above.
Wisconsin Approach	
Highways 35 and 54 (Great River Road)	Minimal Potential - visual connection to the project area would be blocked by topography, and vegetation to remain.
Bridge 5930	Minimal Potential – bridge would be outside northern construction limits and no alterations are planned to the bridge.

Construction methods and staging are described under EAW Item 6. Temporary impacts during construction would include cranes, barges, and construction vehicles around the construction site, impacting views from downtown Winona, the Broadway Residential Historic District, and the Mississippi River area. Construction activities may be visible from several blocks away and upstream and downstream from the construction site.

Visual Quality Guidelines Development Process

As part of preliminary design, MnDOT is to developing visual quality guidelines for the project and taking input from a Visual Quality Review Committee (VQRC). The guidelines will cover many aspects of the project design including bridge features (such as pier shapes, bridge abutment surfaces, and railings), retaining walls, roadways, grading, slope protection, barriers, lighting, signage, vegetation, and other miscellaneous elements that would affect aesthetics that may be identified. Aesthetic decision will also be informed by Section 106 considerations, engineering analyses, and other technical reviews. The visual quality guidelines will become a resource for project designers during final design so that aesthetic decisions and strategies developed during preliminary design are carried forward faithfully.

27. Compatibility with Plans and Land Use Regulations

Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? Yes No

If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

While state highways are not legally subject to local plans, compatibility of the project with local planning efforts is an important consideration. The area surrounding the south end of the bridge is identified in the City of Winona's *Plan* as Downtown Mixed Use east of the bridge and Downtown Fringe and Traditional Neighborhood west of the bridge. The Downtown Mixed Use designation includes a range of uses including governmental offices, retail, and medium to high density residential uses. The Downtown Fringe designation is a similar range of uses, but with a lower intensity. The Traditional Neighborhood designation includes medium density residential uses with interspersed commercial uses, parks, and schools. Latsch Island is planned to remain in public use. While the project would have impacts to Latsch Island Park and the marina, the project would not change the ability to fulfill planned land uses and is therefore compatible. The project is generally compatible with existing and planned land uses in downtown Winona. While the project would change land uses on specific parcels, the bridge would not change the ability to fulfill City plans and is therefore compatible. See EAW Item 9 for additional discussion of comprehensive plan compatibility.

28. Impact on Infrastructure and Public Services

Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? Yes No

If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)

The project would require private and public utility relocations and replacements. See Table 10.

City of Winona storm sewer would require upgrades to serve the needs of the project. A storm sewer line is proposed to run along the north side of 4th St, to replace the existing line. This proposed line connects to two new ponds to be constructed north of 3rd St.

A new storm sewer line may be needed along the new Bridge 85851 which would connect to stormwater treatment facilities on Latsch Island. Another proposed storm sewer line would run along the existing bridge 5900 from the center of the river, to be carried through Latch Island and to connect into the proposed ponds north of Latch Island.

TABLE 10. UTILITY IMPACTS

Utility Company	Impact
City of Winona	<ul style="list-style-type: none"> • Relocate water main and sanitary under 2nd St. and 3rd St. (Impacted by pier placement). • Relocate water main and sanitary sewer under Winona Bridge between 3rd St. and the railroad line (Impacted by pier placement). • Relocate sanitary sewer under TH 43 between 3rd St. and 4th St. • Remove existing storm sewer pipe under the 4th St. and TH 43 intersection. • Remove existing storm sewer pipe under 2nd St., 3rd St., and TH 43.
Xcel Energy	<ul style="list-style-type: none"> • Aerial power lines on properties along Winona St. from 4th St. to 3rd St. • Aerial lines near Winona Bridge (Impacted by pier placement) • Aerial and underground power lines under 2nd St. • Gas lines under Winona Bridge from 3rd St. to the river (Impacted by pier placement) • Gas lines under 2nd St. and 3rd St. • Gas line under 4th St. and Winona intersection and along 4th St. between Huff and Winona.
Century Link	<ul style="list-style-type: none"> • Two conduit lines under 3rd St. (Impacted by pier placement). • Buried line and fiber optics under Winona Bridge from 3rd St. to the river (Impacted by pier placement). • Overhead and buried lines under Latch Island.
Hiawatha Broadband	<ul style="list-style-type: none"> • Buried television line south of the river and east of the existing bridge. (Impacted by bridge reconstruction/rehabilitation). • Buried television line under Latch Island.
Charter Communications	<ul style="list-style-type: none"> • Buried and aerial communication lines under 4th St, south of Winona St. • Aerial communication line under 2nd St. (Impacted by pier placement).
McLeod USA (PAETEC)	<ul style="list-style-type: none"> • Buried communication line and conduit under 2nd St. (Impacted by pier placement).
MnDOT	<ul style="list-style-type: none"> • Buried electrical lines under bridge #5900 and under Latch Island. (Affected by bridge rehabilitation/reconstruction and roadwork on Latch Island).

29. Cumulative Potential Effects

Minnesota Rule part 4410.1700, subpart 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative potential effects. (Such future projects would be those that are actually planned or for which a basis of expectation has been laid.) Describe 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 (or discuss each cumulative potential effect under appropriate item(s) elsewhere on this form).

In addition to cumulative potential effects, cumulative impacts are defined by the Council on Environmental Quality (CEQ) as “impacts on the environment that result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 158.7). 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 causally 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 cumulative potential impacts analysis is to look for impacts that may be minimal, and therefore, neither significant nor adverse when examined within the context of the proposed action, but that may accumulate and become significant and adverse when combined with other actions.

Scope of Cumulative Potential Effects

The cumulative potential effects analysis is limited to those resources, ecosystems, and human communities affected by the proposed project – property acquisitions and land development, wildlife, levee impacts, environmental hazards and contamination, water quality and quantity, cultural resources, and social impacts.. While the proposed action may affect several resources either directly or indirectly, the purpose of the cumulative impacts analysis is to narrow the focus to the project-related impacts that could potentially have the largest cumulative effect.

The geographic scope of this analysis varies by the resource under examination, but in general is limited to an area within or adjacent to the project limits except where noted for specific resources.

The temporal scope of the analysis attempts to consider previous impacts to the resources that occur over time. The year 2030 is considered the current limit of comprehensive planning activities for the area, as the extent of transportation and land use planning efforts are reasonably available up to this time, and thus can be used as the basis for future cumulative impact assessment.

Past and Recent Actions

Past actions in the project area include decades of commercial, industrial, and residential development, as well as highway and other infrastructure construction, which have created the existing built urban environment. Existing development near the Winona Bridge has been in place for many years.

Recent actions considered for this assessment of the potential for cumulative impacts include:

Winona County Office Building Expansion. The expansion and renovation of the building located at 202 3rd Street was completed in 2011. The project included expansion of the building and reconstruction of portions of the parking lot, including installation of a catch basin system for the parking lot, which drains to the City storm sewer.

Winona Commercial Port Dock Project. A new bulkhead wall was installed in 2012 at the Winona Commercial Port near Riverview Drive. Minor dredging occurred as part of the project and was coordinated with the USACE.

River View Condominiums. A new 16-unit condominium building is under construction at 2 Washington Street as a redevelopment of a commercial parcel.

Future Actions Anticipated

The projects, listed below, that were considered for this analysis are consistent with the recent 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 *City of Winona Comprehensive Plan* calls for a better connection from downtown to Levee Park at Main Street and identifies a goal of relocating the rail storage area east of Main Street. The Plan also discusses redesigning Levee Park, including increasing docking areas, additional picnic areas, and better lighting. Future Levee Park redevelopment would likely include temporary detouring of bicycle and pedestrian traffic exiting the Waterfront Trail at Levee Park.

The *Plan* calls for extension of the Waterfront Trail west of Riverview Drive and notes easements have already been obtained for the trail. City of Winona staff have indicated plans to develop an off-road trail west of Levee Park are unlikely to move forward due to difficulty and expense of construction of a trail on or adjacent to the Levee. If a trail is constructed it would likely be an on-street bike facility.

The *Plan* calls for development of Latsch Island Park, potentially including trails, fishing piers, and canoe rentals, and incorporation of the privately-run public marina into the park. The *Plan* also identifies a future Great River Trail connection on Latsch Island from the bridge area to the wagon bridge to Aghaming Park.

The *Plan* calls for a new performing arts center downtown just east of the existing bridge. According to City staff, the arts center is not being actively pursued at this time.

No further activities listed in the *City of Winona Capital Improvements Program* are planned for the project area for the 2013-2022 period.

The Winona County Capital Improvement Program does not list any planned improvements in or near the project area for the 2013-2017 period. County staff also indicated no further planned improvements in or near the project area.

Major bridge projects on the Mississippi River at I-90, Red Wing, and Hastings.

Evaluation of Cumulative Potential Effects

Land Development

Existing Conditions

The land surrounding the project is fully developed. Downtown Winona is a mix of residential and commercial uses, and Latsch Island is in public ownership (park and marina). Future development in Winona will be in the form of redevelopment.

Impacts from Proposed Action

The project would require property acquisitions, changing the surrounding land development context by converting other land uses to transportation use. Remnant parcels required for construction of the project but not needed for long term MnDOT use may be acquired and redeveloped by others following completion of the project.

Impacts from Other Actions

The Riverview Condominium project is a land use change from the previous land use pattern, but is following Winona development review requirements. Other recent and future planned projects would not have a substantial impact on land development.

Cumulative Potential Effects

Land development is guided by the Winona comprehensive planning efforts. This process helps Winona consider the beneficial and negative impacts of land development and prescribes development patterns reflecting community goals. This effort reduces the negative cumulative effects of development and redevelopment through orderly growth. The City zoning code ensures compatibility of uses and preservation of natural resources. Transportation facilities are also considered through the comprehensive planning process.

The Winona Bridge project would improve local traffic operations and would provide a long term transportation connection across the Mississippi River. These project benefits are consistent with local comprehensive planning efforts. Redevelopment opportunities potentially resulting from the project (due to remnant parcels being acquired and redeveloped by others) would be managed via the local land development review process and would therefore be compatible with comprehensive planning goals. Therefore, there are no substantial cumulative impacts to land development in Winona are not anticipated.

Wildlife

Existing Conditions

EAW Item 11 identifies wildlife present in the project area.

Impacts from Proposed Action

The project would disturb wildlife habitat in the river and the wetland areas on Latsch Island. Mitigation measures are described earlier in this document.

Impacts from Other Actions

The Port construction project included minor dredging in the Mississippi River which was coordinated with the USACE. Future Latsch Island Park improvements may impact wetland habitat; these wetland impacts would require mitigation. Other major bridge projects in the Mississippi River are anticipated. Each bridge project is subject to environmental review, including assessment of potential impacts and identification of avoidance and minimization strategies.

Cumulative Potential Effects

With the implementation of mitigation measures (avoiding construction during fish spawning season, use of erosion control measures, etc.), both for the Winona Bridge Project and other actions, the potential for adverse cumulative effects has been minimized. No further impacts to river and wetland wildlife habitat in the project area are anticipated. Therefore substantial cumulative effects to wildlife are not anticipated.

Levee Impacts

Existing Conditions

The Winona Levee protects the City from flooding and is managed by the USACE.

Impacts from Proposed Action

The project would require construction staging on the levee and construction of one new pier on the levee structure.

Impacts from Other Actions

The Waterfront Trail would be constructed on top of the levee. Any future development would be coordinated with the USACE.

Cumulative Potential Effects

The USACE closely monitors activities on the levee to protect the integrity of the structure. There is little potential for substantial adverse cumulative effects to the levee.

Contaminated Properties

Existing Conditions

Contaminated materials are present in the project area, and regulated materials are present on the existing bridge.

Impacts from Proposed Action

Construction activities are likely to encounter contaminated and regulated materials. Construction activities would follow state and federal regulations to ensure proper handling and disposal of contaminated materials and to prevent spills.

Impacts from Other Actions

Past actions have not encountered hazardous materials. Future actions are not anticipated to impact hazardous materials.

Cumulative Potential Effects

With the implementation of mitigation measures (avoiding construction during fish spawning season, use of erosion control measures, etc.), both for the Winona Bridge Project and other actions, the potential for adverse cumulative effects has been minimized. No further impacts to river and wetland wildlife habitat in the project area are anticipated. Therefore substantial cumulative effects are not anticipated.

Water quality and quantity

Existing Conditions

The existing stormwater runoff drains either directly into the Mississippi River via a scupper system, drains to the City storm sewer, or to grassed ditches on Latsch Island. Mississippi River water quality is managed by the DNR and MPCA.

Impacts from Proposed Action

The proposed project would increase the amount of impervious surface in Winona, primarily due to the construction of the second bridge. To mitigate for this increase, the project would include improvements to the stormwater conveyance system, including installation of a scupper system on the existing bridge which would treat stormwater rather than discharging it directly into the river. Stormwater mitigation BMPs would

mitigate for the increase in stormwater runoff and improve the stormwater management over the existing system.

Construction activities in the river would include dredging, construction of cofferdams, placement of barges, and would require temporary dewatering.

Impacts from Other Actions

The County Building expansion included stormwater management improvements over the preexisting system. The Port of Winona Project included dredging which was coordinated with the USCG.

Cumulative Potential Effects

Federal, state, and local requirements for stormwater management ensure the Winona Bridge Project, as well as other recent and future action, would mitigate for stormwater runoff increases. The project and other recent actions improve stormwater management over the existing system. The project and other recent and planned projects are subject to USCG and DNR permitting and coordination. Given the requirements in place, negative impacts would be mitigated, and adverse cumulative effects on water quality and stormwater quantity are not anticipated.

Cultural Resources

Existing Conditions

A number of properties within or near the project area are listed or eligible for listing on the NRHP, including the existing Bridge 5900.

Impacts from Proposed Action

The proposed project has been found to have no adverse effect (direct or indirect) on the existing bridge, nor will there be any direct adverse effects to the other identified historic properties. Impacts to historic resources will be addressed via the PA process previously discussed in this document.

Impacts from Other Actions

Recent actions have not impacted cultural resources in or near the project area. Future actions are also not anticipated to impact cultural resources.

Cumulative Potential Effects

The PA previously discussed in this document will address and provide for mitigation for a review process by which effects to historic properties can be determined as the design process proceeds. Any identified adverse effects will be avoided. If they cannot be

avoided, the effects will be minimized or mitigated. No other foreseeable impacts to cultural resources in the project area are anticipated. Therefore, no cumulative impacts to cultural resources would occur.

Social Impacts

Existing Conditions

Community facilities are described in Section B.1.

Impacts from Proposed Action

Minor impacts to community facilities would occur during construction. Temporary impacts to Section 4(f) properties would also occur. Future access to community facilities would be improved as a result of the project, and the Section 4(f) process requires site conditions to be restored to a condition at least as good as before the project.

Impacts from Other Actions

Other recent and planned public actions would have net positive impacts to community facilities.

Cumulative Potential Effects

There is little potential for substantial adverse cumulative effects to community resources.

Conclusion

Based on the information known to date, there is little potential for substantial cumulative impacts to the resources directly or indirectly impacted by the project.

30. Other Potential Environmental Impacts

If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.

31. Summary of Issues

Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW.

List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that

have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

The following discussion outlines the project's environmental impacts that would require further action, based on the discussion in EAW Items 1-30 above. Where applicable, mitigation measures have been identified.

Potential Environmental Hazards

Construction activities would likely encounter contaminated materials. Known or potentially contaminated sites would be investigated further before property acquisition occurs. A plan for proper handling, treatment, and disposal of contaminated materials would be developed in cooperation with the MPCA.

Regulated wastes may be encountered during bridge rehabilitation/reconstruction and building demolition. These materials would be handled and disposed of according to applicable state, federal, and MnDOT policies and regulations. In the event that a leak or spill occurs during construction, it would be responded to in accordance with MPCA containment and remedial action procedures.

Vegetation/Habitat/Sensitive Species

The proposed project would remove trees, result in impacts to wetland habitat, and include construction and staging activities in the Mississippi River, a habitat for aquatic species.

Trees would be replaced according to MnDOT specifications. A vegetation plan would be prepared that includes efforts to avoid and/or minimize these impacts during both the design and construction phase. Mitigation measures such as the use of temporary fence for tree protection would be used. Vegetation replacement would follow a required vegetation plan. Re-vegetation within the project area would attempt to control invasive species. The contractor would be required to control state listed noxious weeds.

The mitigation discussed under Physical Impacts on Water Resources below would also mitigate for impacts to wetland and aquatic habitat.

The Mississippi River is a migration corridor for migratory waterfowl and shorebirds; the Coordination with the USFWS service would continue through final design to identify opportunities to minimize the potential for impacts to migratory birds. The bridge will be inspected for the presence of nesting activity prior to the start of work on the existing bridge. If nesting activity is identified, appropriate measures would be taken in accordance with the provisions of the Migratory Bird Treaty Act.

The August 2013 mussel survey conducted by the DNR found no federally-listed species within the search area. On behalf of FHWA, MnDOT has coordinated with the USFWS regarding the appropriate consultation path. The USFWS and MnDOT have agreed that a

determination of “May affect, not likely to adversely affect” is the most appropriate under Section 7. MnDOT will continue its coordination with USFWS to complete the consultation process, which will include MnDOT formally requesting concurrence from the USFWS on this determination and USFWS issuing of a concurrence letter in response.

Physical Impacts on Water Resources/Wetlands/Water Quality

The project may include dredging in the Mississippi River, placement of fill in the river, and construction of in-water bridge piers. BMPs would be utilized during these operations.

The project would result in 0.19 acres of permanent wetland impacts and 0.5 acres of temporary impacts. Additionally, the tree-cutting wetland impacts for the project total 1.69 acres.

Prior to construction, all unavoidable impacts would likely be mitigated through an off-site WCA and USACE approved wetland mitigation bank. Mitigation plans would be created during the final design and permitting process.

The project would result in 1.5 acres of additional impervious area compared to existing conditions. Stormwater BMPs, such as wet basins and infiltration basins, would be constructed to mitigate for the additional impervious area. The BMPs would provide water quality treatment and rate control and would be designed to meet NPDES standards.

Temporary and permanent erosion control plans would be identified in the final site grading and construction plans as required by the NPDES-SDS permitting for construction sites in accordance to the MPCA standards.

Water Use

The project would include construction with wellhead protection areas and may require dewatering. Construction activities would be coordinated with the MDH to prevent drinking water contamination due to construction activities. The appropriate permits would be obtained from the DNR for any temporary dewatering activities.

Water Surface Use/River Navigation

The project would result in temporary impacts to navigation. The contractor would be responsible for coordination with the USCG. The USCG would review plans for bridge construction to minimize impacts to river navigation during construction. The navigation channel would remain open during construction to the extent possible and no disruption is anticipated except for temporary short term closures to be coordinated with the USCG. These impacts would apply to barge and recreational boaters. Recreational boats may be subject to a “no wake” restriction during construction in lieu of closures. The USCG,

USACE, and the contractor would coordinate construction activities with river users for safety of construction workers and boaters by using Navigational Safety Zones.

Vibrations, Dust, and Noise

While vibration impacts to structures in the project area are not anticipated to result from the project, the location and magnitude of construction vibrations would be assessed further during final design.

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.

There may be increased noise levels during construction. Construction equipment would be required to be properly muffled and in proper working order. While MnDOT and its contractor are exempt from local noise ordinances, it is the practice to require contractors to comply with applicable local noise restrictions and ordinances to the extent that it is reasonable. Advanced notice would be provided to the affected communities of 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.

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 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. Pile-driving equipment results in the highest peak noise level. Pile-driving is anticipated with construction of the proposed new bridge.

Archaeological/Historic Resources

No adverse effects to historic properties have been identified. Property interest changes affecting the NRHP-eligible C&NW Railroad (Union Pacific Railroad) corridor are proposed to meet the de minimis definition regarding Section 4(f) use. There would be minor temporary occupancy affecting the YMCA property and Huff-Lamberton House property.

A Programmatic Agreement (PA) would provide for a review process as the rehabilitation/reconstruction design of the existing bridge and the new bridge plans move forward, with FHWA, CRU, and SHPO would have opportunity to review design plans at 30, 60, and 90 percent completion milestones. The PA also would provide for consultation and the development of mitigation if, during subsequent design, the project is determined to have an adverse effect on historic properties that cannot be avoided.

Archaeological testing of parcels to be acquired for the project would occur when MnDOT has acquired these parcels. The PA provides for the avoidance, minimization, and mitigation of any impacts to eligible sites if identified during testing.

Parks/Trails

The project would result in minor disruptions to access to the Winona Municipal Harbor during construction. MnDOT would have a temporary and a permanent easement over Waterfront Trail for construction and staging access and long term access to the bridge. The trail would be temporarily impacted, but restored following project construction. The effect to the trail is proposed to meet the de minimis definition regarding Section 4(f) use.

Visual Impacts

The project would alter views of and from the existing bridge, downtown Winona, the Commercial and Broadway Residential Historic Districts, the river, Latsch Island, and the surrounding bluffs. MnDOT is consulting with a Visual Quality Review Committee regarding the visual quality aspects of the design. MnDOT will develop a Visual Quality Manual to guide the aesthetic aspects of the project.

Infrastructure/Community Facilities

City of Winona storm sewer would require upgrades to serve the needs of the project. A number of utilities would need to be adjusted or relocated in order to accommodate project construction. MnDOT would coordinate with the City and utility owners.

The project would result in the loss of one parking space at the County Law Enforcement Center parking lot, removal of on-street parking in the vicinity of the YMCA, and temporary access impacts in the area near the YMCA during construction.

Right of Way Acquisition and Relocation

The project would require acquisition of land for highway right of way as well as permanent and temporary easements during construction. Permanent total acquisitions include 22 residential units and 7 business properties. Permanent partial acquisitions affect three residential properties, the YMCA, Winona County property, and Winona Port Authority property.

Property acquisitions and any relocations 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). Resources are available to all relocated residents and businesses without discrimination. MnDOT would work with and City of Winona staff to assist in identifying relocation properties for displaced businesses.

The boathouses located on new MnDOT right of way over the Mississippi River would be addressed as encroachments.

Aviation

The Federal Aviation Administration (FAA) is reviewing bridge type alternatives. A Determination of No Hazard to Air Navigation for the preferred bridge type is expected because the project lies outside of the Runway Protection Zone, as defined in FAR Part 77; consultation with FAA has indicated that this formal determination would be made closer to construction. MnDOT will continue coordination with the FAA and the Winona Municipal Airport as the design progresses.

Wildlife attractants such as ponds and wetlands within an AOA are considered hazards to air traffic navigation. The detention ponds would be designed to meet current AOA regulations if requested by the FAA and an agreement between MnDOT and the City of Winona would be developed to ensure the regulations are being implemented.

Mitigation Commitments

Appendix I includes a list of mitigation commitments proposed for the project.

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 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature: 
Title: Chief Environmental officer

Date: 9/13/13

Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at the Minnesota Department of Administration, Office of Geographic and Demographic Analysis. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-201-2492, or <http://www.eqb.state.mn.us>

B. ADDITIONAL FEDERAL ISSUES

1. Social Impacts

Community Facilities

Existing community facilities within and near the study area include a state university, churches, and other community facilities. Winona State University, founded in 1858, is located south of 8th Street between Huff Street and Main Street. This public university has a student population of more than 8,000. Student housing is distributed throughout the university area.

The following churches and worship-related facilities are located in or near the study area:

- First Baptist Church – 368 West Broadway Street
- Central Lutheran Church – 259 West Wabasha Street
- Lutheran Students Fellowship – 303 Winona Street
- First Congregational Church United Church of Christ – 161 West Broadway Street
- Central United Methodist Church – 114 West Broadway Street
- Community Bible Church – 69 East 3rd Street\

Other community facilities include a public library, a senior center, and the YMCA. The Winona Public Library, located on 151 West Fifth Street, serves the residents of Winona and neighboring Wisconsin. The Winona Senior Friendship Center, 251 Main Street, provides recreational opportunities and social services support for older adults in the area. The recently renovated YMCA at 4th Street and Winona Street provides recreational and physical fitness opportunities. Winona County Human Services at 202 West 3rd Street provides health care resources, immunizations, and other social services. The Winona County Law Enforcement Center and Winona County Courthouse are located along 4th Street east of the bridge.

The project would have no permanent direct impacts to community facilities except as noted below. Access to community facilities would be maintained during construction, though there may be minor traffic delays and routing shifts during construction.

The parking lot of the County Law Enforcement Center would lose one parking space out of approximately 16 stalls. As other spaces would remain nearby, this impact would be minor.

The project would have temporary impacts to the YMCA due to construction activities nearby. Due to traffic staging, traffic patterns on the surrounding streets may change as compared to the existing, and YMCA members may need to take a more circuitous route. Pedestrian crossings may also be more challenging than usual for the surrounding blocks during construction, but pedestrian and bicycle access to the building would be

maintained during construction to the extent possible. A temporary easement would be needed for workers to construct ADA-accessible crosswalks for the 4th Street/Winona Street intersection; this temporary occupancy is discussed in Section B.6.

There would be a permanent reduction in on-street parking for the YMCA block, but this impact is anticipated to be minor since the YMCA has a dedicated parking lot. The YMCA drop off location on Winona Street would remain.

Accessibility

The proposed project requires providing accessibility to a program, activity, or service and by law the project must comply with the required accessibility provisions. The project would comply with Americans with Disabilities Act requirements for the new bicycle and pedestrian facility on the new bridge, trail loop on Latsch Island, and all crosswalk improvements. Crosswalks were specifically designed to meet current Americans with Disabilities Act (ADA) standards.

Police, Fire, and Other Emergency Services

The City of Winona and emergency service providers in Wisconsin have mutual service agreements and rely on the crossing for transportation. The project would not have a permanent adverse impact on police, fire, and medical emergency services. Traffic would be maintained during construction to the extent possible and any closures would be communicated in advance. Maintenance of access would also include emergency vehicle access to the river.

Security

As noted in EAW Item 21, Traffic, the project will result in the removal of 75 parking stalls from under the existing bridge. This is consistent with FHWA guidance regarding site layout countermeasures for security of bridges. Security will be an important consideration as planning proceeds for other potential activities under the existing and new bridges.

2. Considerations Relating to Pedestrians and Bicyclists

Project Relationship to Existing Trails and Facilities

There is an existing 4.5-foot wide walkway cantilevered off the existing bridge. This would be removed as part of the rehabilitation/reconstruction of the existing bridge. The new bridge would include a 12-foot shared use path on its west (upstream) side. A loop connection trail on Latsch Island would be completed to carry shared use path users to the trail on the east side of the back channel bridge. Minor impacts to trail access may occur during construction, similar to impacts to vehicle traffic.

The project includes reconstruction of the sidewalks along 4th Street; pedestrian traffic would be redirected during construction but would have improved facilities after construction.

Waterfront Trail provides a connection from Levee Park to Riverview Drive. The trail runs underneath the existing bridge. The trail would be rerouted during construction and restored after construction is complete. See Section B.6 for discussion of Section 4(f) impacts.

Proposed/Planned Trails and Facilities

The back channel bridge, Latsch Island, and the wagon bridge to Aghaming Park are identified as future trail connections to the Great River Trail. The Winona County Trail Plan (draft 2012) calls for a shared use path connecting to trails in Wisconsin. The project would be constructed to connect pedestrian and bicycle facilities to the back channel bridge and as to not preclude connections to other trails on Latsch Island. The planned extension of the Waterfront Trail is not moving forward at this time, but the project would not inhibit the ability to extend the trail as planned.

3. Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” dated February 1, 1994, requires that environmental justice be addressed (to the greatest extent practicable and permitted by law) in all federal planning and programming activities. The purpose of Executive Order 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 federal permit requirements and will receive federal funding. As such, it is considered a federal project for the purpose of compliance with this Executive Order.

Executive Order 12898 requires that the proposed actions be reviewed to determine whether there are “disproportionately” high or adverse impacts on these populations. “Disproportionate” is defined in two ways: the impact is “predominately 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:

1. Identification of the location of low-income population and/or minority population in the project area;
2. Identification of the impacts of the project area upon the identified low-income population and/or minority population; and
3. Determination of whether the impacts are disproportionately high or adverse.

Minority and Low-Income Population Determination

The first step in the environmental justice determination process is to determine whether any minority and/or low-income persons are present within the project area. 2010 Census and 2007-2011 American Community Survey data were examined to identify the presence of low-income or minority populations. Discussions with local officials were also undertaken in an effort to determine if low-income and/or minority populations were present within the project area. See Figure 21 in Appendix A for a map depicting census block groups within the project area.

Low-Income Populations

Low-income persons, for the purposes of this document, are defined as persons with incomes below poverty level. A low-income population is any readily identifiable group of low-income persons who live in geographic proximity or geographically dispersed/transient low-income persons who would be similarly affected by a proposed action.

Individual poverty statistics are not available at the block group level, therefore household and family poverty rates were examined. The rate of households below poverty level in the State of Minnesota is 10.6 percent, while the City of Winona has 23.2 percent of households below poverty level. American Community Survey (ACS)-reported household poverty rates in the project area block groups range from 18.6 percent to 56.5 percent (0 to 76.8 percent for family households), however, due to small sample sizes, the margin of error for these data is quite large for some block groups (up to 133 percent for households and up to 159.3 percent for family households). For Block Group 4, where residential impacts would be occurring, the household poverty rate is 56.5 percent with a 62.0 percent margin of error and the family household poverty rate is 28.3 percent with a 159.3 percent margin of error. The Census reports 320 households in Block Group 4; the proposed project would directly impact project impacts 20 residential units. Income and poverty population data is provided in Table G-1 in Appendix G.

Because of the limitations of the data, the Census does not provide a complete basis for readily identifying low-income populations affected by the project. City of Winona staff were also consulted for additional information. City of Winona staff confirmed the immediate project area is popular for off-campus student rental housing, however also indicated that there are no particular areas of concentrated low-income residents in Winona.

The affected residences include a mix of owner-occupied and rental housing. There is no readily available information indicating that households in the affected areas are Section 8 rental assistance residents.

There is also no readily available information indicating that employees in the affected area represent a geographically-dispersed low-income population. It is possible that low-income persons are employed by some of the affected businesses, but City staff have

indicated that they have no specific knowledge or data to confirm this. The affected businesses do not specialize in serving low-income populations.

During the public involvement activities for the project, no concerns were raised about potential low-income populations or project effects to low-income persons.

Property acquisitions and any relocations 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). Resources are available to all relocated residents and businesses without discrimination.

Minority Populations

Based on Census data, the affected area has a low proportion of minority persons. The 2010 Census reports non-white populations in project area block groups to be 5.8 to 7.6 percent, in the City of Winona as a whole to be 6.9 percent, and in the State of Minnesota to be nearly 11 percent. The 2010 Census reports the Hispanic populations in project area block groups to be 1.2 to 1.6 percent, the City of Winona 1.7 percent, and the State of Minnesota 4.7 percent. Minority population data is provided in Table G-2 in Appendix G. City staff indicated no knowledge of a grouping of minority persons which would constitute a population. Based on this information, it was determined that no readily identifiable minority population exists in the project area.

Environmental Justice Finding

The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

There are no readily-identifiable low-income or minority populations affected by the project. Most project impacts are distributed evenly throughout the project area and the proposed improvements would provide benefits for all who utilize the Winona Bridge crossing.

Therefore, the proposed action would not have disproportionately high and/or adverse human health or environmental effects to any minority or low-income population.

4. Right of Way Acquisition and Relocation

The project would require acquisition of land for highway right of way as well as permanent and temporary easements during construction. The project would require the total acquisition of 7.87 acres of property on 20 parcels, including two properties owned by the Winona Port Authority, 1.19 acres from three parcels owned by the Winona Port Authority as permanent easements, and 1.05 acres from seven parcels of temporary easements (including two Winona Port Authority properties, the YMCA, the Huff-

Lamberton House, two residential properties, and the Winona County Government Center). MnDOT would also acquire 12.6 acres of new highway right of way (air space) over the Mississippi River.

Six of these parcels being acquired are commercial properties. The project would result in business relocations. Efforts have been made to minimize impacts to businesses to the extent possible. Property owners may be reimbursed for the actual reasonable moving costs, certain reestablishment expenses, and costs incurred in finding replacement sites.

The following businesses would be impacted by the project:

- Dahl Express Service
- Dahl Auto Dealership
- Sinclair Gas Station
- AmericInn Hotel
- Winona Leasing and Sales
- Vacant commercial building

Residential properties would also be acquired. A total of 11 residential buildings (22 residential units), including three single family homes and eight multifamily buildings (19 residential units) would be acquired.

Voluntary early acquisitions are planned as part of the project.

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: Your Rights and Benefits* and the *Guidebook for Property Owners* 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 relocatees. Relocation resources are available to all residential relocatees without discrimination.

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.

MnDOT would work with City of Winona staff to assist in identifying relocation properties for displaced businesses.

As noted under EAW Item 25, five boathouses are located on the proposed area of new MnDOT right of way over the Mississippi River. These would be addressed as encroachments.

5. Noise

Refer to EAW Item 24 for noise impacts. No noise barriers are proposed as part of the project. See Appendix F.

6. Section 4(f) Properties

Project impacts to Section 4(f) properties include the following (See Appendix H):

Waterfront Trail

Waterfront Trail is located on City-owned property which MnDOT would have a temporary and permanent easement over for the purposes of construction and staging access and long term access to the bridge. Use of the trail is unavoidable since it passes under the existing bridge. Based on consultation with City of Winona staff, a de minimis impact finding to Waterfront Trail is proposed since the impact does not adversely affect the activities, features, and attributes of the resource. See correspondence in Appendix H.

The FHWA will make a final determination regarding the proposed de minimis finding following the public comment period for the EA/EAW.

YMCA

The project would result in a temporary occupancy of the YMCA parcel for the purpose of construction access to construct ADA-compliant pedestrian ramps. The YMCA is eligible for listing on the NRHP and therefore SHPO must concur with the work and with the temporary occupancy finding. This work meets the Section 4(f) definition of temporary occupancy because all of the following criteria would be met:

- The duration of the occupancy will be temporary in nature and there will be no change in ownership of the land.
- The scope of work to be performed will be minor.

- There are no anticipated permanent adverse physical impacts nor will there be interference with the historic eligibility of the property.
- The land being used will be fully restored to a condition that is at least as good as the one that existed prior to the project.

To proceed with the construction, there must be documented agreement that the officials having jurisdiction over the resource (i.e., in the case of a historic property, SHPO) concur with the work to be completed and agree that the four conditions listed are met (See Appendix H).

Huff-Lamberton House

The project would result in a temporary occupancy of the Huff-Lamberton House parcel for the purpose of construction access to construct ADA-compliant pedestrian ramps. The property is listed on the NRHP and therefore SHPO must concur with the work and with the temporary occupancy finding. This work meets the Section 4(f) definition of temporary occupancy because all of the following criteria would be met:

- The duration of the occupancy will be temporary in nature and there will be no change in ownership of the land.
- The scope of work to be performed will be minor.
- There are no anticipated permanent adverse physical impacts nor will there be interference with the historic eligibility of the property.
- The land being used will be fully restored to a condition that is at least as good as the one that existed prior to the project.

To proceed with the construction, there must be documented agreement that the officials having jurisdiction over the resource (i.e., in the case of a historic property, SHPO) concur with the work to be completed and agree that the four conditions listed are met (See Appendix H).

C&NW Railroad (Union Pacific Railroad)

The property on which the C&NW Railroad (Union Pacific Railroad) operates is owned by the Winona Port Authority. The C&NW Railroad (Union Pacific Railroad) is eligible for listing on the NRHP. The project would result in permanent and temporary easement over this property for the purposes of construction access and long term access to the bridge. The permanent easements have been determined to result in no adverse effect to the railroad with regards to the Section 106 process (See correspondence in Appendix E).

To proceed with the construction, there must be documented agreement that the officials having jurisdiction over the resource (i.e., in the case of a historic property, SHPO)

concur with the work to be completed and agree that the four conditions listed below are met:

- The duration of the occupancy will be temporary in nature and there will be no change in ownership of the land.
- The scope of work to be performed will be minor.
- There are no anticipated permanent adverse physical impacts nor will there be interference with the historic eligibility of the property.
- The land being used will be fully restored to a condition that is at least as good as the one that existed prior to the project.

Latsch Island

The MnDOT right of way for the existing bridge on Latsch Island is not subject to Section 4(f), since the right of way is owned by MnDOT, i.e., it is in a transportation use and the City has only been granted a Limited Use Permit. (See Appendix B for the Limited Use Permit for City of Winona uses of MnDOT right of way, which stipulates that 1) MnDOT can revoke the permit with 90 day notice and 2) City use of this MnDOT property is not subject to Section 4[f].)

Potential for Future Section 4(f) Review

As discussed in Section IV.A EAW Item 25, through the Section 106 review process, MnDOT CRU on behalf of FHWA has determined that the project would not have an adverse effect on historic properties. It furthermore describes that, as plans are further reviewed, if an adverse effect to one or more historic properties is identified, mitigation measures will be developed in accordance with the Section 106 Programmatic Agreement (PA) currently under development. In addition, if an adverse effect is identified, the proposed action would be reviewed to determine if it constitutes a Section 4(f) use, and if so, would be evaluated per Section 4(f) regulations.

7. Aviation

The project area is located southeast of the Winona Municipal Airport, a facility which includes 575 acres of land, a 5100 foot runway, and provides instrument approach to the airport. The project area is within a three and a quarter mile radius of the Winona Municipal Airport. The proximity of the project to the Airport generated the need to review potential impacts to avoid creating height hazards in the path of aircraft as well as consideration of the potential for bird strike hazards related to construction of proposed storm water treatment ponds within 10,000 feet of the Aircraft Operating Area (AOA).

The Federal Aviation Administration (FAA) is reviewing bridge type alternatives. A Determination of No Hazard to Air Navigation for the preferred bridge type is expected shortly because the project lies outside of the Runway Protection Zone, as defined in

FAR Part 77. MnDOT will continue coordination with the FAA and the Winona Municipal Airport as the design progresses.

The stormwater ponds shown on Figure 3 in Appendix A are not within a 10,000 foot radius of the Winona Municipal Airport, which is the Airports' Aircraft Operating Area (AOA). Wildlife attractants such as ponds and wetlands within an AOA are considered hazards to navigation (US DOT Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B). The detention ponds would be designed to meet current AOA regulations if requested by the FAA and an agreement between MnDOT and the City of Winona would be developed to ensure the regulations are being implemented.

8. Mississippi River Navigational Traffic Impacts

Construction would involve temporary interruptions to the navigation channel at various stages of construction to allow for pier construction, launching of materials, use of tugboats, and work on the bridge structure. These closures would need to be coordinated with the USACE, USCG, and barge operators, and would impact commercial and recreational water users. The timing and duration of closures would vary.

9. Section 106

See EAW Item 25a.

V. PUBLIC AND AGENCY INVOLVEMENT AND PERMITS/ APPROVALS

A. INFORMATIONAL PROCESS

1. Public Involvement Plan

A public involvement plan was developed and implemented early in the project development process. This plan has helped to establish communication between MnDOT and the public and has given MnDOT a better understanding of the concerns that the public and agencies have about the proposed project. It has also given the public and agencies knowledge about what MnDOT is trying to accomplish with the project, and the standards, procedures, and constraints that MnDOT needs to consider while developing the project. Elements of the public involvement plan include coordination and contact meetings, advisory groups, newsletters, a web-site, public meetings, and the public comment period on the Environmental Assessment.

2. Coordination Meeting and Contacts

Several public and agency meetings were held and newsletters made available between August 2009 and August 2013. The following is a list of involvement activities:

- A series of three scoping meetings on September 16, 2009, October 7, 2009, and November 4, 2009. The members of the PAC, TAC, and regulatory agencies were invited to attend to develop a range of alternatives and decide on alternatives for further evaluation. The alternatives evaluation is described earlier in this document.
- Environmental agency follow-up meeting on September 23, 2009 with Minnesota State Historic Preservation Office and the MnDOT DNR liaison to follow up from the first scoping meeting.
- Public Information Meeting 1: October 21, 2009
- Public Information Meeting 2: October 27, 2010
- Public Information Meeting 3: September 27, 2012
- Public Information Meeting 4: August 12, 2013
- Municipal Consent Hearing: August 19, 2013
- A project website was created to provide updates on the project. Meeting materials and notices were posted to the website:
www.dot.state.mn.us/d6/projects/winonabridge/

Agency Meetings and Coordination:

- USCG
- USACE
- FAA
- MPCA
- SHPO
- DNR
- USFWS

Coordination with the above agencies was conducted throughout the project development and EA preparation processes forms the basis of understanding regarding project impacts, mitigation, and future coordination described in this EA.

3. Project Advisory Committee

A Project Advisory Committee (PAC) was formed in August 2009 to help provide community input into the project process and to encourage communications between the MnDOT and the affected community. The PAC held seven meetings between September 2009 and July 2013 and will continue to meet as needed. The PAC is composed of representatives from Winona County, City of Winona, and Wisconsin. There are also members representing the following organizations: Winona Chamber of Commerce, Winona State University, commercial harbor interests, trucking interests, Winona Port

Authority, City of Winona, Winona Planning Commission, Winona Bike Committee, Winona Heritage Preservation Commission, Winona Environmental Quality Committee, Downtown Revitalization Committee, Central City Neighborhood Committee, agriculture interests, Winona County Board, Winona County Sheriff, DNR, USACE, U.S. Fish and Wildlife Service, USCG, and Buffalo County Highway Department.

4. Technical Advisory Committee

A Technical Advisory Committee (TAC) was formed to review and provide input on the proposed project consistent with the policies of the agencies that the various members represent. The TAC met monthly or every other month to review the environmental process approach, alternatives evaluation, traffic analysis, preliminary design, and public involvement opportunities. The agencies represented on the TAC include FHWA, MnDOT, WisDOT, City of Winona, and Winona County.

B. SUMMARY OF EARLY COORDINATION COMMENTS

As a result of the above early coordination meetings and contacts, comments and concerns about the proposed project were received, both verbally and in writing. The following is a list of the agencies contacted:

- MnDNR Natural Heritage Database
- MnDNR Environmental Review Program
- MnDNR Trails and Waterways Section
- MnDOT Office of Environmental Stewardship
- MnDOT Cultural Resources Unit
- Natural Resources Conservation Service

Copies of agency comments received as a result of early coordination meetings and contacts can be found in Appendix B. Substantive issues and comments are discussed throughout this document.

C. PERMITS AND APPROVAL REQUIREMENTS

**TABLE 11
PERMITS AND APPROVALS**

Permit	Agency	Action Required
Federal		
Environmental Assessment	FHWA MnDOT	Approval
EIS Need Decision	FHWA	Approval
Section 4(f) de minimis determination	FHWA	Approval
Endangered Species Act Section 7	FHWA	Consultation
Section 106 (Historic / Archeological)	FHWA	Approval
Section 10 Permit	USACE	Permit
Section 404 Permit	USACE	Permit
Section 9 Permit	USCG	Permit
State		
Environmental Assessment Worksheet (EAW)	MnDOT	Approval
EIS Need Decision	MnDOT	Approval
Wetland Conservation Act (Replacement Plan) for new roads and capacity expansion projects	MnDOT with coordination with the DNR	Approval/Review
Dewatering permit	DNR	Permit
Public Waters Work Permit	DNR	Permit
Prohibited Invasive Species Permit (if needed)	DNR	Permit
Section 401	MPCA	Certification
National Pollutant Discharge Elimination System – Construction Stormwater	MPCA	Permit
Dredge materials Management Permit	MPCA	Permit
Local		
Municipal Consent	City of Winona	Approval

D. 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 would 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 express their comments, ideas and concerns about the proposed project. These comments will be received at the hearing and during the remainder of the comment period, and will become a part of the official hearing record.

E. EA NOTICES AND REPORT DISTRIBUTION

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 23CFR771.119 and state Minnesota Rule 4410.1500.

F. PROCESS BEYOND THE HEARING

Following the comment period, MnDOT and the FHWA will make a determination as to the adequacy of the environmental documentation. If further documentation is necessary it could be accomplished by preparing an Environmental Impact Statement (EIS), by revising the Environmental Assessment, or clarification in a Findings of Fact and Conclusion document, whichever is appropriate.

When the environmental documentation is determined adequate, MnDOT will choose a project alternative, either the No Build or the Build alternative under consideration.

If an EIS is not necessary, as currently anticipated, MnDOT will prepare a "Negative Declaration" for the state environmental requirements. MnDOT will also prepare a request for a "Finding of No Significant Impacts" (FONSI) that will be submitted to the FHWA. If the FHWA agrees that this finding is appropriate, it will issue a FONSI.

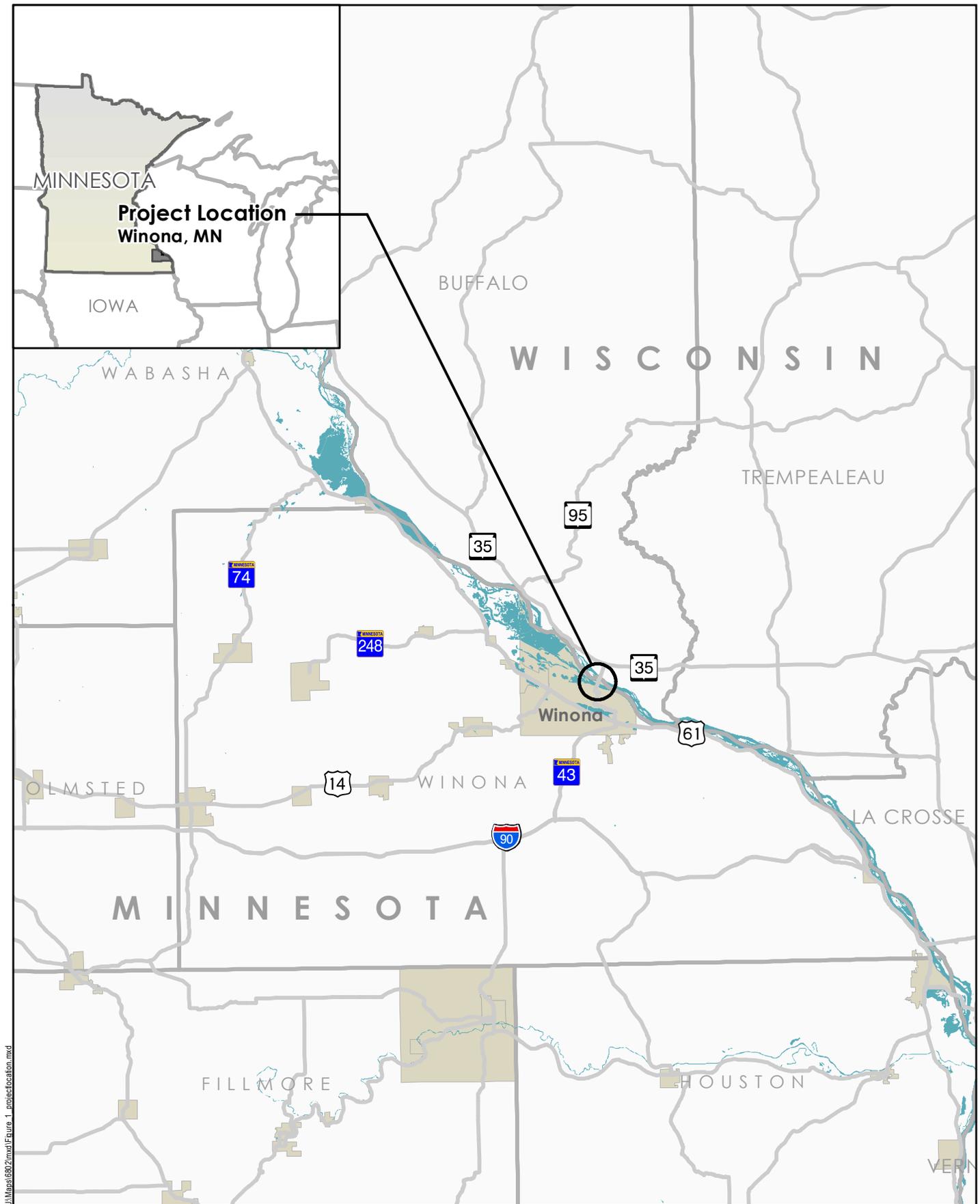
Notices of the federal and state decisions and availability of the above documents will be placed in the Federal Register and the Minnesota Environmental Quality Boards (MEQB) Monitor. MnDOT will also distribute the Negative Declaration and FONSI to the Environmental Assessment Worksheet (EAW) distribution list and publish notices in local newspapers announcing the environmental and project alternative decisions that were made.

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APPENDICES

APPENDIX A

FIGURES

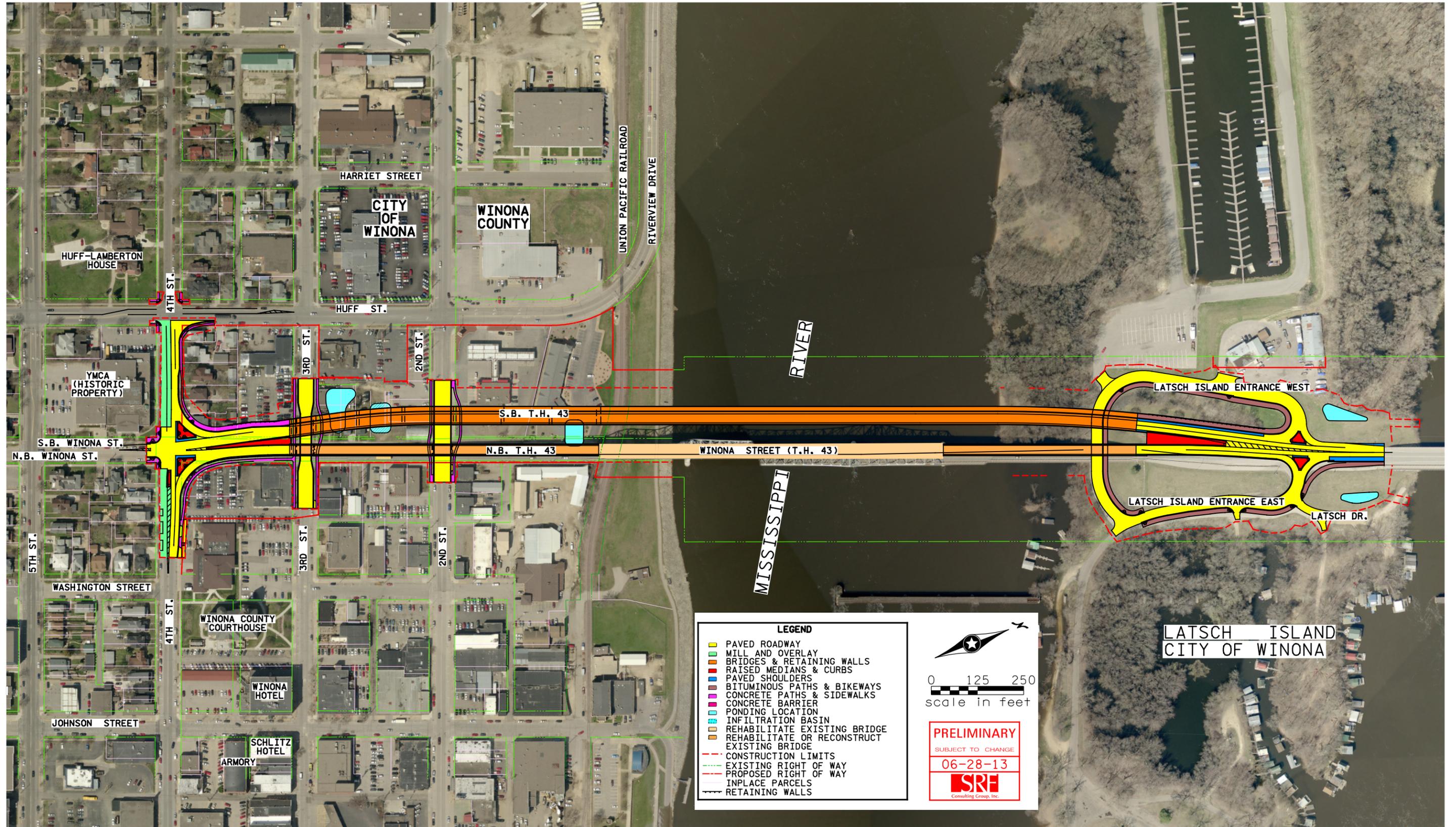


Project Location

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 1

H:\Projects\6802\Design\EA_Graphics\Layouts\cd850346_bdrgr EA_11x17 Landscape_Overview.dgn

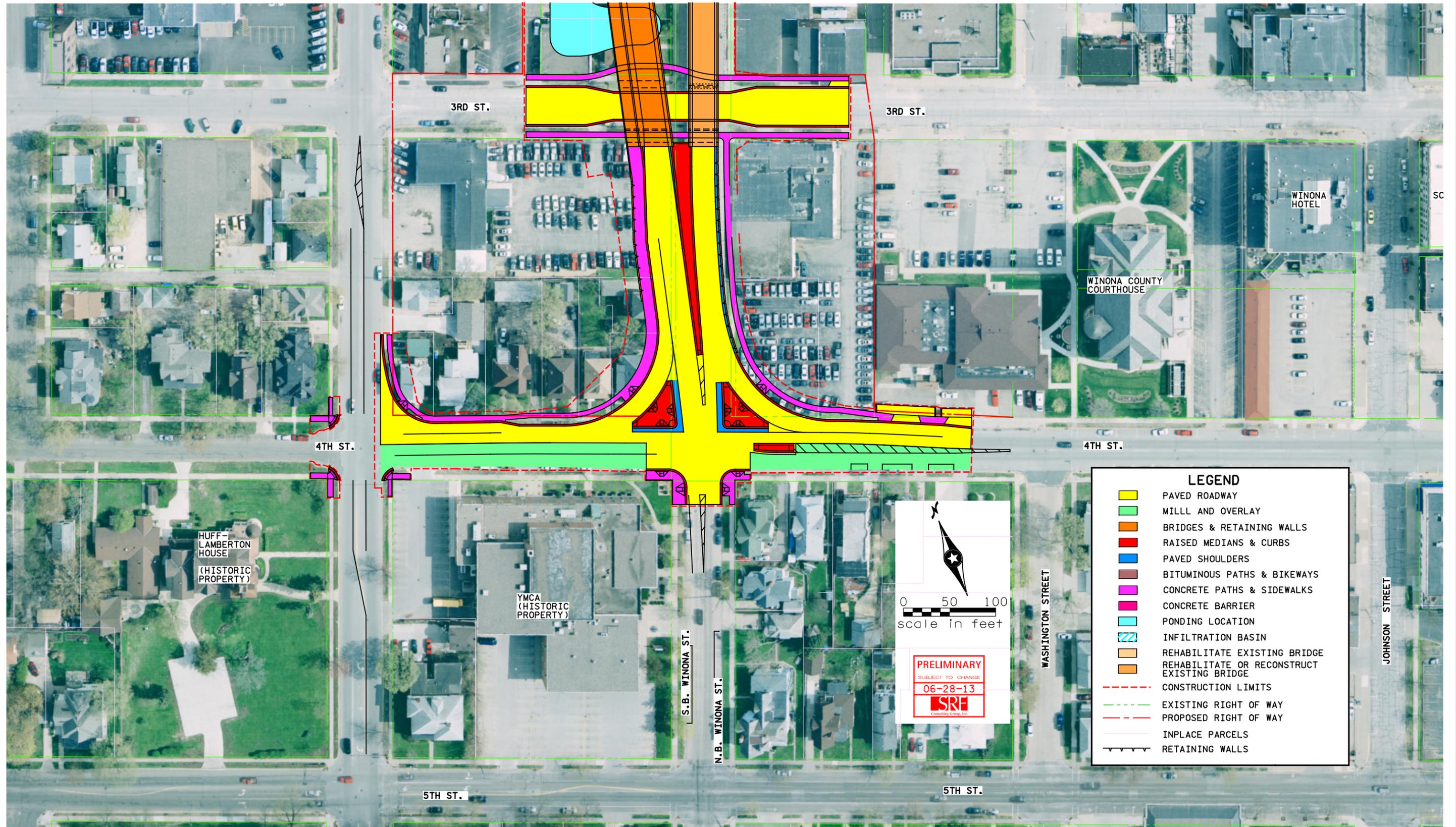


Layout

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 3

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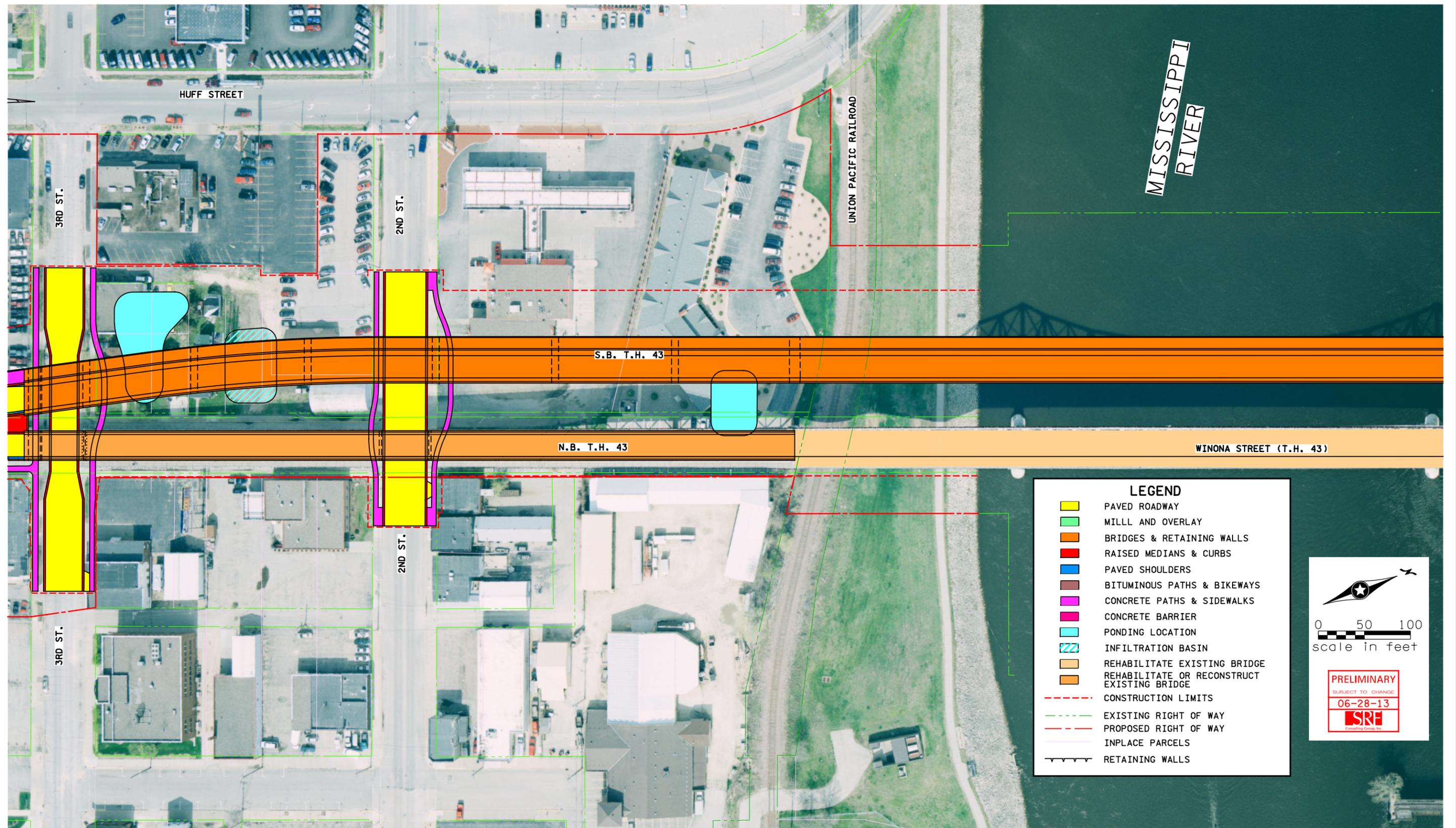


Layout- 4th Street Touchdown

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 4

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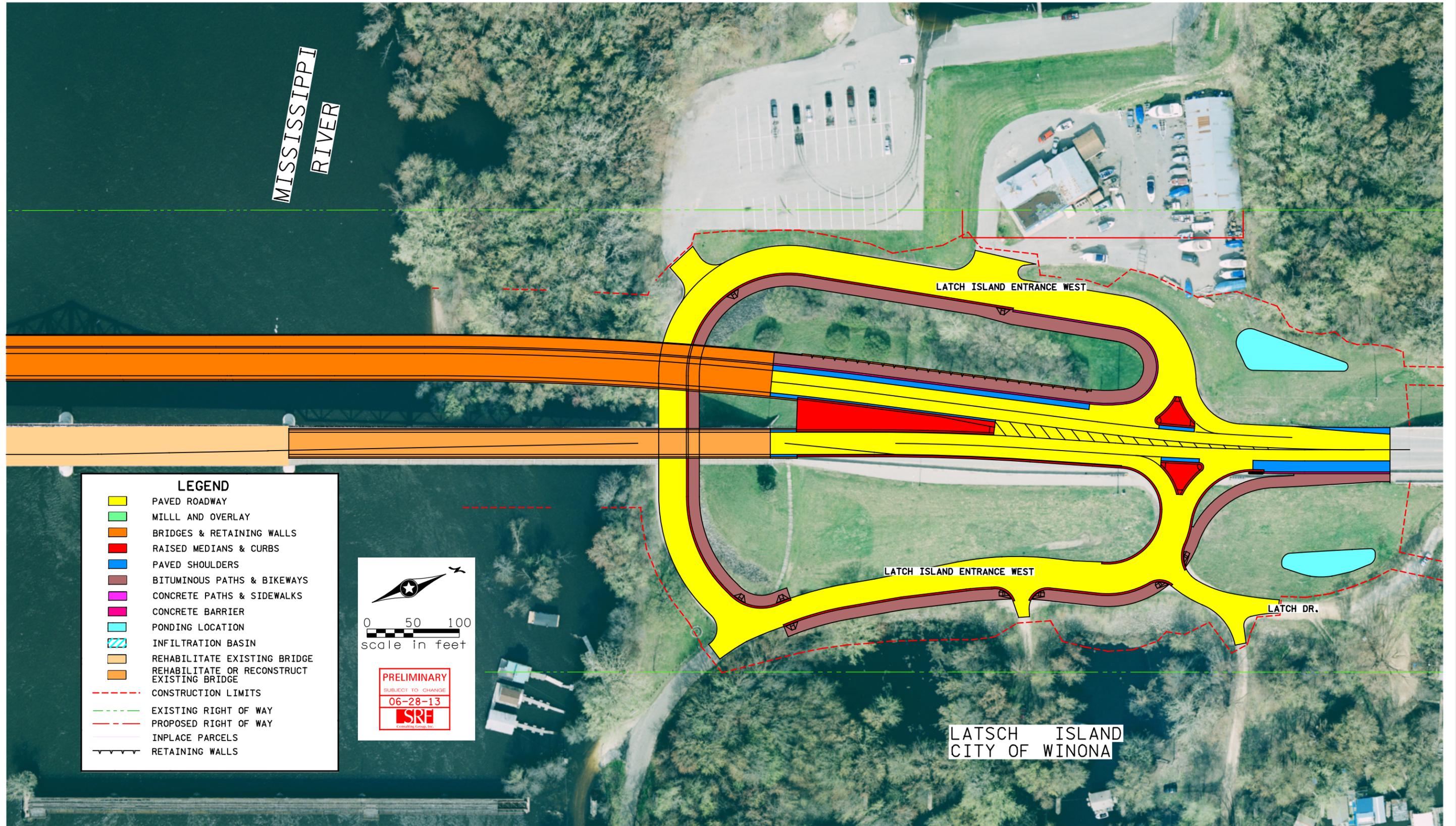


Layout- South Approach and Main Span

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 5

H:\Projects\6802\Design\EA_Graphics\Layouts\cd850346_bdrgra_EA_11x17_Landscape_3.dgn

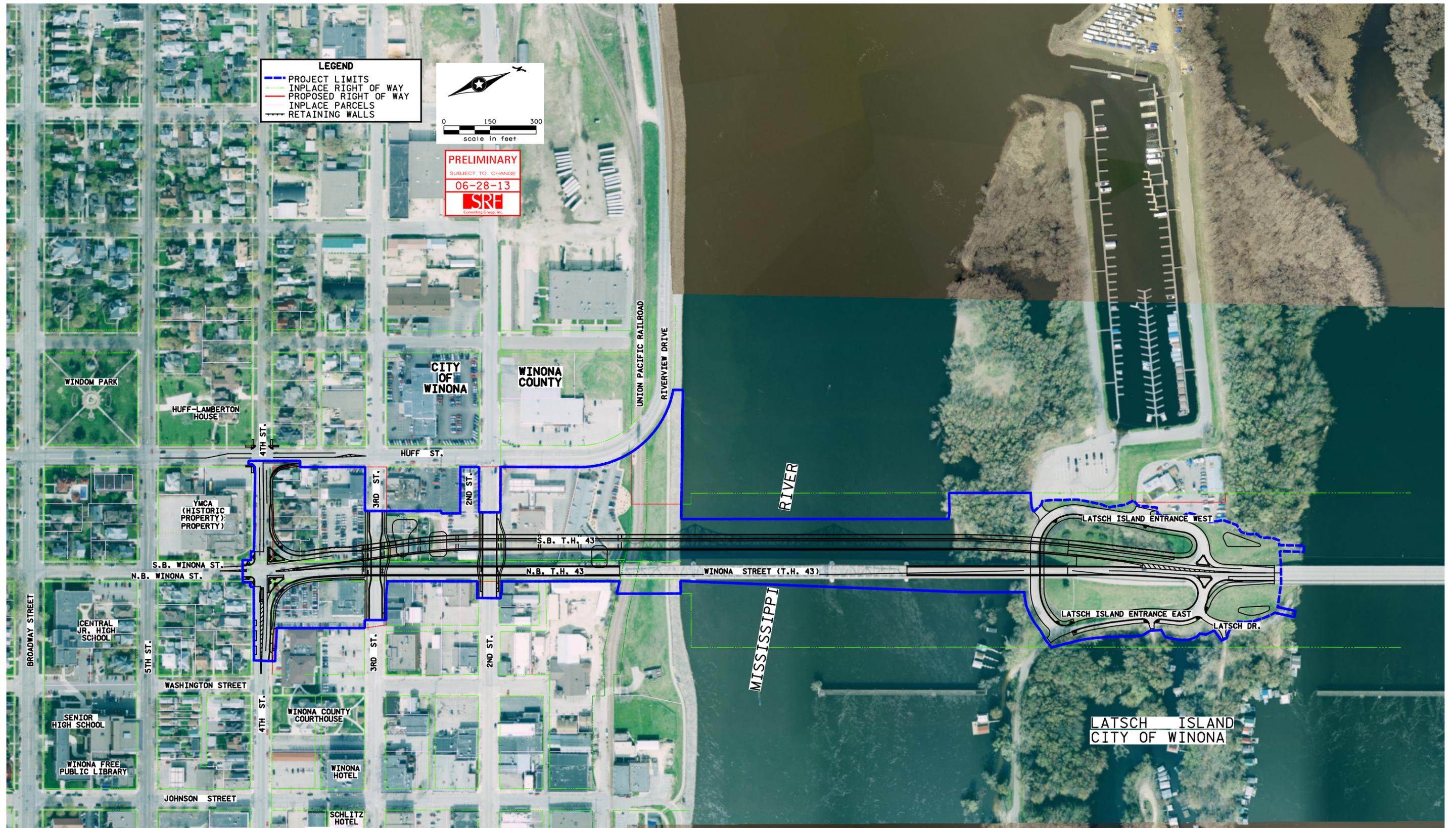


Layout- North Approach

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 6

H:\Projects\6802\Design\EA_Graphics\Layouts\cd850346_bdrgra_EA_11x17 Layout_with Project Limits.dgn

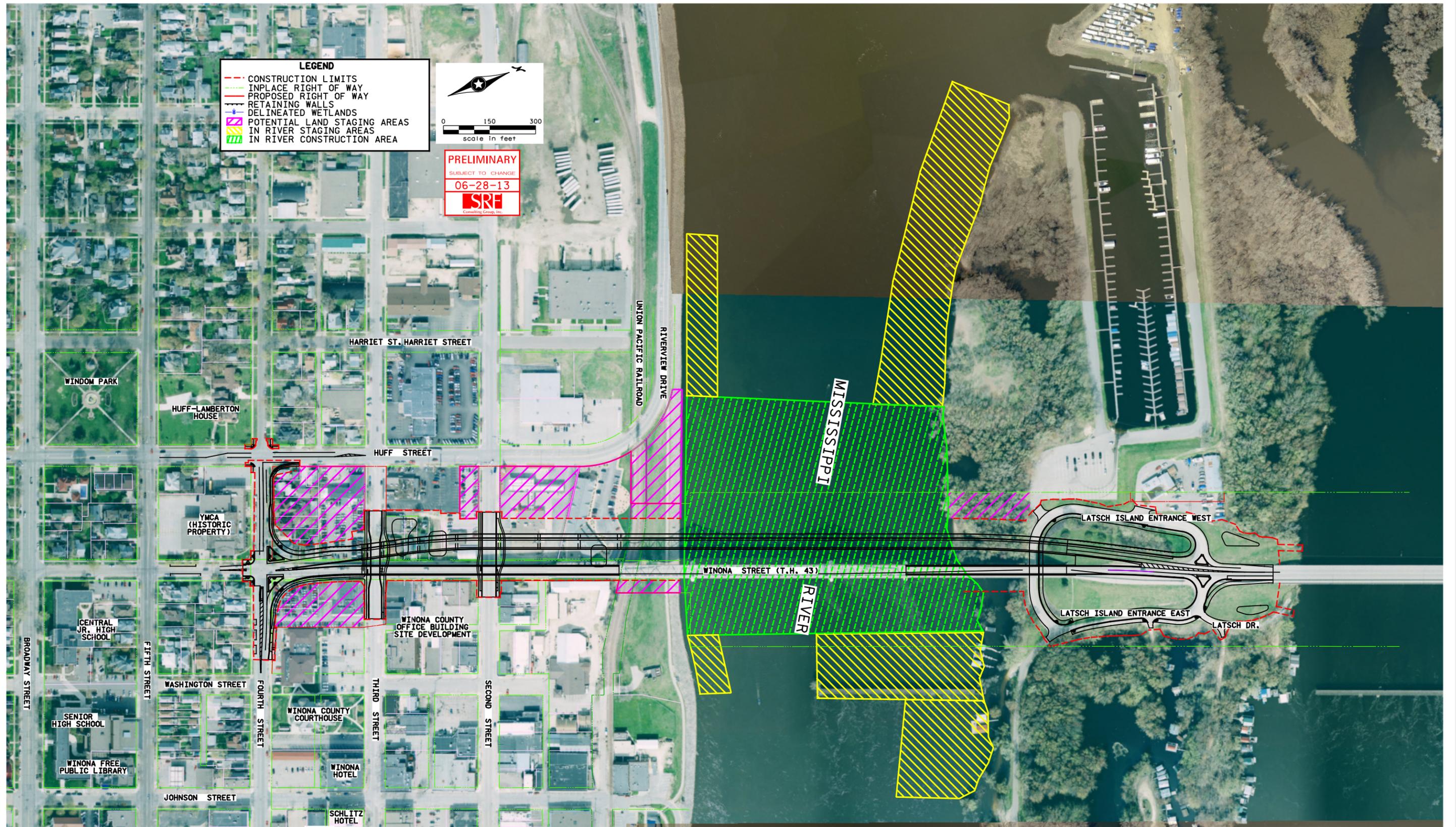


Project Limits Layout

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 7

H:\Projects\6802\Design\EA_Graphics\Staging Areas\cd850346_bdrgra_EA_11x17 Staging Areas.dgn

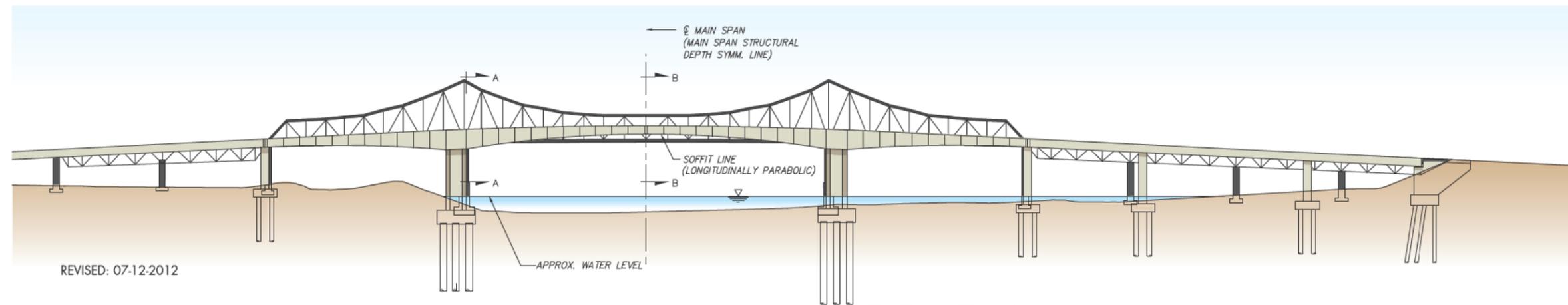


Construction and Staging Areas

Winona Bridge Project
SP 8503-46
Winona, Minnesota

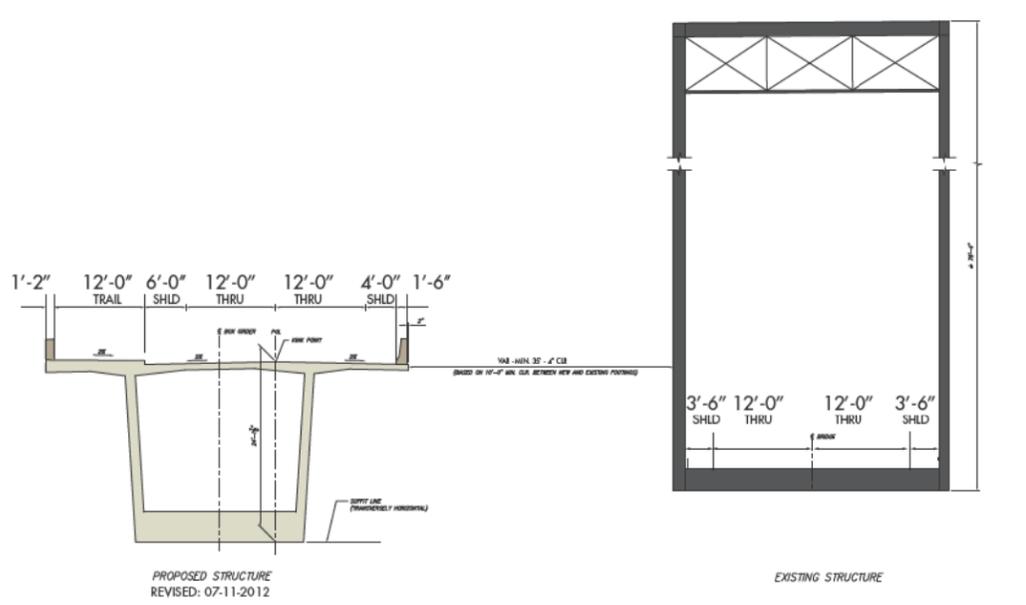
Figure 8

H:\Projects\6802\EP\Microstation_basefiles\cd850346_EA-Bridge Alternative01.dgn

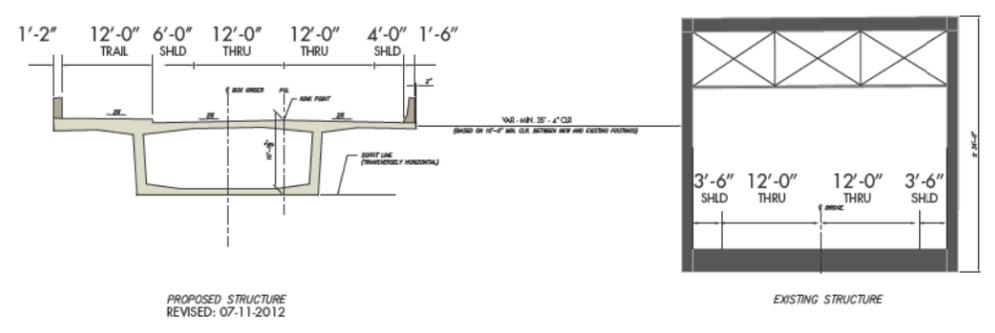


ELEVATION

*CONCEPTUAL ILLUSTRATION OF VISUAL RELATIONSHIP BETWEEN EXISTING BRIDGE AND POTENTIAL ADDITIONAL NEW 2-LANE BRIDGE



CROSS SECTION A-A AT PIER (NOT TO SCALE)



CROSS SECTION B-B AT CL MAIN SPAN (NOT TO SCALE)

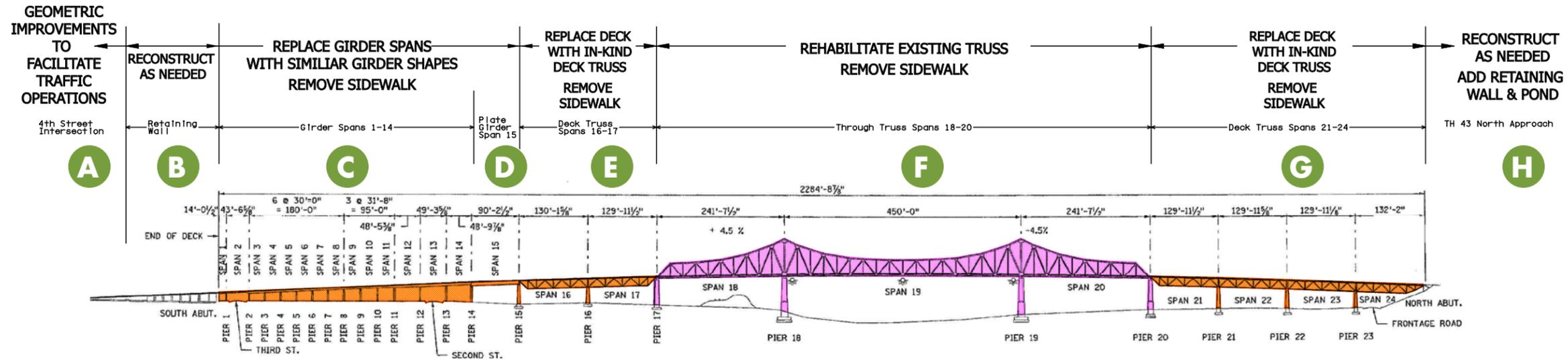
Recommended Alternative Profile

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota

LEGEND

- REPLACE IN KIND
- REHABILITATE EXISTING BRIDGE STRUCTURE

June 28, 2013



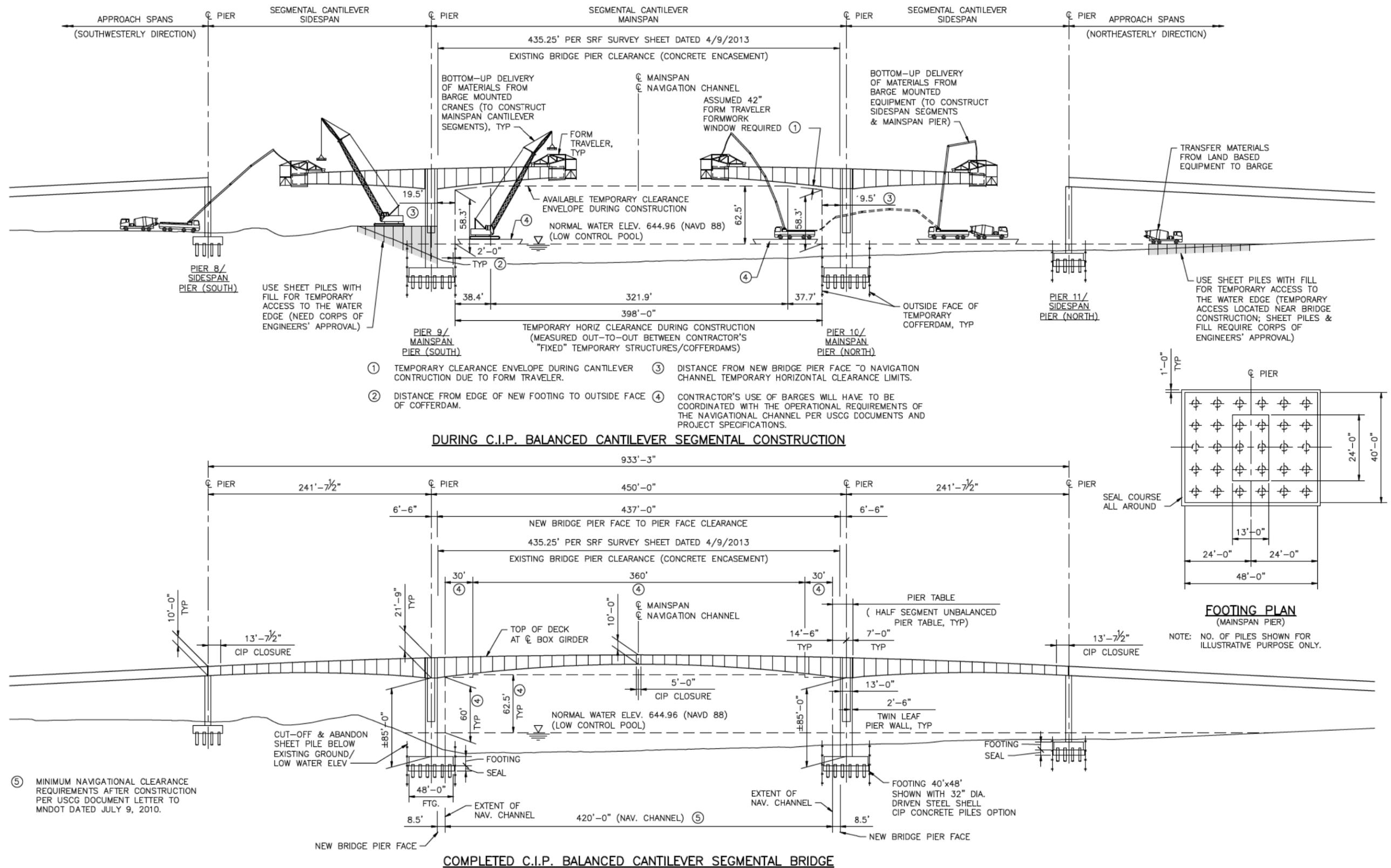
Elevation view, schematic and photograph, of the existing Winona Bridge, looking west

Support/6802 Winona Bridge Preliminary Design/EAF/figures/

Bridge 5900 Rehabilitation Overview

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota
 6802 | 20130617

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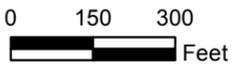
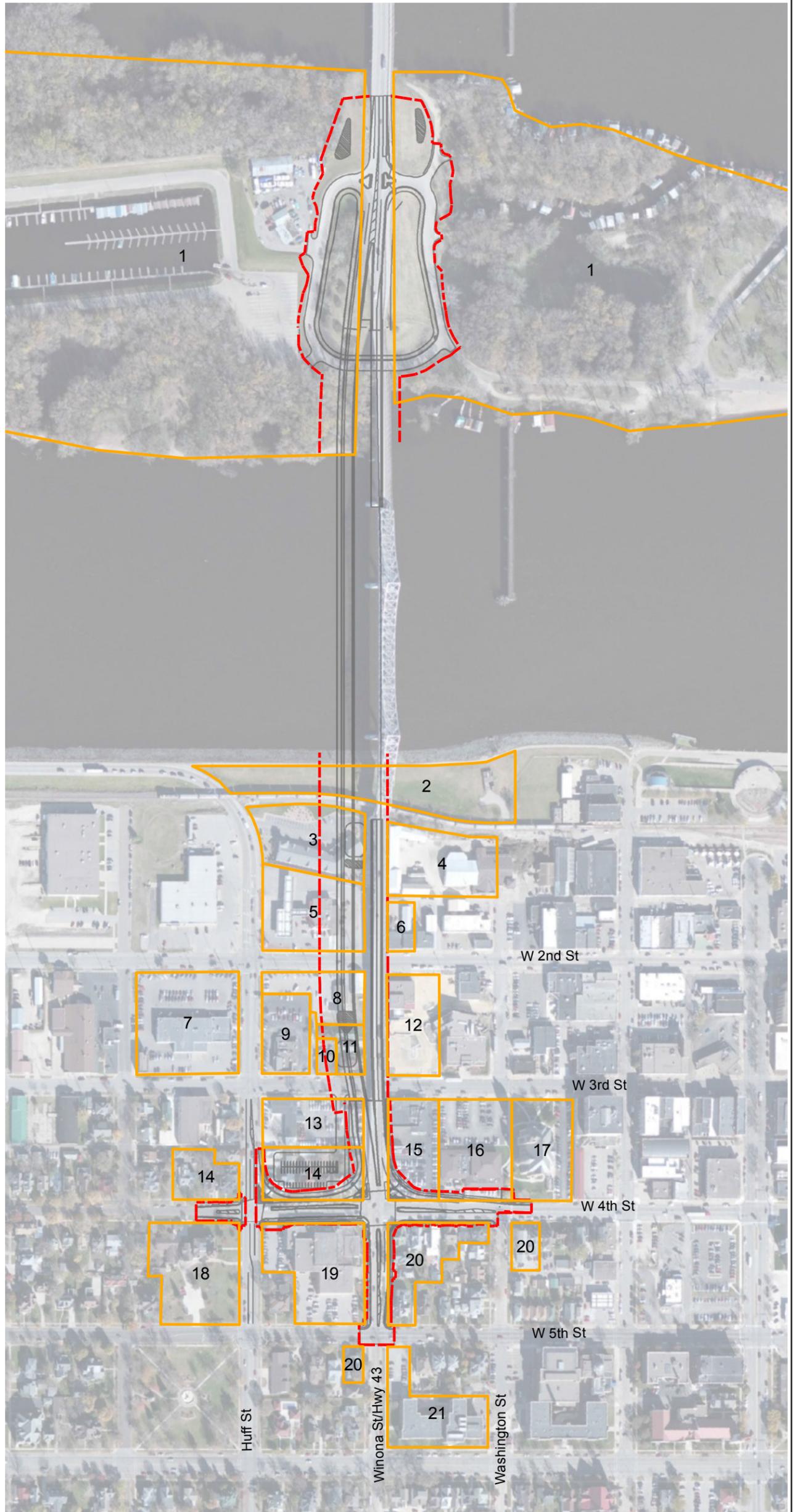
Balanced Cantilever Construction Method

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 11

Legend	
	Site
	Construction Limits

SITE #	NAME	RANKING
1	Island Number 72 (Latsch Island)	Medium
2	Winona Port Authority	Medium
3	Americinn	Medium
4	Former Best Lumber (vacant)	Medium
5	Sinclair	Medium
6	Downtown Recycling Co. and Unidentified Commercial Building	Low
7	Winona Chrysler	High
8	Winona Leasing & Sales and U-Haul	Medium
9	Timbers Restaurant	Medium
10	Commercial Building (Possibly Vacant)	Medium
11	Residential Dwellings	Low
12	Winona County Environmental Services (with Household Hazardous Waste Drop-Off)	Medium
13	Dahl Express Sales and Service	Medium
14	Residential Dwellings	Low
15	Dahl Chevrolet Buick	Medium
16	Winona County Law Enforcement Center	Medium
17	Winona County Courthouse	Medium
18	Multi-Family Residential Dwelling (Lamberton House)	Medium
19	Winona Family YMCA	Medium
20	Residential Dwellings	Low
21	Apartment Building (Former Junior High School)	Low



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

23003\Phase I Sites.mxd



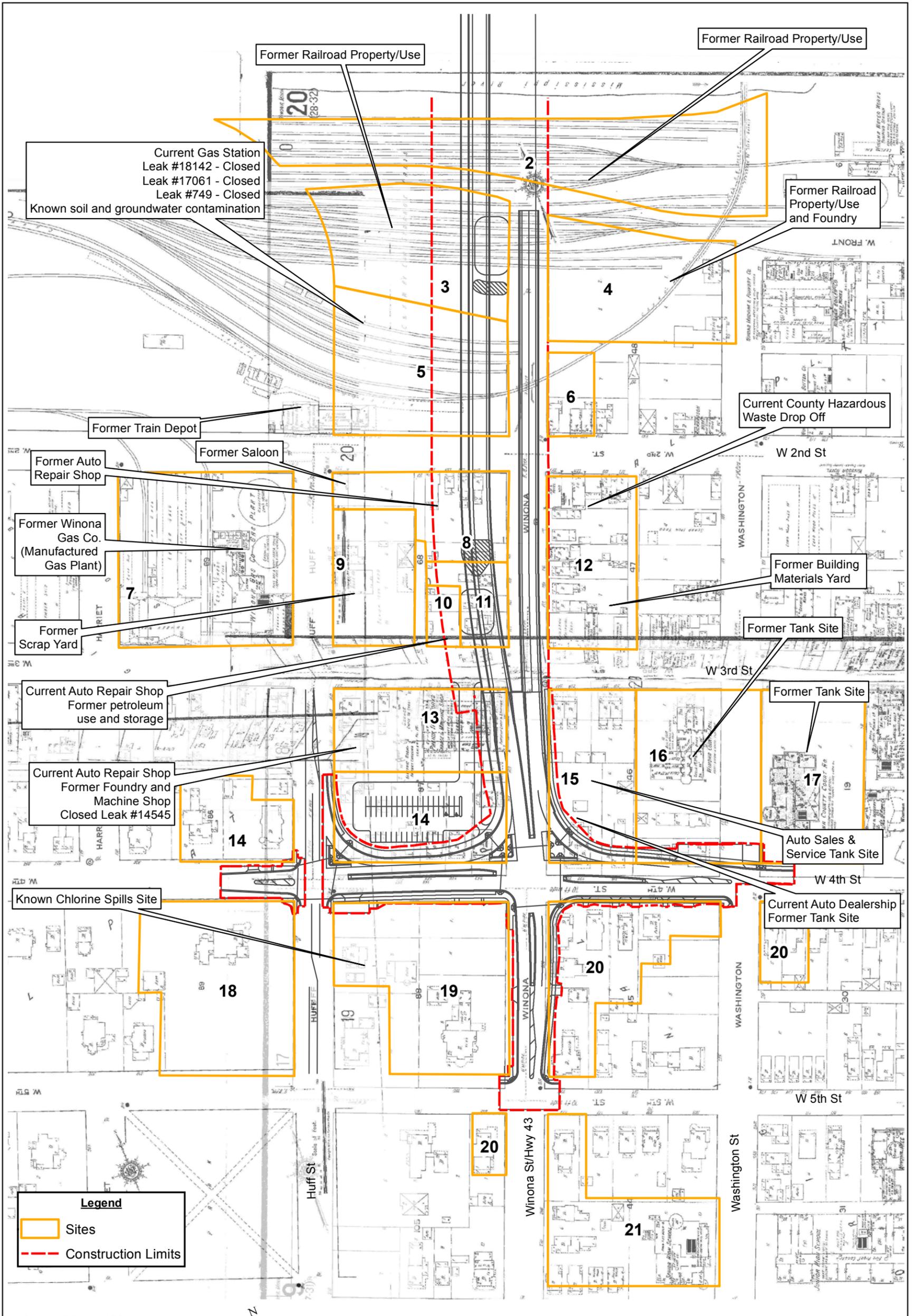
PROJECT # 23003

PROJECT AREA SITES

JULY 2013

S.P. 8503-46
TRUNK HIGHWAY 43
WINONA, MINNESOTA

FIGURE
2



Legend
 Sites
 Construction Limits

0 75 150
 Feet

* 1917 Sanborn Fire Insurance Map obtained from Historical Information Gatherers, Inc.

23003\selected uses map.mxd



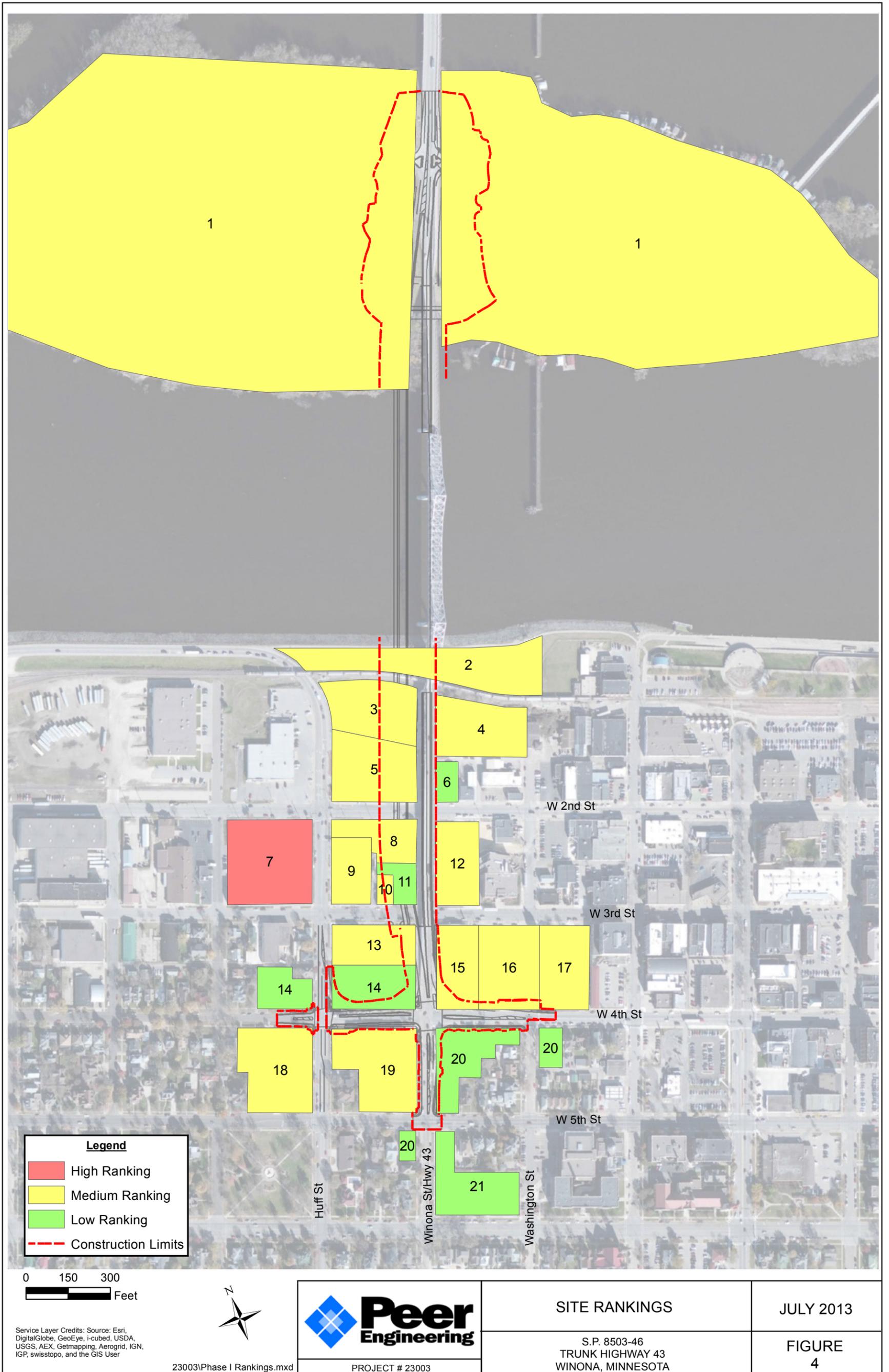
PROJECT # 23003

SELECTED CURRENT AND HISTORICAL USES

S.P. 8503-46
 TRUNK HIGHWAY 43
 WINONA, MINNESOTA

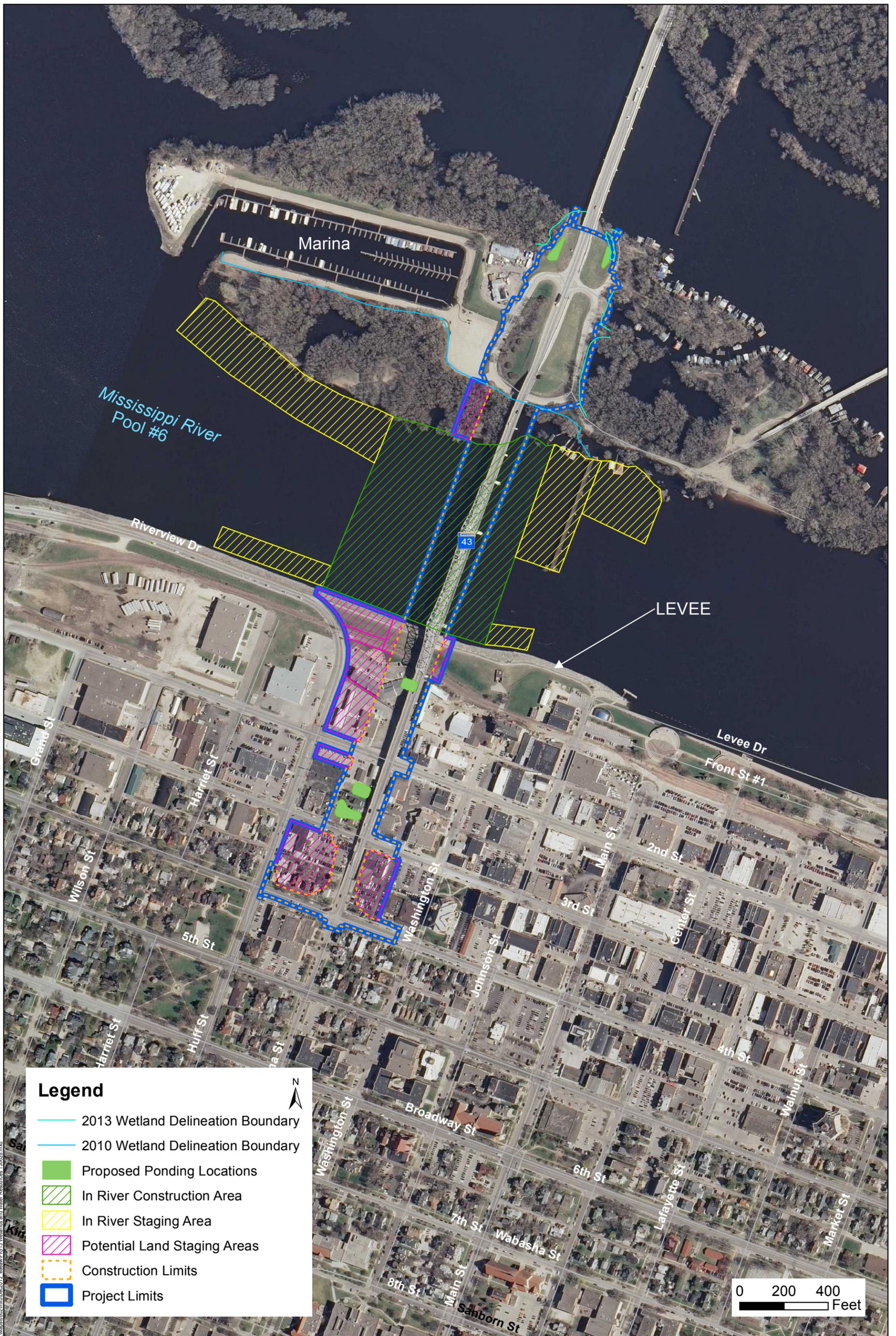
JULY 2013

FIGURE 3



Phase I ESA Update Contaminated Sites

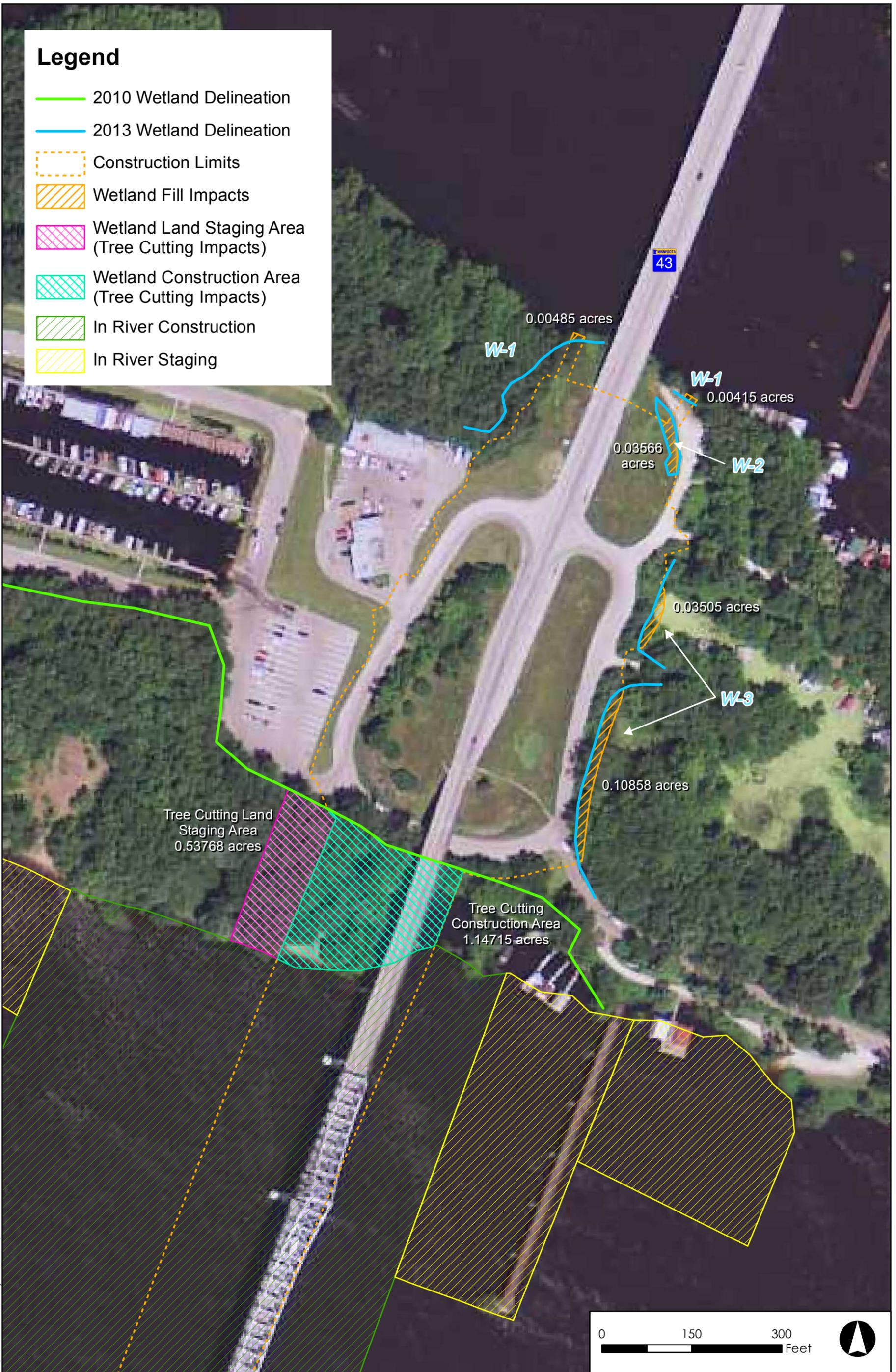
Figure 12C



Wetlands and Water Resources

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota

Figure 13

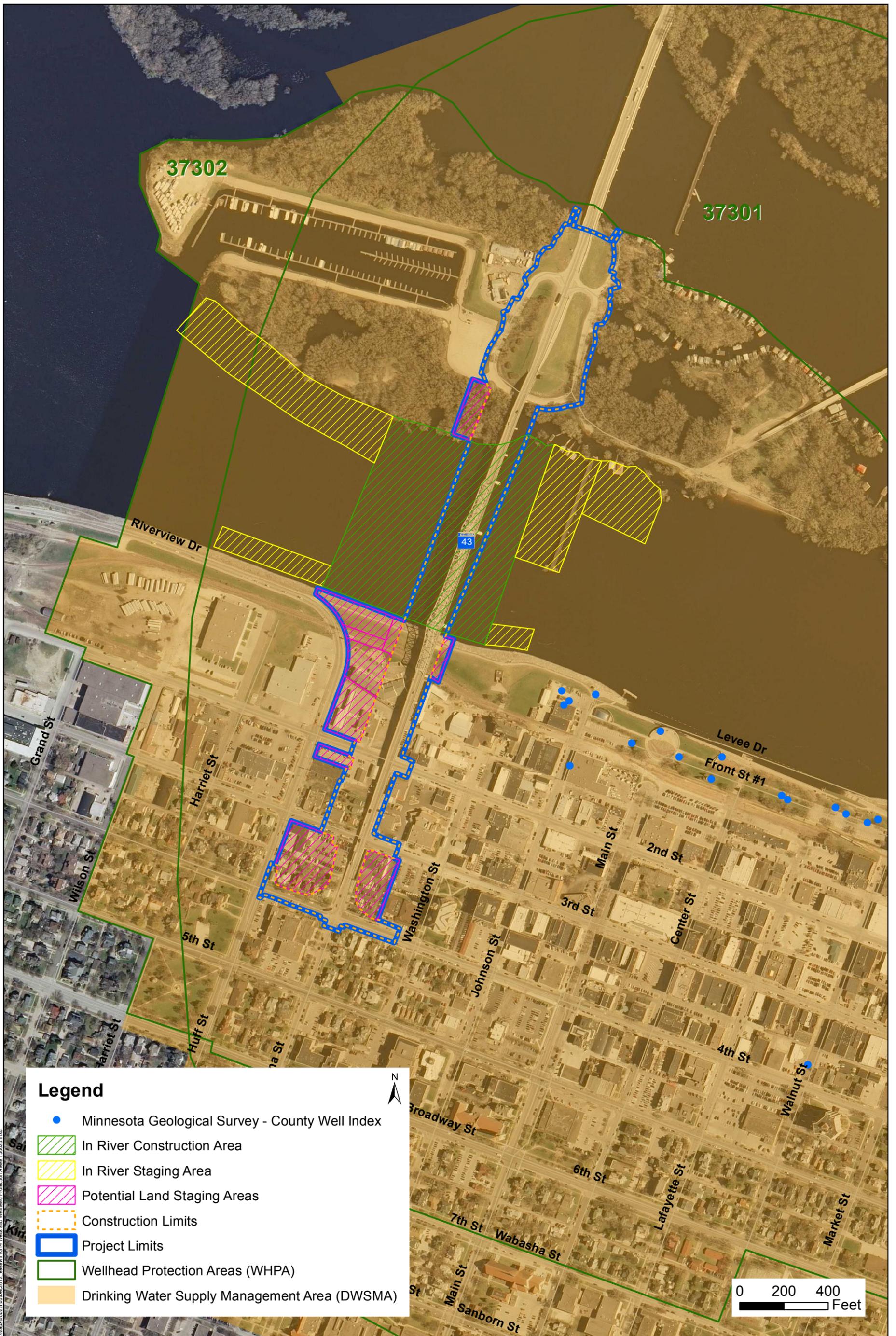


Wetland Fill Impacts and Wetland Land Staging Impacts

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota

Figure 13A

J:\Maps\6802.mxd\Dec2012_easaw\Figure13A_WetlandImpacts.mxd



Legend

- Minnesota Geological Survey - County Well Index
- In River Construction Area
- In River Staging Area
- Potential Land Staging Areas
- Construction Limits
- Project Limits
- Wellhead Protection Areas (WHPA)
- Drinking Water Supply Management Area (DWSMA)



0 200 400
Feet

Wells and Wellhead Protection Areas

Winona Bridge Project
SP 8503-46
Winona, Minnesota

Figure 14



Floodplains

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota

Figure 15



Project Soils

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota

Figure 16



Figure 33: Final Results Map

Winona TH 43 Bridge Study
Architectural History Evaluation
S.P. 8503-46 2011 rev. 12/11

Broadway Residential NRHP-listed, NRHP-determined Eligible, and Contributing Properties

LR Landscape Research LLC

Broadway Residential NRHP Historic District	NRHP-listed or Previously Determined Eligible
Contributing Property	Phase II property NRHP-eligible (outside Broadway Residential NRHP Historic District)
MN SHPO Inventory Number: WA-WAC-####	Phase I property not NRHP-eligible (outside Broadway Residential NRHP Historic District)

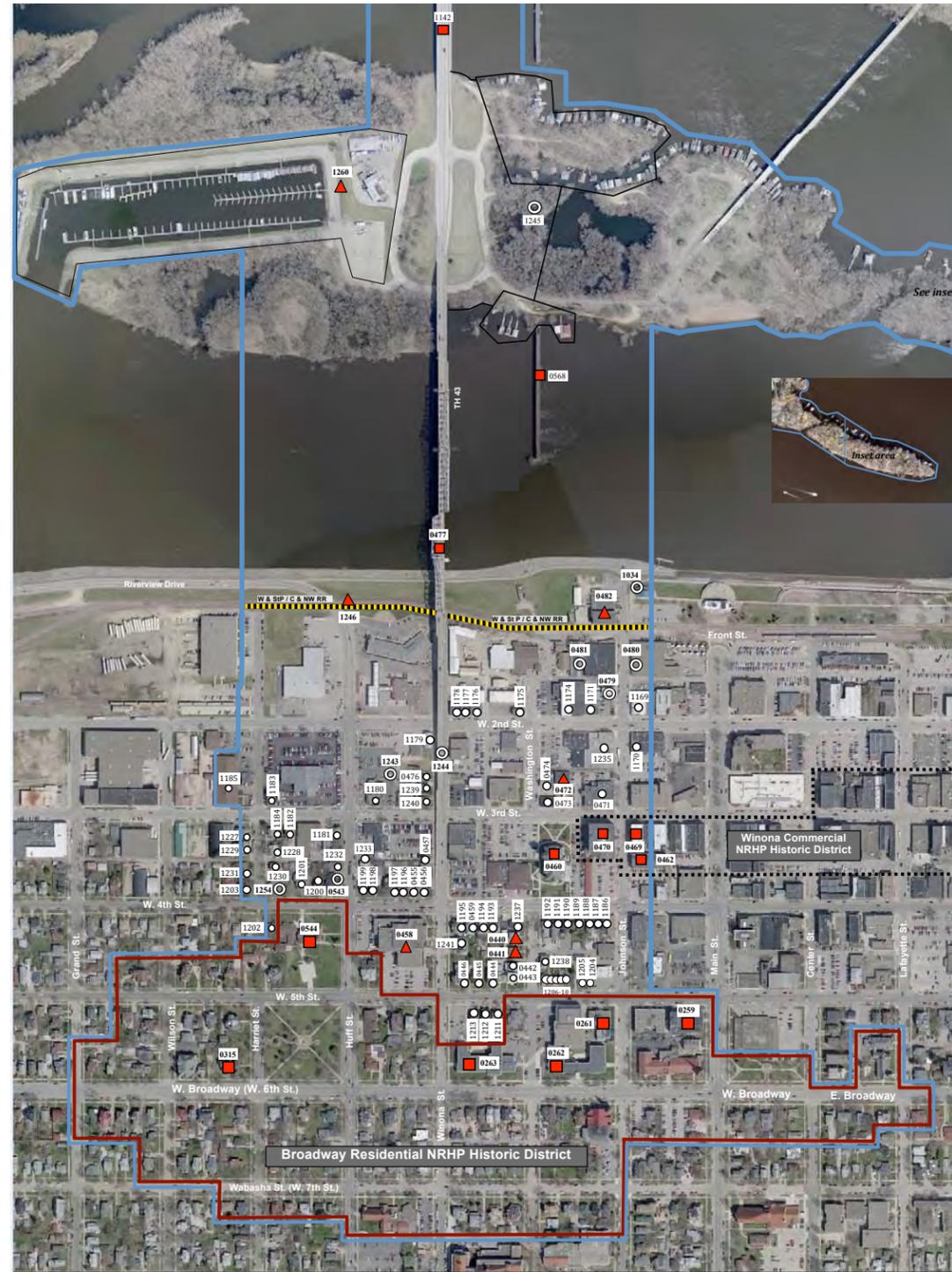


Figure 32 FINAL RESULTS MAP

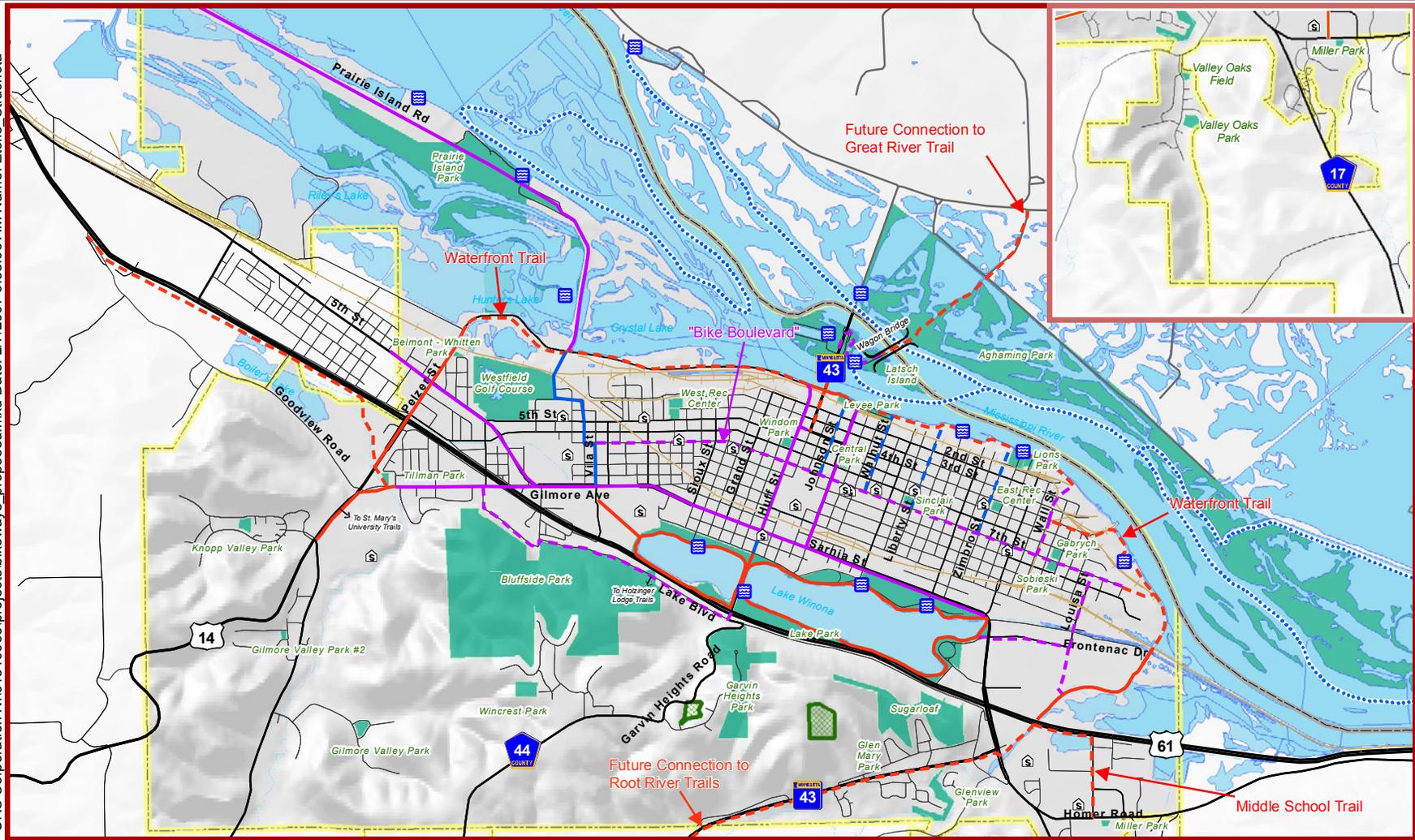
Winona TH 43 Bridge Study
Architectural History Evaluation
S.P. 8503-46 2011 rev. 11/12

LR Landscape Research LLC

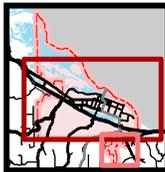
Architectural History Area of Potential Effect (APE)	NRHP-listed or Previously Determined Eligible
Broadway Residential NRHP Historic District	Phase II property NRHP-eligible (outside Broadway Residential NRHP Historic District)
WN-WAC-####: MN SHPO Inventory Number	Phase II property not NRHP-eligible (outside Broadway Residential NRHP Historic District)
	Phase I property not NRHP-eligible (outside Broadway Residential NRHP Historic District)

Architectural History Evaluation

Winona Bridge Project
SP 8503-46
Winona, Minnesota
6802 | 20130617



Map Location



Legend

- Water Access
- Park
- Open Space
- School

Existing Trails

- Multi-Purpose Trail
- Bicycle Lane / Shared Shoulder
- Signed Bicycle Route

Proposed Trails

- Multi-Purpose Trail
- Bicycle Lane / Shared Shoulder
- Signed Bicycle Route
- Water Trail

Future Trails and Bikeways Plan

Figure 6

June 2007

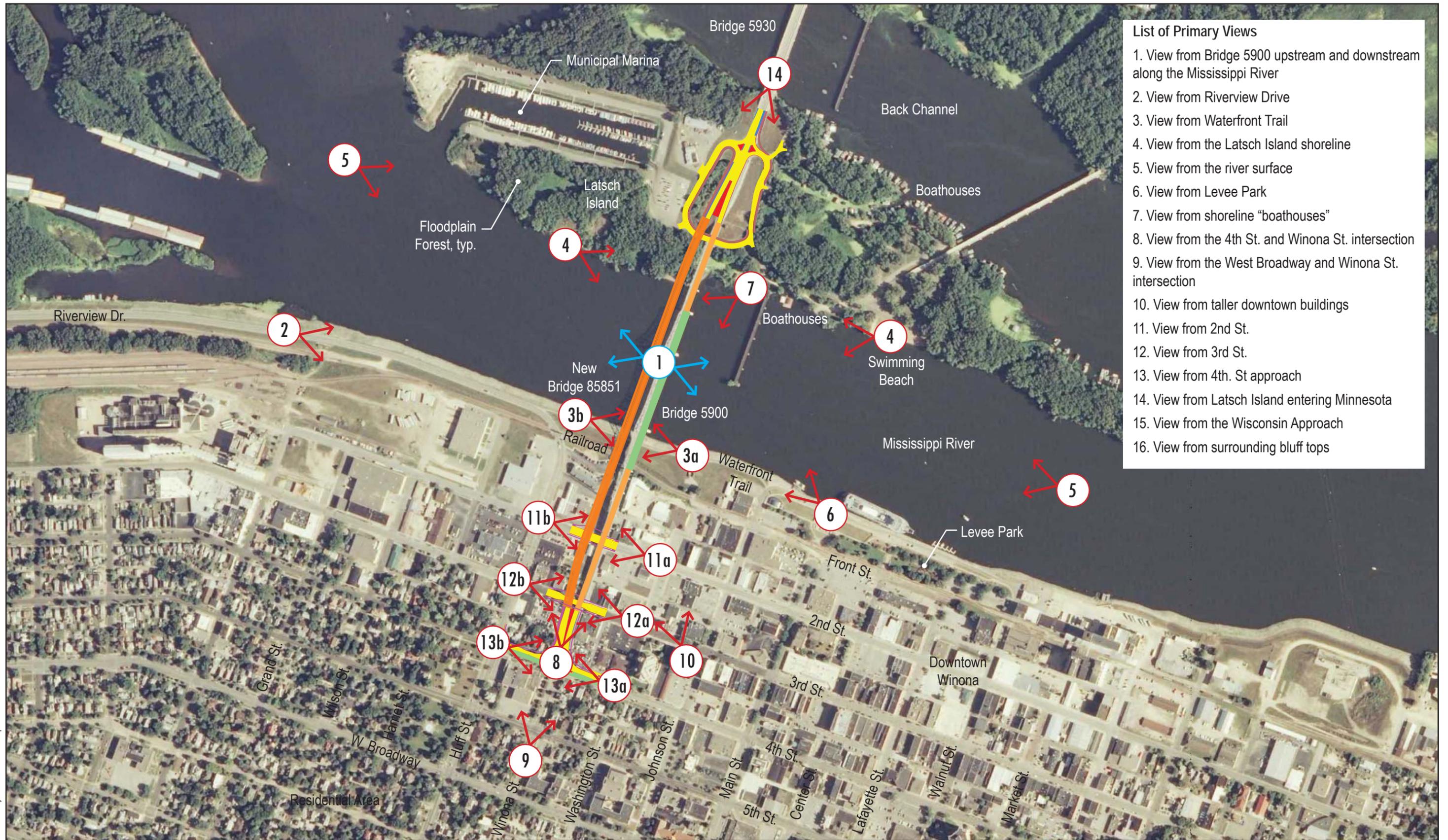


Data Sources: City of Winona, MnDOT, ESRI, URS

Winona Parks and Trails

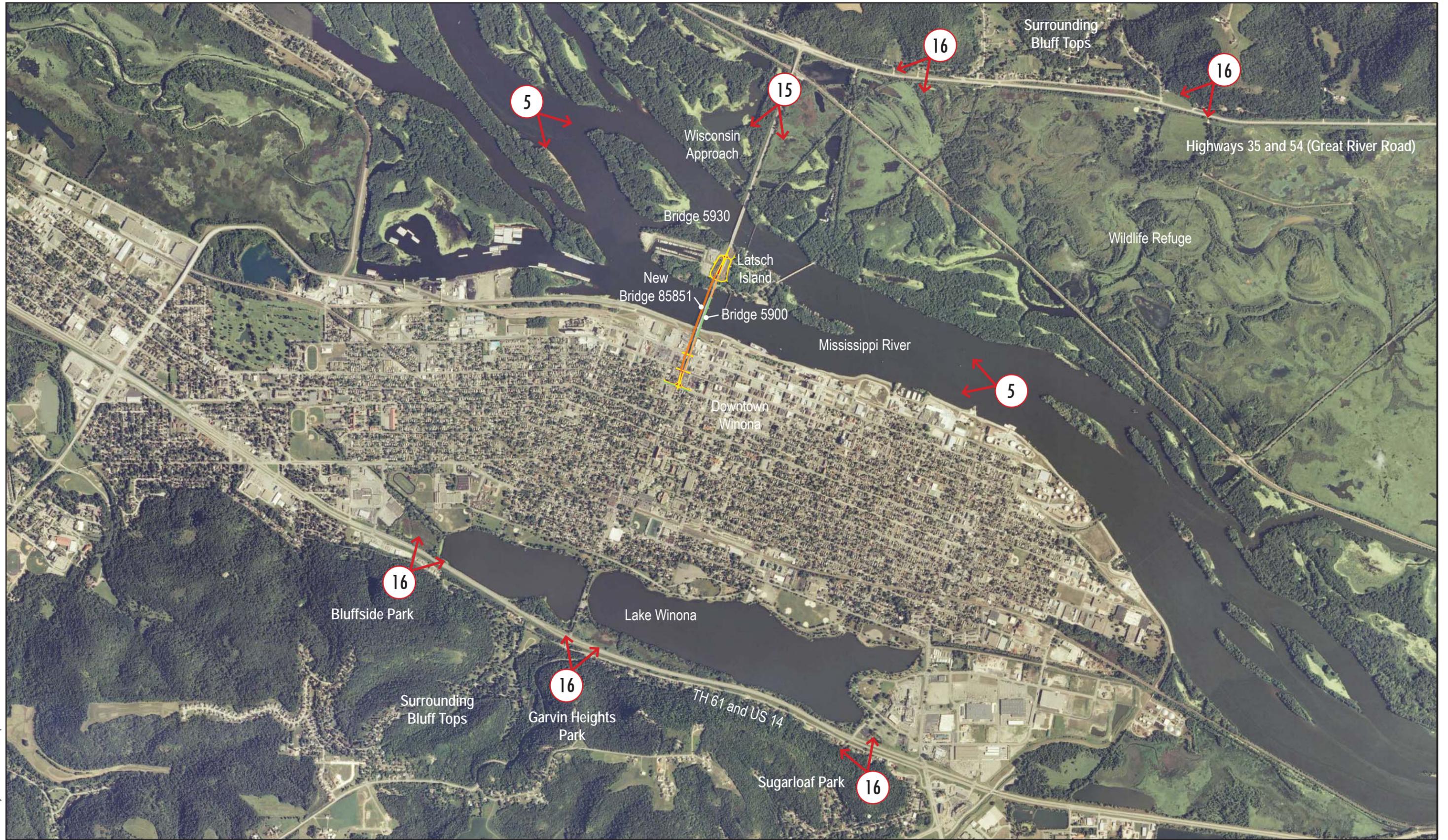
Winona Bridge Project
 SP 8503-46
 Winona, Minnesota
 6802 | 20130617

Figure 18



Primary Views to the Bridge and Project Site in the Immediate Vicinity

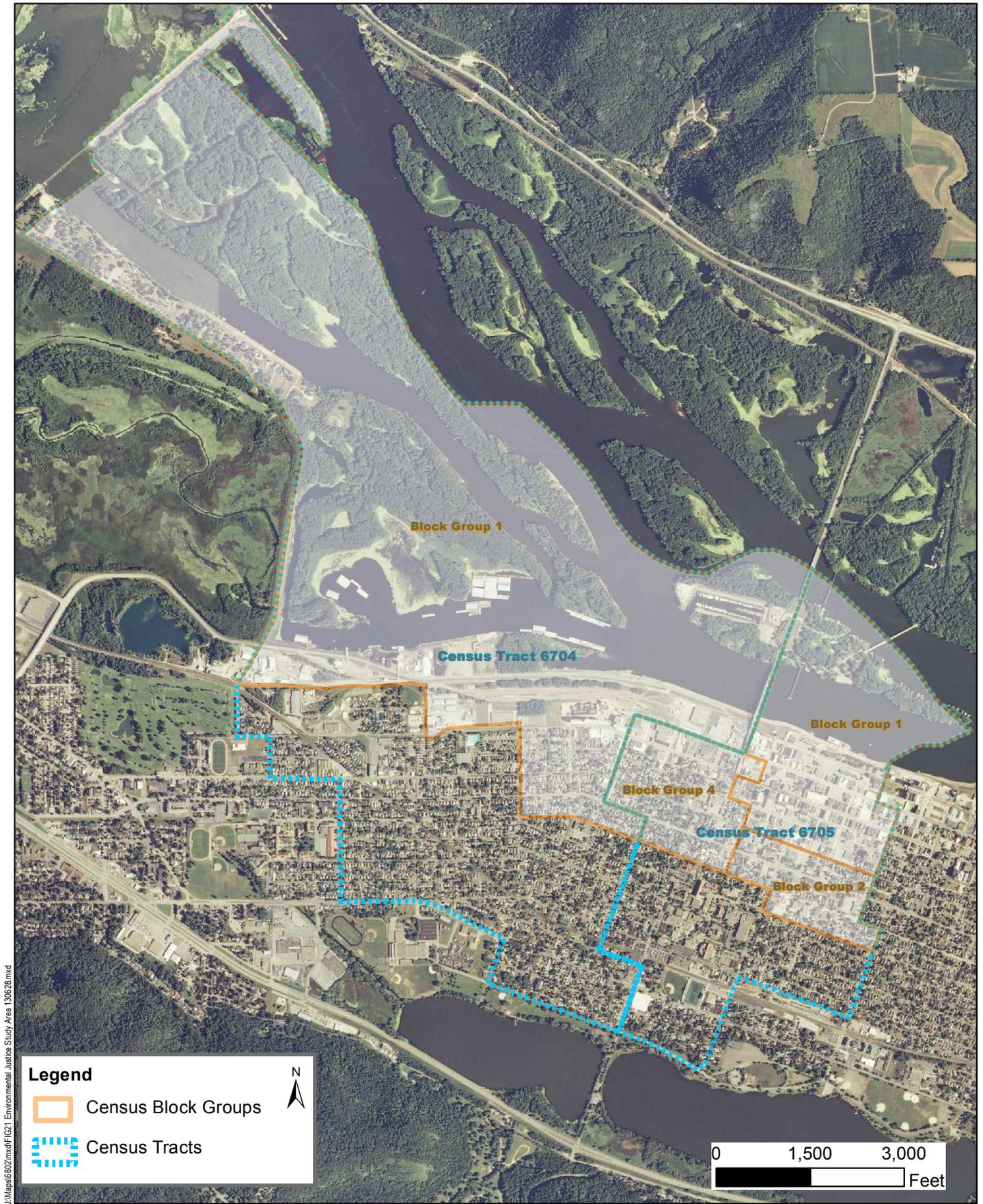
Figure 19



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Select Views to the Bridge and Project Site from More Distant Surroundings

Figure 20



Environmental Justice Study Area

Winona Bridge Project
 SP 8503-46
 Winona, Minnesota

Figure 21

APPENDIX B

CORRESPONDENCE



Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-4010

February 14, 2009

Jai Kalsy
MnDOT District 6
2900 48th Street NW
Rochester, MN 55901

RE: Response to MnDOT Early Notification Memo Requesting Information and Early Coordination Regarding TH43 (SP8503-46) Mississippi River Bridge, Winona County

Dear Mr. Kalsy:

The Minnesota Department of Natural Resources (DNR) has completed review of the information submitted in the MnDOT Early Notification Memo regarding a proposed replacement bridge for TH 43 Mississippi River crossing on new alignment, most likely upstream and adjacent to existing bridge. An existing back channel bridge (north of the main bridge) may also be impacted by the project due to geometric constraints; however, it is MnDOT's desire to maintain this bridge if possible. The following comments were submitted to me during DNR field review of the project:

1. The Mississippi River is a Public Waters and as such a Public Waters Work Permit will be required. As the project moves forward, design of the crossing should meet the conditions listed in GP 2004-0001 (copy attached to cover email). Authorization for the project under this permit will require final review of the project at a later date. Guidance for conditions of the GP (including guidance on construction methods) may be found in the Manual "Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001". A pdf version of this manual may be found at: http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/DNR_GP_Guidance_Manual.pdf

Additional design considerations and information on specific GP conditions are:

- a. It is unknown how much of the proposed project will require work within the river banks (EG in the water). However construction methods should be discussed in order that acceptable demolition and/or reconstruction methods and staging areas for the bridge can be identified in design and project bid letting documents. Bridge demolition guidance has been attached to the cover email.
- b. The Mississippi River is designated as infested with Zebra Mussels. Precautions will be required when removing any equipment off site. See condition #18 of GP 2004-0001.
- c. Winona is protected by a Corps of Engineers flood control project. We will require documentation that the proposed project will not increase flood levels, or impact the flood protection provided by the Corps levee. There is a draft floodway model for the Mississippi River provided by the Corps of Engineers. This model must be updated to reflect the new bridge.
- d. An issue we see with project scheduling is work in or adjacent to the water often conflicts with fish spawning dates. For construction purposes, Work Exclusion dates for non-trout streams in DNR Region 3 is March 1 through June 1. These dates are to allow for fish migration and spawning. Work shall not occur adjacent to, or in the water during this time without prior written approval of the DNR. For main channel work, we would probably issue a waiver on the exclusion period for this project. This is assuming there will not be any major diversions of flow during construction. If there is work on the back channel bridge, we would have to see the proposed work prior to considering a waiver.
- e. To meet DNR Erosion and Sediment Control Requirements, at the start of the project adequate measures to prevent sediment from entering the river must be installed concurrently or within 24. These measures shall be maintained or improved as needed for the duration of the project.
- f. At areas adjacent to Public Waters, revegetate disturbed soil with native plant species suitable to the local habitat.

Please contact me as soon as possible in order to identify further design needs of this project for authorization under the GP.

2. The Minnesota Natural Heritage Information System has been queried to determine if any rare plant or animal species, native plant communities, or other significant natural features are known to occur within an approximate one-mile radius of the TH 43 Bridge Replacement (S.P. 8503-46) project area. Based on this query, several rare features have been documented within the search area (for details, please see the attached database reports). The following rare features may be impacted by the proposed project:
 - a. Several mussels, including state-listed threatened and endangered species, have been documented in the Mississippi River in the vicinity of the proposed bridge replacement. Bridge work can impact mussel resources if it involves disturbance of the river substrate or results in increased siltation due to bank work. As such, it is important that sound erosion and sediment control practices be implemented and maintained throughout the duration of the project. In addition, given the potential for harming a state-listed mussel species and the likelihood of success in moving them out of harm's way, a mussel survey and relocation will be required if the proposed project will impact the riverbed. The extent of the mussel survey should include all areas of the riverbed that will be directly impacted by excavation, pile driving, placing of fill or riprap, driving of equipment, or dewatering; as well as any areas downstream that will receive sediment from project activities. The mussel surveyor will need to contact the Minnesota Endangered Species Coordinator, Rich Baker at 651-259-5073, to obtain a permit before conducting the mussel surveys. Please send the results of all survey work to Lisa Joyal, Endangered Species Environmental Review Coordinator (lisa.joyal@dnr.state.mn.us or 651-259-5109).

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist on the project area.

If you have questions regarding this letter, please e-mail me at peter.leete@dot.state.mn.us or call at (651) 366-3634.

On behalf of the DNR

Sincerely,



Peter Leete
DNR Transportation Hydrologist
(DNR-MnDOT OES Liaison)
Office of Environmental Services, mail stop 620
Minnesota Department of Transportation
395 John Ireland Blvd.
St. Paul, MN 55155

C: ERDB file 20090380

From: [Leete, Peter \(DOT\)](#)
To: [Kelcie Young](#)
Cc: [Ward, Terry \(DOT\)](#); [Nancy Frick](#); [Huber, Bill P \(DNR\)](#); [Popp, Walter A \(DNR\)](#); [Joyal, Lisa \(DNR\)](#); [Alcott, Jason \(DOT\)](#); [Joyal, Lisa \(DNR\)](#); [Kestner, Nathan \(DNR\)](#); [Doperalski, Melissa \(DNR\)](#); [Lund, Keegan \(DNR\)](#); [Stauffer, Kevin W \(DNR\)](#); [Blommer, Craig J \(DNR\)](#); [Yearwood, Terri L \(DNR\)](#); [Alcott, Jason \(DOT\)](#); [Kalvelage, Karen M - DNR](#); Lisie.Kitchel@wisconsin.gov
Subject: Winona Bridge - Additional MnDNR comments/coordination items for EA
Date: Thursday, June 20, 2013 12:56:16 PM
Attachments: [TH43 \(SP8503-46\)Winona-comlet.pdf](#)
[DNRbasemap\(new\).pdf](#)
[best-practices-for-preventing-ais \(April 2013\).pdf.pdf](#)

Kelcie,

I have looked at the DNR letter regarding the Winona bridge sent back on Feb 14, 2009 (attached). The information provided at that time is still correct, though I have the following comments to add/clarify:

1. For my project review purposes, I no longer provide a printout of all the rare species on the Natural Heritage Information System NHIS. I now utilize a map of the project area (the attached DNRbasemap.pdf) showing locations of DNR concern such as Public Waters (in dark blue), designated aquatic invasive species (red), snowmobile Trails (in pink), green shaded polygons for areas of Biodiversity Significance, and various polygons of rare features from the Natural Heritage Information System (NHIS) database (in magenta). In order to protect the inadvertent release of the location of listed species contained in the NHIS, I have not labeled any rare features on the attached map. If you have any questions regarding proposed work near any of these polygons, please give me a call. I believe that SRF has a license to access the NHIS for those details as well. Your GIS folks also can access additional data from the DNR's Data Deli website at <http://deli.dnr.state.mn.us/>. The following files will allow the creation of the same map and ease your cross reference for road locations.

- MCBS Native Plant Communities
- MCBS Sites of Biodiversity Significance
- Public Waters Inventory (PWI) Watercourse Delineations
- Public Waters Inventory (PWI) Basin Delineations
- DNR managed lands such as Wildlife Management Areas, Public Access, State Parks, State Forests, etc
- Trout streams
- Snowmobile Trails

2. The Mississippi River (Lock and Dam Pool #6) is a Public Waters and as such a Public Waters Work Permit will be required for the bridge work. As the project moves forward, design of the crossing should meet the conditions listed in GP 2004-0001:
http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/General_Permit_2004-0001.pdf

In addition to the comments provided in the Feb 14, 2009 letter, please note:

- a. Project documents should include areas of expected impact, including temporarily impacted areas due to staging and construction. These areas of temporary impacts can be of greater concern than the final design for the bridge work itself and should be included in any permit review documents.
- b. The DNR defers navigation requirements for the commercial navigation channel to the US

Coast Guard and/or US Corps of Engineers. There are no additional requirements for the state water trail designation.

Permit authorization for the project will require final review of the project at a later date. Guidance for conditions of the GP (including guidance on construction methods) may be found in the Manual "Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001". A pdf version of this manual may be found at:

http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html

3. I have reviewed the NHIS to see if there are any additions or changes since 2009. I do not see any additional entries in the immediate area, though be aware that the current list of rare species is undergoing review. Many species are slated for re-designation. From my cross referencing the NHIS, I am not seeing any change in status that would impact what has already been identified as 'rare'. Generally speaking, the rare species within one mile of the project area are found in three areas; the Mississippi river backwater islands (including areas of Lasch Island), the bluff areas, or in the river itself. Of concern for this project are those that are located in the river itself.
 - a. The rare species most susceptible to adverse impacts from this project are the native mussel species, many of which are on the state list of threatened or endangered species. MnDOT is currently working towards funding a mussel survey of the areas of expected impact. The results of this survey will provide information to determine what if any potential impacts there may be to rare native mussel species.
 - b. Due to the known native mussel beds nearby and other listed species in the river (several listed fish species are known to frequent in the area) stringent erosion, sediment, and other pollutant contaminant/control practices should be incorporated throughout the project area.
4. The Mississippi River and its backwaters are designated as "infested" with zebra mussels & eurasian watermilfoil. The attached guidance sheet for 'Best Practices for Preventing of Spread of Aquatic Invasive Species' shall be followed for equipment going into or coming out of the water. This is also available on the website:
http://files.dnr.state.mn.us/publications/ewr/invasives/ais/best_practices_for_prevention_ais.pdf
5. There are several Public Access locations along the Mississippi River in Winona (yellow triangles on the attached basemap.pdf). My records show that all of these are administered by the City. On similar other bridge projects there has been discussion with local emergency services folks to be sure that access to the river is not impeded should there be an emergency need. I assume these conversations will occur as the project moves along.

That's all I can think of at the moment. We may have additional comments during the EA/EAW review process or as additional project details become known.

Contact me if you have questions

peter

Best Practices for Preventing the Spread of Aquatic Invasive Species

All equipment¹ being transported on roads or placed in Waters of the State shall be free of prohibited and regulated invasive species and unlisted non-native species (any other species not native to Minnesota)

1. **Project plans or documents should identify Designated Infested Waters²** located in or near the project area.
2. **Prior to transportation along roads into or out of any worksite, or between water bodies within a project area, all equipment** must be free of any aquatic plants, water, and prohibited invasive species.
 - A. **Drain** all water from equipment where water may be trapped, such as tanks, pumps, hoses, silt curtains, and water-retaining components of boats/barges (see Figures 5 & 6) **AND**
 - B. **Remove** all visible aquatic remnants (plants, seeds and animals). Removal of mud & soil is not required at all sites, though is encouraged as a Best Practice. Removal of mud and soil may be required on sites designated as infested (see #4).
3. **Prior to placing equipment into any waters**, all equipment must be free of aquatic plants and non-native animals.

4. **Additional measures are required on Designated Infested Waters to remove and kill prohibited species such as zebra mussels, quagga mussels, New Zealand mudsnails, faucet snails, or spiny waterfleas.**

Note: The DNR is available to train site inspectors and/or assist in these inspections. Contact the appropriate Regional Invasive Species Specialist:

www.mndnr.gov/invasives/ais/contacts.html

- A. For day use equipment (in contact with the water for 24 hours or less); Perform #2 above or,
- B. For in-water exposure greater than 24 hours: Perform #2 above, and inspect all equipment for the prohibited invasive species present (see Figure 1).

Then choose one of the following three: **on-site treatment**, **off-site treatment**, or **customized alternative**.

On-Site Treatment

Remove by handscraping or powerwashing (minimum 3000 psi) all accessible areas (Figures 1 and 2) **AND**

Kill Prohibited Aquatic Invasive Species in non-accessible areas using one or more of the following four techniques:

- **Hot Water (minimum 140°F) for ten seconds** (Figure 2) for zebra mussels, quagga mussels, New Zealand mudsnails, faucet snails **OR**
- **Air Dry** (Figures 3 & 4)
 - Spiny waterfleas – air dry for a minimum of 2 days
 - New Zealand mudsnails – air dry for a minimum of 7 days
 - zebra or quagga mussels, faucet snails – air dry for a minimum of 21 days **OR**
- **Freezing Temperatures**
 - zebra mussels - expose to continuous temperature below 32°F for 2 days **OR**
- **Crush**
 - Crush rock, concrete, or other debris by running it through a crushing plant to kill prohibited species

Off-Site Treatment

Under certain conditions, the DNR will allow transportation of equipment off-site after partial removal of prohibited species (for example, after “removal” has been done and equipment will be taken to a facility to complete final treatment [i.e., “kill”]) This is a ‘one-way pass’ to allow transport to a storage area or disposal facility. This option can only be utilized if the receiving site is at least 300 feet from riparian areas, wetlands, ditches, stormwater inlets or treatment facilities, seasonally-flooded areas, or other waters of the state. To be allowed to use the off-site treatment option you must do the following:

- Read, complete, and comply with the appropriate authorization form for transportation of Prohibited Invasive Species at www.mndnr.gov/invasives/ais_transport.html (Note that a completed form is required to be in every vehicle that is transporting equipment containing infested species) **AND**
- Complete on-site treatment described in 4B above prior to re-use in or adjacent to water.



Figure 1. Invasive species may not be readily visible on equipment. Some species are less than 1/4 inch in size.

Photo credit: Brent Wilber, Lunda Construction



Figure 2. Removal of aquatic remnants is required before transporting.

Photo credit: Peter Leete, DNR

Best Practices for Preventing the Spread of Aquatic Invasive Species

Contact a DNR Invasive Species Specialist for authorization of a customized alternative

There may be situations due to time of year, length of exposure, type of equipment, or site conditions that a DNR Invasive Species Specialist could approve alternative methods or requirements for treatment. Contact the appropriate Regional Invasive Species Specialist:
www.mndnr.gov/invasives/contacts.html

5. Temporary appropriations of water from Designated Infested Waters to utilize elsewhere (such as for dust control, landscaping, bridge washing, etc.) is not allowed except by permit, thus should be avoided.

If use of Designated Infested Waters is unavoidable, permit information is located at www.mndnr.gov/waters/watermgmt_section/appropriations/permits.html



Figure 3. Drying will also kill aquatic organisms. Lay out materials to dry in the proper time. Drying times vary by species. Inspect after drying period is over.
Photo credit: Dwayne Stenlund, MnDOT



Figure 4. Drying techniques must not trap water. This equipment will not dry adequately.
Photo credit: Peter Leete, DNR



Figure 5. Pumping from designated infested waters for use elsewhere on the project is prohibited without a permit.
Photo credit: Peter Leete, DNR



Figure 6. Drain all water from equipment where water may be trapped. Remove drain plugs and drain hoses prior to transport.
Photo Credit: Peter Leete, DNR

Document Information

www.mndnr.gov/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html

Best Practices for Meeting DNR GP 2004-0001 (published 5/11, updated 12/12) – Chapter 1/Page 8

More on the DNR Invasives Species Program can be found at: www.mndnr.gov/AIS

¹ **'Equipment'** is defined as any implement utilized in construction. This includes boats, barges, heavy machinery, light machinery, or other material that may be moved on-site or off-site, including but not limited to rock (riprap) or timber for temporary workpads, backhoes, pumps, hoses, worksite isolation materials (eg, sheet pile or jersey barriers), boats, barges, temporary staging materials, erosion prevention products, sediment control products (eg, silt curtain), water trucks that take water from open bodies of water (eg, dust control), or dewatering components.

² **List of Designated Infested Waters:** http://files.dnr.state.mn.us/eco/invasives/infested_waters.pdf

DNR Contact Information



DNR Ecological and Water Resources lists area office staff at www.mndnr.gov/waters

DNR Ecological and Water Resources
500 Lafayette Road, Box 32, St. Paul, MN
55155-4032, (651)259-5700 or 5100

DNR Ecological and Water Resources website provides information at www.mndnr.gov or by calling (651) 259-5700 or 5100.

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DNR Information Center

Twin Cities: (651) 296-6157
Minnesota toll free: 1-888-646-6367
Telecommunication device for the deaf (TDD): (651) 296-5484
TDD toll free: 1-800-657-3929

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This information is available in an alternative format on request



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, MN 55155

August 28, 2013

Tony Sullins, Field Supervisor
U.S. Fish and Wildlife Service
Twin Cities Field Office
4101 East 80th Street
Bloomington, MN 55425

Re: Request for Concurrence
May Affect, Not Likely to Adversely Affect Determination –
Higgins eye (*Lampsilis higginsii*)/sheepnose (*Plethobasus cyphus*)
State Project 8503-46, Trunk Highway 43
City of Winona, Winona County, Minnesota

Dear Mr. Sullins:

The Minnesota Department of Transportation (MnDOT) acting as the non-federal representative for the Federal Highway Administration (FHWA), is requesting concurrence from the U.S. Fish and Wildlife Service (Service) that the above referenced action may affect, but is not likely to adversely affect the Higgins eye (*Lampsilis higginsii*) or the sheepnose (*Plethobasus cyphus*), both federally-listed endangered species..

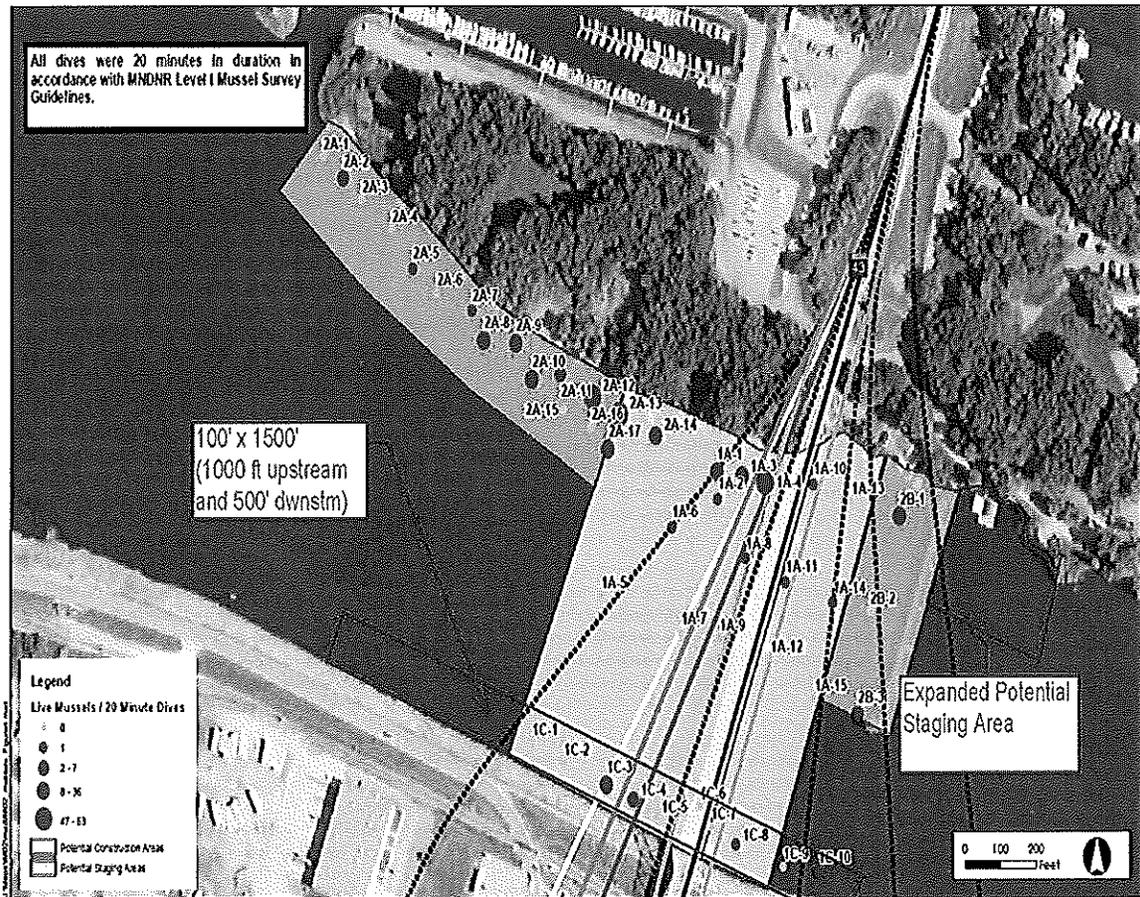
Project Background

The proposed project is located in the City of Winona, located on the Mississippi River in Winona County, Minnesota. Trunk Highway (TH) 43 is a two-lane highway where it crosses the Mississippi River back channel over Bridge 5930 and the main channel over Bridge 5900. TH 43 continues through the City of Winona connecting to U.S. Highway 61.

The main channel bridge (5900) has stood as a distinctive element in the community since 1942. Concerns about the structural stability of bridges following the Interstate 35W bridge collapse triggered a closure of the bridge in 2008 while gusset plate repairs were made. In addition, the Minnesota Legislature required that all fracture critical bridges be addressed to minimize risk of future collapse; the Winona Bridge was among these bridges.

This project will rehabilitate the existing main channel bridge (5900) and construct a new two-lane girder bridge immediately upstream. The project will also involve improvements to the 4th Street/Winona Street intersection (see Project Limits Layout and the Construction and Staging Areas Map in the Appendix).

Two separate mussel surveys were completed for this action. The first survey was conducted by a private firm in 2010 and the second conducted by the Minnesota Department of Natural Resources (MNDNR) in 2013. The graphic below shows the original 2010 survey area as well as the expanded 2013 limits. Note: The 2013 survey conducted by the MNDNR covered both the original and expanded areas.



Approximate Locations of Mussel Sampling
Winona Bridge Project
Winona, Minnesota

Figure 4

Listed Species/Critical Habitat within the Action Area

The County Distribution of Minnesota's Federally-Listed Threatened, Endangered, Proposed, and Candidate Species list provided by the Service indicates that Winona County is within the distribution range of the eastern massasauga (*Sistrurus catenatus*), a federal candidate species as well as the Higgins eye pearl mussel (*Lampsilis higginsii*), the sheepsnose (*Plethobasus cyphus*) and the Karner blue butterfly (*Lycaeides melissa samuelis*) all federally-listed endangered species. There is no critical habitat designated in Winona County.

Of the species identified above, only the Higgins eye and the sheepsnose have the potential to occur within the project area.

Survey Conducted and Results

Two separate mussel surveys were completed for this action. The first survey was conducted by a private firm in 2010 and the second conducted by the MNDNR in 2013. Neither survey identified federally-listed mussel species in the areas searched.

The 2013 mussel survey revealed low mussel densities in the search area consisting of primarily common species with the exceptions being three individuals of round pigtoe (*Pleurobema sintoxia*), a state-listed special concern species. No federally-listed species were identified. Based on these results, the MNDNR indicated that they have no further mussel-related concerns and the project can proceed without further surveys, mitigation and without the need for a State Endangered or Threatened Species Taking Permit.

Reason for Concurrence Request

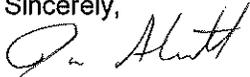
Due to the scope of the action and the in-water impacts, the Service was contacted to help determine the appropriate consultation path in accordance with Section 7 of the Endangered Species Act of 1973, as Amended. After reviewing the survey results, and given that no federally-listed species were identified and that no areas with high mussel density or diversity were found in the action area during in either of the two survey efforts, it was decided that a determination of may affect, but is not likely to adversely affect was appropriate.

Determination

Based on the information and coordination provided above, MnDOT acting as the non-federal representative for the FHWA, has determined that the proposed action may affect, but is not likely to adversely affect Higgins eye or the sheepsnose.. We are requesting concurrence that consultation with your office under Section 7 of the Act is complete. As an item of information a determination of no effect has been made for the eastern massasauga and the Karner blue butterfly.

If you require additional information, please contact me at (651) 366-3605.

Sincerely,



Jason Alcott
Natural Resource Specialist

cc: USFWS- Phil Delphey
MnDOT- Terry Ward
MnDOT - Deb Moynihan
file

Appendix

Project Limits Layout

Construction and Staging Areas Map



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, MN 55155

Date: Aug 22, 2013

Terry Ward, Project Manager
MnDOT Rochester District

RE: Winona Bridge (No. 5900) EA – wetland impact replacement

Dear Terry:

As per your request, I have prepared a wetland impact replacement statement for the above project.

This project will incur wetland impacts as indicated in the table below. These impacts are shown in the project’s Environmental Assessment. The total project wetland impacts are anticipated to be 0.19 acre of permanent impact via wetland fill and 1.68 acre of permanent impact via conversion of wetland type (clearing of trees will convert forested wetland to herbaceous wetland). As the design and permitting of the project proceeds, the wetland impacts may differ from the amounts listed below.

Table 1 - Anticipated Project Wetland Impact

Nature of Impact	Amount of proposed impact	Wetland classification	Wetland Type C-39
Permanent fill	0.15 acre	Floodplain Forest	Type 1L
Permanent fill	0.04 acre	Wet meadow	Type 2
Permanent conversion of wetland Type	1.68 acre	Floodplain Forest	Type 1L

The wetland impacts for the above MnDOT project will be replaced through the MnDOT & BWSR Cooperative Wetland Replacement program. Through an interagency agreement with the Board of Water and Soil Resources (BWSR), MnDOT has purchased \$4 million worth of wetland credits from established and WCA-approved wetland banks. At the beginning of 2013, MnDOT credit holdings were approximately 240 credit-acres.

An Equal Opportunity Employer



Nature of wetlands in the project area: wetlands in the vicinity of the project are primarily riverine floodplain forest wetlands. These wetlands provide wildlife and fisheries habitat.

The minimum WCA/Corps wetland replacement ratio for the project area is 2.0 for permanent fill. The typical Corps replacement ratio for conversion of wetland type is 0.25 (WCA does not consider wetland conversion to be an impact). The table below lists the anticipated wetland banking site and proposed replacement acres that are anticipated to be used as mitigation for this project.

Table 2 - Wetland bank credits proposed for use as mitigation

Amount of proposed replacement	Replacement wetland classification/Type	Wetland Bank Name / County	Wetland Bank WS / BSA
0.38 acre for fill impact	Floodplain Forest	Hokah / Houston	WS 44 / 8
0.42 acre for conversion impact	Floodplain Forest	Hokah / Houston	WS 44 / 8

The Hokah Bank Site is a cooperative wetland restoration project between MnDOT and BWSR. As of August 2013, the Hokah Bank Site account contains 150 Corps/WCA-approved credits (see attached bank site ledger).

Sincerely,

Sarma Straumanis
 Wetland Program Coordinator
 Office of Environmental Stewardship

cc: Deb Moynihan, MnDOT OES





Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-4010

November 26, 2008

Minnesota Department of Transportation
Attn: Frank Pafko
Office of Environmental Services, Mail Stop 620,
395 John Ireland Blvd. St. Paul, MN 55155

RE: Amended Statewide General Permit 2004-0001 for Minnesota Department of Transportation

Enclosed is Amended General Public Waters Work Permit (GP) 2004-0001 issued to the Minnesota Department of Transportation (MnDOT) for projects to replace or repair bridges, culverts or stormwater outfalls on Public Waters. The permit has been amended to extend the expiration date to November 30, 2013, to extend the authorized work to all Public Waters and to include stormwater outfalls. This General Permit is mutually beneficial and should continue to improve methods and procedures that result in protecting the physical and biological characteristics of Public Waters.

An important aspect of reviewing MnDOT projects for compliance with GP 2004-0001 has been the combining of DNR early environmental review and permit review into MnDOT's internal Early Notification Memo process. Early guidance on meeting provisions of GP 2004-0001 is provided to MnDOT at this early planning stage. Projects can then be authorized under GP 2004-0001 at any time the project is deemed to meet its conditions, often prior to final design of a project. Specific written authorization is provided for each project to show compliance with GP 2004-0001 (a template of this authorization form is attached). Peter Leete, DNR Transportation Hydrologist will continue to be the point of contact for this permit.

GP 2004-0001 is valid until November 30, 2013. The success to continuation of this general permit is contingent upon commitment of staff in MnDOT to assure compliance with its terms and conditions. Projects previously authorized under GP 2004-0001 that have not been completed by November 30, 2008, are authorized under this permit reissue. The reissued General Permit is available on the DNR Waters website: <http://www.dnr.state.mn.us/waters/forms.html>.

The manual, *Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001* is being updated. The manual provides guidance on meeting the conditions of the GP, though is not intended to be utilized in its entirety for every project. The information in the manual will continue to be developed to aid MnDOT in addressing DNR concerns in their specifications, designs and construction methods. The manual is at:
http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/DNR_GP_Guidance_Manual.pdf

Please do not hesitate to contact Peter Leete, Transportation Hydrologist at (651) 366-3634 or peter.leete@dot.state.mn.us if you have any comments or questions regarding General Permit 2004-0001.

Sincerely
DNR WATERS

Kent Lokkesmoe
Director

Attachments

cc: U. S. Army Corps of Engineers
Minnesota Association of Soil & Water Conservation Districts
Minnesota Association of Watershed Districts
League of Minnesota Cities
MN Pollution Control Agency
DNR Area & Regional Hydrologists
DNR Fisheries

DNR Forestry
DNR Wildlife
DNR Enforcement
DNR Ecological Resources
DNR Trails and Waterways
DNR Waters, Permits Unit



GENERAL PUBLIC WATERS WORK PERMIT

**Amended
General
Permit Number
2004-0001**

Pursuant to Minnesota Statutes, Chapter 103G, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant and other supporting data, all of which are made a part hereof by reference, **PERMISSION IS HEREBY GRANTED** to the applicant to perform the work as authorized below:

Public Water Name All Waters shown on the Public Waters Inventory Location maps: http://www.dnr.state.mn.us/waters/watermgmt_section/pwi/download.html	County All counties in Minnesota
Name of Permittee Minnesota Department of Transportation, Attn: Frank Pafko	Telephone Number (Include Area Code) 651-366-3602
Address (No. & Street, RFD, Box No., City, State, Zip Code) Office of Environmental Services, Mail Stop 620, 7 th Floor Transportation Building, 395 John Ireland Blvd., St. Paul, MN 55155	
Authorized Work: Replace or repair bridges, culverts, or stormwater outfalls on Public Waters, where all conditions and provisions specified herein are met. This permit is valid from the date of issuance until November 30, 2013. Projects authorized under this permit that have not been completed by the expiration date of this permit will require the project engineer to request an extension as noted in condition #7.	
Purpose of Permit Bridge, Culvert or Stormwater Outfall Repair or Replacement	Expiration Date of Permit November 30, 2013
Property Described As: The Permittee or it's authorized agent must own, control or have permission to access and use all lands affected by the project.	

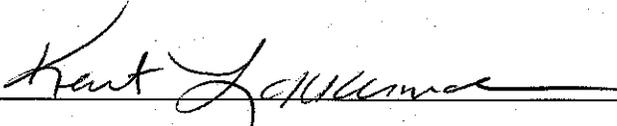
This permit is granted **subject to** the following **CONDITIONS**:

1. The **permittee** is not released from any rules, regulations, requirements, or standards of any applicable federal or state agencies; including, but not limited to, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Board of Water and Soil Resources, MN Pollution Control Agency, or watershed districts.
2. This permit is not assignable by the **permittee** except with the written consent of the Commissioner of Natural Resources.
3. The **permittee** shall notify the DNR Transportation Hydrologist or Area Hydrologist at least five days in advance of the commencement of the work authorized hereunder and notify him/her of its completion within five days. The Notice of Permit issued by the Commissioner shall be kept securely posted in a conspicuous place at the site of operations.
4. The **permittee** shall make no changes, without written permission previously obtained from the Commissioner of Natural Resources, in the dimensions, capacity or location of any items of work authorized hereunder.
5. The **permittee** shall grant access to the site at all reasonable times during and after construction to authorized representatives of the Commissioner of Natural Resources for inspection of the work authorized hereunder.

6. This permit may be terminated by the Commissioner of Natural Resources at any time deemed necessary for the conservation of water resources of the state, or in the interest of public health and welfare, or for violation of any of the conditions or applicable law of this permit, unless otherwise provided in the Permit.
7. Construction work authorized under this permit shall be completed on or before the date specified above. The **permittee** may request an extension of time to complete the project, stating the reason thereof, upon written request to the Commissioner of Natural Resources.
8. In all cases where the **permittee** by performing the work authorized by this permit shall involve the taking, using, or damaging of any property rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the **permittee**, before proceeding, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests needed for the work.
9. This permit is permissive only. No liability shall be imposed by the State of Minnesota or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the **permittee** or any of its agents, employees, or contractors. This permit shall not be construed as stopping or limiting any legal claims or right of action of any person other than the state against the **permittee**, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as stopping or limiting any legal claim or right of action of the state against the **permittee**, its agents, employees, or contractors for violation of or failure to comply with the permit or applicable provisions of law.
10. Any extension of the surface of Public Waters from work authorized by this permit shall become public waters and left open and unobstructed for use by the public.
11. Where the work authorized by this permit involves the draining or filling of wetlands not subject to DNR regulations, the **permittee** shall not initiate any work under this permit until the **permittee** has complied with the Wetland Conservation Act, any applicable Executive Order, its replacement, or subsequent state policy or law.

See Attachment A: ADDITIONAL CONDITIONS

cc: U. S. Army Corps of Engineers
 Minnesota Association of Soil & Water Conservation Districts
 Minnesota Association of Watershed Districts
 League of Minnesota Cities
 MN Pollution Control Agency
 DNR Area & Regional Hydrologists
 DNR Fisheries
 DNR Forestry
 DNR Wildlife
 DNR Enforcement
 DNR Ecological Resources
 DNR Trails and Waterways
 DNR Waters, Permits Unit

Authorized Signature	Title	Date
	Director, Division of Waters	11-26-08

By: Kent L. Lammers

Date: 11-26-08

Attachment A: ADDITIONAL CONDITIONS
Bridge and Culvert General Permit No. 2004-0001

12. **Notification and Project authorization.** This permit provides conditions to aid project planning and facilitate initial design to streamline DNR regulatory approval. A project must be reviewed by the DNR Transportation Hydrologist through the MnDOT Early Notification Memo (ENM) process in order for it to qualify for authorization under this permit. The existing framework of MnDOT environmental review by the applicable DNR personnel will be utilized to review projects at the earliest possible stage for permit needs and additional conditions. Additional design information may be required of MnDOT during this process. If a project cannot meet the conditions of this permit, a separate individual permit will be required. If emergency or unforeseen projects arise that can not include the framework of environmental review (ENM), the permittee shall contact the DNR Transportation Hydrologist or Area Hydrologist immediately to provide details and discuss project design and applicable standards for authorization under this permit. **Work shall not commence until written approval that the project will meet these (and any additional written) permit conditions is received from the applicable DNR Hydrologist.**
13. **Applicable Projects.** Except as allowed by Condition #15, this permit applies only to the replacement, reconstruction, or repair (including associated minor channel work) of existing structures in Public Waters that are designed under the supervision of a registered professional engineer. A project not meeting applicable conditions of this permit or a project the DNR identifies as having the potential for significant resource impacts is not authorized herein. Rather, such projects will require an individual permit application.
14. **Environmental Review.** If the bridge/culvert construction is part of a road project that requires mandatory environmental review pursuant to MN Environmental Quality Board rules, then the permit is not valid until environmental review is completed.
15. **Maintenance Projects.** Prior to commencing structural or hydraulic maintenance at Public Waters, the Permittee shall discuss with the DNR Transportation Hydrologist or Area Hydrologist the extent and method of required maintenance. Maintenance work shall not be commenced until permittee receives approval from the applicable DNR Hydrologist.
16. **Notification of Wetland Work Above OHW.** The MnDOT Project Manager or designee shall notify the MnDOT District wetland contact or other MnDOT personnel having Wetland Conservation Act oversight if any grading or filling is to be done in wetlands above (landward) the ordinary high water mark.
17. **Photos and As-Builts.** Upon completion of the authorized work, the permittee may be required to submit a copy of established benchmarks, representative photographs, and may be required to provide as-built surveys of Public Watercourse crossing changes.
18. **Invasive Species.** All equipment intended for use at a project site must be free of prohibited invasive species and aquatic plants *prior* to being transported into or within the state and placed into state waters. All equipment, used in state waters known to contain aquatic invasive species that are designated as infested waters, shall be inspected by MnDOT or its contractors and adequately decontaminated *prior* to being transported. The DNR is available to train MnDOT site inspectors and/or assist in these inspections. A list of designated infested waters can be found at <http://files.dnr.state.mn.us/eco/invasives/infestedwaters.pdf>.

Basic measures to prevent the spread of aquatic invasive species are:

- A. Before transporting equipment from a work site, inspect all equipment that had been in contact with the water and remove all visible aquatic remnants [plants, seeds, mud, soil, and animals]. Powerwashing followed by drying (7 days) is an acceptable method to ensure killing and removal of invasive species.
- B. Before transporting equipment from a work site, drain all water from equipment where water may be trapped, such as tanks, pumps, hoses, silt curtain, and water-retaining components of boats/barges.
- C. After spraying and draining, dry equipment that has been in infested waters for a minimum of 7 days before reuse.

Should the methods above not be able to be met, contact the DNR Transportation Hydrologist to determine alternative treatments.

By: Kurt L. Miller

Date: 11-26-08

Permit 2004-0001, Attachment A continued

19. **State & Federal Listed Species Prohibition.** If there are unresolved concerns regarding impacts to federally or state listed species (endangered, threatened, or special concern), the general permit is not applicable, and the project must be submitted as a separate permit application. Compliance with DNR and federal guidelines established for a listed species (e.g. Topeka Shiner conditions) would constitute a resolved concern.
20. **Preliminary Engineering.** This permit authorizes preliminary engineering studies in the water associated with bridge planning (EG core sampling). All core holes must be sealed in accordance with Department of Health well sealing requirements. On infested waters, all equipment in contact with the water must be decontaminated per condition #18.
21. **Demolition and Construction methods.** Temporary work below the OHW such as channel diversions, placement of fill for temporary work pads, bypass roads, or coffer dams to aid in the demolition or construction of any authorized structure shall be reviewed and approved in writing by the DNR Transportation Hydrologist or Area Hydrologist prior to beginning work. Where permitted, temporary fill shall be washed inorganic material free of pollutants or nutrients and all such material shall be removed prior to project completion. Hydrologic modeling may be required to show impacts to the 100yr flood elevation (see provision #25), or contingency plans developed to ensure all construction equipment and unsecured construction materials are removed to prevent impacts to the 100yr flood elevation or from being swept away by flood waters.
22. **Navigation Maintained or Improved.** The structure's final design will not obstruct reasonable public navigation, as determined by the DNR. For bridges, three feet above the calculated 50-year flood stage ordinarily satisfies navigational clearance requirements. For culverts, three feet of clearance above the ordinary high water level (top of the bank) ordinarily satisfies navigational requirements. All work on navigable waters shall be so conducted that free navigation of waterways will not be interfered with, except as allowed by permits issued by the proper public authority. [See MnDOT Standard Specifications for Navigable Waters (spec #1709) of MnDOT Standard Specifications for Construction, 2005 edition, or its successor <http://www.dot.state.mn.us/tecsup/spec/>.]
23. **Dewatering.** Temporary dewatering for bridge, culvert, or stormwater outfall work is authorized by this permit. Stream diversion water must be kept separate from worksite dewatering. All worksite discharge water must be treated for sediment reduction prior to return to the waterbody (see condition #30). Stream diversion water shall be immediately returned to the original channel downstream. On infested waters, pumped water shall not be utilized in a manner that could spread invasive species (such as dust control), and all equipment in contact with the water must be decontaminated per condition #18.
24. **Flowline/Gradient not changed.** Replacement of culverts or crossings are to follow (or be restored to) the natural alignment and profile of the stream. Changes from the existing flowline, gradient or alignment must be consistent with Conditions 27 & 32 and authorized by the DNR Transportation Hydrologist or Area Hydrologist.
25. **Hydrologic/Hydraulic data reporting.** Unless waived by the DNR Transportation Hydrologist or Area Hydrologist, hydrologic modeling to show the impacts of the structure on the 100yr flood elevation is required. Additional modeling may also be required for temporary fill or temporary structures required during demolition or construction. Calculations showing calculated velocities through the structures at 2-year peak flows may also be required.
26. **Flood stages/damages not increased.**
 - A. No approach fill for a crossing shall encroach upon a DNR approved community designated floodway. When a floodway has not been designated or when a floodplain management ordinance has not been adopted and approved, increases in flood stage in the regional flood of up to one-half of one foot shall be approved if they will not materially increase flood damage potential. Additional increases may be permitted if: a field investigation and other available data indicate that no significant increase in flood damage potential would occur upstream or downstream, and any increases in flood stage are reflected in the floodplain boundaries and flood protection elevation adopted in the local floodplain management ordinance as determined by the applicable DNR Hydrologist;
 - B. If the existing crossing has a swellhead of one-half of one foot or less for the regional flood, the replacement crossing shall comply with the provisions for new crossings in (A). If the existing crossing has a swellhead of more than one-half of one foot for the regional flood, stage increases up to the existing swellhead may be allowed if field investigation and other available data indicate that no significant flood damage potential exists upstream from the crossing based on analysis of data submitted by the applicant. The swellhead for the replacement crossing may exceed the existing swellhead if it complies with the provisions found in (A) above.

By: Kurt Lullman
Date: 11-26-08

Permit 2004-0001, Attachment A continued

27. **Water Level Control.** Permittee is responsible for maintaining existing water level control elevations.
28. **Material Handling.** Except as allowed under Condition #21, project materials must be deposited or stored in an upland area, in a manner where the materials will not be deposited into the public water by reasonably expected high water or runoff.
29. **State Trails.** Projects proposed near an existing or proposed state trails system should be consistent therewith.
30. **Erosion and Sediment Control.** In all cases adequate measures [Best Management Practices (BMPs)] to control sediment from leaving the worksite shall be installed adjacent to Public Waters and on in-water work areas. Adequate erosion control BMPs, and/or sediment control BMPs, such as mulches, blanket, temporary coverings, silt fence, silt curtains/barriers, vegetation preservation, redundant BMPs, isolation of flow, or other engineering practices shall be installed concurrently or within 24hrs after the start of the project. These measures shall be maintained (or improved if needed) for the duration of the project in order to prevent sediment from leaving the worksite. Adequate measures are provided:
- A. For projects that have worksites one acre or greater; MPCA's General Stormwater Permit for Construction Activity (MN R100001) requirements and enforcement actions apply. A copy of the Stormwater Pollution Prevention Plan (SWPPP) and a Site Plan (per MnDOT Spec #1717) shall be submitted to the DNR Transportation Hydrologist or Area Hydrologist for review. Failure to prevent sediment from entering Public Waters may result in both MPCA and DNR enforcement actions.
 - B. For projects with worksites less than one acre (when an MPCA General Stormwater Permit for Construction Activity is not required); Part IV Construction Activity Requirements of the MPCA General Stormwater Permit for Construction Activity can be utilized to meet DNR Erosion and Sediment Control requirements [see <http://www.pca.state.mn.us/publications/wq-strm2-51.doc>]. A Site Plan (per MnDOT Spec #1717) shall be submitted to the DNR Transportation Hydrologist or Area Hydrologist for review. Failure to prevent sediment from entering Public Waters may result in DNR enforcement actions.
 - C. All projects must also adhere to MnDOT Standard Specifications for Construction, 2005 edition, (eg. specs 1701, & 1717), its supplements or its successor [see <http://www.dot.state.mn.us/tecsup/spec/>].
- Should differing requirements, specifications, or measures exist, the more restrictive shall apply. DNR requirements may be waived in writing by the DNR Transportation Hydrologist or Area Hydrologist based on site conditions, expected weather conditions, and/or project completion timelines.
31. **Work Exclusion Dates for Fish Spawning and Movement:** Work within Public Waters may be restricted due to fish spawning and migration concerns. Dates of fish spawning and migration vary by species and location throughout the state. Specific dates for each DNR Region may be found on page 1-2 of the manual, *Best Practices for Meeting DNR General Waters Work Permit GP2004-0001*:
http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/DNR_GP_Guidance_Manual.pdf
Work in the water is not allowed within these dates. The DNR Transportation Hydrologist, Area Hydrologist, or Area Fisheries Supervisor shall be contacted about waiving work exclusion dates where work is essential or where MnDOT demonstrates that a project will minimize impacts to fish habitat, spawning, and migration.
32. **Fish Passage:** Bridges, culverts and other crossings shall provide for fish movement unless the structure is intended to impede rough fish movement or the stream has negligible fisheries value as determined by the Transportation Hydrologist or Area Hydrologist in consultation with the Area Fisheries Manager. The accepted practices for achieving these conditions include:
- A. Where possible a single culvert or bridge shall span the natural bankfull width adequate to allow for debris and sediment transport rates to closely resemble those of upstream and downstream conditions. A single culvert shall be recessed in order to pass bedload and sediment load. Additional culvert inverts should be set at a higher elevation. All culverts should match the alignment and slope of the natural stream channel, and extend through the toe of the road side slope. "Where possible" means that other conditions may exist and could take precedence, such as unsuitable substrate, natural slope and background velocities, bedrock, flood control, 100yr flood elevations, wetland/lake level control elevations, local ditch elevations, and other adjacent features.
 - B. Rock Rapids or other structures may be used to retrofit crossings to mimic natural conditions.

By: Kent Lawrence

Date: 11-26-08

Permit 2004-0001, Attachment A continued

33. **Species Movement.** Structures shall not be detrimental to significant wildlife habitat. In some cases the DNR may require crossings be designed for species movement. If the crossing is located at a significant wildlife travel corridor as determined by DNR Wildlife or Ecological Services Staff, the crossing shall be designed to minimize concerns. Generally, bridges are preferred over culverts because they accommodate wildlife movement as long as there is adequate clearance for passage beneath road decks, and /or the presence of a stream bank (dry ground) at normal flow conditions.
34. **Nesting Birds.** MnDOT adherence to existing federal migratory bird protection programs will suffice for DNR concerns. Should active nests be encountered on the project (including swallow nests attached to bridges or culverts), contact MnDOT Office of Environmental Services (jason.alcott@dot.state.mn.us, ph; 651-366-3605), for specific guidance relating to Federal Threatened and Endangered Species and U.S. Fish and Wildlife Service coordination.
35. **Native Plant Communities and Sites of Biodiversity Significance.** If DNR Ecological Resources staff determines that Native Plant Communities or Sites of Biodiversity Significance are present in or adjacent to Public Waters, precautions must be implemented to ensure protection and restoration of vegetation. MnDOT Standard Specifications for Protection and Restoration of Vegetation (spec #2572) of MnDOT Standard Specifications for Construction, 2005 edition, or its successor must be followed to minimize disturbance to such areas [see <http://www.dot.state.mn.us/tecsup/spec/>]. This may include, but is not limited to, the following: (1) During the project, parking, placement of temporary structures or material shall not be allowed outside the existing road right-of-way; (2) Place temporary fence at the construction limits and at other locations adjacent to vegetation designated to be preserved; (3) Minimize vehicular disturbance in the area (no unnecessary construction activities); (4) Leave a buffer of undisturbed vegetation between the critical resource and construction limits; (5) Precautions should be taken to ensure that borrow and disposal areas are not located within native plant communities; and (6) Revegetate disturbed soil with native species suitable to the local habitat and selected in consultation with DNR Ecological Resources staff.

**STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION**

LIMITED USE PERMIT

In accordance with Minnesota Statutes Section 161.434, a Limited Use Permit is hereby granted by the State of Minnesota, Department of Transportation ("Department") to the City of Winona ("City"), for the purpose of constructing, operating, maintaining and supervising certain facilities which constitute highway and aesthetic uses of the right of way in accordance with this Statute and as described in this permit. This permit is subject to the following special provisions:

SPECIAL PROVISIONS

1. For purposes of this permit, City includes the City for itself, its successors in interest, its agents and assigns.
2. This permit is granted solely for the purpose of constructing, operating, maintaining and supervising certain portions of a public marina on Latsch Island as shown on the exhibits attached and incorporated as part of this permit.
3. The attached exhibits depict the following: The right of way across Latsch Island, outlined in red on Exhibit "A" and the portion of right of way on Latsch Island subject to this permit, shaded red on Exhibit "B".
4. Constructing, operating, maintaining and supervising the described facilities will be at no expense to the Department.
5. The City may, with approval of the Department, clear from the right of way trees and bushes which would otherwise interfere with construction and operation of the described facilities.
6. No deviation from the planned geometrics will be made without approval of the Department.
7. No advertising devices in any form or size shall be constructed, placed or permitted to be constructed or placed upon the right of way subject to this permit.

8. No assignment of this permit is allowed and no commercial activities will be allowed on the right of way subject to this permit.
9. This permit is non-exclusive and is granted subject to the rights of others, including, but not limited to, public utilities which may occupy the right of way.
10. The City will preserve and protect all utilities legally located upon the right of way subject to this permit at no expense to the Department and it shall be the responsibility of the City to call the Gopher State One-Call System at 1-800-252-1166 at least 48 hours prior to performing any excavation or driving any posts.
11. The City, in its construction and maintenance activities, shall preserve or restore any disturbed ground surface in such a manner that drainage, erosion control and aesthetics are perpetuated.
12. This permit does not grant the right of vehicular access to T.H. 43 except at locations provided by the Department.
13. Any use permitted by this permit shall remain subordinate to the right of the Department to use the right of way for highway and transportation purposes and nothing in this permit shall be construed so as to interfere with the right of the Department to maintain T.H. 43.
14. The Department may, without notice, temporarily interrupt or suspend this permit for safety or emergency reasons including, but not limited to, repair, maintenance or reconstruction of any portion of T.H. 43.
15. The Department, its Commissioner and its employees shall not be liable for property damage, bodily injury, death or other losses and expenses to the City or individuals using the right of way subject to this permit, caused by or resulting from maintenance, lack of maintenance, or operations.
16. The City shall not permit the storage of any substance or material on the property which may create a fire hazard to the adjacent highway facility. If the Department determines that the City is using the property in such way as to create a danger to the adjacent highway facility or traveling public thereon; and, if upon receiving notice, the City does not remedy the danger to the satisfaction of the Department, then the Department may immediately cancel and terminate this permit. Any requirement for giving notice of cancellation set out elsewhere in the permit shall not apply to cancellation under this paragraph.
17. This permit will remain effective until December 31, 2005, unless the Department determines that the permitted use creates a hazard for the users of Trunk Highway 43, including that

described in the previous paragraph, or that the right of way is required for transportation purposes, in which case the City, upon 90 days written notice, shall remove the improvements herein described and restore the area to its prior condition at no expense to the Department.

18. This permit does not relieve the City from any liability or obligation imposed by federal law, Minnesota statutes, local ordinances or other agencies relating thereto and any necessary permits relating thereto shall be obtained by the City.
19. The Department shall retain the right to limit and/or restrict the parking of vehicles and assemblages of viewers on the highway right of way over which this permit is granted so as to maintain the safety of both the motoring public and users of the right of way subject to this permit.
20. The City will hold harmless and indemnify the State, its Commissioner of Transportation and employees from claims resulting from the temporary or permanent termination of user rights on any portion of highway right of way subject to this permit.
21. This permit does not grant any interest whatsoever in land, nor does it establish a permanent park, recreation area or wildlife or waterfowl refuge facility that would become subject to Section 4(f) of the Federal-Aid Highway Act of 1968, nor does this permit establish a bike trail or pedestrian way which would require replacement pursuant to Minnesota Statutes Section 160.264.
22. The City will hold harmless and indemnify the state, its Commissioner of Transportation and employees from liability claims for damages because bodily injury, death, property damage, sickness, disease or loss and expense arising from the use of the right of way subject to this permit.
23. The City for itself, its successors in interest, its agents and assigns, agrees to abide by the provisions of Title VI, Appendix C, of the Civil Rights Act of 1964 to the end that in accordance with the act, regulations and other pertinent directions, no person in the United States shall on the ground of race, color or national origin be excluded from or denied use of the facilities located on the right of way subject to this permit.
24. Before this permit becomes effective, its provisions shall be approved by resolution of the City Council of the City of Winona.
25. This permit shall be interpreted according to the laws of the State of Minnesota.

RECOMMENDED FOR APPROVAL:

Kermit K. McRae
Kermit K. McRae
Transportation District Engineer
Minnesota Department of Transportation

8-25-97
Date

CITY OF WINONA:

Approved and accepted by the City of Winona,
acting by and through its Common Council

Jerome S. Miller
Mayor, City of Winona

8-5-1997
Date

Jim [Signature]
City Administrator

8-5-1997
Date

APPROVED:
Commissioner of Transportation

W. Smith [Signature]
Director, Office of Land Management

9-8-97
Date

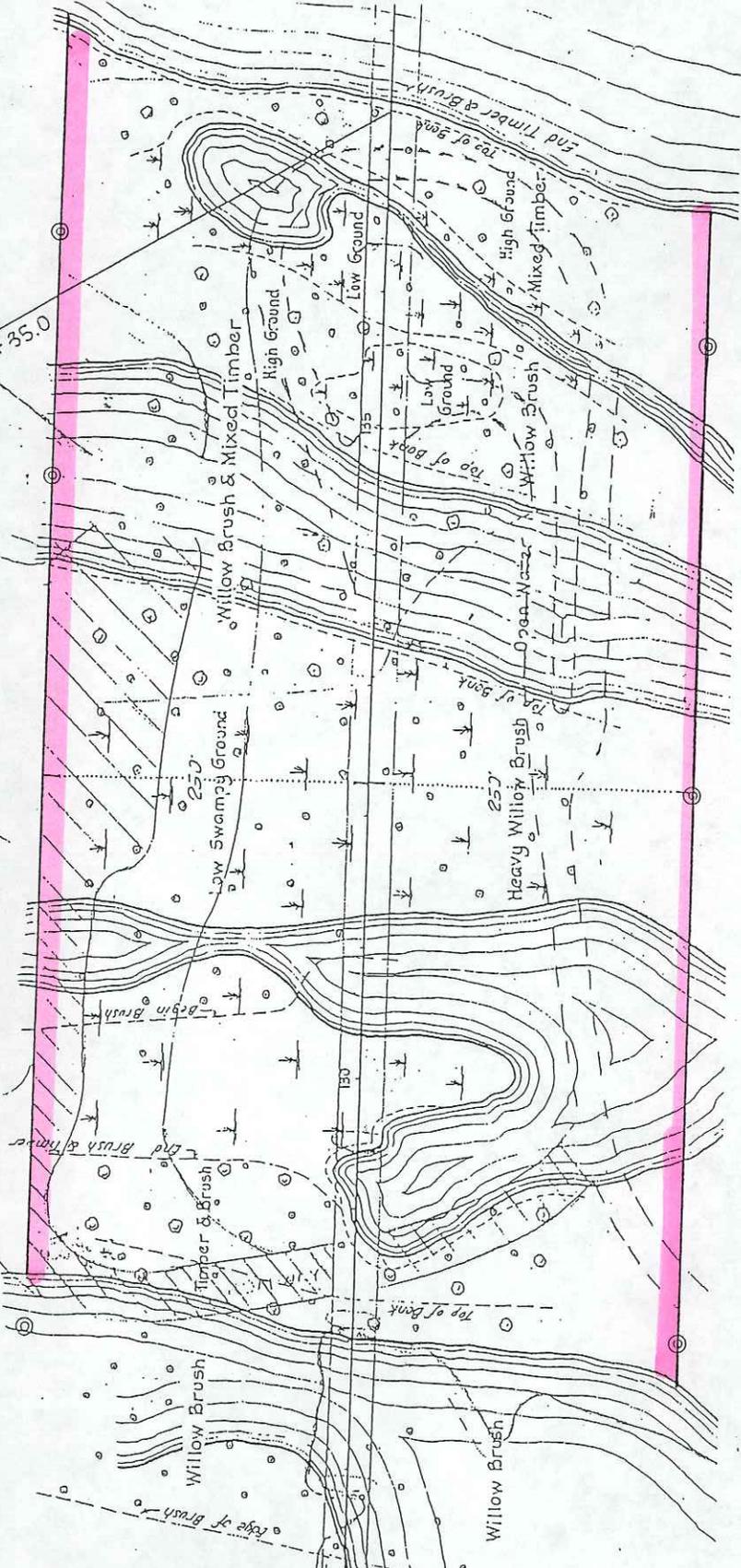
The Commissioner of Transportation by the execution of this permit certifies that this permit is necessary in the public interest and that the use intended is for public purposes.

PARKING AREA TO BE
CONSTRUCTED & SURFACED
BY THE CITY OF WINONA
AV ELEV. 652.00

END ORDER NO 13596
S.P. 8510 & P.O. 8503 (43-75)

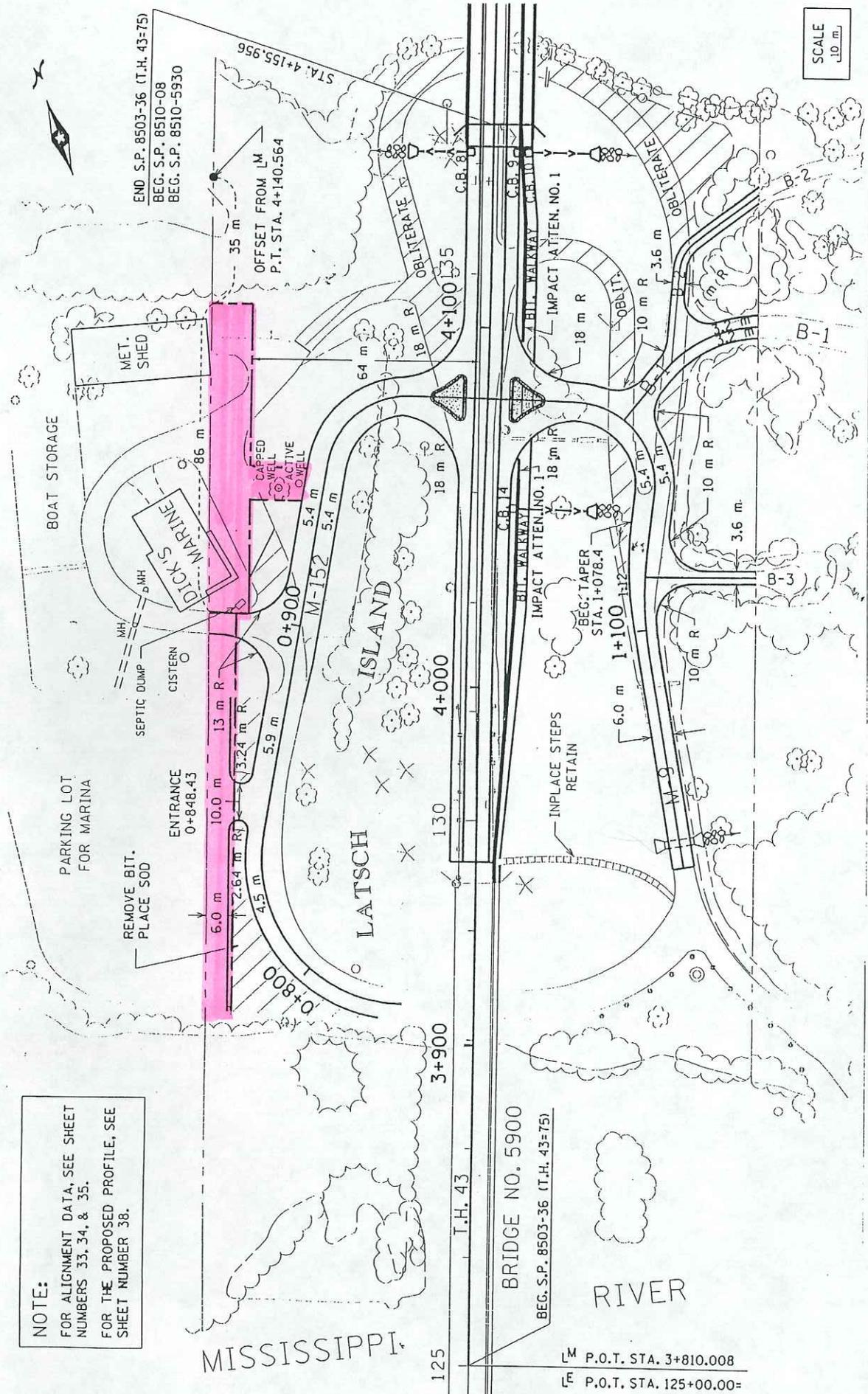
SERVICE AREA APPROX.
200' x 300' TO BE
FILLED TO AN ELEV.
OF 658.00 BY
CITY OF WINONA

STA. 136+35.0



NOTE:

FOR ALIGNMENT DATA, SEE SHEET
NUMBERS 33, 34, & 35.
FOR THE PROPOSED PROFILE, SEE
SHEET NUMBER 38.



MISSISSIPPI

125

BRIDGE NO. 5900
BEG. S.P. 8503-36 (T.H. 43=75)

LM P.O.T. STA. 3+810.008
LE P.O.T. STA. 125+00.00=

Exhibit B

State of Minnesota}
} §
County of Winona}

Certification

I, James G. Pomeroy, City Clerk in and for the City of Winona, county and state aforesaid, do hereby certify that I have the care and custody of the resolutions adopted by the City Council of said City; that the annexed and foregoing resolution is a true, correct and compared copy of the original thereof as adopted by said City Council on the 4th day of August, 19 97, and now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and the seal of said City of Winona, Minnesota, this 5th day of August 19 97.



Handwritten signature of James G. Pomeroy over a horizontal line, with the printed name 'James G. Pomeroy' and title 'City Clerk' below it.

RESOLUTION

WHEREAS, the City of Winona owns the marina on Latsch Island, commonly called Dick's Marine; and

WHEREAS, the City of Winona desires to keep this a viable operation; and

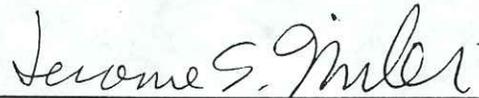
WHEREAS, a portion of the marina encroaches on Minnesota Department of Transportation right-of-way; specifically, a corner of the existing building, the well, and a portion of the parking lot; and

WHEREAS, a Limited Use Permit is necessary to accommodate the encroachments.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Winona, Minnesota:

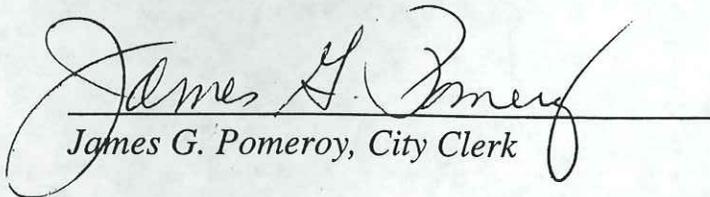
- (1) The Limited Use Permit is hereby approved.
- (2) The Mayor and City Manager are hereby authorized to execute the permit on behalf of the City of Winona.

Passed and adopted by the City Council of the City of Winona, Minnesota at a meeting thereof held this 4th day of August, 1997.



Jerome S. Miller, Mayor

Attest:



James G. Pomeroy, City Clerk

(Seal of the City of Winona)

From: Deb.Sorenson@dot.state.mn.us

To: Jai Kalsy <Jai.Kalsy@dot.state.mn.us>

Cc: Harris Baker <Harris.Baker@dot.state.mn.us>, Kathleen Vesely <Kathy.Vesely@dot.state.mn.us>

Bcc:

Subject: Re: S.P. 8503-46, MN T.H. 43, Winona Bridge Project Early Notification Memo

Date: 1/20/2009 12:48:22 PM

S.P. 8503-46, MN T.H. 43, Winona Bridge Project falls under the approach to runway 30 to the Winona Municipal Airport. The Winona Airport Zoning Ordinance defines height restrictions in the approaches to the runways as well as around the airport that cannot be penetrated. Although this project may not penetrate actually the approach slope, I recommend that you contact the City and obtain the Winona Airport Zoning Ordinance to review the airspace protections.

Minnesota legislation requires all public owned airports to zone their airports for continued funding. This Office has the role of overseeing that the zoning ordinances are upheld not only for the continued utility of the airport and for continued funding, but for the safety of people and property in the air and on the ground in the vicinity of the airport.

In addition, A Notice of Proposed Construction or Alteration may be required for the Federal Aviation Administration. The following is a link to the appropriate FAA Form 7460-1: <http://forms.faa.gov/forms/faa7460-1.pdf>. If you have questions please contact me or you may directly contact the FAA Regional Office listed on the form.

Debra Sorenson
Principal Planner
222 East Plato Blvd
St Paul MN 55107-1618
651-234-7191 - Office Phone
651-234-7261 Fax
www.mndot.gov

then click on the plane

>>> Jai Kalsy 1/7/2009 2:04 PM >>>

All-

Attached, please find an Early Notificcation Memo with exhibits. Some of you may have seen this previously, as this was sent out in advance of a CRAVE study last November.

Jai Kalsy, P.E.
Mn/DOT District 6
2900 48th St. NW
Rochester, MN 55901
ph: 507.286.7545
fax: 507.285.7355
e-mail: jai.kalsy@dot.state.mn.us

>>> John Sampson 9/30/2008 3:36 PM >>>
Jai,

This is John Sampson. I'm Jennie's supervisor. We have been discussing these CRAVE projects at length in our office and how to handle the time commitments that are being requested of us. I've also had conversations with Minnie Milkert regarding this. What we are going to do at this point to ensure that the necessary input and information is provided to you is that we will appoint a spokesperson for our office to attend the first meeting of the CRAVE team to present the information/issues/etc. that we see that needs to be addressed.

Prior to this, if you would send an "Early Notification/Coordination Memo to me as you suggested, that would be great. I will see that it is distributed to the various folks in our office for their input. We will send this back to you prior to your first CRAVE meeting (providing that we have enough time to do so). The representative/spokesperson from our office will be briefed and will attend the first meeting to present our issues/input, etc and also answer questions. If the questions are ones that they can't answer, they will bring that back to our office and get the answer. For your information, Jason Alcott will be the representative from our office for this project. Our staff will be available to answer questions, etc. the rest of the week and can be reached via phone, fax, e-mail, etc. Hopefully this approach will give you the input, etc. you need without the major disruption to our staff as we try to balance assistance for the "regular" program along with assistance for initiatives such as this.

If you have further questions, feel free to call me tomorrow. Unfortunately I will be gone on vacation after tomorrow until October 13. If you send the Early Notification after tomorrow, send it to Jason as well. Thanks!

John M. Sampson, P.E.
Minnesota Department of Transportation
Office of Environmental Services
Director, Environmental Analysis Section
Transportation Building
395 John Ireland Blvd.
MS #620
Phone: 651.366.3622 Fax: 651.366.3603

E-mail: john.sampson@dot.state.mn.us

"What we do in life, echoes in eternity"

>>> Jennie Ross 9/30/2008 11:21:46 AM >>>

>>> Jai Kalsy 9/30/2008 9:41 AM >>>
Jennie-

As you may already suspect, there are no construction limits established for Winona (or for Red Wing). I think what we are going to have to do, given where we're at with this project and the timing of the CRAVE, is to assess the risks to any potential alternatives. This is definitely going to be a 30,000-ft. assessment whereas Dresbach is closer to a 10,000 ft. assessment (in my opinion). Perhaps we could have some folks do some database searches to get a macroscopic view of environmental risks/hazards/sensitive areas prior to the CRAVE.

I think we have a pretty good feel for where the Upper Miss. River National Wildlife Refuge is. Other risks/areas of concern would be with Environmental Justice on Latsch Island and potentially contaminated sites in Winona. We could also pull some wetland maps, floodplain maps, etc.....many of the same issues as Dresbach. Unknowns would include endangered mussels and buried cultural resources (although there might be some areas listed in the database).

I could initiate an Early Coordination Memo to drum up some early feedback from folks in OES/DNR and hopefully have some responses back by Nov. 17th. What do you think?

Jai Kalsy, P.E.
Mn/DOT District 6
2900 48th St. NW
Rochester, MN 55901
ph: 507.286.7545
fax: 507.285.7355
e-mail: jai.kalsy@dot.state.mn.us

>>> Anjani Milkert 9/30/2008 7:53 AM >>>

Jennie,

You should work directly with the PM on getting whatever info you need and informing them of your concerns. If we need your input during the study itself, we'll contact you.

See you on Monday.

Minnie

>>> Jennie Ross 9/30/2008 7:48 AM >>>

Sounds okay to me, Minnie-

The only remaining question is how to get info (e.g., project limits and existing data availability) on Red Wing and Winona prior to those meetings, and how to avoid duplication of effort in data collection for those projects. Will the PMs (or the CRAVE facilitator??) be contacting OES directly to coordinate this???

Jennie

Jennie Ross
Mn/DOT Environmental Services
651/366-3636

>>> Anjani Milkert 9/29/2008 5:53 PM >>>

Jennie,

John Sampson and I discussed these concerns at length this morning. After that meeting, I talked to the CRAVE facilitator. Based on those discussions, I think the most effective use of your time would be:

Environmental Services (environmental, cultural resources and contaminated) functional areas fully brief the PM's on their specific concerns, problem areas, issues, etc.

Someone(s) who can speak to those issues from your office should attend the Monday morning presentation for each study. This is extremely useful for informing the team about your concerns and issues. There are ALWAYS questions and it's good to have the face to face dialog.

Be available via phone, fax or e-mail during the rest of the week in the unlikely case there are other questions that come up. For the "not so far along" projects, this might make more sense (this is revised from my discussions with Brian last week). You would have access to your files, documents, iHub, etc., to look into concerns that come up during the week.

It's always good to attend the Friday afternoon session. That's when we present our findings. You'll see them eventually, but hearing them first hand is better. It's your opportunity to ask questions and express your opinions.

Does that sound workable? I'll send an agenda tomorrow. I'm in the office all day Tuesday. Please stop by if you'd like to discuss further.

Minnie

>>> Jennie Ross 9/29/2008 5:26:40 PM >>>

Minnie-

I believe that John Sampson from OES already talked to you re: our staff's inability to commit to participating for five full days for each of these 3 bridge projects. My Environmental Assessment Group staff would be able to participate for ½ to one day of each of the three CRAVE studies - however, we should discuss how and what day would be the best for us to participate in each. See my specific questions below.

[NOTE: Brian Kamnikar and Joe Hudak should also be responding separately regarding their availability - I can only respond re: my Environmental Assessment Unit staff availability.]

Dresbach - The environmental issues for this project have been pretty well defined already - my question is: what day would be the most useful for me to attend the CRAVE study meeting? I have another commitment the afternoon of Oct 6 that I would like to keep, but if that is the day that decisions will be made re: alternatives to keep vs. those being eliminated, I will make arrangements to be at the CRAVE meeting on the 6th. Please let me know who makes the decision on what the best day would be for me to participate - maybe I could talk to them directly to decide.

Red Wing and Winona - These projects are not very far along, so there is limited environmental resources information available to assist in making CRAVE decisions. [I believe that cultural resources and contamination evaluations information is similarly limiting.] Also, we don't have any information on the likely project limits for these two projects. In order to avoid duplication of effort in compiling data, it would be helpful if project staff (or someone else on the CRAVE team) would contact me (and others in OES) to discuss what information they need from us, and to provide us with some preliminary project information, so we can come prepared (to the extent possible) to the CRAVE meeting. Cultural resources input will be especially important in making decisions re: constraints/impacts for both of these projects, I think - I'm assuming that you are also coordinating with Joe Hudak in OES-CRU re: participation in these studies.

I believe that Jai Kalsy and Mike Kempinger are the PMs for these 2 projects, so I cc:d them on this response, so they can contact me directly, if needed.

I understand what you are trying to accomplish with the CRAVE studies, and I hope that we can work together to identify the most efficient way for my group to assist in this process. Please call me if necessary - it would probably be easier to work these issues out than via e-mail.

Thanks.

Jennie

Jennie Ross
Mn/DOT Environmental Services
651/366-3636

>>> Anjani Milkert 9/23/2008 6:28 PM >>>

Brian/Jennie,

Please call to discuss all of the following, but in the meantime, some brief info:

We had a lengthy conference call with D6 today about the CRAVE (Cost Risk Assessment and Value Engineering) studies that are coming. Attached is a spread sheet showing all of the studies, but here are the D6 studies in a nutshell. Each study is FIVE FULL days:

Dresbach - Oct 6
Red Wing - Oct 20
Winona - Nov 17

All of them have environmental issues. Ideally, we think someone with Environmental background should be a full team member - participate all 5 days. This is especially true for the projects that are early in the design process - Red Wing and Winona.

Need to discuss your availability, need to be a team member or if some questions can be addressed via phone calls, should we bring in consultants (not sure if we can get this done for Dresbach). This is where the discussion part would start...

Minnie

Anjani (Minnie) Milkert, P.E.
Value Engineering Coordinator, Design Services Section
Office of Technical Support
395 John Ireland Blvd. MS 696
St. Paul, MN 55155

Phone: 651-366-4648 FAX: 651-366-4699

From: Keri.Aufdencamp@dot.state.mn.us
To: Jai Kalsy <Jai.Kalsy@dot.state.mn.us>
Cc: Karlene French <Karlene.French@dot.state.mn.us>
Bcc:
Subject: SP 8503-46 Early Notification Memo
Date: 1/20/2009 3:39:25 PM

Jai,

We reviewed the Minnesota Pollution Control Agency (MPCA) databases to check for known contaminated sites in the project area which is delineated by the area located two blocks west and south and one block east and north of TH 43 between the river and 9th Street. The databases searched included: leaking underground storage tank facilities, landfills, salvage yards, voluntary investigation and cleanup (VIC) sites, Superfund sites and dump sites. The Minnesota Department of Agriculture (MDA) databases and the Sanborn fire insurance maps were also reviewed. A review of these MPCA files is a component of a Phase I Environmental Site Assessment (Phase I ESA). A complete Phase I ESA includes at least two other components: research on historic land use, and site reconnaissance. It should be noted that the MPCA and MDA database files are continually being updated. Although this information is the most up-to-date available, some of the information may be incomplete or inaccurate.

Based on the database review, there are two VIC sites, one Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) site, and ten closed leaking underground storage tank sites within approximately 500 feet of the project area. VIC sites are sites with known or potential releases of non-petroleum contamination. CERCLIS is a Superfund site information system that contains information on hazardous waste sites, potentially hazardous waste sites, and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL. Additionally, the review indicates that almost the entire project area as described above supports or has supported industrial land uses, such as railroad yard and refueling operations, manufactured gas plant, gasoline stations and automobile repair and body shops, iron works (foundry and blacksmith), lumber companies, boiler works, painting, dry cleaning facilities, and bulk fuel.

Given the nature and location of the project area, and based on the HPDP threshold criteria as summarized below, this project has a high risk of encountering potentially contaminated sites. Therefore, additional evaluation of the project area for potential contamination is necessary:

1. The project involves acquisition of new right of way in an urban, commercially developed area.
2. Project excavation and grading will be quite extensive. The work will be taking place in a fairly narrow urban corridor where commercial businesses are directly adjacent to existing right of way. This increases the chances of encountering contaminants that may have originated from an off-site source and migrated into the right of way.
3. The project is in a commercial/industrial area. This increases the chances of encountering contaminants that may have originated from an off-site source and migrated into the right of way.

4. The project may require ground water dewatering.

A Phase I Environmental Site Assessment will need to be completed for this project. If the information obtained from the Phase I Environmental Site Assessment indicates a contaminated site may be impacted by the project, the property will be evaluated, and soil and groundwater testing completed, as appropriate. If necessary, a plan will be developed for properly handling and treating contaminated soil and/or groundwater during construction in accordance with all applicable state and federal requirements.

Please add activity codes 1095 and 1233 to PPMS, notify the district consultant coordinator that funding for these activities will be necessary, and notify the Environmental Investigation Unit to begin the investigation when parcel acquisitions and preliminary construction limits have been identified.

Thank you,

Keri B. Aufdencamp
Hydrogeologist
Office of Environmental Services (MS 620)
Minnesota Department of Transportation
395 John Ireland Blvd
St. Paul, MN 55155
651-366-3627
email: keri.aufdencamp@dot.state.mn.us

**U.S. Department of
Homeland Security**

**United States
Coast Guard**



Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103
Staff Symbol: (dwb)
Phone: 314-269-2381
Fax: 314-269-2737
Email: David.H.Studt@uscg.mil

16591.1/726.0 UMR
October 13, 2010

Mr. Philip Forst
Environmental Specialist
Federal Highways Administration
380 Jackson Street
Galtier Plaza, Suite 500
St. Paul, MN 55101-4802

**Subj: PROPOSED WINONA HIGHWAY BRIDGE REPLACEMENT, MILE 726.0,
UPPER MISSISSIPPI RIVER**

Dear Mr. Forst:

This is in reply to your letter dated September 8, 2010 concerning the NEPA process and the Coast Guard's cooperating agency role for the subject bridge project.

The General Bridge Act of 1946 requires that the location and plans for bridges over navigable waters of the United States be approved by the Commandant, U.S. Coast Guard prior to commencing construction. The Upper Mississippi River is a navigable waterway of the United States for bridge administration purposes at the bridge site.

Applications for bridge permits should be addressed to Commander (dwb), Eighth Coast Guard District, 1222 Spruce Street, St. Louis, Missouri 63103-2832, Attn: Bridge Branch. The application must be supported by sufficient information to permit a thorough assessment of the impact of the bridge and its immediate approaches on the environment. We recommend that the impacts of procedures for constructing cofferdams, sand islands, and falsework bents, etc., that will be employed to build the bridge and demolish the old bridge be discussed. The Environmental Assessment (EA) should also contain data on the number, size and types of vessels currently using the waterway. This information should be compared with past and projected future trends on the use of the waterway.

We agree to serve as a Cooperating Agency for the project from a navigation standpoint. We should be given the opportunity to review the EA and be consulted before a decision is made to prepare a FONSI in lieu of an Environmental Impact Statement (EIS). Our review and recommendations on the vertical and horizontal clearance requirements for river traffic will be coordinated with the Minnesota Department of Transportation. Mr. David Studt is the Coast Guard's cooperating agency contact and will coordinate the review of NEPA documents with FHWA.

If the old bridge is eligible for the National Register of Historic Places, a Department of Transportation Guidance Memorandum signed by the Federal Highway Administration and the Coast Guard requires the preparation of an EIS for demolition of a historic bridge unless the structure is not considered important for preservation. You will note that documentation and coordination beyond Section 106 requirements are necessary in order for a FONSI to be

Subj: PROPOSED WINONA HIGHWAY BRIDGE REPLACEMENT, 16591.1/726.0 UMR
MILE 726.0, UPPER MISSISSIPPI RIVER October 13, 2010

acceptable for such projects. Currently the Coast Guard requires the SHPO address the demolition of the bridge by a signed letter containing the following statement: "I concur that since similar historic bridges exist in the State therefore, the demolition of the Winona Highway Bridge would not be a depletion of the resource." Please note Criteria #3 of the Memorandum is satisfied by this statement.

We appreciate the opportunity to comment on the project in this early stage. You may contact Mr. David Studt at the above number if you have questions about our requirements.

Sincerely,



ERIC A. WASHBURN
Bridge Administrator
By direction of the District Commander



Minnesota Department of Transportation

MEMO

OFFICE OF ENVIRONMENTAL SERVICES
Forestry Unit
MS 620
395 John Ireland Boulevard
St. Paul, MN 55155

Office Tel: (651) 366-3613

Fax: (651) 366-3603

Date: February 3, 2009

To: Jai Kalsy
Project Manager
District 6

From: Ken Graeve
Botanist / Plant Ecologist
Forestry Unit - Office of Environmental Services

Subject: S.P. 8503-46 Winona Bridge vegetation review (Early Notification Memo)

As requested, I reviewed the area in Winona around Bridge #5900 on TH 43 to determine potential impacts to the vegetation based on the information you supplied in your Early Notification Memo dated November 10, 2008. The following are my observations and recommendations based on my review of the area on February 3, 2009.

General Description of Vegetation

The vegetation along TH 43 and the re-routing options in the downtown area consists of small, medium, and large boulevard trees. On the East end of the proposed bridge there are patches of naturally occurring floodplain forest trees.

Potential Impacts to Vegetation

At this early stage and with the alternative routes still being considered it is too early to know what vegetation will be impacted. It is likely that the floodplain forest trees at the east end of the bridge will be impacted. It is also likely that a number of boulevard trees in the downtown area will be impacted.

Protection of Vegetation

It is assumed that there will be tree loss and other vegetation impacts as part of this project. During the design process, all efforts should be made to create a plan that will minimize these impacts. Part of this should be to include measures for vegetation protection into the plan package. These measures should be based on Mn/DOT Standard Specification for Construction 2572 (Protection and Restoration of Vegetation). In order to protect vegetation that lies outside of the Construction limits, special attention should be paid to 2572.3A, including but not limited to the use of temporary fence for tree protection, clean root cutting, and proper handling of remaining oak trees to prevent the spread of oak wilt. These areas should be identified in the plan and Standard Detail Sheets that are available for these items included in the Plan Package.

Timber Utilization

In reference to the patches of trees on the east end of the bridge, look into Standard Specification 2101.3D (D1) for Utilization of Marketable Timber, to see if it is applicable to this

project (if volume exceeds 100 cubic Yards). If so, the Contractor would be responsible for carrying out the requirements of this specification including providing written proof from 3 wood using industries or individuals that the wood is not wanted before disposing of or wasting. If disposal is necessary, it is recommended that no wood be burned or buried, but that grinding the wood up for mulch is an acceptable timber utilization practice and makes a great erosion control product.

Vegetation Replacement

The city of Winona takes its trees seriously, both for aesthetics and for stormwater management. Final plans should include replacement of any impacted trees. It would be good to consult with the City Forester in Winona and with foresters in our office. Because plans are preliminary I did not do a site visit for this review. Once construction limits are more clearly defined we can determine what trees will be impacted, which will benefit from protection measures, and what replacements will be needed.

Cc. Frank Pafko
Roadside Vegetation Management Unit



Memo

Office of Transit
Bicycle and Pedestrian Section
395 John Ireland Blvd.
Mail Stop 315
St. Paul, MN 55115

Tel: (651) 366-4179
Fax: (651) 366-4192
E-mail: Michelle.Natrop@dot.state.mn.us

February 10, 2009

To: Jai Kalsy
Project Manager
From: Michelle Natrop

Subject: S.P. 8503-46 TH 43

The TH 43 bridge provides access to and from downtown Winona and its businesses, civic buildings, schools, parks/recreational, and residential areas. TH 43 south of the bridge is a designated bike lane and transit route. In addition, the Mississippi River Trail is adjacent to the bridge both in Minnesota and Wisconsin. Therefore, safe, effective bike and pedestrian accommodations on this project are critical. The Great River Trail has plans to extend from the current trailhead in Trempealeau National Wildlife Refuge to Winona

The Bicycle and Pedestrian Section proposes for this project:

City vitality and livability:

1. **Entering city.** Establish speed limits that alert motorists they are entering Winona's core city. This is especially important as motorists cross the bridge into downtown. Use aesthetic and roadway cues such as lighting, roadway widths, bridge elements, etc. to build awareness of pedestrian and bicycle modes in downtown.
2. **Bike route connectivity.** Consult with City of Winona for existing and proposed plans for bike/pedestrian routes as consideration if rerouting TH 43 within the city. Extend the network and close network gaps by extending lanes through this project.

Bicycle facilities: to deter biking on sidewalks, provide on-road bicycle accommodations.

3. **Shoulders.** Install shoulders on both sides of the bridge and roadway. Widths range from 4' (rideable surface; no gutter pan) to 10'; consult Mn/DOT's [Bikeway Facility Design Manual](#) chapter 4, page 70 to determine the appropriate width
4. **Sharrows.** Install sharrows at on-street locations where there is a need for transition from an on-street bike facility bike lane through parking zones.

Pedestrian facilities:

5. **Sidewalks.** Install 12' wide sidewalk the south side of the bridge to accommodate two way traffic and provide overlook bump outs to keep stopped users out of the way of moving bicyclists and pedestrians.
6. **Buffer.** Allow buffer space for street trees, signs, utilities, snow storage, etc. 4' or greater is recommended to accommodate these elements.
7. **Controlled pedestrian crossings.** Install traffic signals where warranted. Install

pedestrian crossings at all legs of the intersection. This includes curb ramps, sidewalk extensions to the street, and crosswalk markings. Stripe all crosswalks with a zebra crossing (longitudinal stripes). Consider an advanced stop line. Provide APS and countdowns at all signals. Provide adequate crossing time for pedestrians. See PROWAG 2005 listed below for crossing times and walking speeds.

8. **Uncontrolled pedestrian crossings.** Because of the land use and population density, establish or maintain pedestrian crossings at all uncontrolled intersections to provide adequate crossing opportunities and minimize mid-block crossings. Provide pedestrian crossing at all legs of the intersection, including side streets to avoid forcing pedestrians to cross additional intersection legs. Where signals are not warranted, consider treatments as listed in TCRP Report 112. Pages 50 and 51 show treatments that most effective for this roadway type, volume, and speed.

Universal Design:

9. **PROWAG.** Universal design serves all non-motorized users; use the [Revised Draft Guidelines for Accessible Public Rights-of-Way \(2005\)](#) to ensure pedestrian facilities meet or exceed ADA requirements. This includes items such as clear sidewalk widths, running and cross slopes, surfaces, curb ramp design and orientation to pedestrian access routes, driveway circulation, etc. Strive for perpendicular pedestrian curb ramps to best follow the pedestrian access route.
10. **Existing curb ramps.** Replace all noncompliant curb ramps within the project in accordance with [Technical Memorandum 08-13-TS-05](#); Pedestrian (Curb) Ramp Guidelines.
11. **Public involvement.** Engage or establish a universal design advisory group of community members to provide feedback and guidance on walking, bicycling, accessibility and other non-motorized uses of the public right-of-way.

Miscellaneous:

12. **Lighting.** Light all pedestrian crossings. Ensure bicycle/pedestrian visibility at all intersections and crossings.
13. **Transit.** Identify existing and proposed transit stops. Establish or maintain universal design connections between the roadway and the stop. Contact Jean Meyer for any known safety or operational issues.
14. **Right of way.** Acquire adequate R/W or easement to allow for any future phased bicycle and pedestrian accommodations such as shoulder width, sidewalks, shared use paths, etc.

General comments

Maintenance. Establish maintenance procedures that include:

- a. Maintain sidewalks, crossings, and curb ramps for accessibility.
- b. Remove any free standing sidewalk barriers and obstructions to ensure pedestrian access route on sidewalks and improved visibility of pedestrians.
- c. Repair any sidewalk surface issues and discontinuities.
- d. Ensure proper maintenance for snow and ice removal, sweeping, and sidewalk repairs.
- e. Establish routine for sidewalk inspections.

Construction. Develop a detour/alternate route to safely accommodate both bicyclists and pedestrians during construction. Any pedestrian facility that is disrupted during construction requires signing and/or alternative route. If necessary to restrict movement through construction, consider detouring non-motorized users to

continuous parallel streets one block to either side of the construction c. See the [Mn/MUTCD](#) for pedestrian accessible route for temporary work zone: chapter 6.

See additional information in the references noted below. For example: NCHRP Report 612, pages 32 – 36 and TCRP Report 112, pages 50 and 51 for treatment types based on speed limit and number of lanes that are most effective to promote motorist yielding to pedestrians at intersections.

Thank you for the opportunity to review this project. If you have any questions or concerns, please contact me. We look forward to working with you as this project progresses.

Sincerely,
Michelle Natrop
Bicycle and Pedestrian Section

Resources

Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO 2004

[Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations
FHWA HRT-04-100](#)

Pedestrian Facilities Users Guide: Providing Safety and Mobility FHWA RD-01-102

[Improving Pedestrian Safety at Unsignalized Crossings, TCRP Report 112](#)

[Safe and Aesthetic Design of Urban Roadside Treatments, NCHRP Report 612](#)

[Revised Draft Guidelines for Accessible Public Rights-of-Way 2005](#)

[Toolbox for Countermeasures and Their Potential Effectiveness for Pedestrian Crashes](#)

[Main Street: When a Highway Runs Through It. 1999.](#)

[Mn/DOT Bikeway Facility Design Manual](#)

[Technical Memorandum 08-13-TS-05; Pedestrian \(Curb\) Ramp Guidelines](#)

CC: Tim Mitchell
Bicycle and Pedestrian Section

Account: 1466

Account Profile / Transactions Report

Minnesota Wetland Bank

August 13, 2013

Account No 1466 Original Application Number 6099D Date Approved 03/19/2010 Account Manager Road Mitigation, BWSR
 Land Use Type/s ALL Annual Fee Paid for year: 0 Account Established on 03/19/2010 Credits Available N
 Account Holder

Road Mitigation, BWSR Minor Acct BWSR 520 Lafayette Road Saint Paul, MN 55155 () -

Replacement Site Information

Site Number 4908-Houston Major Watershed 42 Mississippi (La Crescent) Qtr T Section 31
 Site Name Hokah Corps SA 8 Lower Mississippi River Qtr F Township 104
 Last Monitored on: 08/26/2011 Corps # 2002-07917-DAS Qtr Q Range 04 W

Account Groups	COE	Credit Type	Wetland Type	Topography	Acres Deposited	Balance
A	Y	SWC	2	wet to wet-me	133.4100	106.5149
B	Y	NWC	3	shallow marsh	6.0400	2.2600
C	Y	PVC	U	Upland	56.2000	0.0000
D	Y	SWC	7	floodplain fo	22.7300	22.6250
E	Y	SWC	2	fresh (wet) m	21.5900	19.6700

Account Transactions

Trans Date	Type	Grp	Amount	App No	Landowners	Site No.	Watershed	Wetland Type(s)	Topography
03/19/2010	Deposit	A	84.1300	6099D					
		B	3.5000						
		C	56.2000						
07/01/2010	Withdrawal	A	7.2250	6229W	MnDOT - District 7, MnDOT - Mankato	5011-Nobles	84 Little Sioux	1 2, 3,	Unknown
04/06/2011	Withdrawal	A	0.1100	4510M	Highway Department, Murray County	3777-Murray	51 West Fork des Moines	2 3	6
		C	0.1100						
04/06/2011	Withdrawal	A	0.0700	4555M	County, Fillmore	3794-Fillmore	43 Root		2
		C	0.0700						
04/06/2011	Withdrawal	A	0.0600	4590M	Highway Department, Big Stone County	3823-Big Stone	22 Minnesota (headwaters)		

MN Board of Water and Soil Resources

APPENDIX C

TECHNICAL MEMORANDA & REPORTS BIBLIOGRAPHY

WINONA BRIDGE PROJECT
Technical Memoranda and Reports Informing the
Alternatives Development and Evaluation Process

Rehabilitation Study Documents

Winona Bridge Rehabilitation PN 2914, December 18, 2009, Modjeski and Masters.

Winona Bridge - Foundation Study, July 28, 2010, Modjeski and Masters.

Winona Bridge Deck Truss Rating, July 22, 2010, Modjeski and Masters.

Winona Bridge Scour Evaluation, August 11, 2011, Modjeski and Masters.

Winona Bridge - Approach Truss Gussets. September 14, 2010, Modjeski and Masters.

Response to Questions on Approach Truss Gussets. October 5, 2010, Modjeski and Masters.

Winona Bridge Main Truss Rating, October 6, 2010. Modjeski and Masters.

Winona Bridge - Main Truss Gussets, October 28, 2010. Modjeski and Masters.

Winona Bridge Deck Truss Rating - Additional Analysis for Legal Loads, September 20, 2011, Modjeski and Masters.

Winona Bridge Rehabilitation Ratings - Deck Truss and Main Span Truss - Load Case Lightweight Deck with Sidewalk, November 17, 2011, Modjeski and Masters.

Timber Pile Foundation Testing Feasibility Investigation, December 1, 2011, SRF Consulting Group.

Winona Bridge Main Span Truss Member and Gusset Plate Rehabilitation PN 2914, December 9, 2010, Modjeski and Masters.

Winona Bridge Deck Truss Rehabilitation, December 10, 2010, Modjeski and Masters.

Comments on Winona Bridge 5900 Main Truss Rehabilitation, December 22, 2010, Mead and Hunt.

Comments on Winona Bridge 5900 Deck Truss Rehabilitation, January 7, 2011, Mead and Hunt.

Winona Bridge - Deck Rehabilitation Options, February 8, 2011, Modjeski and Masters.

Spans 1-15 (South Approach) Rehabilitation. October 7, 2011, SRF Consulting Group.

Comments on Winona Bridge 5900 Spans 1-15 (South Approach) Rehabilitation, October 14, 2011, Mead and Hunt.

Response to May 4, 2012 Letter from the SHPO - Winona Bridge, August 2, 2012, MnDOT State Bridge Engineer.

Deck Truss Rehabilitation - Supplemental Information, March 29, 2012, SRF Consulting Group.

Maintenance of Traffic (MOT) Study Documents

Accelerated Bridge Construction - Sliding Span Techniques, April 3, 2012, SRF Consulting Group.

Winona Bridge Project - Ferry Service Feasibility, October 3, 2011, SRF Consulting Group.

High Profile Temporary Bridge Investigation, November 9, 2011, SRF Consulting Group.

Maintenance of Traffic (MOT) - Concept Evaluation Matrix, May 29, 2012, SRF Consulting Group.

Traffic Study Documents

Frac Sand Truck Sensitivity Analysis, April 17, 2012, SRF Consulting Group.

Median Need Summary, November 30, 2009, SRF Consulting Group.

Alternative Alignment Summary, January 18, 2010, SRF Consulting Group.

Traffic Forecasts, January 29, 2010, SRF Consulting Group.

VISSIM Analysis Summary, February 24, 2010, SRF Consulting Group.

Traffic Operations Analysis Draft Report, February 2, 2010, SRF Consulting Group.

New Bridge Design Study Documents

Bridge Roadway Design Recommendations, March 18, 2010, SRF Consulting Group.

Bridge Roadway Shoulder Width, January 7, 2011, SRF Consulting Group.

Alternative Bridge Alignments, March 2, 2011, SRF Consulting Group.

Bridge Type Study, May 1, 2013, SRF Consulting Group and TY Lin International.

Environmental Reports

Level I Mussel Survey in the Proposed Hwy 43 Bridge Improvement Area, Mississippi River Mile 725.8, Winona MN, January 19, 2012, Malacological Consultants.

Wetland Delineation Report, September 1, 2010, SRF Consulting Group.

Phase I Archeological Survey and Geomorphological Investigation for Winona Bridge (Wisconsin Report), January 1, 2010, Florin et al.

Phase I Archeological Survey and Geomorphological Investigation for Winona Bridge (Minnesota Report), April 1, 2010, Florin et al.

Addendum Report: Additional Phase I Archeological Survey and Geomorphological Investigation for Winona Bridge, December 1, 2010, Florin et al.

Phase I and II Architectural History Evaluation for the Winona Bridge Study, May 1, 2011, Landscape Research LLC.

Limited Phase I Environmental Site Assessment, April 1, 2010, Braun Intertec.

H:\Projects\6802\EP\Reports\EA EAW\FHWA review\Appendices\Appendix C Technical Memo and Reports Bibliography Appendix\Technical Memoranda and Reports Bibliography_130719.docx

APPENDIX D

Alternatives Evaluation Tables

Note: The Evaluation Tables contained in this Appendix reflect project scoping based on concept-level alternative definitions. The Recommended Alternative has been refined; therefore related impacts presented in the EA are updated and supersede the impacts presented here.

**TABLE D-1
EVALUATION OF REPLACEMENT AND REHAB OPTIONS/MOT OPTIONS**

EVALUATION CRITERIA		REPLACEMENT AND REHAB OPTIONS/MOT OPTIONS						
		Replace Existing Bridge	Rehabilitate Existing Bridge					
			Options Retaining Sidewalk/No Permanent Bridge ¹			Options Removing Sidewalk/Permanent Parallel Bridge		
			Rehab 1A	Rehab 4A	Rehab 6A	Rehab 1C	Rehab 4C	Rehab 6c
NEEDS								
PRIMARY NEED								
Structurally Sound Bridge		Yes	Yes, but likely would not provide 20-yr service life.	Yes, but likely repairs excessive compared to achieved design life.	Yes.	Yes, but would not provide 20-yr service life.	Yes, but repairs excessive compared to achieved design life.	Yes
SECONDARY NEEDS								
Connect to WI 54		Yes	Yes			Yes	Yes	Yes
Maximize MOT		Yes	Detour only: No Ferry: No Temporary Bridge: Limited	Detour only: No Ferry: No Temporary Bridge: Limited	Detour only: No Ferry: No Temporary Bridge: Limited	Yes	Yes	Yes
Access to Latsch Island		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Capacity, Operations, Design	Year 2038 Operations at Winona/4 th Street and Huff/4 th Street Intersections	Yes	No	Improved compared to 1A	Improved compared to 1A and 6A	Yes	Yes	Yes
	Queuing impact on other intersections	Yes	No	Improved compared to 1A	Improved compared to 1A and 6A	Yes	Yes	Yes
	Overall Network Operations	Yes	No	Improved compared to 1A	Improved compared to 1A and 6A	Yes	Yes	Yes
	Safety at TD intersection – profile grade, sight lines	Yes	No	Improved compared to 1A	Improved compared to 1A and 6A	Yes	Yes	Yes
Maintain ped/bike crossing accommodation		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regulatory Requirements								
<i>Historic – Bridge</i>	Determination of effect	Section 106 adverse effect. Section 4(f) use.	Likely Section 106 adverse effect. Likely Section 4(f) use.	Likely Section 106 adverse effect. Likely Section 4(f) use.	Likely Section 106 adverse effect. Likely Section 4(f) use.	Likely Section 106 adverse effect. Likely Section 4(f) use.	Likely Section 106 adverse effect. Precludes repair per SOI standards. Likely Section 4(f) use.	Determination of no adverse effect. No Section 4(f) use.
<i>Historic – Other Properties</i>	Property acquisition from historic properties.	Unknown. Would depend on alignment, design details of replacement bridge.	No.	No.	No.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
	Potential for indirect effects to existing downtown historic districts and properties	Unknown. Would depend on alignment, design details of replacement bridge.	No.	No.	No.	Would depend on alignment, bridge type of parallel bridge.	Would depend on alignment, bridge type of parallel bridge.	Would depend on alignment, bridge type of parallel bridge.
	Archaeology	Unknown. Would depend on alignment, design details of replacement bridge and subsurface investigations yet to be completed.	No	No	No	Would depend on alignment of parallel bridge and subsurface investigations yet to be completed.	Would depend on alignment of parallel bridge and subsurface investigations yet to be completed.	Would depend on alignment of parallel bridge and subsurface investigations yet to be completed.

¹ MOT options considered if no permanent bridge include Detour, Ferry Service, Temporary Bridge.

**TABLE D-1
EVALUATION OF REPLACEMENT AND REHAB OPTIONS/MOT OPTIONS**

EVALUATION CRITERIA		REPLACEMENT AND REHAB OPTIONS/MOT OPTIONS						
		Replace Existing Bridge	Rehabilitate Existing Bridge					
			Options Retaining Sidewalk/No Permanent Bridge ¹			Options Removing Sidewalk/Permanent Parallel Bridge		
			Rehab 1A	Rehab 4A	Rehab 6A	Rehab 1C	Rehab 4C	Rehab 6c
<i>Parkland</i>		Unknown. Would depend on alignment, design details.	No			Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
<i>Navigation</i>	Horizontal clearances	Meets requirements.	Meets requirements.			Meets requirements.	Meets requirements.	Meets requirements.
	Vertical clearances	Meets requirements.	Meets requirements.			Meets requirements.	Meets requirements.	Meets requirements.
<i>Stormwater</i>	Ability to meet required management practices	Yes	Yes			Yes	Yes	Yes
OTHER CONSIDERATIONS								
Pedestrian/Bicycle Connections	Connection to adjacent facilities	Yes	Yes	Yes	Yes	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
Standard Geometrics	Flat landing at TD intersection, conventional intersection control, adequate turn lanes, adequate turn and curb radii	Yes	No	No	No.	Yes	Yes	Yes
Minimized Impacts To Local Roadway Network	2 nd , 3 rd , and 4 th Streets open to traffic	Yes						
Change in Traffic Downtown		Would depend on alignment of replacement bridge.	No	No	No	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
Traffic Impacts to Residential Neighborhoods		Would depend on alignment of replacement bridge.	No	No	No	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
Traffic Circulation Changes		Would depend on alignment of replacement bridge.	No	No	No	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
Minimized Truck Routing Impacts	Maintain truck connection to shippers and multi-modal facilities	Would depend on alignment of replacement bridge.	Yes	Yes	Yes	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
	Avoid rerouting through residential neighborhoods	Would depend on alignment of replacement bridge.	Yes	Yes	Yes	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS								
Community	Economic	See MOT finding.						
	Cohesion	See MOT finding.						
	Community Facilities	Would depend on alignment of replacement bridge.	No impacts other than MOT related.	No impacts other than MOT related.	No impacts other than MOT related.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
Natural Resources	Wetlands	Impacts due to new piers and temporary construction staging.	No permanent impacts. Temporary construction impacts likely.	No permanent impacts. Temporary construction impacts likely.	No permanent impacts. Temporary construction impacts likely.	Impacts due to new piers and temporary construction staging.	Impacts due to new piers and temporary construction staging.	Impacts due to new piers and temporary construction staging.

**TABLE D-1
EVALUATION OF REPLACEMENT AND REHAB OPTIONS/MOT OPTIONS**

EVALUATION CRITERIA		REPLACEMENT AND REHAB OPTIONS/MOT OPTIONS						
		Replace Existing Bridge	Rehabilitate Existing Bridge					
			Options Retaining Sidewalk/No Permanent Bridge ¹			Options Removing Sidewalk/Permanent Parallel Bridge		
			Rehab 1A	Rehab 4A	Rehab 6A	Rehab 1C	Rehab 4C	Rehab 6c
Natural Resources	Mussels ²	No federal species found. MN-listed species found. Potential for construction impacts.	No federal species found. MN-listed species found. Potential for construction impacts.	No federal species found. MN-listed species found. Potential for construction impacts.	No federal species found. MN-listed species found. Potential for construction impacts.	No federal species found. MN-listed species found. Potential for construction impacts.	No federal species found. MN-listed species found. Potential for construction impacts.	No federal species found. MN-listed species found. Potential for construction impacts.
	Migratory birds	Potential for impediment depends upon bridge type of replacement bridge.	No new impediment.	No new impediment.	No new impediment.	Potential for impediment depends upon bridge type.	Potential for impediment depends upon bridge type.	Potential for impediment depends upon bridge type.
Land Use/Right of Way/Relocation	Parcels	Would depend on alignment of replacement bridge.	None assumed.	None assumed.	None assumed.	Yes. Would depend on alignment of parallel bridge.	Yes. Would depend on alignment of parallel bridge.	Yes. Would depend on alignment of parallel bridge.
Hazardous Waste/Contamination	Likelihood of contamination per Phase I ESA	Would depend on alignment of replacement bridge.	None assumed.	None assumed.	None assumed.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
Visual/aesthetic		Would depend on alignment and bridge type of replacement bridge.	Construction impacts.	Construction impacts.	Construction impacts.	Yes. Would depend on alignment, bridge type of parallel bridge.	Yes. Would depend on alignment, bridge type of parallel bridge.	Yes. Would depend on alignment, bridge type of parallel bridge.
Proximity to residential noise receptors		Yes. Would depend on alignment of parallel bridge.	No change.	No change.	No change.	Yes. Would depend on alignment of parallel bridge.	Yes. Would depend on alignment of parallel bridge.	Yes. Would depend on alignment of parallel bridge.
Parking	Blocks of on-street parking removed	Would depend on alignment of parallel bridge.	Construction impacts.	Construction impacts.	Construction impacts.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.	Would depend on alignment of parallel bridge.
COST ³	Concept cost estimate (\$ millions)	\$128M ⁴	\$96M	\$101M	\$72M	\$88M	\$88M	\$55M

² Based on 2009 survey. 2013 survey was conducted in the area of the Winona Street-West alignment. The 2013 survey found no federal species. The 2013 survey found low density of state species.

³ These are conceptual design cost estimates. Estimates are in 2015 dollars. The estimates for the "C" series do not include the new parallel bridge. The estimate for 6c increased from \$55M (initial estimate stated above) to \$63M (estimate reported in body of EA) because of the need to meet historic preservation standards with pier placement and aesthetics. Costs do not include project delivery or right of way costs.

⁴ Assumes replacement of existing bridge with a suspended type structure. (Girder type structure estimated at \$105M.) Cost also includes removal of existing bridge and temporary bridge to maintain traffic.

**TABLE D-2
EVALUATION OF PARALLEL BRIDGE ALIGNMENTS**

EVALUATION CRITERIA		PARALLEL BRIDGE ALIGNMENT				
		Winona Street – East	Winona Street – West	Huff Straight	Huff Hybrid	Huff Curved
NEEDS						
PRIMARY NEED						
Structurally Sound Bridge		Yes	Yes	Yes	Yes	Yes
SECONDARY NEEDS						
Connect to WI 54		Yes	Yes	Yes	Yes	Yes
Access to Latsch Island		Yes	Yes	Yes	Yes	Yes
Capacity, Operations, Design	Year 2038 Operations at Winona/4 th Street and Huff/4 th Street Intersections	LOS C or Better	LOS C or Better	LOS C or Better	LOS C or Better	LOS C or Better
	Queuing impact on other intersections	Insignificant - Contained w/in segments	Insignificant - Contained w/in segments	Insignificant – contained w/in segments	Insignificant – contained w/in segments	Insignificant – contained w/in segments
	Overall Network Operations	Good	Good	Good	Good	Good
	Safety at TD intersection – profile grade, sight lines	Improved	Improved	Improved	Improved	Improved
Maintains pedestrian/bicycle crossing accommodation		Yes	Yes	Yes	Yes	Yes
Regulatory Requirements						
<i>Historic – Bridge</i>	Proximity to existing bridge	Immediately adjacent and parallel to and downstream of the existing bridge.	Immediately adjacent and parallel to and downstream of the existing bridge.	One block away from existing bridge on upstream side; ties in to TH 43 just north of existing bridge. Skewed in relation to the existing bridge.	One block away from existing bridge on upstream side; ties in to TH 43 just north of existing bridge. Skewed in relation to the existing bridge.	One block away from existing bridge on upstream side; ties in to TH 43 just north of existing bridge. Skewed in relation to the existing bridge.
	Determination of effect	Greater visual impacts viewed from the downtown historic district and individual historic properties than upstream alignments. (No formal effect determination made.)	No adverse effect.	Lesser visual impacts viewed from the downtown historic district and individual historic properties than downstream alignment. (No formal effect determination made.)	Lesser visual impacts viewed from the downtown historic district and individual historic properties than downstream alignment. (No formal effect determination made.)	Lesser visual impacts viewed from the downtown historic district and individual historic properties than downstream alignment. (No formal effect determination made.)
<i>Historic – Other Properties</i>	Property acquisition from NRHP-listed or eligible properties	Likely able to avoid.	None.	Impacts YMCA. Touchdown intersection at Huff-Lamberton House. Likely able to avoid.	Impacts YMCA. Touchdown intersection at Huff-Lamberton House. Likely able to avoid.	Impacts YMCA. Touchdown intersection at Huff-Lamberton House. Likely able to avoid.
	Physical relation to existing downtown historic districts	Downstream of existing bridge	Upstream of existing bridge	Upstream of existing bridge	Upstream of existing bridge	Upstream of existing bridge
	Archaeology ⁵	No potential sites impacted	Impacts Sinclair site	Impacts YMCA and Sinclair sites	Impacts YMCA and Sinclair sites	Impacts YMCA and Sinclair sites
<i>Parkland</i>		Similar in relation to Waterfront Trail and Latsch Island Park.	Similar in relation to Waterfront Trail and Latsch Island Park.	Similar in relation to Waterfront Trail and Latsch Island Park.	Similar in relation to Waterfront Trail and Latsch Island Park.	Similar in relation to Waterfront Trail and Latsch Island Park.
<i>Navigation</i>	Horizontal clearances	Meets requirements.	Meets requirements.	Meets requirements.	Meets requirements.	Meets requirements.
	Vertical clearances	Meets requirements.	Meets requirements.	Meets requirements.	Meets requirements.	Meets requirements.
<i>Stormwater</i>	Ability to meet required management practices	Yes	Yes	Yes	Yes	Yes

⁵ If the project impacts these sites, archaeological testing would be done.

**TABLE D-2
EVALUATION OF PARALLEL BRIDGE ALIGNMENTS**

EVALUATION CRITERIA		PARALLEL BRIDGE ALIGNMENT				
		Winona Street – East	Winona Street – West	Huff Straight	Huff Hybrid	Huff Curved
OTHER CONSIDERATIONS						
Pedestrian/Bicycle Connections	Connection to adjacent facilities	Temporary impacts to facilities on existing bridge, trail along waterfront in Winona, and on-street bike facilities on 4 th Street between Winona St and Huff St.	Temporary impacts to facilities on existing bridge, trail along waterfront in Winona, and on-street bike facilities on 4 th Street between Winona St and Huff St.	Temporary impacts to facilities on existing bridge, trail along waterfront in Winona, and on-street bike facilities on 4 th Street between Winona St and Huff St. Bike lane along Huff would need to be moved.	Temporary impacts to facilities on existing bridge, trail along waterfront in Winona, and on-street bike facilities on 4 th Street between Winona St and Huff St. Bike lane along Huff would need to be moved.	Temporary impacts to facilities on existing bridge, trail along waterfront in Winona, and on-street bike facilities on 4 th Street between Winona St and Huff St. Bike lane along Huff would need to be moved.
Standard Geometrics	Flat landing at TD intersection, conventional intersection control, adequate turn lanes, adequate turn and curb radii	Meets design standards. Requires reverse curves.	Meets design standards. Requires reverse curves.	Meets design standards.	Meets design standards.	Meets design standards.
Minimized Impacts To Local Roadway Network	2 nd , 3 rd , and 4 th Streets open to traffic	Yes	Yes	Yes	Yes	Yes
Change in Traffic Downtown		No permanent change, temporary possible.	No permanent change, temporary possible.	Moderate – more circuitous access to downtown, potential bypass of downtown, traffic routed away from Huff St in neighborhood along Harriet St.	Moderate – more circuitous access to downtown, potential bypass of downtown, traffic routed away from Huff St in neighborhood along Harriet St.	Moderate – more circuitous access to downtown, potential bypass of downtown, traffic routed away from Huff St in neighborhood along Harriet St.
Traffic Impacts to Residential Neighborhoods		No permanent change, temporary possible.	No permanent change, temporary possible.	Increased traffic on Huff, 4 th , and Harriet Streets.	Increased traffic on Huff, 4 th , and Harriet Streets.	Increased traffic on Huff, 4 th , and Harriet Streets.
Traffic Circulation Changes		No permanent change, temporary possible.	No permanent change, temporary possible.	2 changes but positive benefit to Winona Street circulation.	2 changes but positive benefit to Winona Street circulation.	2 changes but positive benefit to Winona Street circulation
Minimized Truck Routing Impacts	Maintain truck connection to shippers and multi-modal facilities	No change.	No change.	Moderate – relocates Huff St truck route between 4 th Street and Riverview.	Moderate – relocates Huff St truck route between 4 th Street and Riverview.	Moderate– relocates Huff St truck route between 4 th Street and Riverview.
	Avoid rerouting through residential neighborhoods	No change.	No change.	Moderate – potential for additional routing into neighborhoods.	Moderate – potential for additional routing into neighborhoods.	Moderate – potential for additional routing into neighborhoods.
SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS						
Community	Economic	Assumed total acquisitions affect 5 commercial business sites.	Assumed total acquisitions affect 3 commercial business sites.	Assumed total acquisitions affect 5 commercial business sites.	Assumed total acquisitions affect 2 commercial business sites.	Assumed total acquisitions affect no commercial business sites.
	Cohesion	New structure would be adjacent to existing.	New structure would be adjacent to existing.	New structure would be within one block of existing but closer to a residential neighborhood.	New structure would be within one block of existing but closer to a residential neighborhood.	New structure would be within one block of existing but closer to a residential neighborhood.
	Community Facilities	Impacts to Winona County offices, marina.	Temporary impacts to YMCA, marina.	Temporary impacts to YMCA, marina. Will need to consider emergency vehicle access at 370 W. 2 nd St during design and construction staging.	Temporary impacts to YMCA, marina. Will need to consider emergency vehicle access at 370 W. 2 nd St during design and construction staging.	Temporary impacts to YMCA, marina. Will need to consider emergency vehicle access at 370 W. 2 nd St during design and construction staging.

**TABLE D-2
EVALUATION OF PARALLEL BRIDGE ALIGNMENTS**

EVALUATION CRITERIA		PARALLEL BRIDGE ALIGNMENT				
		Winona Street – East	Winona Street – West	Huff Straight	Huff Hybrid	Huff Curved
Natural Resources	Wetlands	Using concept-level footprint, 0.4 acres wetland impacts anticipated, including permanent and temporary impacts.	Using concept-level footprint, 0.9 acres wetland impacts anticipated, including permanent and temporary impacts. ⁶	Using concept-level footprint, 1.2 acres wetland impacts anticipated, including permanent and temporary impacts.	Using concept-level footprint, 1.2 acres wetland impacts anticipated, including permanent and temporary impacts.	Using concept-level footprint, 1.2 acres wetland impacts anticipated, including permanent and temporary impacts.
	Mussels ⁷	No federal species. MN-listed species found upstream and downstream of existing bridge.	No federal species. MN-listed species found upstream and downstream of existing bridge; more found upstream.	No federal species. MN-listed species found upstream and downstream of existing bridge; more found upstream.	No federal species. MN-listed species found upstream and downstream of existing bridge; more found upstream.	No federal species. MN-listed species found upstream and downstream of existing bridge; more found upstream.
	Migratory birds.	No difference among alignments.	No difference among alignments.	No difference among alignments.	No difference among alignments.	No difference among alignments.
Land Use/Right of Way/Relocation	Parcels ⁸	11 affected, 16 acquired See Figure D-2-1.	11 affected, 17 acquired See Figure D-2-2.	16 affected, 18 acquired See Figure D-2-3.	20 affected, 16 acquired See Figure D-2-4.	19 affected, 13 acquired See Figure D-2-5.
	Properties requiring relocation	Assumed total acquisitions affect 5 commercial business sites, 6 residences, and Winona County offices. Would affect the most boathouses of all alignments.	Assumed total acquisitions affect 3 commercial business sites, and 10 residences. ⁹ Would affect fewer boathouses than Winona Street – East alignment and the same as all Huff Street alignments.	Assumed total acquisitions affect 5 commercial business sites, and 8 residences. Would affect fewer boathouses than Winona Street – East alignment and the same as Winona Street – West and the other Huff Street alignments.	Assumed total acquisitions affect 2 commercial business sites, and 10 residences. Would affect fewer boathouses than Winona Street – East alignment and the same as Winona Street – West and the other Huff Street alignments.	Assumed total acquisitions affect 10 residences. Would affect fewer boathouses than Winona Street – East alignment and the same as Winona Street – West and the other Huff Street alignments.
Hazardous Waste/Contamination	Likelihood of contamination per Phase I ESA	0 high, 5 med	0 high, 5 med	1 high, 7 med	1 high, 6 med	1 high, 5 med
Visual/aesthetic		New structure adjacent to existing. 2 skewed piers: negative aesthetics and pedestrian comfort impact.	New structure adjacent to existing. 2 skewed piers: negative aesthetics and pedestrian comfort impact.	New structure with more separation from existing structure on south side. 6 skewed piers: negative aesthetics and pedestrian comfort impact.	New structure with more separation from existing structure on south side. 6 skewed piers: negative aesthetics and pedestrian comfort impact.	New structure with more separation from existing structure on south side. 1 skewed pier: negative aesthetics and pedestrian comfort impact.
Proximity to residential noise receptors	Similar to existing	Similar to existing.	Similar to existing.	Closer to more residences west of Huff St.	Closer to more residences west of Huff St.	Closer to more residences west of Huff St.
Parking	Blocks of on-street parking removed	5	5	9	9	9
Other						
COST	Concept cost estimate (\$ millions)	Concept cost estimates were only prepared for the 4-lane concept. Concept cost estimates were essentially the same for all alignments.	Concept cost estimates were only prepared for the 4-lane concept. Concept cost estimates were essentially the same for all alignments.	Concept cost estimates were only prepared for the 4-lane concept. Concept cost estimates were essentially the same for all alignments.	Concept cost estimates were only prepared for the 4-lane concept. Concept cost estimates were essentially the same for all alignments.	Concept cost estimates were only prepared for the 4-lane concept. Concept cost estimates were essentially the same for all alignments.

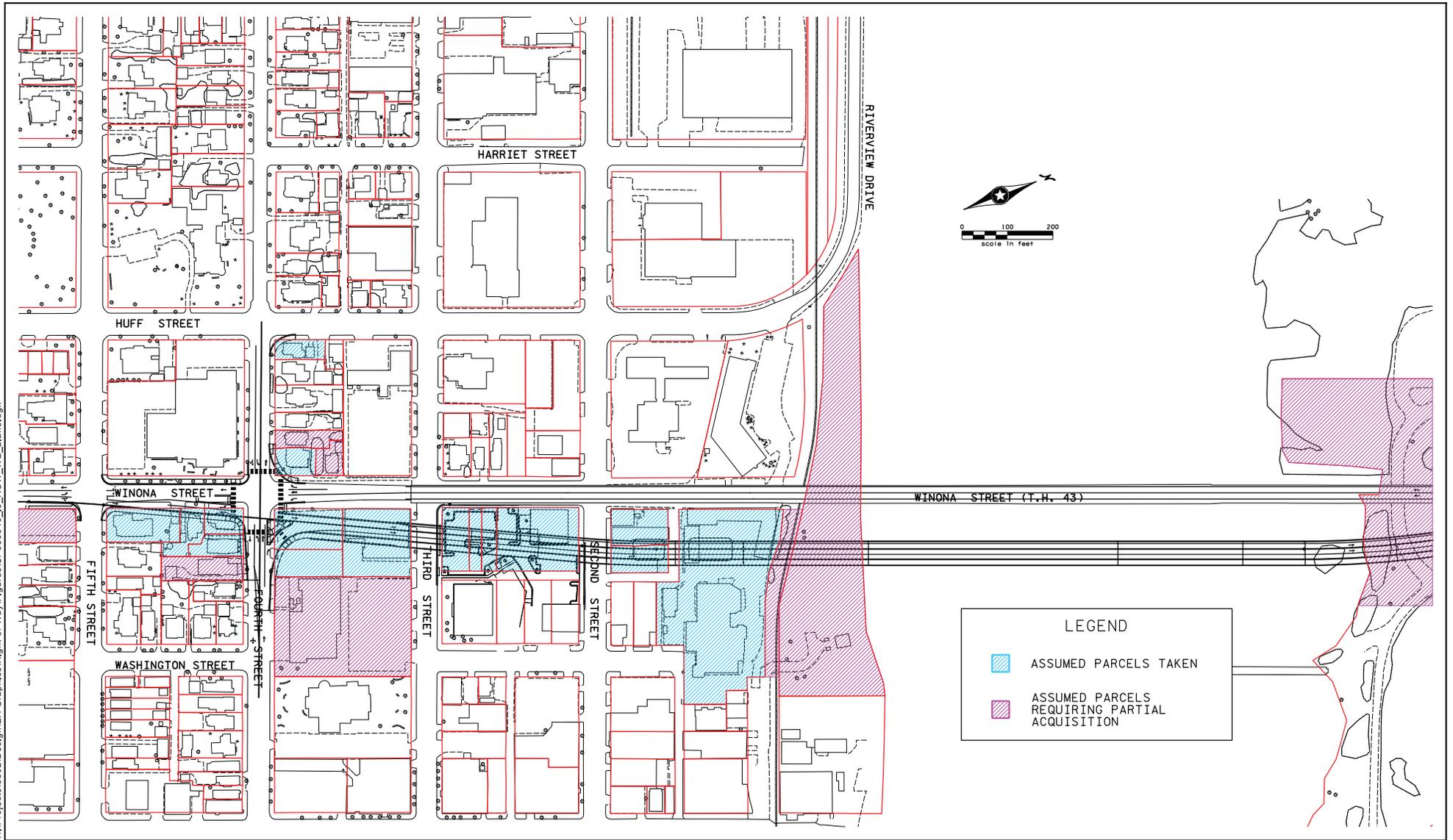
⁶ Wetland impacts reported in EAW Item 12 have been refined based on preliminary design. Similar refinements would have occurred for the other alignments had they been selected for further study.

⁷ Based on 2009 survey. 2013 survey was conducted in the area of the Winona Street-West alignment. The 2013 survey found no federal species. The 2013 survey found low density of state species.

⁸ Some properties cover multiple parcels, therefore the number of parcels acquired is higher than the the numbers reported in the following row, “Properties requiring relocation”.

⁹ Right of way impacts reported in Section IV.B of the EA have been refined based on preliminary design. Similar refinements would have occurred for the other alignments had they been selected for further study.

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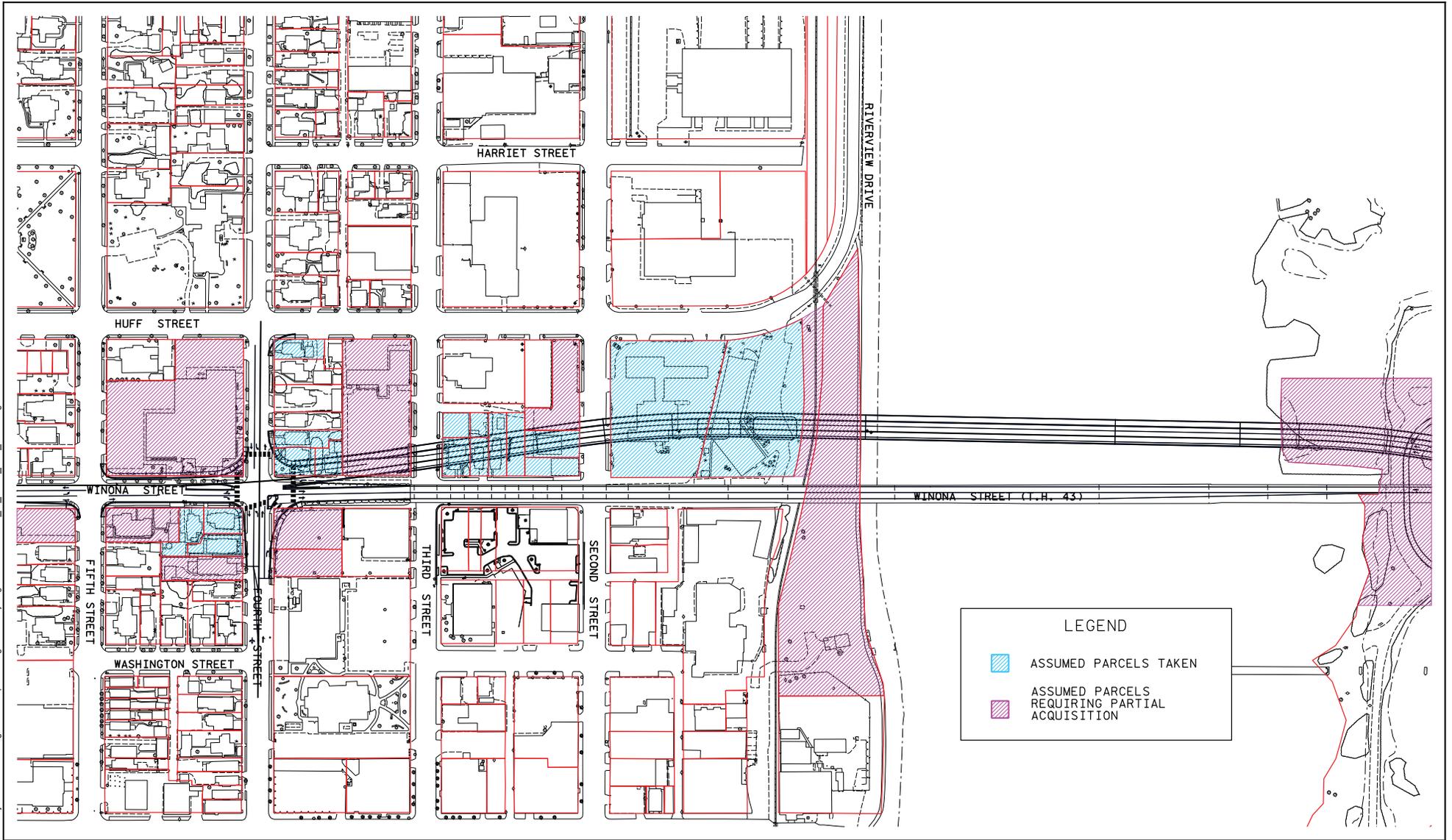


East Offset - Winona St. Concept - 2 Lane Option
Concept Level Preliminary ROW Impacts
Winona Bridge - Winona, MN

Job #6802
8/14/2013

Figure D-2-1

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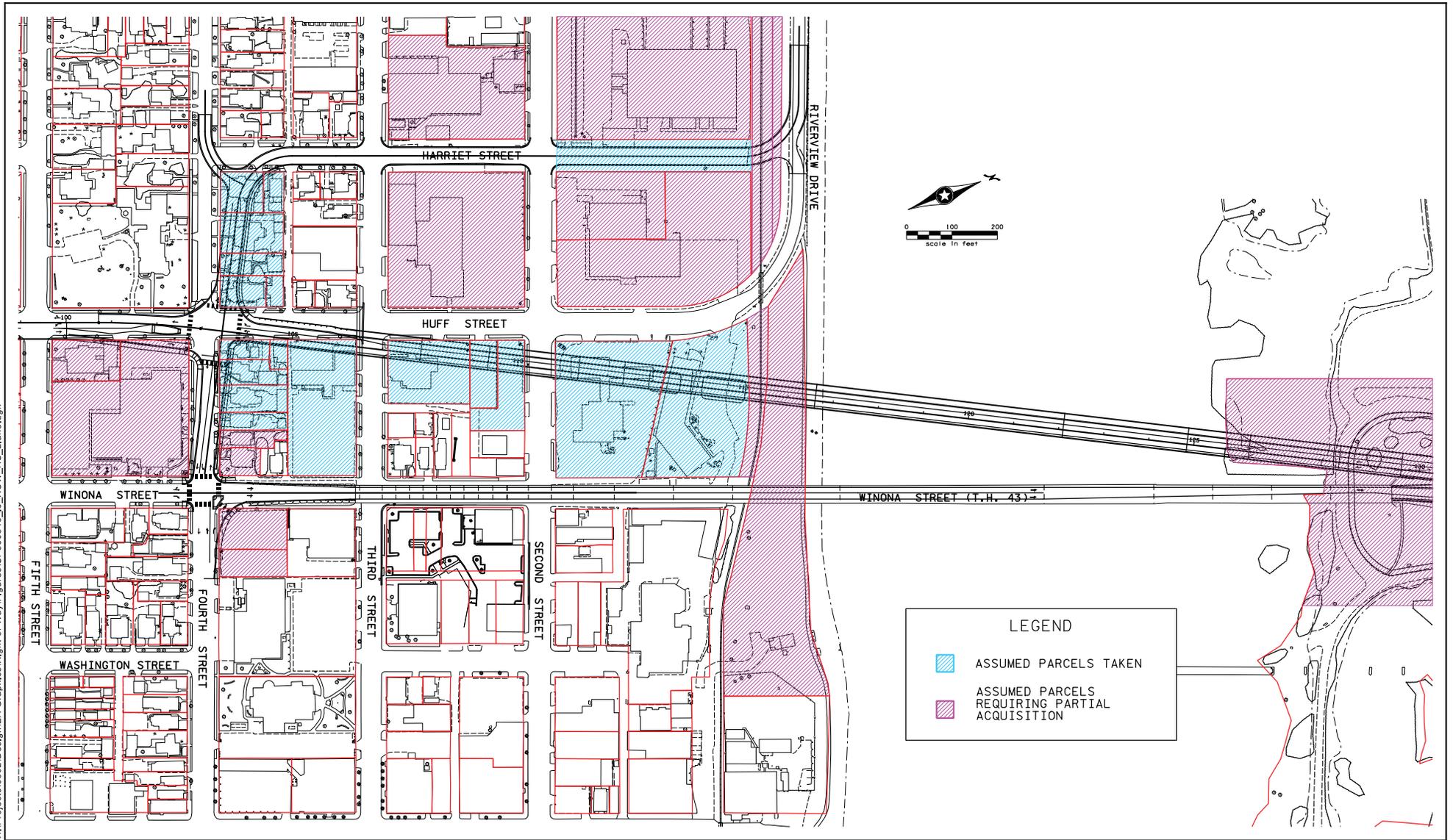


SRE Consulting Group, Inc.
West Offset - Winona St. Concept - 2 Lane Option
Concept Level Preliminary ROW Impacts
Winona Bridge - Winona, MN

Job #6802
8/14/2013

Figure D-2-2

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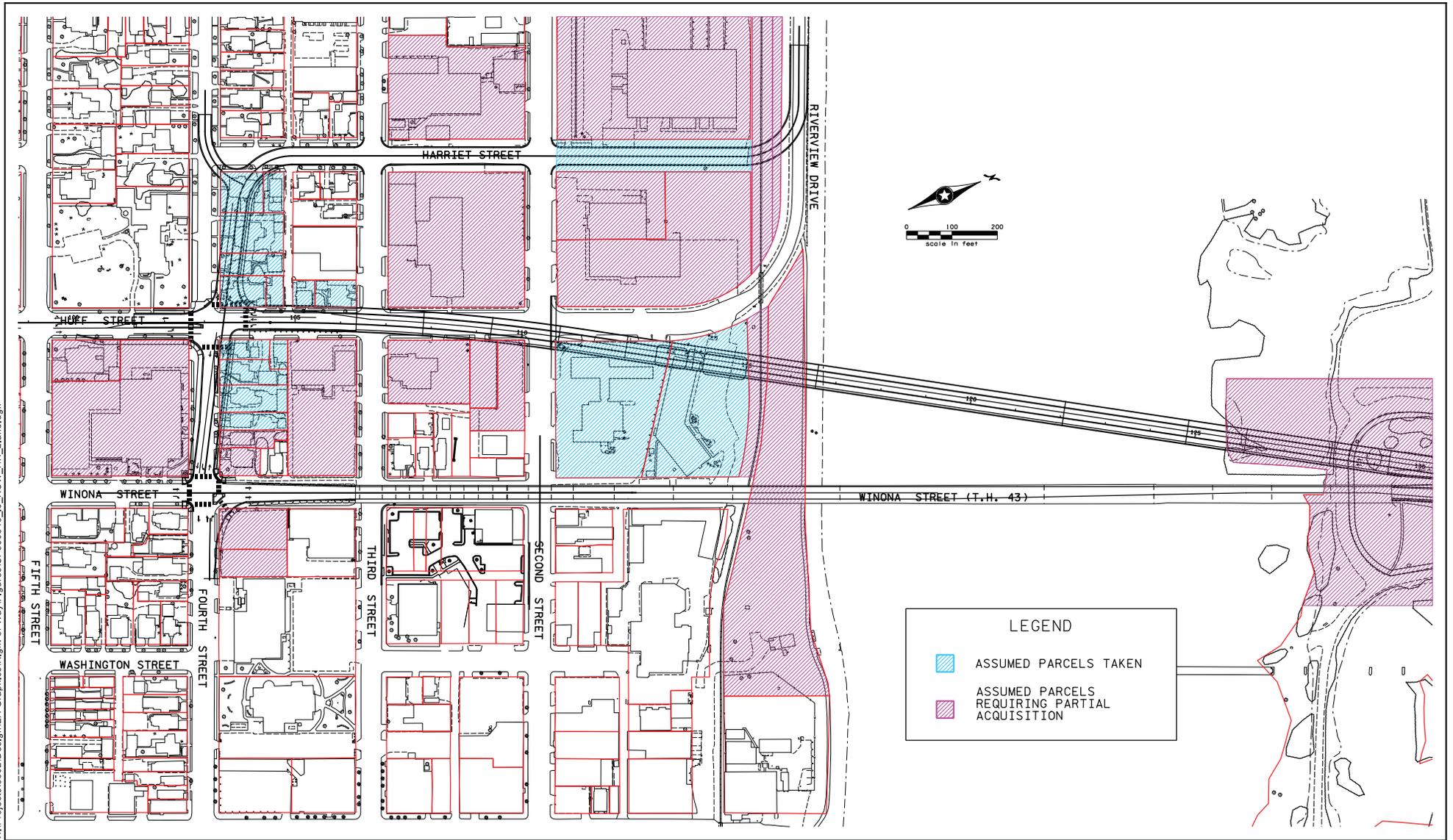


Huff Straight 4th Concept - 2 Lane Option
Concept Level Preliminary ROW Impacts
Winona Bridge - Winona, MN

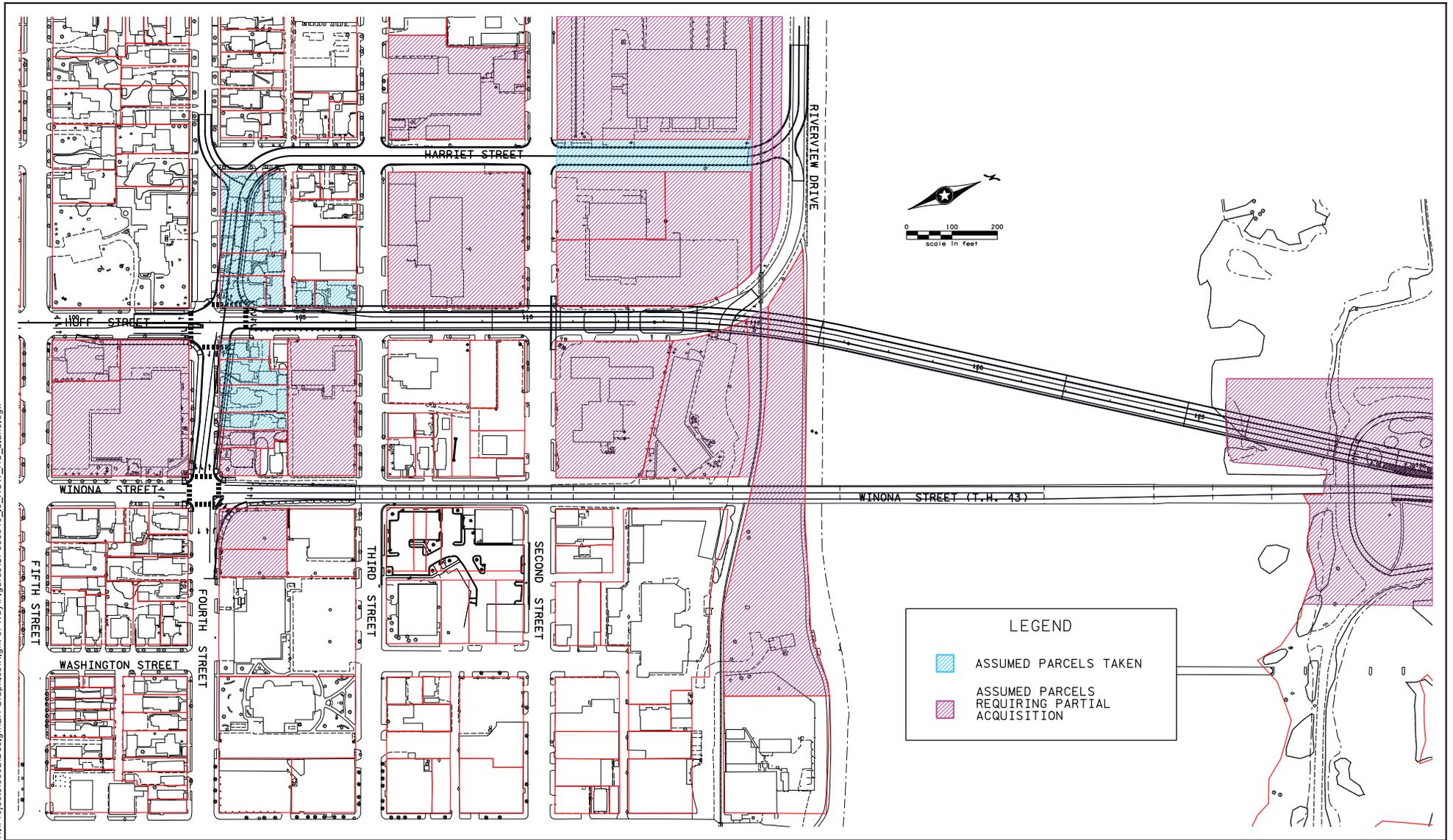
Job #6802
8/14/2013

Figure D-2-3

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Huff Curved 4th Street Concept - 2 Lane Option

Concept Level Preliminary ROW Impacts
Winona Bridge - Winona, MN

Job #6802
8/14/2013

Figure D-2-5

**TABLE D-3
EVALUATION OF BRIDGE TYPES**

EVALUATION CRITERIA		BRIDGE TYPE OPTIONS		
		Girder Type	Arch Type	Cable Stayed Type
NEEDS				
PRIMARY NEED				
Structurally Sound Bridge		Yes	Yes	Yes
SECONDARY NEEDS				
Connect to WI 54		Yes	Yes	Yes
Access to Latsch Island		Yes	Yes	Yes
Capacity, Operations, Design	Year 2038 Operations at Winona/4 th Street and Huff/4 th Street Intersections	No difference among bridge types. LOS C or Better	No difference among bridge types. LOS C or Better	No difference among bridge types. LOS C or Better
	Queuing impact on other intersections	No difference among bridge types. Insignificant - Contained w/in segments.	No difference among bridge types. Insignificant - Contained w/in segments.	No difference among bridge types. Insignificant - Contained w/in segments.
	Overall Network Operations	No difference among bridge types. Good	No difference among bridge types. Good	No difference among bridge types. Good
	Safety at TD intersection – profile grade, sight lines	No difference among bridge types. Improved	No difference among bridge types. Improved	No difference among bridge types. Improved
	Vehicular Conflict Points at Winona/4 th Street and Huff/4 th Street Intersections	No difference among bridge types. 64	No difference among bridge types. 64	No difference among bridge types. 64
Maintain pedestrian and bicycle crossing accommodation		Yes	Yes	Yes
Regulatory Requirements				
<i>Historic – Bridge</i>	Determination of effect ¹⁰	Determination made of no adverse effect.	Blocks views and competes visually with deck truss elements; conflicts visually with original truss design; dwarfs existing truss, making new structure the dominant visual vertical element. No formal determination of effect made ¹¹ .	Confuses and changes the way truss design appears; blocks the deck trusses more than girder design; dwarfs existing truss, making new structure the dominant visual vertical element. No formal determination of effect made.

¹⁰ See Section 106 correspondence in Appendix E.

¹¹ MnDOT CRU has stated that the above-deck elements create more visual impact than the girder type and could present significant challenges in meeting SOI Standards.

**TABLE D-3
EVALUATION OF BRIDGE TYPES**

EVALUATION CRITERIA		BRIDGE TYPE OPTIONS		
		Girder Type	Arch Type	Cable Stayed Type
<i>Historic – Other Properties</i>	Property acquisition from historic properties.	No difference among bridge types. Temporary easement from YMCA. Change in property ownership underlying historic railroad.	No difference among bridge types. Temporary easement from YMCA. Change in property ownership underlying historic railroad.	No difference among bridge types. Temporary easement from YMCA. Change in property ownership underlying historic railroad.
	Potential for indirect effects to existing downtown historic districts and properties	Determination made of no adverse effect. Least visually prominent of the three bridge types.	No formal determination of effect made, however, MnDOT CRU has stated that the above-deck elements create more visual impact than the girder type and could present significant challenges in meeting SOI Standards.	No formal determination of effect made, however, MnDOT CRU has stated that the above-deck elements create more visual impact than the girder type and could present significant challenges in meeting SOI Standards.
	Archaeology	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
<i>Parkland</i>		No difference among bridge types. Temporary rerouting of and change in property ownership underlying trail.	No difference among bridge types. Temporary rerouting of and change in property ownership underlying trail.	No difference among bridge types. Temporary rerouting of and change in property ownership underlying trail.
<i>Navigation</i>	Horizontal clearances	Meets requirements.	Meets requirements.	Meets requirements.
	Vertical clearances	Meets requirements.	Meets requirements.	Meets requirements.
<i>Stormwater</i>	Ability to meet required management practices	Yes	Yes	Yes
OTHER CONSIDERATIONS				
Pedestrian/Bicycle Connections	Connection to adjacent facilities	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Standard Geometrics	Flat landing at TD intersection, conventional intersection control, adequate turn lanes, adequate turn and curb radii	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Minimized Impacts To Local Roadway Network	2 nd , 3 rd , and 4 th Streets open to traffic	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Change in Traffic Downtown		No difference among bridge types.	No difference among bridge types.	No difference among bridge types.

**TABLE D-3
EVALUATION OF BRIDGE TYPES**

EVALUATION CRITERIA		BRIDGE TYPE OPTIONS		
		Girder Type	Arch Type	Cable Stayed Type
Traffic Impacts to Residential Neighborhoods		No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Traffic Circulation Changes		No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Minimized Truck Routing Impacts	Maintain truck connection to shippers and multi-modal facilities	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
	Avoid rerouting through residential neighborhoods	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS				
Community	Economic	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
	Cohesion	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
	Community Facilities	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Natural Resources	Wetlands	Minimal impacts at pier locations. Similar potential for construction impacts among bridge types.	Minimal impacts at pier locations. Similar potential for construction impacts among bridge types.	Minimal impacts at pier locations. Similar potential for construction impacts among bridge types.
	Mussels ¹²	No federal species found. MN-listed species found. Similar potential for impacts.	No federal species found. MN-listed species found. Similar potential for impacts.	No federal species found. MN-listed species found. Similar potential for impacts.
	Migratory birds	Least above deck structure.	More above deck structure than girder type.	More above deck structure than girder type.
Land Use/Right of Way/Relocation	Parcels	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Hazardous Waste/Contamination	Likelihood of contamination per Phase I ESA	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.

¹² Based on 2009 survey. 2013 survey was conducted in the area of the Winona Street-West alignment. The 2013 survey found no federal species. The 2013 survey found low density of state species.

**TABLE D-3
EVALUATION OF BRIDGE TYPES**

EVALUATION CRITERIA		BRIDGE TYPE OPTIONS		
		Girder Type	Arch Type	Cable Stayed Type
Visual/aesthetic		Least visually prominent of the three bridge types.	More visually prominent than girder type bridge.	More visually prominent than girder type bridge.
Proximity to residential noise receptors		Profile differences among bridge types would not result in substantial noise impact differences.	Profile differences among bridge types would not result in substantial noise impact differences.	Profile differences among bridge types would not result in substantial noise impact differences.
Parking	Blocks of on-street parking removed	No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
Railroad crossings		No difference among bridge types.	No difference among bridge types.	No difference among bridge types.
COST	Concept cost estimate (\$ millions) ¹³	\$31	\$45	\$44

¹³ Includes mobilization.

APPENDIX E

SECTION 106 CORRESPONDENCE & DRAFT PROGRAMMATIC AGREEMENT



Minnesota Department of Transportation

Transportation Building

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

August 14, 2009

Mr. Dennis A. Gimmestad
Government Programs & Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

RE: S.P. 8503-46, Mn/DOT District 6 to rehab or replace Bridge #5900 on TH 43 in Winona,
Winona County
T107 R7W S22, 23

Dear Mr. Gimmestad:

We have initiated the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

Mn/DOT District 6 plans to study alternatives for rehabilitation or replacement of Bridge #5900 on TH 43 in Winona, Winona County, using federal funds administered by the Federal Highway Administration (FHWA). Bridge #5900 extends from downtown Winona to Latsch Island (Island 72 in the Mississippi River). If a new bridge is identified as a Preferred Alternative, it is anticipated to be located adjacent to existing Bridge #5900. An existing back channel bridge (Bridge #5930) from Latsch Island to Wisconsin has the potential to be impacted by the project due to geometric constraints; however, efforts will be made to minimize impacts to this bridge. Roadway improvements to MN TH 43 in Winona will be examined to determine if a more direct route through the city may be identified.

District 6 has hired SRF Consulting Group, Inc. to manage the environmental process and preliminary design on this project. The environmental process will include a wide variety of meetings including a Technical Advisory Committee (TAC), scoping meetings and environmental workshops. Our office will coordinate with you as part of our consultation process to ensure that you are invited to meetings where cultural resources will be discussed.

Given that Bridge #5900 is eligible for the NRHP, our office has worked with District 6 to ensure that a rehabilitation study is included as part of the scoping alternatives analysis. SRF Consulting Group has subconsulted with Modjeski and Masters of Harrisburg, Pennsylvania, to conduct the rehabilitation study, working in conjunction with Mn/DOT CRU's historical consultant, Mead & Hunt. This work is anticipated to begin in September and will be conducted over the next six months; meetings will be scheduled with your office for feedback at key points in the process.

Our office has contracted for assistance in carrying out the identification and evaluation work associated with this project. We have developed an Area of Potential Effect (APE) that is very similar for both archaeology and for architectural history (see map attached to this letter). Phase I identification work for archaeology and architectural history is currently underway.

The APE for archaeology is somewhat larger than is typical due to the uncertainty about a future

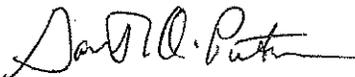
bridge location. For archaeology (and geomorphology), the APE includes an area of downtown Winona, from Harriet Street (two blocks west of the bridge) to Johnson Street (two blocks east of the bridge) and extending south to 5th Street. On Latsch Island, the archaeological APE extends approximately 720 feet either side of TH 43. The area on the Wisconsin side of the bridge extends 328 feet either side of TH 43 and 150 meters inland from the river channel; it was included for archaeology in the event that the project requires a reworking of Bridge #5930, the back channel bridge.

For architectural history, the APE includes the same east and west boundaries as the archaeology in downtown Winona, but extends south to 6th Street. On Latsch Island, the APE extends approximately two blocks either side of TH 43, and includes the remnants of the former railroad bridge, as well as numerous houseboats at the island. No architectural survey work is anticipated on the Wisconsin side of the back channel.

It is recognized that the architectural history survey APE may need to be expanded in the future, depending on whether a new bridge is constructed and its location, and depending on whether the project team decides to study a rerouting of TH 43 through Winona. If a new bridge is constructed, there may be a need to expand the APE to account for visual effects. The potential rerouting of TH 43 will be discussed in the scoping process, but it is not yet clear whether that will be undertaken as part of the bridge study. If a new bridge location is identified, or a new TH 43 route is identified, we will consult with your office to determine an appropriate APE as needed.

Please provide your comments on the APE within 30 days of the receipt of this letter. Please contact me if you would like additional information on the project or our work thus far. We look forward to working with your office as this project proceeds.

Sincerely,



Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Enc.

CC: Kevin Kliethermes, FHWA
Jai Kalsy, Mn/DOT District 6 Project Manager
Nancy Frick, SRF Consulting Group, Inc.
Joe Hudak, Mn/DOT CRU
Mn/DOT CO/CRU Project File

September 22, 2009

Ms. Garneth Peterson
MnDOT- Cultural Resources Unit
Transportation Building
Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Peterson:

Thank you for consulting with our office regarding the area of potential effect for the above-referenced project.

Generally, we prefer to characterize the project area of potential effect as the largest area encompassing all types of project effects. Within this area, different levels of identification strategies are appropriate, depending on the specific types of historic properties and the types of potential effects to those properties.

We would expect that the potential effects on historic architecture resources (including visual and auditory) will define the largest area, and your submittal indicates that more information on the project scope is needed before this area can be defined. Within this larger area, we concur with your suggested strategy to define the area where archaeological survey is needed.

We look forward to working with you on this review. Contact us at (651) 259-3456 with questions or concerns.

Sincerely,



Dennis A. Gimmestad
Government Programs & Compliance Officer

cc: Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

June 23, 2010

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, Mn/DOT District 6 to rehabilitate or replace Bridge #5900 on TH 43 in Winona, Winona County
T107 R7W S22, 23

Dear Ms. Heidemann:

We have initiated the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

Mn/DOT District 6 plans to study alternatives for rehabilitation or replacement of Bridge #5900 on TH 43 in Winona, Winona County, using federal funds administered by the Federal Highway Administration (FHWA). Bridge #5900 extends from downtown Winona to Latsch Island (Island 72 in the Mississippi River). An existing back channel bridge (Bridge #5930) from Latsch Island to Wisconsin has limited potential to be impacted by the project due to geometric constraints.

Bridge #5900 and Bridge #5930 were determined eligible for the National Register of Historic Places (NRHP) under Criterion A-Transportation History, and Criterion C – Bridge Design and Engineering, in Hess Roise and Company's *Evaluation of National Register Eligibility: Winona Highway Crossing (Bridge Nos. 5900 and 5930) Summary of Findings* (September 1996). No official eligibility concurrence date was identified, but correspondence by the SHPO in 1998 acknowledged that Bridge 5900 met the criteria of the National Register.

Our office previously consulted with you in a letter dated August 14, 2009, regarding this project and the Area of Potential Effect for both archaeology and architectural history. Work has proceeded on both the archaeological and architectural history surveys as well as a rehabilitation study on the bridge. At this time, the archaeological study is being submitted for your review. Enclosed please find one copy of the *Phase I Archaeological Survey and Geomorphological Investigation for the Winona Bridge Rehabilitation/ Replacement Project at the City of Winona, Winona County, Minnesota*, prepared by Florin Cultural Resource Services with geomorphological contributions by Strata Morph Geoexploration.

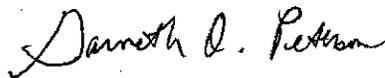
In the response to our August 14, 2009 letter, your office concurred with our APE for archaeology (see Figure 2 in *Phase I Archaeological Survey* report), which consists of an area two blocks either side of Winona Street and the bridge, both in downtown Winona and on Latsch Island. The archaeological and geomorphological survey and evaluation identified one site, Site FCRS 267-2, within the APE. The OSA determined the site did not meet necessary conditions for assignment of a state inventory number. The site is a c. 1860-1960 historic period artifact

scatter associated with residential households in Winona; it has been determined not eligible for the NRHP.

The Phase I Archaeological Survey report is complete except for those portions of the survey area that were paved or lacked survey consent. Several of these areas are recommended for further survey. It is anticipated that further survey work will be carried out as project planning proceeds and an Addendum to this report will be prepared.

Please provide your comments within 30 days of receipt of this letter. Although further archaeological work is anticipated, we request your comments so that this information can inform project planning on the Winona Bridge project and foster avoidance of historic resources.

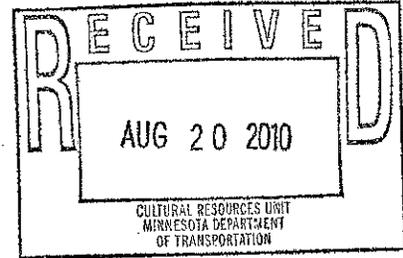
Sincerely,



Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Attachments

cc: Jai Kalsy, District 6
Frank Florin, Florin Cultural Resource Services
Joseph Hudak, Mn/DOT CRU
Mn/DOT CRU/CO File



August 18, 2010

Ms. Garneth Peterson
MnDOT- Cultural Resources Unit
Transportation Building
Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Peterson:

Thank you for the opportunity to review and comment on the Phase I Archaeological Survey and Geomorphological Investigation prepared for the above-referenced project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

Based on the information provided, we concur that the area surveyed thus far has no archaeological properties listed in or eligible for listing in the National Register of Historic Places. If additional areas are identified for future survey work, we will review that work when the time comes.

We are also aware that MnDOT is working to better define an area of potential effect for historic architectural resources. This effort, in turn, depends upon better definition and selection of project alternatives. We look forward to consulting with you further as project alternatives become better defined.

Contact us at (651) 259-3456 with questions or concerns.

Sincerely,


Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

November 22, 2010

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, Addendum Archaeology Report for Mn/DOT District 6 to rehabilitate or replace Bridge #5900 on TH 43 in Winona, Winona County
T107 R7W S22, 23
SHPO Number: 2009-3391

Dear Ms. Heidemann:

We have reviewed the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

Mn/DOT District 6 is examining alternatives for rehabilitation or replacement of Bridge #5900 on TH 43 in Winona, Winona County, using federal funds administered by the Federal Highway Administration (FHWA). Bridge #5900 extends from downtown Winona to Latsch Island (Island 72 in the Mississippi River) and has been determined eligible for the National Register of Historic Places (NRHP) under Criterion A-Transportation History, and Criterion C – Bridge Design and Engineering.

Our office previously consulted with you on the Phase I archaeological report for this project in a letter dated June 23, 2009. Your response of August 18, 2010, concurred that the area surveyed had no archaeological properties listed in or eligible for listing in the NRHP. Enclosed please find one copy of the *Addendum Report: Additional Phase I Archaeological Survey and Geomorphological Investigation for the Winona Bridge Rehabilitation/ Replacement Project at the City of Winona, Winona County, Minnesota*, prepared by Florin Cultural Resource Services with geomorphological contributions by Strata Morph Geoexploration.

This report documents additional Phase I archaeological survey at four parcels for which access became available this summer and which may be impacted by bridge construction. Additional historic artifacts from site FCRS 267-2 (identified in the 2009 Phase I report) were identified. The site is a c. 1860-1960 historic period artifact scatter associated with residential households in Winona, and was determined to be not eligible for listing on the NRHP based on the results of the 2009 survey. It is the determination of our office that the additional site data from the 2010 survey, as documented in the *Addendum Report*, does not change the site's status, and that the site is **not eligible** for the NRHP.

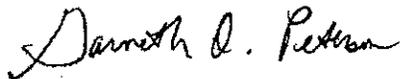
The *Addendum Report* also included results of geomorphological coring conducted by Strata Morph Geoexploration at five paved parcels. Of these parcels, the coring at the Sinclair gas station and at the YMCA identified relatively undisturbed soils that have the potential to contain intact archaeological deposits. Archaeological testing of these areas is recommended if they will be impacted by the bridge

replacement project.

In addition to the Sinclair and YMCA sites, there are 13 unsurveyed residential parcels and nine paved parcels that are recommended for survey and coring if it is determined that the project will affect these areas. These areas will be considered for geomorphology and archaeological survey if needed when bridge rehabilitation and/or replacement options are identified.

Please provide your comments within 30 days of receipt of this letter so that this information can inform the planning on the Winona Bridge project and can foster avoidance of historic resources. We look forward to working with your office as this project progresses.

Sincerely,

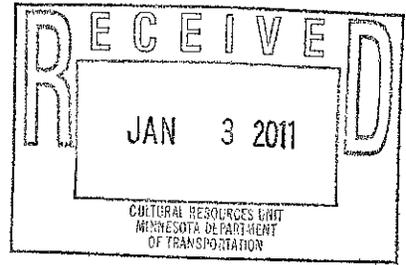
A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Attachments

cc: Jai Kalsy, District 6
Frank Florin, Florin Cultural Resource Services
Joseph Hudak, Mn/DOT CRU
Mn/DOT CRU File

 Minnesota
Historical Society
STATE HISTORIC PRESERVATION OFFICE



December 21, 2010

Ms. Garneth Peterson
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Peterson:

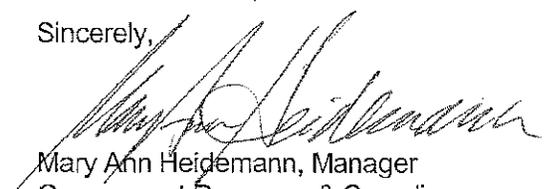
Thank you for the opportunity to review and comment on the Addendum Report, covering additional archaeological and geomorphological investigations for the above-referenced project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

As with our earlier letter dated August 18, 2010, and based on the additional information provided, we concur that the area surveyed thus far has no archaeological properties listed in or eligible for listing in the National Register of Historic Places. If additional areas are identified for future survey work, we will review that work when the time comes.

Meanwhile, we are still waiting for a better definition of the area of potential effect for historic architectural resources. This effort, in turn, depends upon better definition and selection of project alternatives. More importantly, we are waiting for the promised rehabilitation study alternatives for the bridge itself, which was to be prepared by Mn/DOT District 6. It would help us to receive an overall submittal schedule for the remaining Sec. 106 review materials that have yet to be completed. Reviewing the project in pieces as we have to date is not easy or efficient, because many review considerations are interconnected with the as yet unknown project alternatives.

Thanks for your understanding. Contact us at (651) 259-3456 with questions or concerns.

Sincerely,


Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

May 26, 2011

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, Mn/DOT District 6 to Rehabilitate Bridge #5900 on TH 43 in Winona, Winona County
T107 R7W S22, 23
SHPO No. 2009-3391

Dear Ms. Heidemann:

On February 10, 2011, representatives from FHWA and the Mn/DOT Cultural Resource Unit (CRU) met with you to develop a programmatic approach to complex projects. We agreed to begin complex projects by sending the Purpose and Need to your office as evidence of an undertaking, and to send the Public Involvement Plan for preliminary identification of stakeholders and consulting parties.

Enclosed with this letter are the Purpose and Need and the Public Involvement Plan for the Winona Bridge Project. We recognize that this project has been in process since 2009, and are forwarding these documents now to catch up and better inform your office as we go forward on the Winona project.

The Purpose and Need is identified as a working draft, as there are some final numbers that will need to be inserted and some work is being conducted with regard to a loading capacity issue.

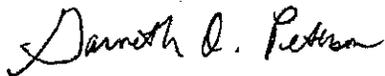
The Public Involvement Plan was prepared by Mn/DOT District 6's consultant for the project as a whole. Our office has participated in a number of the Public Involvement meetings and presented information on historic properties as project discussions occurred (see scheduled meetings on pg. 4). In particular our office participated in all three Scoping meetings in September and October 2009, which also included representatives from Winona's HPC and County Historical Society. Your office participated in the September 23, 2009, Environmental Agency meeting. Our office has also presented cultural resources updates at the Technical Advisory Committee (TAC) and Project Advisory Committee (PAC) meetings. Our office has participated in the Public Information Meetings on October 21, 2009, and the second Public Information Meeting held on October 27, 2010 (not shown on the schedule). Each of these meetings has provided regular opportunities to discuss cultural resources issues with city, county and agency representatives, as well as the project planners.

As the project proceeds, we anticipate additional consultation with the Winona Heritage Preservation Commission and the Winona County Historical Society. We also anticipate that

other stakeholders may be identified as the bridge rehabilitation study and various options are brought forward for discussion.

We ask for your comment regarding these materials and appreciate your suggestions regarding stakeholder involvement. We look forward to working with you as work proceeds on the various cultural resources aspects of this project.

Sincerely,

A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Attachments

cc: Philip Forst, FHWA
Jai Kalsy, District 6
Joe Hudak, Mn/DOT CRU
Mn/DOT CRU File

WINONA BRIDGE PROJECT PURPOSE AND NEED WORKING DRAFT

5/4/11 draft

The primary need for the project is to provide a structurally sound, safe bridge crossing of the Mississippi River Main Channel at Winona.

Also described below are secondary needs that must be given strong consideration in the development and evaluation of alternatives for this project. The river crossing must continue to connect to WI STH 54 and provide access to Latsch Island. Maintenance of traffic—both across the river and on the river—must be maximized during construction (i.e., as short an amount of time with total closure as possible). Opportunities for addressing existing and future safety and operational issues within the project area should be considered. The existing level of pedestrian-bicycle accommodation at the crossing should be maintained, at a minimum, and opportunities for improvement should be considered. Any actions taken to address problems at the crossing must meet the critical regulatory requirements to protect historic resources, parkland, water quality, and river navigational clearances.

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

A. PRIMARY NEED: A STRUCTURALLY SOUND, SAFE BRIDGE

The primary reason for undertaking this project is to address the condition of the bridge structure. Additional details regarding the structural issues identified to date are provided below.

Rehabilitation, maintenance, and inspection history

The existing bridge was completed in 1942, and has maintenance needs that will require extensive ongoing investment. In 1985, a major rehabilitation project was performed that re-decked the bridge to address concrete deterioration and widened it by cantilevering a sidewalk off the east truss, to provide more roadway width between the trusses for vehicular traffic. The bridge underwent a partial painting in 1992 and 1993. In 2001, a gusset plate was observed to have corroded to the point where the deterioration of the plate thickness was of concern. Back-up plates were installed over the deteriorated area.

In 2008, an in-depth inspection found deterioration of gusset plates progressing to the point that the bridge needed to be closed to traffic and emergency repairs were made to 15 more gusset plates. Rating of the gusset plates upon completion of the repairs found them to be of adequate capacity but to have little reserve capacity at certain locations. The concrete sidewalk was also found to be bowing upwards, no longer bearing on its steel support and repairs were made to the sidewalk at the same time as repairs were made to the gusset plates.

The 2008 inspection also found that most steel members with faying surfaces (areas where surfaces connect) have pack rust with some areas having rust between plates that has caused

major distress at the connection. (The inspection report noted that all connections were still functioning.) There were scattered areas of deterioration (corrosion) on most steel members that had been cleaned and painted over, or that occurred after the last painting. Foundation stability issues (scour) were found to be critical at the pier, which means high river flows have the potential to cause undercuts to the pier foundations. The inspection report noted that monitoring would be required to detect any further deterioration.

A routine, "Snooper" inspection was performed in May 2009 where typical problems were noted as well as major concerns such as corrosion of steel truss members. The 2009 inspection also noted that the bearings of Pier 21 should be considered for replacement and rehabilitation due to active corrosion and loss of section, which is not allowing the bearing to function as designed. The bearings at Pier 23 should be replaced due to active corrosion and inability to move in rotation, only sliding free along the bottom plate. Under-deck delaminations (portions of concrete becoming loose) over driving and pedestrian areas were highlighted for extra attention in future inspections. A June 2010 visit to the bridge revealed gusset plates in need of immediate repair.

Condition Summary

Overall the bridge is currently functional. Necessary monitoring of the bridge will continue to look at the issues found in these two latest reports as well as new developments. Strain gauges have been placed on the truss spans to monitor structural response to loads. Although repair projects over the last few decades have assisted in extending the life of the bridge, it is time for a higher level of investment in the structure as further deterioration is expected to take place over the next several years. ~~WILL BE UPDATED WITH MOST CURRENT INFORMATION PRIOR TO PUBLICATION.~~

The gusset plate repairs were sufficient to address the spot deterioration, but further deterioration is expected to continue into the future and develop at other locations. Plating over corroded areas creates inaccessibility to the "sandwiched" original plate for inspection of further deterioration. The existing foundations consist of timber piles 26.6 to 40.7 feet long with a required bearing of 20 to 25 tons. Due to construction methods, there is not a practical means to determine the capacity of the existing timber pile foundations to safely carry traffic loads.

As noted above, the bridge is also scour critical, which means high river flows have the potential to cause undercuts to the pier foundations due to shallower than normal piling relative to foundations that would be designed today in this reach of the Mississippi River. The Winona Bridge is under constant monitoring for scour.

Loading Capacity

[This river crossing was also identified as an important route for large truck traffic (e.g., farm-to-market, traffic to Winona port, and trucks from Arcadia, WI destined for WB I-90). The bridge is currently posted with a weight limit, so heavier loads (HL 93 loads) are not permitted on the bridge. However, truck data from weigh-in-motion scales indicates that over-loaded trucks are still crossing at this location, even with the posting. More information is being gathered by Mn/DOT to document the heavy truck demand in this corridor, and additional discussion of this issue will be added to this P&N document, once the data is compiled.]

B. NEED TO MAINTAIN CONNECTION TO WI STH 54

The Minnesota TH 43 to Wisconsin State Trunk Highway (WI STH) 54 connection is an important regional and interstate route. The Winona Bridge provides the only roadway access to STH 54 from Winona. STH 54 connects to STH 35, which is a designated System-Level Priority Corridor in *Connections 2030*, the Wisconsin Department of Transportation's long-range multimodal transportation plan. The crossing is also critical for the rural communities in Wisconsin to reach Winona, the nearest regional destination for smaller towns such as Marshland and Fountain City. The crossing provides an important connection to emergency services for communities in western Wisconsin, as discussed below.

C. NEED FOR MAXIMUM MAINTENANCE OF TRAFFIC

The Winona Bridge provides the only access across the Mississippi River between Wabasha (approximately 35 miles northwest) and the Interstate 90 Bridge (approximately 25 miles southeast). Closure of the Winona Bridge necessitates a detour of approximately one hour for travelers between Winona and Buffalo and Trempealeau Counties in Wisconsin.

Stakeholders have stated the bridge crossing plays an important role for the communities 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 bridge also serves as a regional crossing to move goods and provide roadway access to two river ports in Winona. Continuous access is necessary to meet community and economic needs. Winona area businesses and residents have requested the existing bridge remain open during any construction to the maximum extent practicable.

The communities on both sides of the river rely on the Winona 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 Winona live in Wisconsin.

The Mississippi River provides access for barges and other river traffic. According to the City's economic development staff, the Winona harbor received 790 to 1,400 barges a year, not including through service to ports upstream. It is economically important to ensure the river remains open to navigation to the maximum extent possible during construction as well. The U.S Coast Guard, which has jurisdiction over structures spanning the navigational channel, will also require this.

D. NEED FOR ACCESS TO LATSCH ISLAND

The connection to Latsch Island provides access to Dick's Marine, Latsch Island Park, and a boathouse community. No other roadway connection to Latsch Island exists; therefore, maintaining vehicular access to Latsch Island is critical, including minimizing disruption of access to the island during project construction. Emergency fire, ambulance, and law

enforcement services need to access Latsch Island via the Winona Bridge, and the roadway connection provides access to Winona County Sheriff's watercraft stored at the marina. The only access to Aghaming Park (in Wisconsin but owned by City of Winona, adjacent to the Trempealeau National Wildlife Refuge) is via the old wagon bridge that crosses over the back channel of the Mississippi River, which must be accessed via Latsch Island. The wagon bridge road does not connect to the Wisconsin STH system on the other side.

Approximately X boathouses lease spaces at Latsch Island, and X people live there year round. ~~NUMBERS TO BE ADDED~~ The remaining boathouses are used as seasonal recreational dwellings. The boathouses are not mobile, and cannot easily be transported to another location. Therefore, maintaining vehicular access to Latsch Island is critical to access the boathouses.

E. NEED FOR ADEQUATE ROADWAY CAPACITY, ACCEPTABLE TRAFFIC OPERATIONS, AND SAFE DESIGN

Bridge Capacity

Under future No-Build conditions, forecast traffic volumes exceed the capacity of the existing bridge, based on planning-level thresholds. The two-lane Winona Bridge carried an average daily traffic (ADT) of 11,100 vehicles per day in 2009, which is within the theoretical design capacity of a two-lane undivided rural road (15,000 vehicles per day).

Traffic forecasting was completed to determine future roadway capacity needs. The year 2038 was selected to represent 20 years following a potential project completion date. A 50-year horizon, represented by the year 2068, was also analyzed in consideration of the long-term investment represented by a major bridge project.

The forecast for year 2038 is 15,300 vehicles per day, which is slightly over the theoretical capacity of a two-lane road. An operational analysis was conducted to better understand the ability of the existing bridge and approach roadways to carry the forecast level of traffic. As detailed in the following section, operational issues are expected under future No-Build conditions.

The 50-year forecast anticipates a traffic volume of 19,700 vehicles per day, significantly over the capacity of a two-lane roadway. If additional capacity were not provided, traffic delays and potential related safety issues would be anticipated.

Approach Roadway Intersection Operation Deficiencies

Results of traffic operations analysis found that under existing conditions, traffic in the project area operates at an acceptable LOS C or better.¹

¹ Capacity analysis results identify a Level of Service (LOS), which indicates how well an intersection is operating. The LOS results are based on average delay per vehicle. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. LOS E indicates that the intersection is operating at, or very near, its capacity and that drivers experience

With no improvements (i.e., No Build conditions), year 2038 traffic forecasts show that the intersection of Fourth and Winona Streets at the south approach to the bridge will operate at an overall unacceptable LOS F during the p.m. peak hour (Figure X.2). [TO BE ADDED.] The factor controlling operations at this intersection is the volume exiting the intersection to the north into a single lane on the bridge. This geometric deficiency results in queue lengths which are projected to spill back into adjacent intersections and degrade adjacent intersection operations as well. Due to the proximity of the Fourth Street/Winona Street intersection to the Winona Bridge touchdown, there is a need to consider the relationship between the bridge and potential opportunities to address intersection operational issues when considering bridge alternatives for this project.

Approach Intersection Safety Problems

Due to the proximity of the Fourth Street/Winona Street intersection to the Winona Bridge touchdown, there is also a need to consider the relationship between the bridge and potential opportunities to address existing intersection safety issues (described below) when considering bridge alternatives for this project.

The existing Fourth Street and Winona Street intersection design results in safety issues. The profile grade from the bridge to the north approach of the intersection does not provide a flat landing after the downward slope of the southbound lane as specified in Section 5-2.03 of the Road Design Manual and Chapter 9 of AASHTO's *A Policy on Geometric Design of Highways and Streets*. This creates safety concerns because drivers must anticipate both slowing down and planning turn movements. These are particular concerns in slippery conditions. A house constructed on the west approach to the Fourth and Winona intersection blocks sight lines, exacerbating the safety issue.

Southbound traffic exiting the bridge does not stop, while the other approaches are stop-controlled. This intersection has a crash rate of 0.73 per million entering vehicles (critical crash rate² of 0.64), which is higher than the Mn/DOT District 6 average crash rate for similar intersections (0.40), indicating a safety problem. Many of the collisions at this intersection are right angle/left turn, which is typical of a three-way stop condition.

Maintain pedestrian-bicycle accommodation

The existing Winona Bridge provides a 4.5-foot wide sidewalk on the river crossing bridge. This path is used by pedestrians and bicyclists – including students at Winona State University, visitors to Latsch Island and others crossing the river between Wisconsin and Minnesota. Therefore, there is a need to at least maintain this existing level of non-motorized transportation accommodation in the river crossing corridor.

substantial delays. The goal for this project is a stable LOS D, i.e., delay per vehicle is less than or equal to 40 seconds on a consistent basis and no traffic modeling results in LOS E or worse.

² The critical crash rate determines the statistical significance of the calculated crash rate based on a 95th percentile confidence. If the rate is above the critical crash rate it is considered to be statistically significant and a definitive problem. If the rate is below the critical crash rate but above the average crash rate it is considered to be a potential issue but not one that is statistically significant, and the observed problem may be due to chance circumstance.

F. NEED TO MEET CRITICAL REGULATORY REQUIREMENTS

The Winona Bridge 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 requirements to gain approval.

Historic Resources

The existing bridge is eligible for listing on the National Register of Historic Places. In addition, there are other eligible and properties in affected area of Winona. The project needs to comply with Section 4(f) of the Department of Transportation Act of 1966 which requires avoidance of direct impacts (e.g., 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.

Parkland

In addition to protecting historic resources as described above, Section 4(f) provides protections for publicly owned parks, recreational areas, and wildlife and waterfowl refuges. As noted, 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 Winona Bridge include Latsch Island Park, Trempealeau National Wildlife Refuge, Upper Mississippi River National Wildlife Refuge, and Levee Park.

Navigational Channel

The U.S. Army Corps of Engineers (USACE) maintains a navigational channel on the Mississippi River beneath the Winona Bridge. As noted above, the U.S. Coast Guard (USCG) has jurisdiction over structures spanning the navigation channel. The USCG has determined that the project will need to maintain adequate horizontal and vertical clearances. The existing vertical clearance is 64.2 feet over the normal pool. The existing horizontal clearance is approximately 434 feet, which is the clear distance between the inside faces of the existing piers flanking the navigation channel. **TO BE CONFIRMED WITH USCG**

Stormwater

Under current conditions, stormwater on the Winona Bridge drains directly to the Mississippi, 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.

G. OTHER CONSIDERATIONS

The following describes needs that would be desirable to address:

Improve pedestrian/bicycle accommodation

The existing Winona Bridge provides a 4.5-foot wide sidewalk/bike path which does not meet the current Mn/DOT standard of a minimum 6-foot width for pedestrian use, or minimum 10-foot width for a combined bike/pedestrian facility. The adjacent roadway network includes bicycle facilities and trails, but connection to these facilities via the bridge are lacking. Opportunities for improving pedestrian/bicycle accommodations at the crossing should be considered in conjunction with this project.

Structural redundancy

The Winona Bridge is a fracture critical bridge with non-redundant design. Standard designs do not contain fracture critical design components. Chapter 152 of the Minnesota Legislature 2008 Session Laws directs Mn/DOT to establish a bridge improvement program with an emphasis on structurally deficient and fracture critical bridges. The Winona Bridge is classified as a Tier 1 bridge, which means that if it is repaired but not replaced, an explanation of the reasons for the repair instead of replacement is required.

Bridge Geometrics

The geometric design of the bridge does not meet current standards. The roadway width is 31 feet, which includes two 3.5-foot shoulders. Table 9-2.03A in the Mn/DOT 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 40 mph, which falls in the low speed range. The inadequate shoulders do not allow for snow storage and effectively close 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 1-way crossing until the permitted load passes due to overhang and encroachment into the opposing lane. This deficiency is attributable to lack of available shoulder width.

Minimize impacts to local roadway network (cross-streets)

The project may affect clearance over the local roadway system underneath the bridge. Currently, Second Street and Third Street run perpendicular to the bridge beneath the bridge approaches and is open to traffic. The City would like to see Second, Third and Fourth Streets remain open to local traffic if possible.

Minimize truck routing impacts

TH 43 is a designated truck route, and appropriate connections to local truck routes are needed. Multi-modal facilities lie both to the east and the west of the river crossing. It is desirable to facilitate truck connections to these facilities, while avoiding or minimizing impacts to residential neighborhoods.

PURPOSE STATEMENT

The purpose of the project is to provide a structurally sound bridge-crossing of the Mississippi River Main Channel at Winona, Minnesota that maintains access to Latsch Island and the Wisconsin highway system, with adequate capacity to safely accommodate existing and future transportation needs within the design life of the bridge, while maintaining traffic to the maximum extent possible during construction.

Winona Bridge and Roadway Approach Public Involvement Plan

Draft Update

May 3, 2010

SRF No. 6802

The purpose of this Public Involvement Plan is to articulate clearly the goals, objectives and strategies for public involvement; to identify key stakeholders and define the roles of decision-making and advisory bodies; to identify available communication methods; and to set a schedule for public involvement activities.

1.0 Goals, Objectives and Strategies

Public Involvement Goal:

To establish forward momentum and community buy-in through a meaningful stakeholder process to achieve an aesthetically pleasing, cost effective TH 43 Mississippi River crossing and roadway approach solution. Develop consensus that the process has thoroughly considered options reflecting the broad range of interests and has selected a Preferred Alternative that balances these interests to the greatest degree possible.

Objectives for Public Involvement

- Assure the public they will be heard and understood.
- Build consensus through ongoing communication and involvement.
- Develop successful, context-sensitive solutions through collaboration and conflict management.

Public Involvement Strategies

Strategy 1: Clearly articulate and communicate the project purpose and need to achieve broad agreement that something should be done.

- Use structural study of the Winona Bridge to illustrate existing conditions and the need for bridge replacement or rehabilitation.
- Provide opportunities in the initial stage of the process for all facets (traffic, pedestrian, shipping, business, community) of the project needs to be well-understood.

Strategy 2: Provide consistent and clear communications about the project to residents, business and decision-makers to develop trust and confidence in the process.

- Conduct Public Information Meetings at key points during project development.
- Broadly publicize public events through press releases, newsletters and project website.
- Provide frequent and substantive updates to the project website.
- Demonstrate how public input influenced project development.
- Present all study communications—written and verbal—in a direct and forthright manner, clearly articulating issues, concerns and uncertainties in the project.

Strategy 3: Conduct an evaluation of a range of alternatives with equity and include an assessment of potential impacts and benefits.

- Conduct scoping meetings to identify potential alternatives and solicit input regarding issues to be addressed by the project.
- Use “worst-case” construction limits to assess possible impacts to right of way, access, noise and other key issues. Present potential impacts as ranges to convey uncertainty of impact calculations at the concept level.
- Solicit input from the PAC as to how benefits/impacts should be weighed in the selection of a preferred alternative.

Strategy 4: Promote technically sound project decisions with early agreements regarding assumptions and methodologies.

- Involve City of Winona, Mn/DOT and FHWA and other appropriate local agencies’ staff early in the process to inform alternatives identification, evaluation and assessment methodologies and study assumptions.
- Involve agency staff in review of preliminary analysis results and identify concerns regarding project approvals and/or funding.

Strategy 5: Work toward broad consensus at every phase of the project: project need, alternative identification, alternative evaluation, and preferred alternative selection:

- Provide opportunities for business, resident and key stakeholder input at every phase of the project.

2.0 Stakeholder Roles and Functions

The following provides a summary of project stakeholders and their functions on the Winona Bridge project.

Decision-Making Authorities

Mn/DOT is the lead agency for the project; however, several agencies will potentially serve as decision making authorities:

- Mn/DOT
- Wis/DOT
- FHWA
- City of Winona

Project Advisors

Several groups will serve as project advisors.

- **Technical Advisory Committee (TAC).** Project direction from entities with jurisdictional control over roadways involved in the project (Mn/DOT, FHWA, Wis/DOT, and City of Winona).
- **Project Advisory Committee (PAC).** Advise project through input from stakeholder groups (City committees, business interests, Winona County, Buffalo County (Wisconsin), and others).

- **Environmental Agency Workshop.** Meeting with potential environmental permitting agencies (such as the Watershed District, U.S. Army Corps of Engineers, U.S. Coast Guard, Minnesota Department of Natural Resources, and National Park Service) will identify issues and address permitting concerns.
- **Scoping Meetings.** Meeting with Mn/DOT, FHWA, City of Winona, Winona County, and other stakeholders as appropriate to determine the project need, confirm project limits, identify potential alternatives, and solicit input regarding issues to be addressed in the project. In addition, meeting outcomes will be used to determine whether an EA or EIS is the appropriate document and process.
- **Preferred Alternative Selection Workshops.** Participants to be determined to select a Preferred Alternative to carry forward into the formal environmental document.

3.0 Communications methods

Project web site: Meeting summaries, project layouts/graphics, and notices of upcoming meetings will be regularly posted to the project website:

<http://www.dot.state.mn.us/d6/projects/winonabridge/>.

Public Information Meetings: Up to three Public Information Meetings will be held to gather input and inform the communities and the stakeholders of the study progress. A public hearing will also be held to conclude the environmental document process.

Small Group Meetings: Up to three meetings with small groups of local landowners, business owners, elected bodies, and/or residents will be used to discuss specific issues identified throughout the process.

Newspapers: Mn/DOT Media will contact the local press with meeting notices and press releases. Area newspaper list can be found in separate file.

Project Newsletters: Up to eight newsletters will be used to provide introductory information about the project, provide notice regarding upcoming public involvement events, and direct readers to the project website for more detailed information.

3.0 Public Involvement Schedule

Date	Event	Location	Goal
<u>September 2009</u>			
Sep 2	TAC Meeting 1	Mn/DOT District 6	Discuss Purpose and Need, develop bridge type selection criteria, establish project schedule
Sep 16	Scoping Meeting 1/ Environmental Agency Workshop	Holiday Inn Winona	Discuss issues, concerns, and opportunities; develop range of alternatives for further study
Sep 23	Environmental Agency Follow-up Meeting (agencies unable to attend Sep 16)	Mn/DOT Central Office	Discuss issues, concerns, and opportunities; develop range of alternatives for further study
<u>October 2009</u>			
Oct 7	TAC Meeting 2 and Scoping Meeting 2	TBD (Winona)	Determine alternatives to present during Public Information Meeting 1
Oct 21	Public Information Meeting 1	Winona Middle School	Receive public input on alternatives and issues
<u>November 2009</u>			
Nov 4	TAC Meeting 3 and Scoping Meeting 3	TBD (Winona)	Narrow range of alternatives for study based on public input
<u>December 2009</u>			
Dec 2	TAC Meeting 4	Mn/DOT District 6	Review preliminary analysis documents; discuss alternatives evaluation process; determine project path
<u>January 2010</u>			
Jan 6	TAC Meeting 5	Mn/DOT District 6	Discuss continuing alternatives evaluation
Jan 27	PAC Meeting 2	Tandeski Center	Discuss project update and alternatives selection process
<u>February 2010</u>			
Feb 3	TAC Meeting 6	Mn/DOT District 6	Discuss rehabilitation criteria, finalize Purpose and Need

March 2010

Mar 3	TAC Meeting 7	Mn/DOT District 6	Discuss rehabilitation study results, discuss replacement options analysis
Mar 30	Emergency Services Coordination Meeting	Tandeski Center	Initiate coordination with emergency service providers

May 2010

May 5	TAC Meeting 8	Mn/DOT District 6	Discuss project updates
May 13	PAC Meeting 3	Tandeski Center	Discuss project updates

June 2010

Jun 2	TAC Meeting 9	Mn/DOT District 6	To be announced.
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July 2010

Jul 7	TAC Meeting 10	Mn/DOT District 6	To be announced.
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Additional TAC meetings and public involvement activities to be scheduled.

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Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

May 26, 2011

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, Mn/DOT District 6 to Rehabilitate Bridge #5900 on TH 43 in Winona,
Winona County ARCHITECTURAL HISTORY REPORT
T107 R7W S22, 23
SHPO No. 2009-3391

Dear Ms. Heidemann:

We have initiated the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36.CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

Mn/DOT District 6 is studying alternatives for rehabilitation of Bridge #5900 (Winona Interstate Bridge--WN-WAC-0477) on TH 43 in Winona, Minnesota, using federal funds administered by the Federal Highway Administration (FHWA). Bridge #5900 is eligible for the National Register of Historic Places (NRHP) and extends from downtown Winona across the Mississippi River main channel to Latsch Island (Island 72 in the Mississippi River). Please refer to the Purpose and Need for this project as submitted on May 26, 2011, for further information.

Background

This project includes three separate cultural resources studies: a bridge rehabilitation study, an archaeology study and an architectural history study that is the focus of this submittal.

Given that Bridge #5900 is eligible for the NRHP, our office has hired a historical consultant, Mead & Hunt, to collaborate with District 6 engineers and consultants on a bridge rehabilitation study (in progress). Meetings will be scheduled with your office for feedback at key points in the process as the rehabilitation study is developed.

Our office consulted with your office regarding the Area of Potential Effect (APE) for both archaeology and architectural history in August 2009. This project initially began with consideration of a new bridge or a second bridge to supplement the existing bridge, and the APEs include areas that could be impacted by rehabilitation activities and/or the potential construction of a new bridge, if rehabilitation cannot be achieved.

Our office has previously consulted with your office on the *Phase I Archaeological Survey and Geomorphological Investigation for the Winona Bridge Rehabilitation/Replacement Project at the City of Winona, Winona County, Minnesota*, prepared by Florin Cultural Resource Services with geomorphological contributions by Strata Morph Geospatial. In letters dated August 18, 2010 (Phase I report) and December 21, 2010 (Addendum), your office has concurred that in the

area surveyed thus far, there are no archaeological properties eligible or listed for the NRHP. Our office recognizes that additional archaeological survey may be required when a Preferred Alternative is identified.

Architectural History

Enclosed please find the *Phase I and II Architectural History Evaluation for the Winona Bridge Study, Winona, Winona County, Minnesota*, prepared by Landscape Research.

The APE for architectural history originally consisted of two blocks either side of the Winona Street bridge alignment, and extended south to Broadway (W. 6th Street) on the south. The APE included an area approximate to two blocks on either side of the bridge on Latsch Island (see Figure 1 and Figure 32 [following pg. 52] in report).

The initial 2009 survey identified a portion of a proposed residential historic district in the area around Windom Park along Broadway and appeared to extend to properties outside the original APE on W. 5th and Wabasha streets. SHPO staff recommended that the entire potential historic district be surveyed as part of the project. As a result, the APE was expanded (see Figures 32-34) and in 2010 the consultants conducted additional survey and evaluation for a total of 137 properties in the Broadway Residential Historic District. A number of properties found individually eligible under the initial survey became the nucleus of the historic district; thus the historic district has a number of properties that are both individually eligible as well as contributing to the historic district.

Evaluation Results

For ease in understanding the evolution of the survey, the report and its various tables have been divided to reflect the division of properties into the area outside the district (properties recommended eligible and properties recommended not eligible) and properties inside the district (individually eligible and contributing; and non-contributing).

The APE included 13 properties previously listed or determined eligible for the NRHP (see Table 1, pg. 6 and Figure 32) including the Winona Interstate Bridge.

The properties outside the historic district that are recommended eligible for NRHP listing are shown on Table 3 (pg. 55) and Figure 32 and include:

WN-WAC-1260	Winona Municipal Marina
WN-WAC-1246	Winona & St. Peter (C&NW) Railroad segment
WN-WAC-0482	Winona Water Works
WN-WAC-0472	Winona Monument Co.
WN-WAC-0264	Dr. Linn A. and Abbie Kelly House
WN-WAC-0440	Peter F. and Anna Schmitt House
WN-WAC-0441	William F. and Louisa Kohler House
WN-WAC-0458	YMCA

The Broadway Residential NRHP Historic District

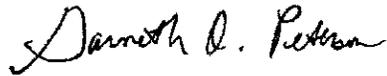
The Broadway Residential NRHP Historic District contains 137 properties more than 50 years old. Of that total 84 are recommended as contributing and 53 are recommended as non-contributing. Table 5 (pg. 57) and Figure 33 (following pg. 64) identify the 84 properties contributing to the Broadway Residential NRHP Historic District. As noted previously, the table includes the large number of properties that had been identified as individually eligible as well as contributing to the historic district.

The district contains the dwellings and major institutions developed by Winona's founders and business leaders during the period from ca. 1852 to 1930. These business leaders developed W. Broadway and portions of E. Broadway, Wabasha, and W. 5th streets between Grand and Lafayette streets into an important residential district during the period. During this period this core area of high-styled houses was associated with the leaders of the city's economic and social progress and its development into a nationally important lumber and manufacturing center. These residents also founded and built the city's churches and charitable institutions and had a lasting impact on Winona's public landscape. Their dwellings represent Winona's early high style architecture, with Greek Revival, Italianate, Queen Anne, Colonial, Period Revival, and Craftsman styles as well as more vernacular, speculatively-built examples.

Our office has determined that the individually recommended properties outside the historic district meet National Register criteria and are eligible for individual listing on the NRHP. Further, our office has determined that the Broadway Residential Historic District is eligible for the National Register.

We would appreciate your comments regarding our determinations of eligibility, and we look forward to further consultation with your office regarding the effects of this undertaking on historic properties. We also anticipate further consultation with consulting parties after we have had the opportunity to hear your comments on this report. If you have questions, please feel free to contact me at (651)366-3615. Thank you.

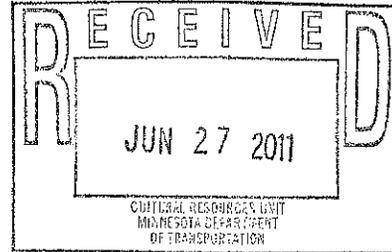
Sincerely,



Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Attachments

cc: Jai Kalsy, District 6
Joe Hudak, Mn/DOT CRU
Mn/DOT CRU File



June 23, 2011

Ms. Garneth Peterson
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Peterson:

Thank you for sending the draft Purpose and Need statement, Public Involvement Plan, and the Phase I and II Architectural History Evaluation. This material has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

I do understand that project planning and analysis under Sec. 106 has been underway for this project since 2009. Therefore, the timing for review of the Purpose and Need, as well as the Public Involvement Plan, is a bit abnormal. However, I appreciate the spirit in which those items have been submitted, because our agencies are seeking a mutually agreeable process for handling complex projects involving historic bridges.

Having said that, here are a few comments on the Purpose and Need:

- The summary of transportation need, the transportation network, safety issues, natural environment and cultural setting is well done and helpful
- It would be nice if the Purpose and Need were accompanied by a project area map, showing the transportation system connections referred to; including the connections on the Wisconsin side.
- We noted locations in the document where additional information will be provided later
- There is some duplicated text in the first and second paragraph of page 5
- I would like to know more about the "Tier I" designation, which seems to favor bridge replacement over preservation. Please expand on the regulatory reference, and discuss the impact this may have on alternative selection
- The impact to local roads is discussed on page 7. I believe some of these impacts are construction-period only. Can you review the document to better explain which concerns are temporary or short-term, and which are permanent or long term?
- There are actually two purpose and need statements; need at the start, and purpose at the end. They read somewhat differently. Please educate me on the subtle differences between the two summary statements, so I can be a better reviewer of this document and others like it. At first I thought the ending Purpose statement should be combined with the

Need statement, and moved to the top. But perhaps there is a good reason to keep it at the end as a summary?

- In the future, it would be helpful if the Historic Bridge Engineer could review and sign off on the Purpose and Need statement for National Register eligible & listed bridges. We'll work on that.

At this point, I have no request for changes or additions to the Public Involvement Plan, other than updating it from the May 2010 version provided, to include any subsequent events or planned activities. MnDOT has already hosted several public meetings. By this time, any interested party should have made themselves known. If additional interested persons or groups contact our office about this project, I will certainly let you know.

We have done a preliminary review of the architectural Area of Potential Effect for the project shown in the consultant's report, and I assume recommended by MnDOT, but we are not yet ready to concur with it. We wish to leave that open until we complete review of the recommended building eligibility (see below). Based on reading the Purpose and Need, however, I would like to know why only a part of Latsch Island is included in the APE, when the bridge provides the only vehicular access. Can you share the thought process behind the limited Latsch Island portion of the APE?

Finally, we are in the process of reviewing the proposed eligibility determinations for this project. The report submitted appears to be thorough and thoughtful. However, we have not yet received the required unbound and completed inventory sheets for all structures surveyed for this project. We need the inventory sheets in order to review the recommended eligibility determinations, and to review and approve the content of the sheets themselves (reference: Guidelines for History/Architecture Projects in Minnesota). Please forward the building inventory sheets to us as soon as possible so we will be able to complete our review.

Thanks for all your continuing work on this project. Contact me at (651) 259-3456 with any questions or concerns you may have about our review.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

August 11, 2011

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, Mn/DOT District 6 to Rehabilitate Bridge #5900 on TH 43 in
Winona, Winona County ARCH HISTORY INVENTORY FORMS
T107 R7W S22, 23
SHPO No. 2009-3391

Dear Ms. Heidemann:

Thank you for your letter of June 23, 2011, responding to our May 26, 2011 submission of the *Phase I and II Architectural History Evaluation for the Winona Bridge Study, Winona, Winona County, Minnesota*, prepared by Landscape Research.

We have initiated the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

Your letter asked for the submission of the unbound and completed inventory forms for all surveyed structures identified in the report. We are pleased to submit those forms to you with this transmittal and anticipate that they will assist your review on determinations of eligibility for the structures within the Area of Potential Effect (APE) for this project.

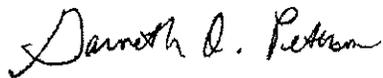
Your letter also questioned the APE boundaries on Latsch Island and recognized that they did not include the entire island. The APE was established early in the project when studies were anticipated for not only a rehab study, but reflected potential alignment alternatives for a temporary, new or paired bridge. The APE on Latsch Island simply continued the geographic boundaries established in downtown Winona, which were set at two blocks either side of Winona Street.

When this APE was submitted to SHPO for comment in August 2009, we did not identify the concern that the bridge provided the most direct vehicular access to Winona for Latsch Island residents. Island residents also have vehicular access on the old Wagon Bridge (at the northeast corner of the island) following Duke Road through the park to Highway 35 in Wisconsin, although that is a circuitous route and would still require

Bridge 5900 to reach downtown Winona efficiently.

We will expand the APE to include all of Latsch Island and prepare a revised map and additional documentation as needed. Please feel free to contact me at (651) 366-3615 on any other questions regarding the report. We appreciate your efforts and look forward to your comments on this project. Thank you.

Sincerely,



Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Enclosures

cc: Jai Kalsy, District 6
Carole Zellie, Landscape Research
Joe Hudak, Mn/DOT CRU
Mn/DOT CRU File



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

August 25, 2011

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, MnDOT District 6 to Rehabilitate Bridge #5900 on TH 43 in Winona, Winona County (Purpose and Need)
T107 R7W S22, 23
SHPO No. 2009-3391

Dear Ms. Heidemann:

Thank you for your letter of June 23, 2011, responding to our submittal of the Purpose and Need and Public Involvement Plan for the Winona Bridge project. We have initiated the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

As noted in our submittal of May 23, 2011, these documents have been submitted as part of our initiative with your office to develop a more programmatic approach to the review of complex projects. We have discussed these comments with the appropriate staff at MnDOT and consolidated our responses in this letter. Comments on the Purpose and Need are addressed in the order as raised in your letter.

- (1) Summary: We are pleased that the summary of issues was instructive and helpful to you overall.
- (2) Map: With this letter, we have supplied a map of Winona showing the relationship of the bridge to the City, the downtown area, Latsch Island and the connection to Wisconsin.
- (3) Additional Information: There are still places in the Purpose and Need where additional information is required; that analysis has not yet been completed. An updated Purpose and Need will be provided when it is available.
- (4) Text Duplication: The text in the first and second paragraphs on page 5 is quite similar, but not exactly duplicated, as the two paragraphs address separate, though related, intersection issues. The sentence ending the "Operation Deficiencies" section is summarizing that intersection operational issues should be considered. The first sentence under "Safety Problems" reiterates that there is also a need to examine safety issues at

Fourth and Winona streets.

- (5) Tier I designation: Chapter 152 of the Minnesota Legislature 2008 Session Laws created a program to accelerate repair and replacement of trunk highway bridges throughout the state (see Minn. Stat. 165.14, Subd. 1-5). The law required MnDOT to develop an inventory of all bridges that were classified as fracture critical or structurally deficient, provide a wide variety of data on each bridge, and prioritize the bridges into Tiers 1-3 depending on their average daily traffic (ADT) and other characteristics. Tier 1 included bridges with an ADT count over 1,000, a bridge sufficiency rating that is at or below 50, or is identified as a priority project. Tiers 2 and 3 had less critical requirements. The law stated that all Tier 1 and Tier 2 bridges must be under contract for repair or replacement by June 30, 2018. It also provided that a specific bridge may remain in continued service if reasons for its preservation are documented in the Statewide Transportation Planning Report and in the Annual report, both submitted to the Legislature to report progress on the program.

Thus, the Tier 1 status does not determine the alternative selection in this case. If the bridge is rehabbed rather than replaced, the reasons for the rehab must be documented in the report to the Legislature. For this project, the Chapter 152 provisions are included in the "Other Considerations" section, but not identified as either a Primary or Secondary need.

- (6) Local Road Impact: The City of Winona's concern for the Second, Third and Fourth streets was intended to address long-term access, although it is recognized that there could be temporary construction impacts as well. In regard to the Needs statement overall, it is intended to define the transportation issues to be addressed in the project, since impacts may not be known. The long-term and temporary impacts will be defined in the impacts section of the environmental document.
- (7) Purpose and Need statements: Federal guidance and regulations and federal and state agencies consistently refer to the "Purpose and Need" for projects reviewed under NEPA, and that is the title most often used. However, in practice, the statement should more precisely be called "Need and Purpose." This document is structured to begin by defining the transportation problem--the needs--and providing additional information that documents and explains those needs in more detail. The Purpose is a brief, succinct statement that summarizes the primary objectives (as opposed to secondary or other considerations) of the study as identified in the previous pages.
- (8) Historic Bridge Engineer review of purpose and need: In a NEPA process, the Purpose and Need is developed with input from a number of sources, including the Bridge Office and Historic Bridge Engineer for bridge projects. The Purpose and Need statement is then reviewed by MnDOT's Environmental Stewardship Office staff and ultimately reviewed/approved by FHWA. Since the project Purpose and Need is not exclusively related to bridge issues, we believe that it is not appropriate for the Historic Bridge Engineer to sign off on the Purpose and Need. We believe that the Historic Bridge Engineer's role is more relevant in project areas related to bridge planning, design and

structural issues, and we will continue to work with you to define the appropriate role of the Engineer in review and approval of work products and project decision-making.

Your letter raised a number of issues, related to purpose and need, levels of needs, and timing of impacts, that require much thought in any project. Often there are subtle differences and issues in integrating Section 106 and the NEPA process in the context of a historic bridge rehabilitation study. We would welcome the opportunity to have appropriate staff experts meet with you and further discuss the environmental process and its integration with Section 106.

We look forward to working with you on other elements of this project and appreciate your interest in developing more efficient methods to review these complex, multi-faceted projects. Please call if we can provide you with further information.

Sincerely,



Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

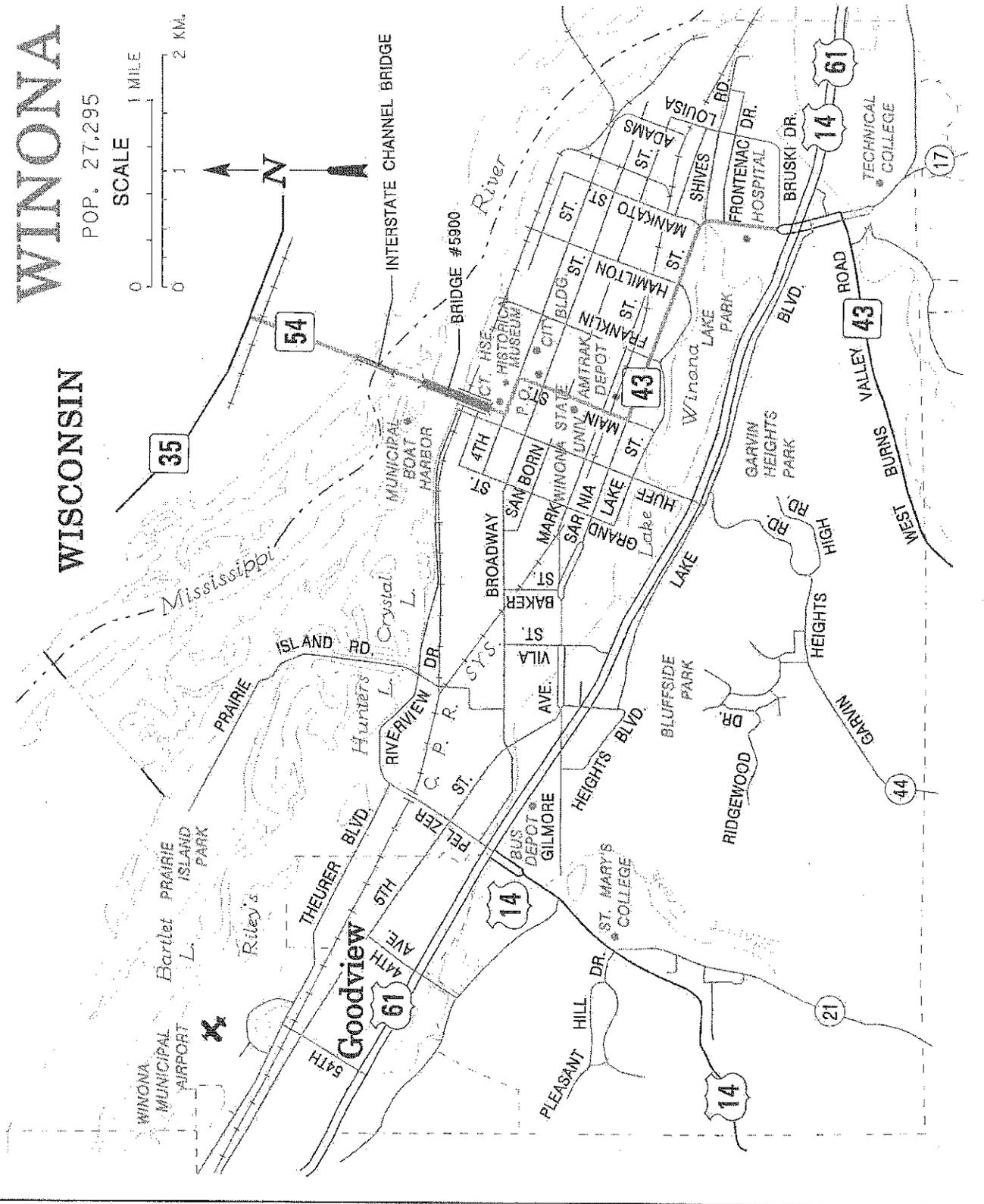
Attachments: Project Area Map

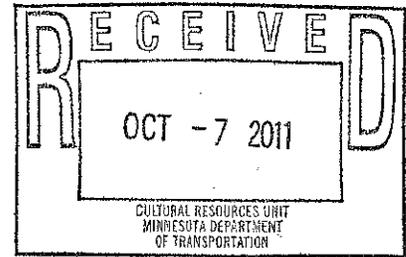
cc: Jennie Ross, MnDOT
Philip Forst, FHWA
Jai Kalsy, District 6
Rick Brown, SRF
Nancy Frick, SRF
Joe Hudak, Mn/DOT CRU
Mn/DOT CRU File

WINONA

WISCONSIN

POP. 27,295





October 5, 2011

Ms. Garneth Peterson
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Peterson:

Thank you for submitting the inventory forms completed for the above project. This material has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

We appreciate the additional review time needed to do justice to all the detailed and voluminous information provided on historic properties in the Area of Potential Effect. Our comments on the inventory forms are provided below, using the groupings in which they were received (very helpful; thank you!).

Not Eligible, Outside District (both Phase I and II survey, shown in Tables 2 and 4): We concur with the consultant and MnDOT recommendations regarding these properties, and find them **not eligible** for the National Register of Historic Places.

Eligible, Outside the District (Table 3): We concur that the following properties are **eligible** for listing in the National Register of Historic Places.

WN-WAC-1260 Winona Municipal Marina
WN-WAC-1246 Winona & St. Peter Railroad Segment
WN-WAC-0482 Winona Water Works
WN-WAC-0472 Winona Monument Co.
WN-WAC-0264 Dr. Linn A. and Abbie Kelly House
WN-WAC-0440 Peter F. and Anna Schmitt House
WN-WAC-0441 William F. and Louisa Kohler House
WN-WAC-0458 YMCA

However, we note that the Kelly House (WN-WAC-0264) is immediately adjacent to the proposed residential historic district, and we think it would make sense to modify the district boundary to include this property.

General Comments about the Proposed Broadway Residential Historic District:

1. At present, there is no separate inventory form for the district itself. Our current office policy is to have an inventory form prepared, with a discrete inventory number. This helps make the district itself searchable in the data base; and also provides a summary description, history, significance statement, and determination of boundaries. This is a recent policy change, but we appreciate your understanding. Tom Cinadr of our staff can provide an inventory number for the district. Please submit a district inventory form.

2. No discussion of reasons for the Period of Significance was provided in the report. The current end date is 1930; but two state-wide contexts cited in the research have ending dates of 1940 (Urban Centers and Railroads/Ag). Is there a reason not to extend the period of significance to 1940? I ask this because resources built during the late 1930s were labeled "non-contributing" based on the foreshortened period. Please consider extending the date, or let us know why 1930 is an appropriate end date in Winona.
3. We have several concerns about the boundaries selected for the district. Either provide a more detailed rationale for the suggested boundary, or modify the boundary to exclude non-contributing properties at the SW end of W. Wabasha, the NE corner of E. Broadway and Lafayette, and eliminate the jog at the SE corner of W. Wabasha and Johnson. We also advise including the eligible Kelly House (WN-WAC-0264), as noted above; and including the building between WN-WAC-0102 and WN-WAC-1316, even if non-contributing, to avoid isolating WN-WAC-1316.
4. After considering the boundary changes suggested above, please submit a revised boundary map along with the district inventory form.

Individually Eligible or Contributing within the District (Tables 4 & 5): We concur with the recommendations for individual eligibility and for contributing resources, except for the items noted below.

WN-WAC-0260 Winona Lumber Exchange Building: We agree that it is individually eligible, but would include Criterion C eligibility as well as A, because it "embodies the distinctive characteristics of a type and period," and has excellent integrity.

WN-WAC-0566 We-no-nah Statue: Because this statue has been moved several times, we don't believe it should be singled out as a contributing resource, but rather noted on the inventory form for Windom Park as a resource currently contained within the Park, which is in turn a contributing resource within the eligible Register district.

WN-WAC-1299 Prentiss House: We agree that it is individually eligible, but would include Criterion C eligibility as well as A, because it "embodies the distinctive characteristics of a type and period," and has good integrity.

WN-WAC-0316: Octagon House: While we agree that it is a rare example of an unusual historic house type, we do not agree that the current structure has "good" integrity. Unfortunately, the porch removal, along with major window, door, siding, and yard modifications, has eliminated the physical and historical integrity of the property. We do not believe that this house, in its present condition, should be designated as a contributing resource within the district.

Non-contributing within the District (Table 7):

WN-WAC-0254 Story House: The location map on the inventory form is incorrect and labels a nearby church as the house. Please correct the map and re-submit.

WN-WAC-1294 Rau House: We believe the integrity of the Rau House is good, the style is representative of the period of significance, and that it should be designated as a contributing resource.

WN-WAC-0306 "House": We believe the integrity of this house is excellent, and the style is representative of the district. In fact, several other Dutch Colonials are found in the district, but none in as good a shape as this one. We believe the only problem with designating this house as contributing is the (inappropriate) cut-off date of 1930 for the period of significance. If the district period of significance is extended to 1940 as we suggest, this house should be designated as contributing.

Summary: We appreciate the massive amount of work that went into this survey project, and we believe the results are very thoughtful and of high quality. I urge you to find an opportunity to present this information locally. The work constitutes a goldmine of historic information that will be extremely helpful in years to come, particularly to property owners, the Winona Heritage Preservation Commission, the County Historical Society

and to the City of Winona. As we discussed by phone, Mike Koop can assist the Heritage Preservation Commission with any questions on how to use this data as support for potential local designations of either individual properties or of the proposed Broadway Residential Historic District.

Thanks for your continuing work on this project. Contact me at (651) 259-3456 with any questions or concerns you may have about our review. We look forward to receiving the requested revisions, and to consulting with you on other aspects of this project.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society
Mike Koop, SHPO



Minnesota Department of Transportation

395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

December 16, 2011

Ms. Mary Ann Heidemann
Government Programs & Compliance Manager
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

RE: S.P. 8503-46, MnDOT District 6 to Rehabilitate Bridge #5900 on TH 43 in Winona, Winona County ARCHITECTURAL HISTORY REPORT FINAL REVISIONS
T107 R7W S22, 23
SHPO No. 2009-3391

Dear Ms. Heidemann:

We have initiated the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

This letter and attachments are prepared in response to your comments of October 5, 2011 regarding the *Phase I and II Architectural History Evaluation for the Winona Bridge Study, Winona, Winona County, Minnesota*, prepared by Landscape Research. As this was an extensive report, we are submitting this letter and the attached maps and revised site forms as an addendum that updates information in the report. The updated information is described below.

You also provided comments on June 23, 2011, regarding the purpose and need, public involvement plan, and the project APE for the overall project, the proposed rehabilitation of the Winona Bridge. We have previously responded to you on the purpose and need and public involvement plan; we are addressing your question on the APE with this updating of the Architectural History.

ADDENDUM SUBMITTAL

Extension of APE at Latsch Island: In response to your comment of June 23, 2011, we have extended the APE on Latsch Island to include all the boat houses at the east end of the island. The boat houses have been determined not eligible, and this extension of the APE does not alter the eligibility decision. Please also note that the APE extension includes one end of the Low Wagon Bridge (WN-WAC-4260), connecting Latsch Island to Wisconsin, which was determined not eligible prior to this project.

Figure 32 Final Results Map: The final results map shows the revised APE at Latsch Island and the boundary changes to the Broadway Residential Historic NRHP District as suggested in your letter of October 5, 2011 and are noted below.

Broadway Residential Historic District:

1. An inventory form for the Broadway Residential Historic NRHP District has been prepared (WN-WAC-1320). The form includes a description of the district and its boundaries, explains the

period of significance, describes the significance of the district in brief, and describes the use of the evaluation criteria.

2. The ending date for the period of significance was carefully considered, but has been kept at ca. 1852 to 1930. As noted in the statement, as early as the 1930s many of the oldest houses were being subdivided and there was a migration of the founding families to newer neighborhoods or other cities, thus diluting the identification of the area with the city's economic and social leaders and identification as Winona's prime residential area.
3. The Broadway Residential NRHP district boundaries have been modified to exclude non-contributing properties at the SW end of W. Wabasha, the NE corner of E. Broadway and Lafayette, and at the SE corner of W. Wabasha and Johnson. Based on the assessment that the Octagon House (Wn-WAC-1316) is not contributing, it has also been eliminated from the district boundary.
4. The Dr. Linn A. and Abbie Kelly House (WN-WAC-0264) has been incorporated into the district.
5. Figures 33 and 34, showing the contributing and the non-contributing properties to the District, respectively, have been updated to reflect the boundary changes.

Individually Eligible or Contributing within the District

Table 2 through Table 7 from the report have been revised to include the changes in criterion and the shifting of properties from contributing to non-contributing as reflected on the figures; a revised version of the tables are included with this submission. Revised inventory forms have been prepared and are included in this submission for the following properties:

WN-WAC-0260 Winona Lumber Exchange Building: Inventory form has been updated to include Criterion C eligibility.

WN-WAC-0566 We-no-nah Statue: Inventory form has been revised to describe the statue as a resource within Windom Park. The inventory number has been removed from Figure 33.

WN-WAC-1299 Prentiss House: Inventory form has been updated to include Criterion C eligibility.

WN-WAC-1316 Octagon House: The property has been shifted from the contributing to the non-contributing table.

WN-WAC-1294 Rau House: The property has been shifted from non-contributing to contributing.

Non-Contributing within the District:

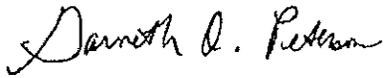
WN-WAC-0254 Story House: The inventory form map has been corrected.

WN-WAC-0306 House: Because the period of significance for the district ends at 1930, this property has been left as non-contributing.

We have spoken with the City of Winona HPC staff and plan to arrange a presentation with them early in 2012 so that the results of this study, including the refinements of boundaries in this submission, can be useful to them in their planning and programming.

We would appreciate your comments regarding our revisions to this report, and we look forward to further consultation with your office regarding the effects of this undertaking on historic properties. If you have questions, please feel free to contact me at (651)366-3615. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

Attachments

cc: Jai Kalsy, District 6
Carole Zellie, Landscape Research
Joe Hudak, MnDOT CRU
MnDOT CRU File



Minnesota Department of Transportation

Office of Environmental Stewardship
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April 5, 2012

Ms. Mary Ann Heidemann
Government Programs & Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

Re: S.P. 8503-46 (Bridge 5900 Rehabilitation Concept Study in Winona, Winona County)
T107 R7W S22, 23
SHPO Number 2009-3391

Dear Ms. Heidemann:

We have reviewed the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the June 2005 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO).

This submittal has been prepared to begin consultation with your office on the rehabilitation concept plans for the Winona Bridge (Bridge 5900) and to solicit your involvement in refining these concepts into a specific rehabilitation approach that will be further detailed in a full rehabilitation study. These concept level packages summarize and assess a range of potential rehabilitation options developed to focus on an approach for preparation of more detailed rehabilitation plans for the project.

Background

MnDOT District 6 is studying rehabilitation of Bridge 5900 over the Mississippi River at Winona using federal funds administered by the Federal Highway Administration (FHWA). Bridge 5900, located on TH 43 northeast of downtown Winona, is eligible for listing on the National Register of Historic Places. Bridge #5900 extends from downtown Winona to Latsch Island (Island 72 in the Mississippi River). An existing north channel bridge (Bridge #5930) from Latsch Island to Wisconsin has limited potential to be impacted by the project due to geometric constraints and no plans have been developed that would affect Bridge #5930.

Bridge #5900 and Bridge #5930 (along with the earthen dike that connects the two bridges and an earthen dike that links Bridge #5930 to Wisconsin) were determined eligible for the National Register of Historic Places (NRHP) under Criterion A-Transportation History, and Criterion C – Bridge Design and Engineering, in Hess Roise and Company's *Evaluation of National Register Eligibility: Winona Highway Crossing (Bridge Nos. 5900 and 5930) Summary of Findings* (September 1996). No official eligibility concurrence date was identified, but correspondence by the SHPO in 1998 acknowledged that Bridge 5900 met the criteria of the National Register.

Our office previously consulted with you on other aspects of this project:

- Phase I Archaeology and Phase I Archaeology Addendum (Submissions of June 23, 2010 and November 22, 2010)
- Phase I and II Architectural History (Submissions of May 26, 2011 and August 11, 2011)

As stated in the attached Purpose and Need (5/4/11), "the primary need for the project is to provide a structurally sound, safe bridge crossing of the Mississippi River Main Channel at Winona." Other secondary needs include maintaining the vehicular connection to Wisconsin; the need for maximum maintenance of traffic during construction since this is the only highway bridge within a 60-mile stretch of the Mississippi River; the need to provide access to Latsch Island; the need for adequate roadway capacity, acceptable traffic operations; and the need to meet critical regulatory requirements.

Rehabilitation Concept Development

As you are aware from our previous submissions, this project was originally conceived with a 'parallel track' approach, looking at a range of project alternatives including new alignments, rehabilitation, and rehabilitation + a new bridge. Early on, the project committee examined various alternatives and combinations of alternatives, including several other bridge crossing locations in downtown and elsewhere in Winona consistent with NEPA and FHWA's programmatic Section 4(f) for historic bridges. The alternative alignments were ultimately rejected due to environmental concerns and because they would not provide the access to destinations that the current location offers. At that time, the recognition that the bridge was eligible for the National Register focused the project team activities to development of a rehabilitation alternative on the current bridge location. Initially, discussion also occurred regarding the potential for a new two-lane bridge in tandem with a rehabbed bridge, although no plans have been developed for that option, and it remains on hold pending the results of detailed assessment of bridge rehab alternatives and impacts. Other options may also require consideration as part of the project's environmental document.

The project Technical Advisory Committee (TAC) has met monthly for two years and conducted a variety of studies that inform the approach and initial findings on rehabilitation alternatives. The firm of Modjeski and Masters, working with historians Mead & Hunt, examined the potential for rehabilitating the deck truss spans and the through truss spans on the bridge. SRF Consulting Group Inc., also working with Mead & Hunt, examined the potential for rehabilitating the approach spans (spans 1-15). Other technical studies were also conducted that examined options for maintaining traffic across the river during a potential rehabilitation, including use of a ferry to carry traffic, construction of a temporary bridge, and other considerations. The engineering technical memoranda regarding rehabilitation options and information on the characteristics and evaluation of all concepts considered are included with this submittal.

Rehabilitation Options

As a way of providing focus, the TAC determined to utilize the information from the technical memos to develop three concepts with varying levels of rehabilitation actions. These three options do not provide in-depth analysis or detailed plans for each approach, but establish a direction on the level and type of rehabilitation activity that is under consideration. Each package (see attachments for Options 1A, 4A and 6A) follows a similar pattern, and most of the information in the first 9 pages in each option is the same. Bridge 5900 consists of 24 spans (see page 3 in package), divided generally into the approach spans (Segments C & D); the deck truss spans (Segments E & G) and the through truss spans (Segment F). Section 5 (pg. 10 in each package) details the work proposed in each option and also cites the technical memorandums that provided direction for each bridge segment. The graphics (pg. 11) further illustrate the options. Section 6 (pg. 12) provides discussion on some of the most critical issues, based on the information available at this stage of the process. Section 6 also includes the historian's analysis, based on the information known at this time, of whether the proposed rehab actions would potentially meet the Secretary of Interior's Standards or would potentially result in an adverse effect. The historians were asked to comment on each option as presented in order to develop rehab approaches that would be most in keeping with the historic bridge. Since these are concept packages, we recognize that it is premature for determination of

effects on the project. We have used the historian's analysis here to try to develop the best rehabilitation "fix" for each option.

All three options meet the primary purpose and need of providing a structurally sound, safe bridge crossing of the Mississippi River Main Channel at Winona and all will potentially have an adverse effect due to various rehab approaches. However, the nature and degree of the adverse effect varies among the three options. We have not yet addressed the question of whether the bridge would continue to meet National Register criteria with each option. Option 4A and Option 6A vary by also addressing secondary needs on the project. The three options are described below.

Rehabilitation Option 1A:

In this package, all spans of the existing structure would be rehabilitated to the degree feasible and strengthened as necessary. All spans would be re-decked and the current sidewalk retained. Existing roadway width is retained, and no intersection changes are proposed at the intersection of 4th Street and Winona.

In terms of potential adverse effects, rehabilitation treatments proposed for the superstructure of the south reinforced-concrete approach spans 3-14 (Segment C) would not comply with the Secretary of the Interior's Standards and would result in an adverse effect. Treatment of the piers in spans 3-14 may or may not meet the Secretary's Standards, depending on development of additional details. There would also be an adverse effect created if new members are added to the deck trusses in Segments E & G (spans 16-17, 21-24).

Rehabilitation Option 4A:

In this package, all spans of the existing steel truss structure (Segment F) would be rehabilitated and strengthened. The southerly concrete girder approach spans (spans 1-15, Segment C & D) would be replaced and widened. All spans would be re-decked and the current sidewalk retained.

Potential adverse effects would result from the replacement and widening of the south approach spans (Segment C & D), and from the additional members added to the deck trusses (Segments E & G).

Under Concept 4A, the widening of Segments C & D would provide additional lanes on the bridge for traffic to queue; combined with intersection improvements at 4th and Winona, these changes would provide capacity to better manage traffic, and particularly provide space for large truck queuing and turn lanes.

Rehabilitation Option 6A:

In this package, all spans of the existing steel through truss structure (Segment F) would be rehabilitated and strengthened. The southerly concrete girder approach spans and the deck truss portions of the bridge (Segments C, D, E and G), would be replaced and widened. (See further discussion of the deck trusses, Segments E and G, below). Replacement of the deck truss would also require replacement of the piers. The length of widening proposed in this package exceeds the length of widening in package 4A by 200 feet in order to allow traffic to operate at a stable flow condition and allow for better merging to the two-lane through truss. The through truss would be re-decked and the current walkway would be retained. In Option 6A as proposed, the through truss (segment F) is the only bridge element that will be rehabilitated and would potentially meet the Secretary of Interior's Standards.

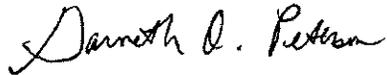
Potential adverse effects would result from the replacement and widening of the south approach spans (Segment C and D), and from the removal of the deck trusses (which are character-defining features) and replacement of piers in Segments E & G, and the widening of Segment E.

Summary

These options have been reviewed by the District 6 project team; MnDOT's historic bridge liaison, and by FHWA staff. However, MnDOT staff and FHWA are continuing to refine the options and agreement has not been reached on all issues (see attached email from FHWA).

We feel it is important to begin consultation with your office to solicit your comments and work collaboratively with you to refine these concepts for a more detailed rehabilitation study. We would welcome the opportunity for the appropriate project team members to meet with you to discuss the analysis performed in developing these options and the next steps on this project. We look forward to continuing to work with you on the rehabilitation of Bridge 5900.

Sincerely,



Garneth O. Peterson
Historian
Cultural Resources Unit (CRU)

cc: Jai Kalsy, MnDOT Dist. 6
Nancy Daubenger, MnDOT Bridge Office
Abbi Ginsberg, FHWA
Teresa Martin, MnDOT CRU
Scott Bradley, MnDOT OES
MnDOT CRU Project File

Attachments with SHPO Submission of Bridge 5900 Rehabilitation Concept Study
S.P. 8503-46
SHPO Number 2009-3391

Option Packages:

Winona Bridge (Bridge 5900) Rehabilitation Package 1-a (March 29, 2012) prepared by SRF and Mead & Hunt

Winona Bridge (Bridge 5900) Rehabilitation Package 4-a (March 29, 2012) prepared by SRF and Mead & Hunt

Winona Bridge (Bridge 5900) Rehabilitation Package 6-a (March 29, 2012) prepared by SRF and Mead & Hunt

Supporting Technical Memos:

Winona Bridge Project Purpose and Need Working Draft (May 4, 2011), MnDOT

Winona Bridge (Bridge 5900) Bridge Significance and Character-Defining Features (Sept. 25, 2009), Mead & Hunt

Winona Bridge Main Span Truss member and Gusset Plate Rehabilitation (Dec 9, 2010), Modjeski and Masters

Comments on Winona Bridge 5900 Main Truss Rehabilitation (December 22, 2010), Mead & Hunt

Winona Bridge Deck Truss Rehabilitation (Dec 10, 2010), Modjeski and Masters

Comments on Winona Bridge 5900 Deck Truss Rehabilitation (January 7, 2011), Mead & Hunt

Winona Bridge Deck Rehabilitation Options (Feb 8, 2011), Modjeski and Masters

Winona Bridge—Spans 1 Through 15 (South Approach) Rehabilitation (October 7, 2011), SRF

Comments on Winona Bridge 5900 Spans 1 thru 15 (South Approach) Rehabilitation (Sept 29, 2011; updated Oct 14, 2011), Mead & Hunt

Bridge No. 5900 (TH 43 Over Mississippi River) – Winona, MN Deck Truss Rehabilitation—Supplemental Information (March 29, 2012), SRF

Comments on SRF Memorandum of March 29, 2012: “Bridge No. 5900 (TH 43 Over Mississippi River) – Winona, MN Deck Truss Rehabilitation—Supplemental Information” (April 5, 2012), Mead & Hunt

May 4, 2012

Ms. Garneth Peterson
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Garneth:

Thank you for submitting the draft rehabilitation concepts for this project. The material has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

First I want to thank you for putting together this informative submittal. The idea of doing a rehabilitation concept review early on as part of project development was heartily endorsed at our recent Kaizan historic bridge review process improvement meetings. I believe this submittal will be used as a model for future projects involving historic bridges. It is also helpful that you have shown the three different rehab solutions that can best fulfill project purpose and need, rather than just one single rehab alternative. Finally, the combination of graphics and text does give us a better idea of what is being proposed; and statements from both the engineers and the historians are helpful in balancing engineering concerns with historic preservation concerns. Our more detailed comments are provided below.

1. The submission does not offer any reasons why the entire bridge deck must be replaced, and all three options include deck replacement. Please provide an explanation for deck replacement (with documentation). Let us know what, if any, deck retention alternatives were considered, and what the historian comments on this element are. Also, on sheet 5 it is noted that rehabilitation of the reinforced concrete t-beam spans is not possible with total deck replacement. Please explain this further, in relationship to the necessity of total deck replacement. Deck replacement may have been addressed in a prior technical memo, but it bears repeating here.
2. All options assume the replacement of lacing and batten with cover plates. We consider the lacing and batten to be an important aspect of the bridge's visual and structural character. Although Option 1a backs off from total replacement at Segment E and G, it is not clear just how much of the lacing will be removed, and from where. Better justification is needed on this point before allowing such a significant change in character of the bridge.
3. Please provide a summary discussion of the rivet versus bolt issue, along with any historian comments. From the submittal it appears that major rivet removal and substitution with bolts is recommended for all alternatives. If rivets have been repaired or replaced in kind on other bridges, why not here?

4. At this point, the SHPO preferred option is 1-a. We understand the need to add structure in a number of places, though the location and extent of addition is quite poorly defined so far. We anticipate greater detail on this later. Again, we really don't like the removal of the lacing and battens, and consider it (without further justification) a potentially adverse effect.
5. Option 4-a goes too far in our opinion. Please try to save D and more of C. In terms of approach work (B and C), it is difficult to understand what effects the widening and traffic improvements will have on the bridge or downtown area, because the plans sent to us are so tiny. However, it does appear that the bigger radius corners shown will be out of place in the surrounding residential area. How might this affect downtown historic buildings and districts? What is the City/HPC reaction to a highway ramp dumping into their downtown? Perhaps you could consider doing shorter turn lanes at just A and B (surely an entire city block of turn lane would do something to improve traffic), rather than all of C.
6. Presently, Alternative 6 does not appear to meet Standards, because it replaces E and G, which are clearly called out as contributing features. We do not wish to see this alternative selected unless both 1a and 4a are knocked out of the running for agreed-upon reasons.
7. We note the continuing engineering disagreements on "load-path redundancy," with implications for rehabilitation. If not necessary to meet purpose and need, and if the added members adversely affect historic integrity, we would expect an application for "exemption" (sic; exceptions?), per our Historic Bridge PA. Historian comments are welcome here.
8. Although you mentioned the rehab alternatives had been reviewed by MnDOT's "historic bridge liaison," there is no indication of liaison comments on the alternatives, or on issues such as applicability of exceptions. Liaison input and comments are requested.

Contact me at (651) 259-3456 with any questions or concerns you may have about our review. We look forward to consulting with you on future aspects of this project.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission



Minnesota Department of Transportation

Office of Environmental Services

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395 John Ireland Boulevard

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August 2, 2012

Dr. Mary Ann Heidemann, Manager
Government Programs & Compliance
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

RE: S.P. 8503-46 (Winona Bridge [5900] Rehabilitation and Parallel Bridge Construction Project, Winona, Winona County)
SHPO Number: 2009-3391

Dear Dr. Heidemann:

We have reviewed the above-referenced study pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the 2005 Section 106 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) and the 2008 FHWA-SHPO Historic Bridge PA.

Our office previously consulted with yours on this project in 2010 with the archaeology study results, and again in 2011 on the architectural history studies and the Purpose and Need and Public Involvement Plan. On April 4, 2012, we submitted three rehabilitation concepts to begin consultation with your office on the rehabilitation options for the Winona Bridge. Your office wrote back on May 4, 2012 regarding the rehabilitation concepts developed to date, expressing some concerns and asking for clarification on certain issues.

The purpose of this letter is to hopefully address the concerns and questions raised in your letter, and to present a fourth rehabilitation alternative that MnDOT would like to move forward as the recommended option. Based on comments received from the City and from your office in your May 4 letter, it was determined that the proposed rehabilitation alternatives did not adequately address the City's concerns (please see attached letter from the City of Winona) nor the concerns raised in your May 4th letter, because of the visual changes to the bridge's design to accomplished Options 4a and 6a. Because of these reasons, MnDOT is proposing to no longer explore Rehabilitation Options 1a, 4a, and 6a, and has instead begun development of a new alternative that rehabilitates the existing bridge and includes a new parallel bridge structure (referred to as Option 6c). MnDOT feels this new recommended option balances the transportation, economic, and historical needs of the project. Of the four rehabilitation alternatives developed, our office feels Option 6c meets the Purpose and Needs and secondary needs of the project the best, while avoiding and minimizing effects to historic properties.

New Rehabilitation Alternative

Key components of the recommended option include:

- The rehabilitation of the existing bridge is recommended to include:
 - Full deck removal and replacement with a light-weight concrete deck; removal of pedestrian cantilevered walkway on through truss (added in 1985)
 - Removal and reconstruction of Spans 1-14, which have no to poor integrity (see below)
 - Reconstruction of the deck truss spans, which have fair material integrity (see below)
 - No substantial member or node repairs to the through truss; truss will be cleaned and painted.
- The new parallel girder bridge (exact type to be determined) is recommended to include:
 - Construction to the west of the existing bridge (to minimize visual impacts when viewed from the downtown historic district and individual historic properties) with a touchdown point immediately west of the existing Span 1 (i.e., not the Huff Street Alternative)
 - Construction of the new bridge before rehabilitation of the existing bridge to accommodate local and regional transportation and economic needs during the rehabilitation, and to avoid the "throw-away" costs associated with a temporary bridge as well as additional rehabilitation costs premiums associated with 'rehabilitation only' alternatives.

- Girder type design to minimize visual impact to the existing bridge and other historic properties, and to comply with U.S. Fish and Wildlife Service requirements for a low-profile bridge to lessen potential for migratory bird collisions with the bridge structure.

As requested by your office in your May 4th, 2012 letter, enclosed please find the summary from MnDOT's Historic Bridge Expert regarding the recommended rehabilitation with parallel bridge alternative.

OPTION 6C EFFECTS TO HISTORIC PROPERTIES

Based on the studies conducted to date, the Option 6c would have direct effects only to the Winona Bridge structure (WN-WAC-0477) and the earthen dike that links Bridge 5900 to Bridge 5930 (see discussion below). Other historic properties could experience indirect effects caused by the construction, visual, and noise/traffic pattern changes. At this phase of the project, it is unknown if these effects would be adverse. **Since the project Environmental Assessment document needs to be completed soon in order for the project to stay on track, our office proposes the development of a Programmatic Agreement (PA) for the project** in order to ensure a thorough design development that will seek to avoid any indirect adverse effects to the following properties, while still moving the project forward:

- the YMCA (WN-WAC-0458)
- Properties within the Broadway Residential Historic District, including specifically the Huff-Lamberton House (WN-WAC-0544) and those on the north side of West 5th Street
- the Winona County Courthouse (WN-WAC-0460)
- the Winona Commercial Historic District, including specifically the Schlitz/Williams Hotel (WN-WAC-0469), the Winona Hotel (WN-WAC-0470), and the Armory (WN-WAC-0462)
- the Winona Water Works (WN-WAC-0482)
- the Chicago and North Western Railroad segment (WN-WAC-1246)
- the Winona Municipal Marina (WN-WAC-1260)
- Bridge 5930 (WN-WAC-1142)
- The Chicago and Northwestern Railroad Bridge remnant (WN-WAC-0568)

Based on the archaeological surveys conducted to date, there are no eligible or listed archaeological sites within the project APE. However, certain areas with potential for archaeological sites were not accessible during the previous survey work due to lack of landowner permission. The project right-of-way acquisition process will begin as soon as possible; therefore, once MnDOT acquires the parcels, we propose that the PA include requirements for the archaeological testing of Parcels 67 and 87, and possibly parcel 68 (as illustrated in Figure 4, Page 6 of the *Addendum Report: Additional Phase I Archaeological Survey and Geomorphological Investigation for the Winona Bridge Rehabilitation/Replacement Project at the City of Winona, Winona County, Minnesota*, November 2010). The PA will include requirements for the survey, identification, and evaluation of any identified sites; and the avoidance, minimization and mitigation requirements for any eligible sites discovered during the testing. If it is determined during the design process that other parcels will be acquired and impacted, we will include provisions in the PA for surveying those as well.

Since the only known direct impacts will be to the Winona Bridge, and since your office had several questions about the proposed rehabilitation scenarios presented in our original letter of April 5, 2012, below is a detailed examination of the bridge's significance, character-defining features, integrity, and the effects from Option 6c.

WINONA BRIDGE

SIGNIFICANCE STATEMENT

The Winona Highway Crossing, including Bridge 5900, was determined to be eligible for the National Register of Historic Places (National Register) under Criterion A – Transportation History and Criterion C – Bridge Design and Engineering. The eligible portion extends for 7,335 feet and includes the Main Channel Bridge (Bridge 5900), the North Channel Bridge (Bridge 5930), the earthen dike that links the two channel bridges, and the earthen dike that links the North Channel Bridge to the overhead railroad grade-separation bridge (Bridge B754) to the north. The overhead railroad grade-separation bridge and the earthen dike north of the railroad grade-separation bridge have lost integrity and do not contribute to the crossing's eligibility.

The Winona Highway Crossing is eligible under Criterion A in the area of transportation history for the role it played as a main arterial route over a major river crossing. In addition, the crossing was vital to the economic life of Winona and the movement of defense materials during World War II. The Winona Highway Crossing is eligible under Criterion C in the area of engineering for its contribution to bridge design and construction in Minnesota. The project was the largest single undertaking by Minnesota Highway Department and was important for the design of both Bridge 5900

and 5930. Bridge 5900 is significant as the state's only surviving example of a cantilever thru-truss dating from before 1946. The cantilever design, used for long spans over navigable waterways, requires significant engineering.

CHARACTER-DEFINING FEATURES

Character-defining features are prominent or distinctive aspects, qualities, or characteristics of a historic property that contribute significantly to its physical character. Such features may include materials, engineering design, and structural and decorative details. From a preservation perspective, character-defining-features are the most important components of the bridge to consider during rehabilitation activities. While the historic fabric, including all historic period materials and physical features, of a bridge should be considered for preservation, character-defining features have the highest priority in preservation planning. The rehabilitation of the bridge, including character-defining features and historic fabric, should be in compliance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*. The character-defining features of Bridge 5900 are:

- **Feature 1.** Steel, riveted, cantilever through-truss, design and construction (spans 18-19-20). Special consideration was given to the overall appearance of the main spans, which were adapted from a similar bridge erected at La Crosse, Wisconsin. This feature includes the overall cantilever through-truss engineering design with the pin-connected suspended span; the rolled and built-up members; the extensive use of rivets throughout, for both member fabrication and for connections of members; and the use of a then-new design for the top chord consisting of a bottom plate with oval holes instead of the conventional lacing. This feature does not include the deck and floor system.
- **Feature 2.** Deck-truss design and construction for approach spans 16-17, 21-22-23-24. The use of deck trusses for bridges was rare in Minnesota. The use of deck-truss approach spans provides continuity of steel design and construction with the adjacent main spans.
- **Feature 3.** Architectural stylistic elements used in design of concrete bridge piers for the cantilever spans and the deck-truss approach spans (piers 15 through 23). The pier columns feature an integrated design of Moderne stylistic elements that blend with the carefully designed form of the cantilever truss above. Pier details include columns that are slightly battered on the outside only, and raised outside panels with pointed tops that reflect the angled bottom of the pier caps.

Additional notable features of the historic fabric include:

- The plate-girder approach span (span 15) adjacent to the southernmost deck-truss approach span. This is the only plate-girder span in the bridge and is comprised of three girder lines placed asymmetrically to accommodate the original deck configuration of a single sidewalk on the east side.
- Stonework at north end of the bridge. This includes original flagstone steps just north of the north abutment that provide access from the east side of the roadway to the bottom of the earthen dike, and the stone slope protection adjacent to the north abutment and beneath the north approach span. The slope protection is designed to include wide stone gutters on each side.
- Remnants of the original Moderne style ornamental railing. These remnants include a single stepped original concrete endpost at the west side of the north abutment, which contains an original bridge plate, and a segment of concrete endpost at the northwest corner of the south filled approach ramp.

INTEGRITY

Bridge 5900 has good overall integrity, maintaining its original location, design, setting, workmanship, feeling, and association. Portions of the bridge have reduced material integrity. When originally built, the bridge carried two traffic lanes and a pedestrian sidewalk on the original deck slab inside the truss lines. During a 1985 rehabilitation project, Spans 1 and 2 were removed and replaced, the deck on Spans 3-14 was milled and overlaid, and the west side fascia beams were removed. Also, the original deck was completely removed and a new full deck was installed for Spans 15-24. These alterations allowed the roadway to use the full new deck width between the truss lines. Pedestrians were accommodated through the installation of an exterior cantilevered sidewalk on the through and deck trusses, and on the reconstructed west side of Spans 3-14. These alternations diminished the integrity of the bridge's original material and design.

The deck truss spans have fair integrity of materials. Between 2000 and 2010, numerous nodes and members were repaired or replaced. These repairs consisted of items such as removal of certain rivets, installation of new plates, angles and bolts to replace the removed rivets, as illustrated in the attached plans from the 2010 work. These alternations were determined to be necessary after fractural critical inspections. However, from a historical standpoint, they diminished the material integrity on over a quarter of the deck truss spans.

APPLICATION OF THE REHABILITATION STANDARDS AND GUIDELINES

The SOI Standards describe Rehabilitation as “the act or process of making possible an efficient compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.” Based on this definition, historic materials and character-defining features are protected and maintained, **but an assumption is made prior to work that existing historic fabric has become damaged or deteriorated over time and, as a result, more repair and replacement will be required in order to allow for the continued use of the property.** Thus, some latitude is given in the Rehabilitation Standards and Guidelines for replacing extensively deteriorated, damaged, or missing features using either traditional or substitute materials. Of the four treatments, only Rehabilitation includes an opportunity to make possible an efficient contemporary use through alterations and additions.

While all the Standards and Guidelines will be followed, a key standard to the Winona Bridge project will be Standard 6, which states that “deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.” The SOI Rehabilitation Guidelines provide further guidance:

“Following repair in the hierarchy, **Rehabilitation** guidance is provided for *replacing* an entire character-defining feature with new material because the level of deterioration or damage of materials precludes repair (for example, an exterior cornice; an interior staircase; or a complete porch or storefront). *If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation, then its replacement is appropriate* [italics added]. Like the guidance for repair, the preferred option is always replacement of the entire feature in kind, that is, with the same material. Because this approach may not always be technically or economically feasible, provisions are made to consider the use of a compatible substitute material. It should be noted that, while the National Park Service guidelines recommend the replacement of an entire character-defining feature that is extensively deteriorated, they never recommend removal and replacement with new material of a feature that--although damaged or deteriorated--could reasonably be repaired and thus preserved.”

DECK

Because the deck is not a character-defining feature, has no to poor integrity (depending on location on the bridge-see Integrity discussion above), and can be replaced with a new deck that will match the original historic deck in terms of design, color, texture and materials, and allows for less load on the structure, which then minimizes the need for additional strengthening of the steel members and nodes on the through truss, our office has determined that the deck replacement meets the SOI Standards. Our historian team at Mead and Hunt had no concerns over the removal of this non-historic fabric, noting that concrete decks are almost never considered character-defining features and are replaced on many historic bridges.

We hope that this information addresses your concerns raised in Comment 1 of your letter dated May 4, 2012 regarding the bridge deck overall. Also, please see attached a memo from Nancy Daubenberger, State Bridge Engineer, for further information on the condition of the current deck.

T-BEAMS -- SPANS 3-14

Your Comment 1 also asked for further clarification on why the T-beam spans would need to be replaced if the deck was completely removed. This issue was addressed in great detail in the SRF technical memo of October 12, 2011, and in the Mead & Hunt comment memo of October 17, 2011, both of which were previously submitted to your office. In these spans, the concrete T-beams were cast as monolithic with the original concrete deck. Because the beams are structurally integral with the deck, at least the top portion of the T-beams would be destroyed through the deck removal process. If attempts were made to retrofit new concrete onto the remaining portions of the T-beams, there would be a very short life-span to the beams and deck since they have uncoated reinforcement (black bars) which are more susceptible to corrosion than modern coated or stainless steel rebar. The T-beams are over 70 years old, and include "black bars" (no epoxy coating) that are corroded. If partial replacement is done under this project, there would be new construction joints in the T-beams, giving chlorides an entry point into the T-beams and increasing the acceleration of corrosion of any remaining historic concrete. Also, fitting the reinforcing bars into the T-beams would be problematic with partial replacement. If partially left in place with this project, it would have a limited service life and would need to be replaced in approximately the next 10-15 years, including the replacement of the reconstructed deck. Since the T-beams are not a character-defining feature, they have compromised integrity from the 1985 alterations, cannot be repaired in any manner that will result in a useful life, and the spans can be replaced in-kind and back to the original historic design, our office has determined that the proposed T-beam replacement meets the SOI Standards. **Again, we hope that this information addresses your concerns raised in Comment 1 of your letter.**

THROUGH TRUSS – INCLUDING LACING AND BATTEN

The main span gusset deficiencies are minimal. By removing the cantilevered pedestrian walkway and using a light-weight concrete deck, the recommended rehabilitation option avoids the need to cover the lacing and batten with cover plates and to do the gusset plate repairs as outlined in the previously submitted rehabilitation options. Our office feels this approach meets the SOI Standards and avoids an adverse effect to the through truss span. Additionally, it allows for the removal of a non-historic element (the cantilevered sidewalk), thereby restoring the main truss to its original design and appearance, and preserving the historical fabric. **We hope this new rehabilitation approach addresses your concerns outlined in Comment 2 of your May 4, 2012 letter.**

RIVETS VS. BOLTS

In your May 4th letter you requested additional information on location of the use of rivets vs. bolts. The submitted material does assume the use of replacement bolts; however, that is simply because we were not to a level of determining that detail at this point. Our office would propose that a Rivet/Button Head Bolt/Bolt matrix be developed, similar to the one developed for the Stillwater Lift Bridge conversion project. The development of such a matrix would be stipulated in the proposed PA. Also, for in-kind replacement of individual members, shop-riveting can be used for fabricating the built-up members. **If your office is agreeable to this approach, it should address the concerns you raised in Comment 3.**

DECK TRUSS

As discussed under the Integrity Section above, the deck truss spans only have fair material integrity. The original fabric has either been covered by new materials or replaced in numerous locations, accounting for approximately a quarter of the deck truss members and nodes. These repairs were necessary due to the deteriorated nature of the original historic fabric

Since we are proposing to drop Options 4a and 6a from further consideration, the widening of the approach spans including the deck trusses is no longer proposed, thereby avoiding this significant alternation to the bridge's historic design. **This hopefully addresses the concerns raised in your May 4th letter about the changes to the visual appearance of the bridge's original design.**

There are two approaches to address the structural deficiencies in the deck truss spans. If the deck trusses are retained, up to approximately another one-quarter of the members and nodes would need to have similar repairs as those conducted over the past 10 years, and connected members may also need to be repaired or replaced at the time of node repairs. These changes would result in an altered appearance and materials for one-half of the deck trusses. Additionally, the installation of plates over the original members and nodes makes those elements much more difficult to inspect. Finally, the cost and constructability of this approach raises great concern by our bridge engineers (please see the enclosed memos from Nancy Daubengerger and Angel Staples for additional information on the deck trusses). For these reasons, we are proposing to drop it from further consideration under the rehabilitation scenario.

Because the level of deterioration and the issues related to retaining the deck trusses make repair and ongoing maintenance difficult, the next step in the Rehabilitation Guidelines hierarchy is to consider replacing an entire character-defining feature with new material. The essential form and detailing of the deck truss spans is evident so the features could be re-established. Again, according to the Guidelines, "If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation, then its replacement is appropriate."

The Bridge Office and District 6 have agreed that deck trusses can be re-installed. It is unclear, however, what the design of those deck trusses will be due to the load-path redundancy issue you noted in Comment 7 of your May 4th letter. If reconstructed in-kind, the deck trusses would not have redundancy. If constructed with four trusses, they would have redundancy, but would look different from the original design. It is unclear if there is another method by which to reconstruct the spans with only two trusses but provide redundancy in another manner. Since the final design approach is unclear, our office recommends spelling out in the PA the research and design review process to be following during the plan development to address this issue of the deck truss design.

FINDINGS ON EFFECTS TO WINONA BRIDGE

36 CFR 800.5 states that "an adverse effect can be caused by "alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines."

The SOI Standards assume retention of as much historic fabric as possible. However, when the level of deterioration is such that preserving the original materials is not possible, the Standards and Guidelines allow for complete in-kind replacement of character-defining features on a historic property. Much of what is proposed for replacement under Option 6c includes either non-historic fabric (e.g., most of the deck, the cantilevered sidewalk, Spans 1 and 2) or historic fabric that is not a character-defining feature and has poor to fair historic material integrity (Spans 3-14). The most problematic element of the proposed rehabilitation work is the replacement of the deck trusses. These trusses are character-defining elements, so it is necessary to consider preservation of the features before considering replacement. As detailed above, the retention of these trusses would require covering much of the original elements, which is not desirable from a historic or engineering perspective. The in-kind replacement approach would allow for all new steel members to be installed, which could be constructed in a shop with rivets and lacing and batten details to have the same design. While this would result in the removal of original historic fabric, it would follow Rehabilitation the hierarchy required of first exploring and demonstrating that such preservation is not possible, and then replacing the historic element in kind; and thereby meet the SOI Standards. However, the issue of whether to reconstruction the spans with two or four trusses, or if there would be another design that would provide redundancy with only two trusses is not resolved. **Since the exact details of the rehabilitation are unknown and elements could come up during design process, especially of the deck trusses, that could trigger an adverse effect, our office proposes that the plan development and review process be spelled out in the proposed project PA.** The PA will outline a process by which alternative methods of achieving redundancy without adding two extra trusses will be investigated, the decision-making process for determining the final deck truss design and other key elements of the rehabilitation, and the steps to be followed if an adverse effect to Bridge 5900 cannot be avoided.

As mentioned above, in addition to addressing the review process for the bridge rehabilitation and new parallel bridge design, the PA will also cover the needed archaeology for parcels not previously accessible for testing, and the visual and noise/traffic impacts to other historic properties within the APE.

As you know, MnDOT will be meeting with the City on August 21, 2012 to update them on the status of the project. While it would be less than the full 30 day review period afforded your office under 36 CFR 800 and the Section 106 PA, I would respectfully request an earlier response, if possible. That way we can fully update the City on your office's review. If you require additional information, please notify me as soon as possible, and we will submit any needed additional supporting materials.

Thank you for your office's attention to this important project. As always, we appreciate your timely responses, your cooperation, and your advice and insight. We look forward to developing the PA with your office, and moving this project forward.

Sincerely,



Kristen Zschomler, RPA, Historian/Archaeologist, MnDOT Cultural Resources Unit

cc: Derrell Turner, FHWA
David Scott, FHWA
Abbi Ginsberg, FHWA
Romeo Garcia, FHWA
Phil Forst, FHWA
Michael Barnes, MnDOT Operations Division Director
Amr Jabr, MnDOT Engineering Services Division
Nancy Daubenberger, State Bridge Engineer
Amber Blanchard, MnDOT Bridge Office
Angel Staples, Historic Bridge Technical Liason, MnDOT Bridge Office
Nelrae Succio, MnDOT District 6 Engineer
Greg Paulson, MnDOT District 6
Jai Kalsy, MnDOT District 6
Steve Kirsch, MnDOT District 6
Lynn Clarkowski, MnDOT Office of Environmental Stewardship (OES)
Scott Bradley, MnDOT OES
Jennie Ross, MnDOT OES



Minnesota
Historical Society

STATE HISTORIC PRESERVATION OFFICE

August 15, 2012

Kristen Zschumler
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Kristen:

Thank you for submitting an additional draft rehabilitation concept for this project. The new rehabilitation alternative has been reviewed in concept, pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act. We also acknowledge your request to negotiate a Programmatic Agreement for this project, due to time constraints, and the inability to articulate effects prior to developing further design information. The PA and what it should cover, from our point of view, will be addressed further below.

The new preferred rehabilitation alternative you have submitted is based on a two-bridge solution. The proposal would preserve and rehabilitate the historic two lane span, while adding a modern parallel bridge compatible in design with the historic structure. Our comments on this concept are offered below

1. In general, we believe that the two bridge alternative makes a great deal of sense. Because it will preserve the historic span, we do see it as a viable rehabilitation alternative.
2. The two bridge alternative will allow removal of the 1985 cantilevered sidewalk from the historic structure, which will restore historic integrity while lightening the load on the bridge.
3. Thank you for sending documentation on the reasons why the entire bridge deck is proposed for removal. Our architect has requested to review this material in depth as part of the design review process to be defined and implemented through the Programmatic Agreement (more on that later in this letter).
4. We acknowledge that replacing the existing deck with a modern, light weight concrete deck, along with removing the cantilevered sidewalk would substantially lessen the need to strengthen structural members, and would therefore allow the preservation of the lacing and batten (a significant design feature), rather than cover them with plates. This would be a boon to preservation design and we look forward to seeing design details on this approach.
5. We are agreeable to addressing the rivet vs. bolt issue when further information is available.
6. We have no objection to pursuing a girder-type design for the new span, and we agree this might make it simpler to come up with a historically compatible design.
7. The two bridge alternative will also avoid adverse economic effects to the historic downtown by avoiding the need for detours during construction, and during future bridge maintenance.
8. We will need to look more closely at land-side impacts on the historic downtown related to the addition of another bridge approach, and we agree that the Programmatic Agreement will allow this examination to occur without holding up progress on the whole project.

Please send more detailed plans for the preferred two-bridge alternative as soon as they are available, including follow-up on the items noted above. We realize that having a "preferred" alternative does not

eliminate the other alternatives, should an unexpected development arise that would change your preference. But we are comfortable with proceeding on consultation focused on the two-bridge rehabilitation/new structure approach outlined in your letter of August 2, 2012.

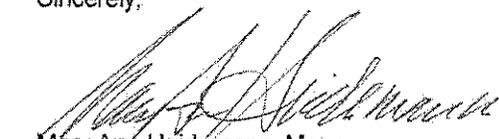
In terms of the Programmatic Agreement contents, we have the following comments:

9. We believe that it is premature to select the appropriate rehabilitation treatment level for the historic bridge at this time. While the submitted engineering information regarding items such as the proposed deck truss replacement helped us understand the engineering considerations you wish to address, we are not ready to decide now between repair and replacement of the deck trusses (i.e. Alternative 4c vs. 6c) until we see more complete design information.
10. The Programmatic Agreement should provide for the standard 30/60/90 percent design review of both the historic bridge rehabilitation plans and the new parallel bridge.
11. The Programmatic Agreement should provide for further review and decision-making on the design issues discussed to date, including bolts vs. rivets, T-beams, lace/batten preservation, etc; within the context of normal design development.
12. The Programmatic Agreement should provide for a detailed review of land-side project impacts on historic resources downtown, as listed in your letter of August 2, 2012.
13. The Programmatic Agreement should address any further archaeological investigations needed for the preferred alternative.
14. Findings of effect should be deferred at this time, awaiting results and outcomes of consultation under the Programmatic Agreement.

Based on this discussion, the next items we anticipate receiving for review would be a draft of the recommended terms and stipulations of the Programmatic Agreement, and (once the PA is signed) the 30% design submittals for rehabilitation of the historic span and construction of the new parallel structure.

If my understanding is incorrect, please let me know. Feel free to contact me at (651) 259-3456 with any questions or concerns you may have about our review. We look forward to consulting with you on future aspects of this project.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission



Minnesota Department of Transportation

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December 24, 2012

Dr. Mary Ann Heidemann, Manager
Government Programs & Compliance
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

RE: S.P. 8503-46 (Winona Bridge [5900] Project, Winona, Winona County)
SHPO Number: 2009-3391

Dear Dr. Heidemann:

We have reviewed the above-referenced study pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the 2005 Section 106 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) and the 2008 FHWA-SHPO Historic Bridge PA. The Section 106 review fulfills MnDOT's responsibilities under the Minnesota Historic Sites Act (MS 138.665-.666), the Field Archaeology Act of Minnesota (MS 138.40); and the Private Cemeteries Act (MS 307.08, Subd. 9 and 10).

Our office previously consulted with yours on this project in 2009 with the proposed area of potential effects (APE); in 2010 with the archaeology study results of parcels studied to date; and again in 2011 on the architectural history studies and the Purpose and Need and Public Involvement Plan. In general, your office agreed with the APE, and the identification efforts made to date, assuming that if the project scope changed dramatically, the APE may need to be expanded.

On April 4, 2012, we submitted three rehabilitation concepts to begin consultation with your office on the rehabilitation options for the Winona Bridge. Your office wrote back on May 4, 2012 regarding the rehabilitation concepts developed to date, expressing some concerns and asking for clarification on certain issues. We replied on August 2nd, 2012 with a new recommended option (rehabilitation of the existing bridge and construction of a parallel girder-type design bridge), and your office responded on August 15th in general agreement with the option, including the need for a Programmatic Agreement. In email correspondence related to the development of the PA, you noted that the APE may need to be reconsidered with the new recommended option, and that you had not received any information on the parallel bridge design to date.

The purpose of this letter is to present the information we have developed to date on a potential parallel bridge design and to clarify the APE in relation to the proposed recommended option.

Parallel Bridge Design

To date, MnDOT has developed a basic layout of the parallel bridge location and general information on the structure type. Please see the enclosed layout (both a printed 11x17 version and a PDF saved on the enclosed CD). As you can see from this layout, the proposed parallel structure would be located immediately to the west of the existing bridge, and it would tie back into the street system at the intersection of Winona Street and 4th Street.

The recommended bridge type is a girder bridge, either steel or concrete. We asked Mead and Hunt, historical consultants on the project, to review the proposed parallel bridge type for compliance with the Secretary of the Interior's Standards (SOI Standards) (please see enclosed memo). We agree with their recommendations that the proposed parallel bridge design to date

meets the SOI Standards, specifically Standards 9 and 10. It is understood that there are still many design decisions to make, so we cannot at this point make a findings of effects, but based on the information to date, it appears that the proposed design has the potential to meet the SOI Standards. Also enclosed are renderings showing the proposed new parallel bridge in relation to the existing Bridge 5900.

Area of Potential Effects (APE)

On August 14th, 2009, MnDOT CRU submitted to your office the proposed area of potential effects (APE). Because it was not known at that time what the preferred alternative would be, a large APE was set for both structures and archaeological resources. While the original APE was not large enough to cover a potential parallel bridge that would have touched down west of Winona Street, it was set large enough to include a potential parallel bridge located immediately to the west of the existing structure (please see enclosed maps).

As noted in my August 2ⁿ letter to you, there were several parcels for which we did not have landowner permission to conduct the archaeological survey. These parcels will be tested after MnDOT acquires the right-of-way. Once MnDOT acquires the right-of-way, MnDOT CRU will conduct additional archaeological investigations for sites that were not accessible due to lack of landowner permission. This includes archaeological testing of Parcels 67, 87, and 88. If during the design process additional parcels are identified that may be impacted or acquired, MnDOT CRU will also conduct archaeological investigations for these sites.

It is the determination of this office that the APE as originally designed covers a sufficient area to take into account the project's potential effects to historic properties under the new recommended option. If the project scope changes, the APE will be revisited. The PA will include language to cover this possibility.

Thank you for your office's attention to this important project. As always, we appreciate your timely responses, your cooperation, and your advice and insight. We look forward to finalizing the PA with your office, and moving this project forward.

Sincerely,



Kristen Zschomler, RPA
Historian/Archaeologist
Cultural Resources Unit

cc: Abbi Ginsberg, FHWA
Phil Forst, FHWA
Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society
Mike Koop, SHPO
Angel Staples, Historic Bridge Expert, MnDOT Bridge Office
Jai Kalsy, MnDOT District 6
Rick Brown, SRF
Christina Slattery, Mead and Hunt
Bob Frame, Mead and Hunt
MnDOT CRU Files

January 24, 2013

Ms. Kristen Zschomler
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
MnDOT District 6 to Rehab or Replace Bridge #5900 on TH 43
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Zschomler:

Thank you for submitting additional information on the parallel bridge concept and design that has been developed to date for this project. The materials have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

We concur with your determination that the Area of Potential Effect (APE) currently defined for the project appears adequate to address potential cultural effects resulting from a two-bridge solution. If future findings show the need for changing (expanding or contracting) the APE, we can address it at that time.

Also, we understand that no archaeological survey work has been performed for Parcels 67, 87 and 88, due to lack of landowner permission. If effects are anticipated on these or other un-surveyed property, we will need to revisit that issue in the future.

You also sent a schematic lay-out and design for the proposed parallel bridge, featuring a box girder design, along with a memo from Mead & Hunt, expressing the opinion that such a design could potentially meet the Secretary of the Interior's Standards. I realize that in a prior communication, I stated that: "We have no objection to pursuing a girder-type design for the new span, and we agree this might make it simpler to come up with a historically compatible design." That opinion in concept has not changed, but the design you submitted does give us pause due to some potential visual effects, which I will discuss below.

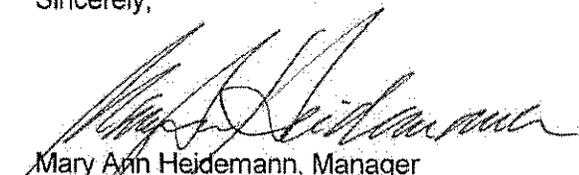
The two spans, old and new, are planned to be fairly close, with a separation distance of just 35 feet. Meanwhile, the proposed box girder, for stated reasons of navigation clearance, raises the deck of the new span higher than that of the old. This means that Wisconsin-bound traffic on the old bridge will face on the upstream view a rather massive side wall of the box girder, rather than the current expansive view of the Mississippi River corridor. It is this potential view-blocking aspect of the box girder design that is of concern. A secondary concern is that the box girder, seen through the open lattice of the historic truss, may be mistakenly "read" as part of

the old bridge. Perhaps these concerns can be addressed by more detailed photo-simulations. At present, based on the information submitted, the upstream views from the old bridge appear to be constrained and unpleasant. This could be considered an adverse effect on the bridge's historic setting. Your thoughts and responses to these concerns will be most welcome, particularly at this early design stage.

You previously told us that a girder design was preferred because it lessened the chance for interference with migratory bird movements (along the important Mississippi Flyway). Please tell us more about any standards and review criteria you need to meet in regard to bird movements, so we better understand the design logic behind the box girder. You also mentioned in a recent phone call that your office considered several other design approaches for the new span at an earlier stage. None of these alternate designs were ever sent to our office, but it's not too late. Please send us the other designs considered by MnDOT, along with a brief explanation of why they were rejected, so we can get a better idea of the design choices and constraints guiding your work, in addition to the Secretary of the Interior's Standards.

Thanks for sharing information on the new span design, and we look forward to continued consultation. Meanwhile, we also look forward to receiving and executing a revised Programmatic Agreement for this project, which will allow the project to move forward as consultation continues. Feel free to contact me at (651) 259-3456 with any questions or concerns you may have about our review.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Mark Moeller, Winona Heritage Preservation Commission



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March 18, 2013

Dr. Mary Ann Heidemann, Manager
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RE: S.P. 8503-46 (Winona Bridge [5900] Project, Winona, Winona County)
SHPO Number: 2009-3391

Dear Dr. Heidemann:

We have reviewed the above-referenced study pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the 2005 Section 106 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) and the 2008 FHWA-SHPO Historic Bridge PA. The Section 106 review fulfills MnDOT's responsibilities under the Minnesota Historic Sites Act (MS 138.665-.666), the Field Archaeology Act of Minnesota (MS 138.40); and the Private Cemeteries Act (MS 307.08, Subd. 9 and 10).

There has been a number of letters written for this project. The most recent letter from your office was dated January 24, 2013 in response to my December 24, 2012 letter regarding the APE for the parallel bridge design and the design of the parallel bridge. While your office previously had no objection to the girder-design, the visualizations I presented in my December 24th letter gave you pause, since it blocks views both to and from the existing bridge. You requested information on the other bridge types that were considered, so this letter presents those concepts. Also, this letter documents the rehabilitation alternative for the deck truss spans (as determined by MnDOT's Bridge Office and approved by FHWA) and the southern approach spans, and presents our office's findings on the effects of the rehabilitation approach.

A. Parallel Bridge Design

As detailed in our December 24, 2012 letter, the recommended parallel bridge type is a girder bridge, most likely of concrete. Your office responded on January 24, 2013 with some concerns and questions. To summarize, your office was concerned about the side wall of the box girder blocking the view from the bridge into the river valley to the west. Further, you stated that the box girder may be mistakenly read as part of the old bridge when viewing them from a distance. Because of these issues, you thought it is possible that the changes may create an adverse visual effect on the existing bridge. Your office also requested the opportunity to see the other options that were considered for the parallel bridge, which we are providing herein.

Because of the channel width and the need for limited piers in the navigable waterway, only two other bridge types were identified as options in this area: a cable-stay bridge and a tied-arch bridge. As you can see from the enclosed renderings, all three designs present a change to the visual setting of the bridge.

- **Girder bridge:** As you noted in your January 24, 2013 letter, the deck of the girder style bridge is deeper and higher than the existing bridge at certain points, creating a change in the views from the bridge at specific locations and the view of the bridge profile from a distance, in which the deck on the new bridge blocks views of the old bridge. However, it should be noted that in cross-section, the girder bridge is an appropriate vertical scale to existing bridge. Also, since the girder style is lower, it is anticipated to not present any significant visual changes from the downtown historic commercial district, the historic residential district, and the other individually eligible properties.
- **Cable-stayed bridge:** For the cable stayed, the thinner deck on the new bridge does not create a visual block of or change the look of the deck on the through-truss; however, the need to place the piers in the same location as the old bridge requires the towers to be located at the apex of the existing trusses. The towers and cables also read as part of the old bridge in this version, but in a way that confuses and changes the way the truss design appears – it almost appears as if the new bridge cables are holding up the old truss. Also, the approach span depths are deeper, so the deck trusses are blocked more in this version than the girder design. Finally, in cross-section, the cable-stayed features are substantially taller than the existing truss, dwarfing it and making the new structure the dominant visual vertical element. The larger tower elements would be more visible from the downtown historic commercial district, the historic residential district, and other individually eligible properties.
- **Tied-arch bridge:** The tied arch option blocks views of both the deck truss elements and fights visually with the truss design on the old bridge. Again, because the piers will be placed in a similar location to the existing bridge's piers, the arch becomes centered between the peaks of the original truss, and conflicts visually with the original truss design. As with the cable-stayed, the arch is substantially taller than the existing truss, dwarfing it and making the new structure the dominant visual vertical element. The larger arch elements would be more visible from the downtown historic commercial district, the historic residential district, and other individually eligible properties.

Setting and Views from the Existing Bridge

You noted in your letter a concern that "Wisconsin-bound traffic on the old bridge will face on the upstream view a rather massive side wall of the box girder, rather than the current expansive view of the Mississippi River corridor" and that the new view would be "constrained and unpleasant". While we agree that the views will change and may be less pleasant for a driver, such a change is different than an adverse visual impact that "diminishes the integrity of the property's significant historic features." The cable stayed and tied arch options may present less of a wall feeling; however, the presence of any parallel structure will limit the current expansive views upstream due to the presence of a two-lane roadway.

It is also important to note that the view to the west will no longer be a primary viewshed for drivers on the existing structure. With any of these bridge-type options, the traffic patterns on the existing bridge will change so that it only accommodates north/Wisconsin-bound drivers. This means that most drivers on the existing bridge will be northbound and will be traveling in

the easternmost lane, so the primary viewshed will be to the north and east - very few drivers will have an opportunity to look directly to the west. The visualization submitted to your office previously presents an unlikely view for most users on the bridge – it assumes someone is standing on the deck of the old bridge and looking due west. We are working with our consultants to develop better visualizations to what would be a more typical view – from a driver's perspective in the easternmost lane and looking north and north-east. We will submit these to your office when available.

36 CFR 800.5(a)(2)(v) states that an adverse effect can occur from the "introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features. While the construction of a parallel bridge of any type creates a change in the original bridge's setting and views to and from the old bridge, the setting is not a character-defining (or significant) feature of the Bridge 5900; **therefore, it is the finding of this office that the recommended alternative does not create an adverse visual effect to Bridge 5900.**

Migratory Bird Treaty Act and Costs

The bridge type choice of a girder design also takes into consideration both the Migratory Bird Treaty Act and costs. Based on conversations with the U.S. Fish and Wildlife Service on this project and our experience with this regulation on the Hastings Bridge Project, the Migratory Bird Treaty Act will likely require selection of the lowest bridge profile in order to not create an impediment to migratory fowl. The lowest bridge profile is achieved with the girder bridge type.

In addition to compliance with the Migratory Bird Treaty Act, the costs of the cable-stay and tied-arch bridge types (many tens of millions of dollars more than the girder type) are prohibitive to the overall project budget.

Summary of Parallel Bridge Design

Taken together, the cost, other environmental regulations, and comparison of the other viable structure types have led MnDOT to select a girder-style parallel structure upstream as the current recommended option (although it is important to note that the NEPA process will need to consider all impacts to social, economic, and other environmental issue; and the recommended option may change). Our historical consultants recommended, and our office has determined, that the girder style parallel bridge meets the SOI Standards, specifically Standard 9 in that the new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing.

B. Approach Spans: Deck Trusses and South Approach Spans

The rehabilitation approach for the existing bridge includes the removal of the existing sidewalk (added in 1985) and the likely use of light-weight concrete on the through-truss portion of the deck in order to lighten the dead load. This approach would not have been possible without the parallel bridge included in the recommendation option, and it allows for very minimal changes to the through truss (the primary character-defining feature). This approach has eliminated the need on the through truss to plate over or remove most full members, and to remove or plate over the lacing and batten and to remove rivets and replace them with bolts. Also, the proposed recommended option of constructing a parallel bridge eliminates the need to widen the south approach spans, which would have created an adverse visual effect.

Deck Truss Spans

While the recommended option has been selected in order to minimize overall effects to the existing structure, the deck-truss approach spans present a unique challenge. To help understand and resolve the issue, the State Bridge Engineer and MnDOT's Historic Bridge Expert engineer prepared a memo outlining the condition issues of the deck trusses (please see enclosed). FHWA has reviewed and accepted this memo's findings. The memo evaluates the three rehabilitation approaches available for the deck trusses:

- Option 1C - minor repairs
- Option 4C - more extensive repairs and replacements
- Option 6C - in-kind replacement

Option 1C presents only a 10-15 year fix and continues the bridge's current rating of "poor". After an investment to the level MnDOT is planning for the through truss span of this bridge, it is unacceptable to have such a low return of service life on investments on the deck truss spans.

Option 4C would provide an approximately 30-year design life with only routine maintenance, but would involve extensive alteration or replacement of almost 50 percent of the nodes (connections) and up to 76 percent all members, including up to 100 percent of the lower chords and up to 72 percent of upper chords and vertical and diagonal members. MnDOT does not recommend Option 4C because of the excessive cost and the extensive amount of replacement of historic fabric relative to the achievable design life.

The recommended option is 6C, in-kind replacement of the deck trusses. With an in-kind replacement of the deck trusses, the new spans achieve a minimum design life of 50 years.

South Approach Spans

The existing condition of the south approach spans was discussed in the SRF Memorandum of October 7, 2011, "Winona Bridge – Spans 1 through 15 (South Approach) Rehabilitation" (please see attached). Included in this memo are:

- Spans 1 and 2. These rolled steel beam spans replaced original concrete spans in 1985 and are not historic fabric.
- Spans 3 – 14. These spans are original 1942 cast-in-place concrete T-beams and are the spans discussed below. They are not character-defining features.
- Span 15. This is a riveted steel girder span. It is not a character-defining feature.

Although spans 3-14 are original, they were significantly altered in 1985 (when spans 1 and 2 were replaced) by removal of the east outside beam on every span. The original beam was replaced with a precast concrete I-beam to allow a widened roadway and support a cantilevered pedestrian sidewalk. Because they are cast-in-place concrete T-beams, the concrete beams are integral with the deck. The deck, which received a low-slump overlay in 1985, has been analyzed for this project and has chloride concentrations over acceptable limits and it must be replaced. In my letter to you in August 2012, our office found that spans 3-14 had poor historical integrity.

In addition the concrete beams (essentially the stems of the T-beams) have chloride contamination; it is difficult to retain the beams if the deck is removed. The SRF memo of October 27, 2011, evaluated six methods for preserving the T-beam stems if the deck is

removed. Each method, while technically feasible, is neither practical nor cost-effective from an engineering perspective and the results would not be compliant with the Secretary's Standards, as reported in the Mead & Hunt report of October 14, 2011, "Comments on Winona Bridge 5900 Spans 1 thru 15 (South Approach) Rehabilitation."

The preferred alternative to addressing the condition issues with Spans 3-14 is removal of the deck and the remaining beam stems of the T-beams and replacing the spans with a concrete beam span that replicates the form and design of the 1942 concrete T-beam spans prior to the 1985 alterations (although the current plan is to not make the deck integral so that it can be replaced in the future without having to remove the T-beams). Span 15 will be replaced with a steel girder span, although the details on the design have yet to be developed.

Application of the Rehabilitation Standards and Guidelines

The SOI Standards for Rehabilitation are applied to this project. Rehabilitation is described as "the act or process of making possible an efficient compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values." Based on this definition, historic materials and character-defining features are protected and maintained, but an assumption is made prior to work that existing historic fabric that has become damaged or deteriorated over time may require repair and replacement in order to allow for the continued use of the property. Thus, some latitude is given in the Rehabilitation Standards and Guidelines for replacing extensively deteriorated, damaged, or missing features using either traditional or substitute materials.

The Rehabilitation Standards provide guidance on how to treat historic properties during rehabilitation, and the guidance was used to inform decisions during the design process for this project. While all of the Rehabilitation Standards were followed during the design process, Standard 6 was of particular use in the approach span decision-making process.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

While the SOI Standards primarily focus on the retention of character-defining features, when necessary, the in-kind replacement of such features is allowable when the condition of said features precludes repair. MnDOT's Bridge Office has determined that the deck-truss spans (a character-defining feature) are severely deteriorated and require replacement. The south approach spans, which are not character-defining features, are also deteriorated and require replacement. The preferred option under the Rehabilitation Standards is always replacement of the entire feature with a new feature that will match the old in terms of design, color, texture and, where possible, materials. Therefore, the replacement of the deck truss spans and south approach spans in-kind is necessary for the long-term preservation of the bridge, including the primary character-defining feature of the through truss, and will enable it to maintain its historic use, which is recommended by the SOI Standards.

Determination of Effect

Summary

Our office has struggled with what is the appropriate finding of effect for the recommended option. On the positive side, the recommended option of the construction of a parallel girder structure offers benefits for the National Register-eligible Bridge 5900 in light of overall impacts. Without the construction of a parallel bridge, the approach spans would likely have been widened to accommodate traffic and the through-truss would have required much more extensive repairs, including replacement of numerous members and rivets, due to the continued dead load of the sidewalk. Also, the construction of a girder-style structure presents the most minimal visual effects to the existing bridge compared to a cable-stayed or tied-arch structure, since it allows most of the upper portions of the truss and the deck trusses to be visible from many locations. In addition, the cross-section scale of the girder type is in keeping with the scale and massing of the old bridge, allowing the existing structure to be the dominate visual element. Finally, the recommended option allows for continued vehicular use of the bridge for 50-plus years, which is a key consideration under the Rehabilitation Standard.

On the negative side, there is no denying that a substantial amount of historic fabric is being lost under the recommended option, and that a character-defining feature (the deck trusses) will be removed. Retention of historic fabric and character-defining features is an important consideration under the National Park Service's criteria of integrity. Also, the SOI Standards state that preservation of materials is always the most desirable approach. However, as discussed above, when the condition of the historic fabric precludes repair, in-kind replacement is appropriate and meets the Standards. 36 CFR 800 further defines an adverse effect as the "Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, *that is not consistent with the Secretary's Standards for the Treatment of Historic Properties* (36 CFR part 68) and applicable guidelines".

So while historic fabric is being lost, the recommended option of in-kind replacement for the approach spans minimizes the overall effects to the historic bridge. While Option 1C would have retained the maximum amount of historic fabric, it would have resulted in much of that fabric being covered by new material, which is less in keeping with the SOI Standards than replacing in kind. Also, Option 4C required so much historic fabric to be replaced, that there was not a substantive difference between that and Option 6C. Also, our design approach for the replacement spans minimizes the overall effect. Typically, approach spans such as these would be replaced with continuous girders spans to minimize cost and future maintenance. However, the Department recognizes the historical value of this bridge, and is willing to expend more money and time to follow the SOI Standards. Also, the approach spans 3-15, which are not character-defining features and have poor material and design integrity as documented in my August 1, 2012 letter, will better reflect the original design, workmanship, and feeling of the bridge.

Reviewing the overall approach to the preservation of the bridge, we conclude that the rehabilitation of the structure as described above, including the new parallel bridge and the in-kind replacement of the approach spans, combines the optimum application of multiple preservation and rehabilitation treatments for the bridge property. Any one bridge component, by itself, may be rehabilitated in a different way, but doing so would affect the effort overall in such a way as to result in a lesser effort in the end.

It is the finding of our office that the proposed parallel bridge design, and the replacement of the deck truss spans and approach span replacements in-kind are in compliance with the SOI Standards for Rehabilitation, and therefore as per 36 CFR 800(5)(a)(2)(ii), is not an adverse effect to Bridge 5900. If your office has great concerns about the loss of historic fabric tipping this approach to an adverse effect, we are opening to discussing and reconsidering our findings. I would be happy to meet and discuss further. However, we do feel that through the project elements, we have minimized the effects and found a solution that meets the SOI Standards.

Thank you for your office's attention to this important project. As always, we appreciate your timely responses, your cooperation, and your advice and insight. We look forward to finalizing the PA with your office, and moving this project forward.

Sincerely,



Kristen Zschomler, RPA
Historian/Archaeologist
Cultural Resources Unit Supervisor

cc: Dave Scott, FHWA
Abbi Ginsberg, FHWA
Phil Forst, FHWA
Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society
Mike Koop, SHPO
Angel Staples, Historic Bridge Expert, MnDOT Bridge Office
Jai Kalsy, MnDOT District 6
Rick Brown, SRF
Christina Slattery, Mead & Hunt
Bob Frame, Mead & Hunt
MnDOT CRU Files

STATE HISTORIC PRESERVATION OFFICE

April 12, 2013

Ms. Kristen Zschomler
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
Bridge #5900 Rehabilitation and Parallel Bridge Design
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Zschomler:

Thank you for submitting additional information regarding the parallel bridge design and the rehabilitation approach for the historic bridge. These materials have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

Concerning the proposed design for the parallel bridge, we still find the box girder to be unattractive and obstructive. The deck rises significantly above the deck of the historic bridge at the center span, is very deep, and obstructs views of the historic bridge and scenic views of the Mississippi River corridor for travelers on the new bridge.

Your letter dismisses the other two options as not meeting the Secretary of the Interior's Standards. We disagree. We believe these to be viable options, particularly the tied arch. Both the cable-stayed and tied- arch bridges have much thinner decks than the box girder (apparently similar to the historic bridge), match the height of the historic deck, and have lighter superstructure above the deck. Although they do not function structurally the same as the historic bridge, they do have a similar lightness.

The cable-stayed bridge is perhaps too similar in general shape to the historic bridge and could potentially create confusion about which is which when looking at them together. The tied-arch design offers a convex shape where the historic bridge is concave, and as such provides an interesting counter point, or conversation, with the historic bridge. We believe the cable-stayed and tied-arch have strong possibilities of a good result.

Though it might initially seem that a low profile, unobtrusive, bridge would fit the Standards, the reality of the depth and bulk of the "unobtrusive" option negates the effectiveness of this approach. Also, you make the argument that aligning the primary new piers for the cable-stayed and tied-arch options with the historic piers detracts from the historic bridge and therefore the box girder is the better option. We find this argument confusing, because the box girder bridge does exactly the same thing in terms of pier placement.

In summary, we find that all three parallel bridge designs meet the Secretary of the Interior's Guidelines. While we may prefer the tied-arch choice, we believe that any of these designs could be suitable. We realize that many other factors will come into play for the final design selection. Your letter mentions, for example, that the box girder is substantially less expensive to construct than the other options. Certainly cost is a legitimate concern. But we don't believe it is fair or accurate to select the low-cost solution on the basis that it is the only one meeting the Secretary of the Interior's Standards. Again, we believe that all three can meet the applicable design standards, though each has design strengths and weaknesses.

Regarding the historic deck replacement, we are a bit confused about what is actually proposed. The study appears to discuss all spans of the bridge, but the letter specifically focuses on spans 1-15. Spans 1-15 appear to not have a great deal of historic integrity, and are in poor condition. Your letter states that the deck spans are not character-defining. This statement is not an acceptable excuse for replacement of historic fabric. Although these spans have been significantly modified, the repair options presented don't sound particularly appropriate in terms of saving original materials. Spans 16-18 are of main concern, as well as 19-24 - but your letter does not seem to address these spans at all. Deck repair is the preferable option to replacement.

We look forward to further consultation regarding the design of the new parallel bridge and the proposed deck repairs for the historic bridge. Please contact me at (651) 259-3456 with any questions you may have regarding this review. For technical questions regarding the historic bridge deck repairs, please contact Natascha Wiener, at (651) 259-3462.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Natascha Wiener, SHPO
Mark Moeller, Winona Heritage Preservation Commission

June 3, 2013

Ms. Kristen Zschomler
MnDOT- Cultural Resources Unit
Transportation Building, Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 8503-46
Bridge #5900 Rehabilitation and Parallel Bridge Design
Winona, Winona County
SHPO Number: 2009-3391

Dear Ms. Zschomler:

Thank you for the additional information provided on rehabilitation alternatives considered for Bridge #5900. We have reviewed the materials pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing regulation at 36 CFR 800, and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

The additional materials sent have clarified what original historic fabric remains, as well as the various rehabilitation alternatives examined by MnDOT to replace non-historic fabric and repair historic fabric. Based on the information provided, we agree that adequate consideration has been given to preservation, and that the least invasive rehabilitation approach has been selected, consistent with safety and project purpose and need.

Considering the supplemental information, we can now agree that the proposed rehabilitation meets the Secretary of the Interior's Standards and will have **no adverse effect** on Bridge #5900.

We look forward to seeing additional design information for the new parallel bridge. Meanwhile, please contact me at (651) 259-3456 with any questions you may have regarding this review.

Sincerely,



Mary Ann Heidemann, Manager
Government Programs & Compliance

cc: Natascha Wiener, SHPO
Mark Moeller, Winona Heritage Preservation Commission



Office of Environmental Services

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July 19, 2013

Dr. Mary Ann Heidemann, Manager
Government Programs & Compliance
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

RE: S.P. 8503-46 (Winona Bridge [5900] Project, Winona, Winona County)
SHPO Number: 2009-3391

Dear Dr. Heidemann:

We have reviewed the above-referenced study pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the 2005 Section 106 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) and the 2008 FHWA-SHPO Historic Bridge PA. The Section 106 review fulfills MnDOT's responsibilities under the Minnesota Historic Sites Act (MS 138.665-.666), the Field Archaeology Act of Minnesota (MS 138.40); and the Private Cemeteries Act (MS 307.08, Subd. 9 and 10).

There have been a number of letters written for this project. Our most recent letter covered the parallel bridge design and the proposed rehabilitation approach for the approach spans on the existing bridge. Your office responded on June 3, 2013 in concurrence with our finding on the approach spans; however, your office requested additional information the next steps in determining the parallel bridge design.

As you know, the selection of a preferred alternative on any project is informed by the historic review process, but the ultimate decision is made based on many factors –costs, feasibility, general visual quality issues, impacts to environmental and cultural resources, and other issues. These considerations are balanced against each other, and documented in the project's NEPA document (in this case, an Environmental Assessment). The preferred alternative is selected through that process. Under the Section 106 process, our office reviews the alternative and makes a finding of effect, and we seek your office's advice, comments on our findings, and, ultimately, your concurrence.

In recent letters, both of our offices have commented on three parallel bridge designs: a concrete box girder, a tied-arch, and a cable-stayed. In our March 18, 2013 letter, we noted that all three bridges present a change in setting. Also, we noted the pros and cons of each type. To summarize:

- **Girder** – Pro: lower vertical profile is in scale with the existing bridge so that the new bridge does not dominate the above-deck elements of the existing truss thicker; Con: higher deck than current bridge and blocks views upstream from deck of existing bridge.
- **Cable Stayed** – Pro: thinner and lower deck so less visual impact of upstream views; Con: The towers and cables conflict with the apex of the existing bridge; deeper approach spans that block the deck trusses, substantially taller vertical elements than the existing truss, dwarfing it and making the new structure the dominant visual vertical element; more visible from the downtown historic commercial district, the historic residential district, and individually eligible properties.

- **Tied Arch** - Pro: thinner and lower deck so less visual impact of upstream views; Con: blocks views of the deck truss elements; the arch becomes centered between the peaks of the original truss, and conflicts visually with the original truss design, and is substantially taller than the existing truss, dwarfing it and making the new structure the dominant visual vertical element and therefore more visible from the downtown historic commercial district, the historic residential district, and other individually eligible properties.

Our office has only made an official finding on the District's recommended option of the concrete box girder, specifically that it meets the Secretary of the Interior Standards. While we commented on the pros and cons of the cable stayed and tied arch designs in previous letters, we did not make a finding or say that they did not meet the Standards. However, our office feels that the parallel bridge types that have above-deck elements create more of a visual impact under the historic standards than the girder style and which, from our initial reviews, could present significant challenges in meeting SOI standards for these types of structures.

Since the time of our March 2013 letter, a draft Environmental Assessment for the project has been submitted to the FHWA, with the concrete box girder presented as the recommended bridge type for the new structure.. Our office's findings in relation to this alternative, as previously presented in our March letter, is that while the box girder design blocks views upstream from the deck of the existing bridge more than the other designs, these changes are not to the point where it would trigger an adverse visual effect under Section 106. (Enclosed please find additional draft visualizations for your review.) The project's historical consultants (Mead and Hunt) recommended that the girder style parallel bridge meets the Secretary of the Interior's Standards for the Treatment of Historic Properties: Rehabilitation Standard (SOI Standards), and our office agrees. So while the construction of any parallel bridge creates a change in the original bridge's setting and views to and from the old bridge, the proposed design meets the SOI Standards; **therefore, it is the continued finding of this office that the recommended bridge type does not create an adverse effect to Bridge 5900.**

Further, the approach of the project overall has been to avoid and minimize effects to historic properties as much as possible. By building a parallel bridge, the existing bridge can be rehabbed in compliance with the Standards and restored more to its original appearance (restoring the original design of the approach spans and avoiding the need to widen, removal of the 1985 sidewalk) while still meeting the transportation needs. Also, other project design decisions have focused on avoiding impacts to historic properties (from traffic routing decisions to right-of-way impacts). The project overall has focused on balancing the historic preservation issues and other social, economic, and environmental impacts with the transportation needs of the traveling public.

Noise Analysis

Our office worked with the engineering consultant on the project, SRF, to determine if the proposed project would create any auditory effects to historic properties in the area of potential effect (APE). Enclosed please find the noise study memo. Twenty-one noise receptors were placed at individually eligible or listed historic properties, and in several locations within the identified historic districts. The noise analysis shows that most of the historic properties will experience a decrease or no change in noise levels between the 2038 Build and the No Build options; and that of the properties that will experience an increase (0.1dBA), it is at a level barely noticeable to the human ear. Noise level decreased between the 2038 Build and No Build options are likely due to traffic shifting from the existing bridge (in both directions) to the proposed bridge (one way southbound traffic) during the loudest hours of the daytime and nighttime periods. **Therefore, it is the finding of this office that the project as currently proposed will have no adverse auditory effect on historic properties in the APE.**

Easements and Curb Work

A permanent easement over the east portion of the C&NW Railroad property is needed for construction and maintenance of the new and existing bridge. Also, a temporary easement over the west portion of

the railroad is needed for construction activities (i.e., no longer term access needed). The railroad will continue to operation and will be restored to existing conditions after construction is complete. Because there will be no direct impact to the railroad and the railroad will continue in use as it does today, this action does not constitute an adverse effect.

For the YMCA and the Huff-Lamberton House, the project will include constructing new ADA compliant curb cuts at the intersections of Huff and 4th and Winona and 4th (please see enclosed memos and maps). In order to complete the work, there will be a temporary easement for worker access. No vegetation will be removed, and all existing conditions will be restored after the completion of the construction. The proposed new V curbs are outside the boundaries of the historic properties so there will be no direct impacts, and their addition to the public right-of-way will not create any visual changes that diminish the integrity of either property's significant features. Also, the temporary use of areas within the property's boundaries will not constitute an adverse effect, since there will be no alternations or changes. **Therefore, it is the finding of this office that the proposed construction and temporary occupancy of the C&NW Railroad, the YMCA, and the Huff-Lamberton House will have no adverse effect.**

Please see the enclosed Temporary Occupancy memos for the C&NW Railroad, the YMCA and the Huff-Lamberton House. We request your signature on these documents if you concur that the work consists of a temporary occupancy.

Finding of Effect Summary

To summarize, it is the finding of our office that the proposed parallel bridge design is in compliance with the SOI Standards for Rehabilitation, and therefore as per 36 CFR 800(5)(a)(2)(ii), is not an adverse effect to Bridge 5900. Also, the noise analysis enclosed herein shows that the project will not have an adverse indirect (auditory) effect on any of the historic properties in the APE. Finally, the proposed project work around the YMCA and the Huff-Lamberton House, and the easements of C&NW Railroad will not create an adverse effect to those historic resources. **Therefore, it is the continued finding of this office that the project as currently proposed will have No Adverse Effect to historic properties.**

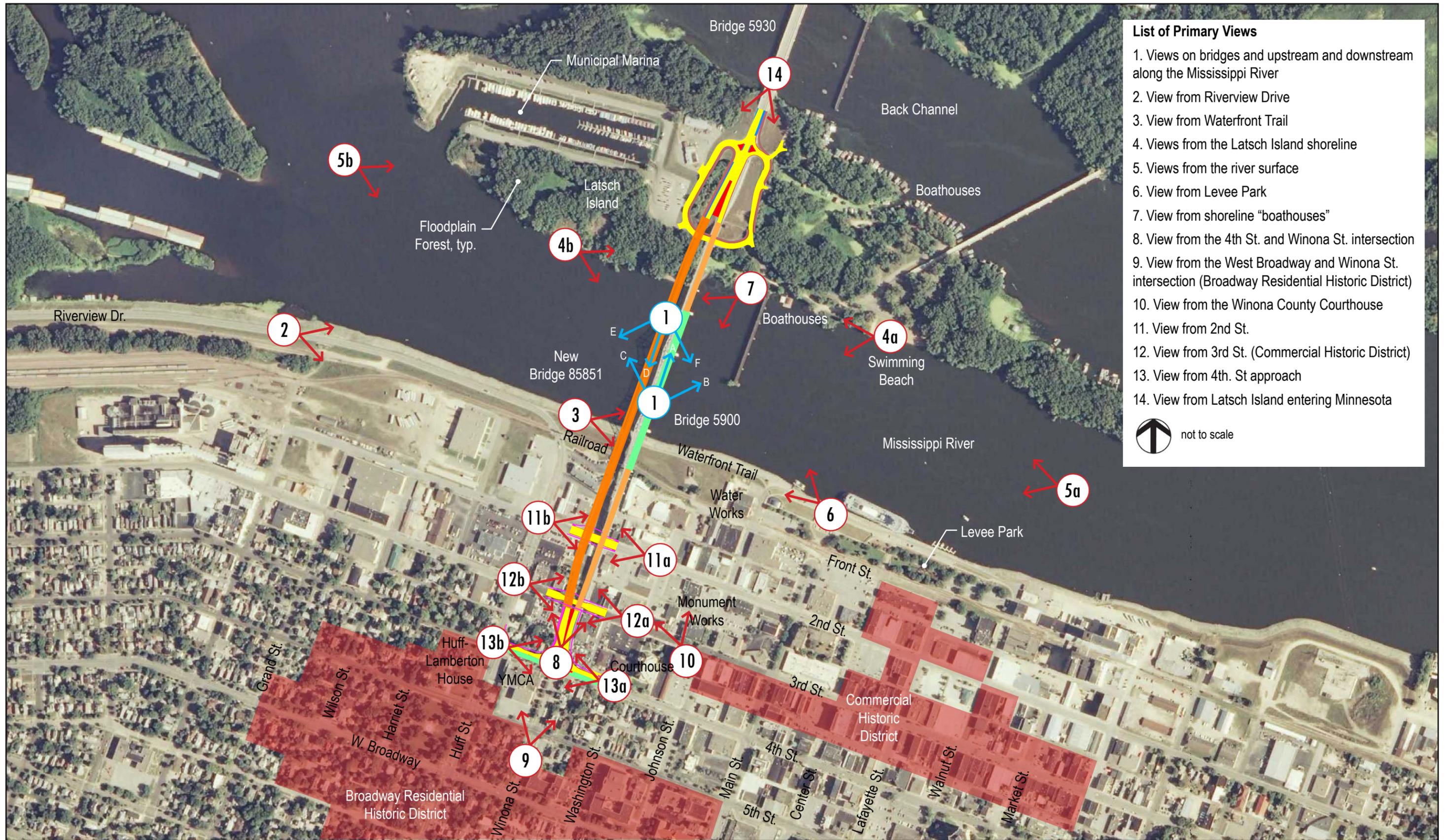
Thank you for your office's continue attention to this important project. As always, we appreciate your timely responses, your cooperation, and your advice and insight. We look forward to finalizing the PA with your office, and moving this project forward.

Sincerely,



Kristen Zschomler, RPA
Historian/Archaeologist
Cultural Resources Unit Supervisor

cc: Dave Scott, FHWA
Abbi Ginsberg, FHWA
Phil Forst, FHWA
Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society
Mike Koop, SHPO
Angel Staples, Historic Bridge Expert, MnDOT Bridge Office
Terry Ward, MnDOT District 6
Rick Brown, SRF
Christina Slattery, Mead & Hunt



SRE Preliminary Project Visualization - Key Plan of Primary Views to the Project Site in the Immediate Vicinity



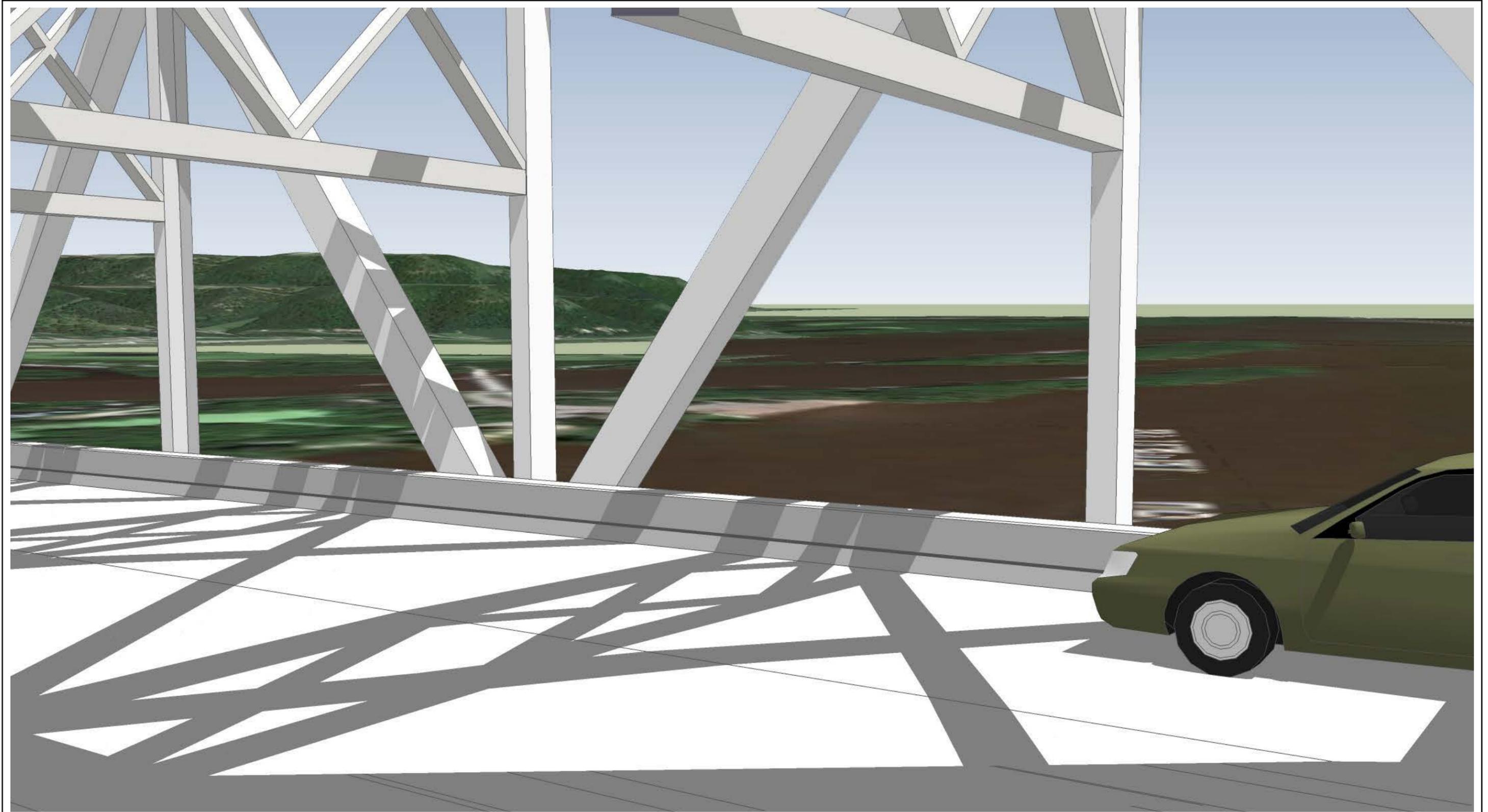
Bird's Eye View Looking Upstream

DRAFT - work in progress



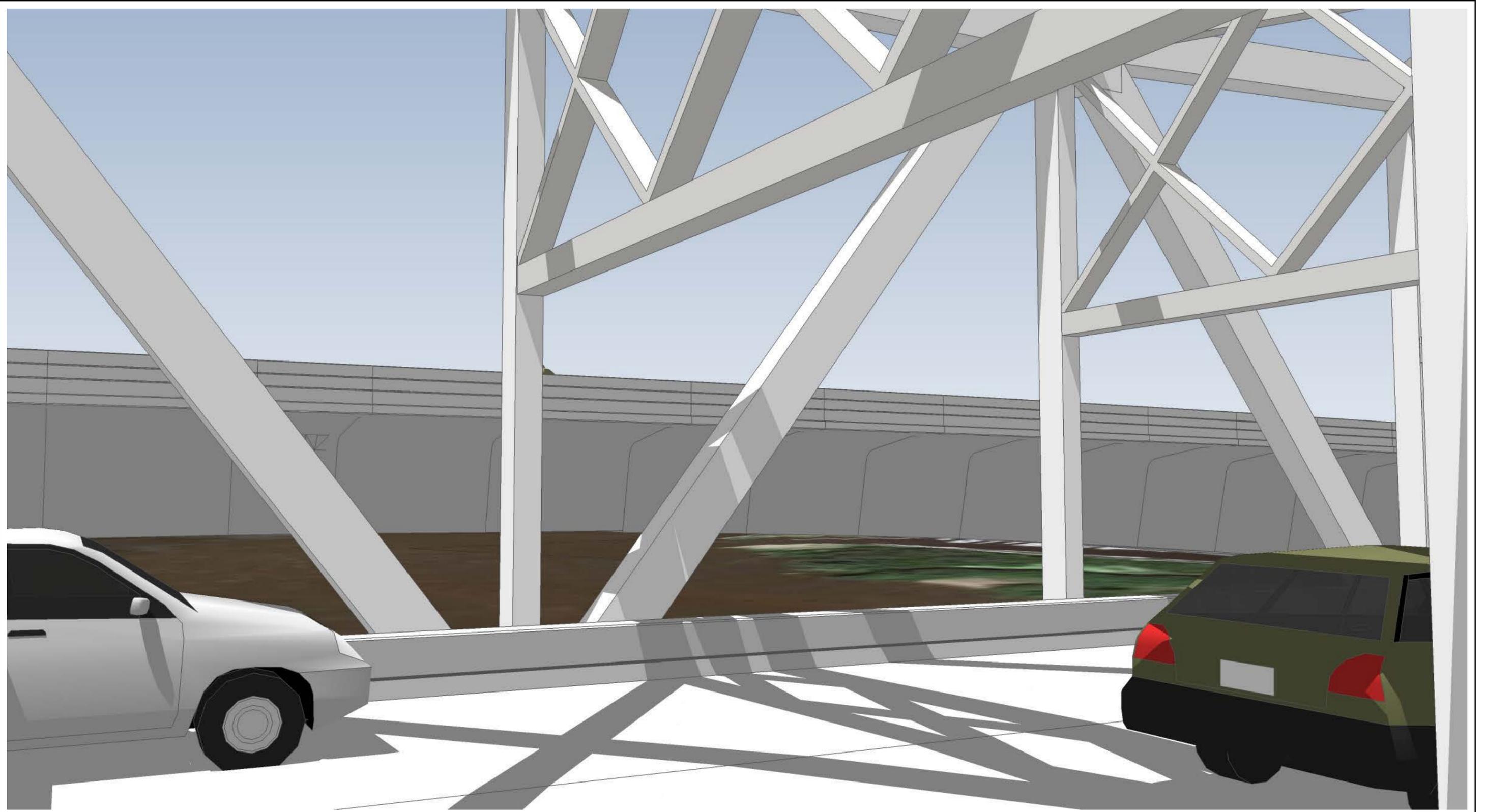
View 1A - View from NB Bridge 5900

DRAFT - work in progress



View 1B - View Downstream from NB Bridge 5900

DRAFT - work in progress



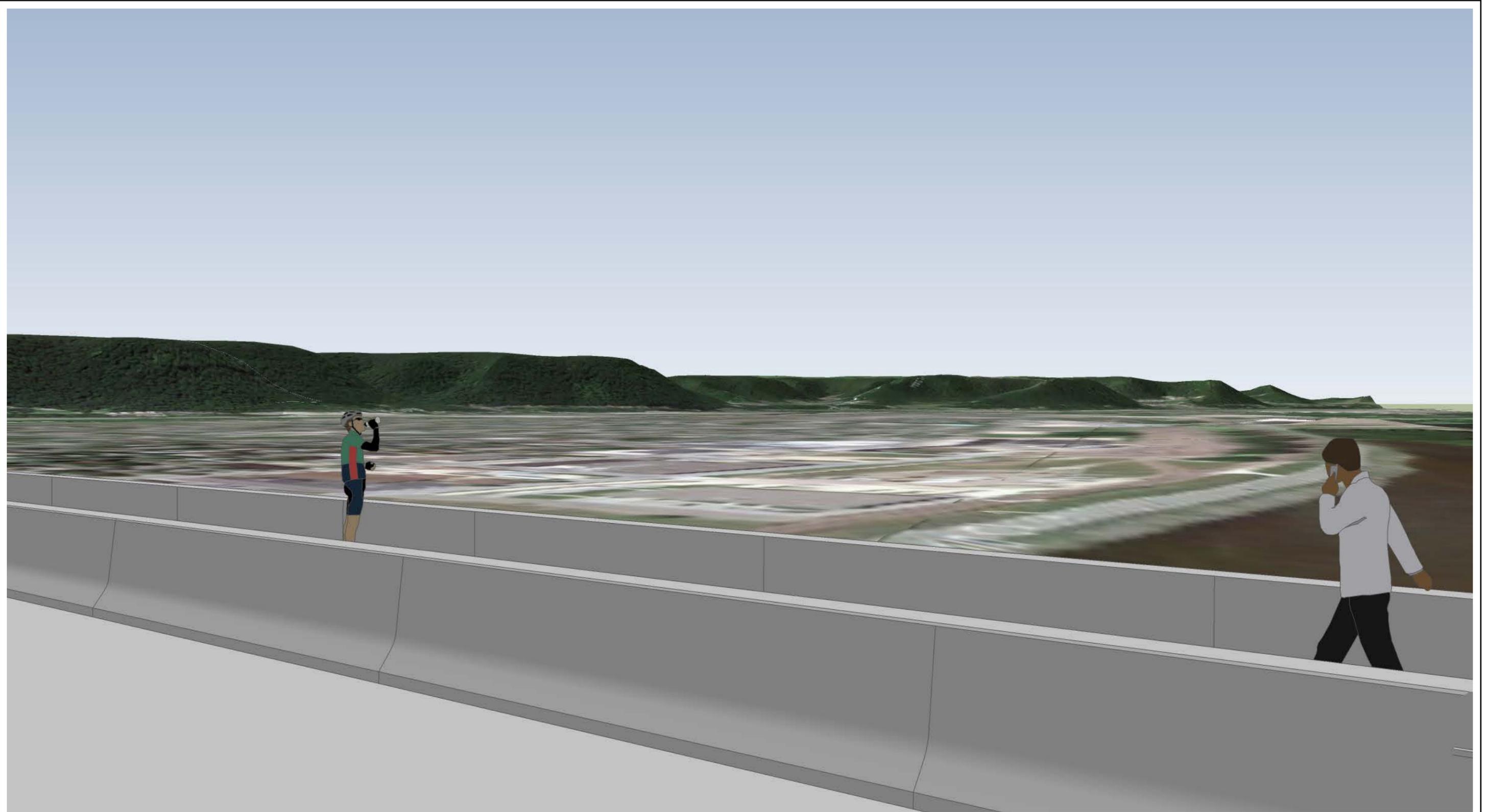
View 1C - View Upstream from NB Bridge 5900

DRAFT - work in progress



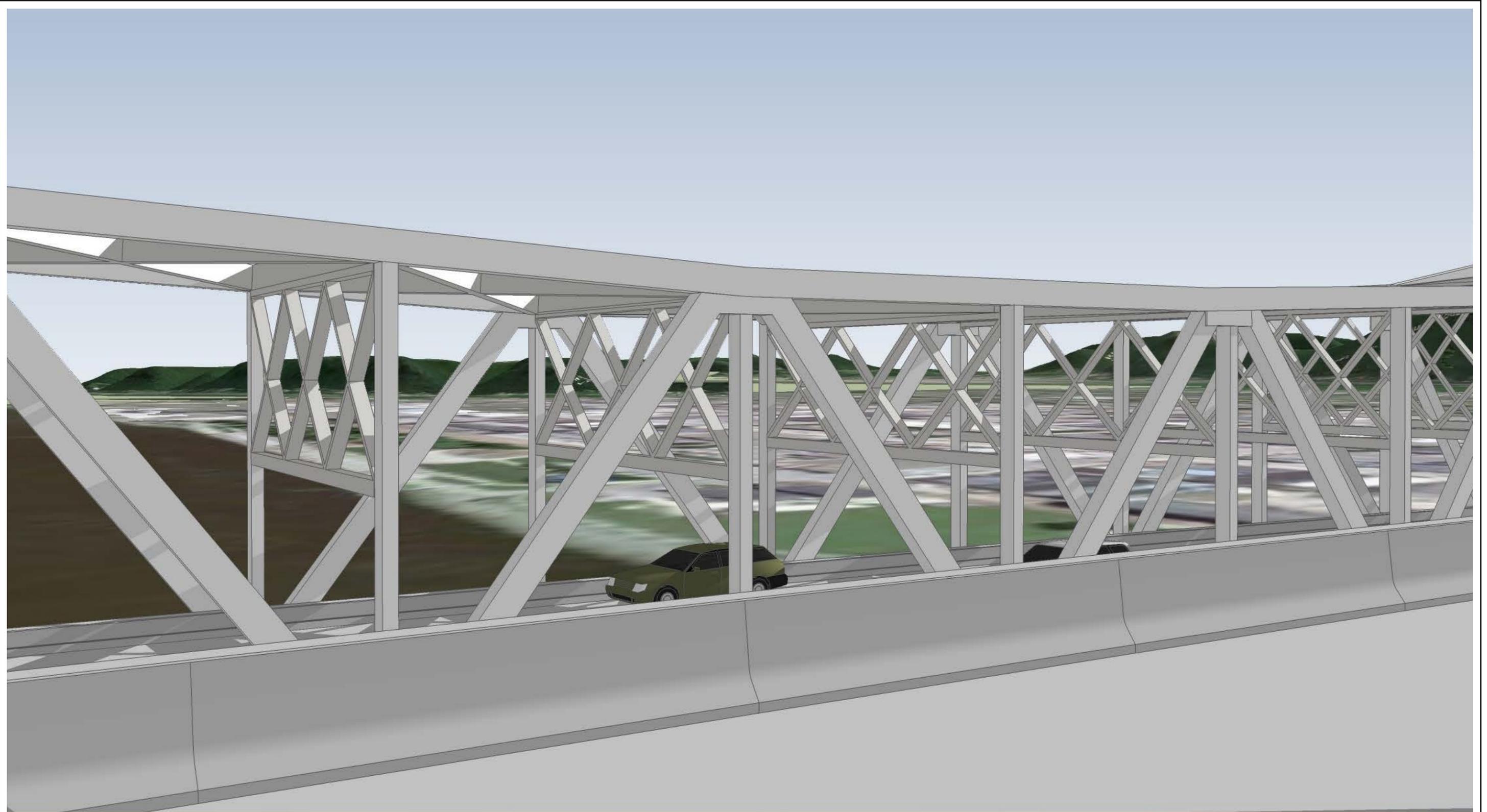
View 1D - View from SB Bridge 85851

DRAFT - work in progress



View 1E - View Upstream from SB Bridge 85851

DRAFT - work in progress



View 1F - View Downstream from SB Bridge 85851

DRAFT - work in progress



View 2 - View Downstream from Riverview Drive

DRAFT - work in progress



View 3 - View Downstream from Waterfront Trail

DRAFT - work in progress



View 4A - View Upstream from Latsch Island

DRAFT - work in progress



View 4B - View Downstream from Latsch Island

DRAFT - work in progress



View 5A - View Upstream from River

DRAFT - work in progress



View 5B - View Downstream from River

DRAFT - work in progress



View 6 - View Upstream from Levee Park

DRAFT - work in progress



View 7 - View from the Boathouses

DRAFT - work in progress



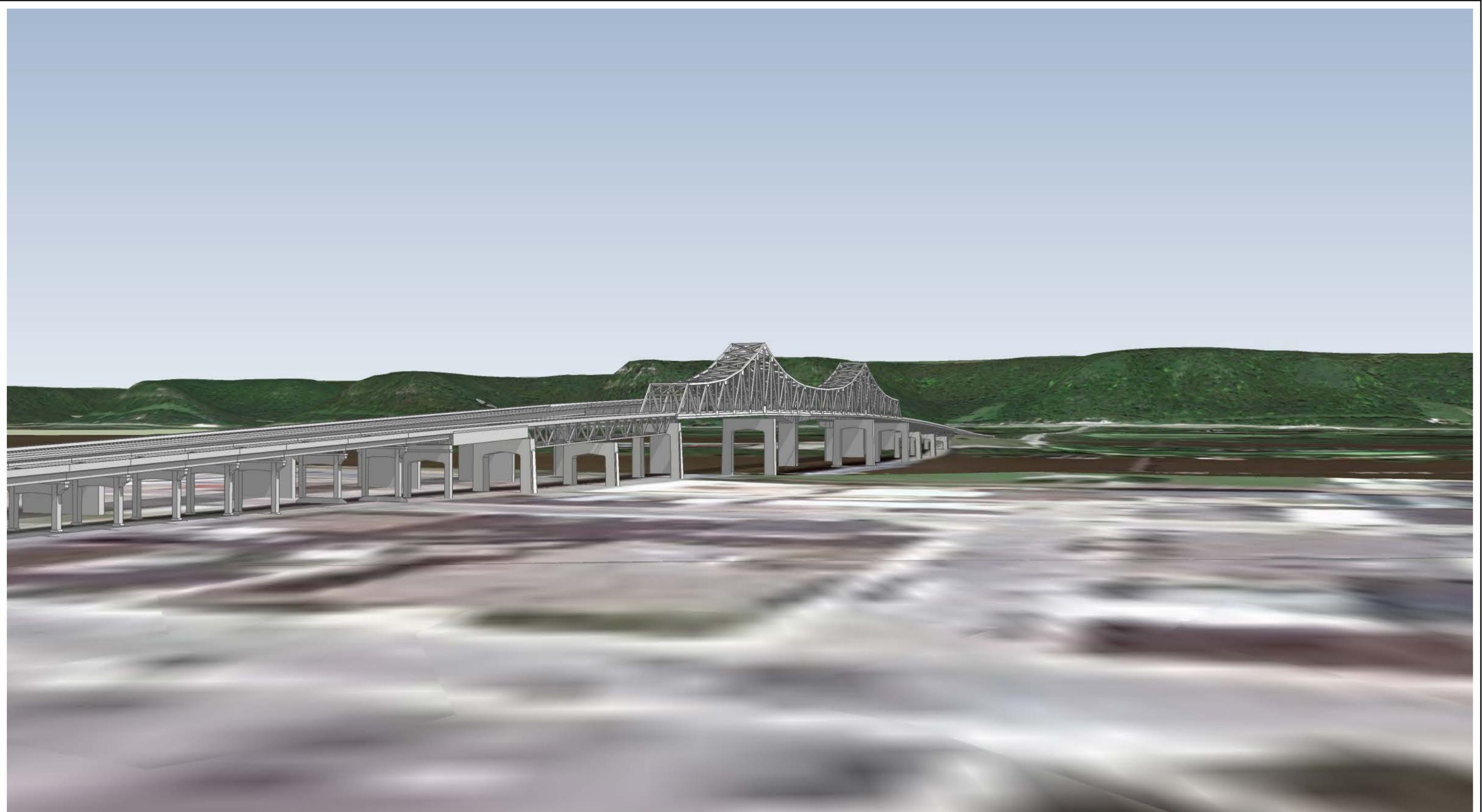
View 8 - View from 4th St. and Winona St. Intersection

DRAFT - work in progress



View 9 - View from West Broadway and Winona St. Intersection (Broadway Residential Historic District)

DRAFT - work in progress



View 10 - View from the Winona County Courthouse (from approximate 3rd floor height)

DRAFT - work in progress



View 11A - View from 2nd Street Looking Northwest

DRAFT - work in progress



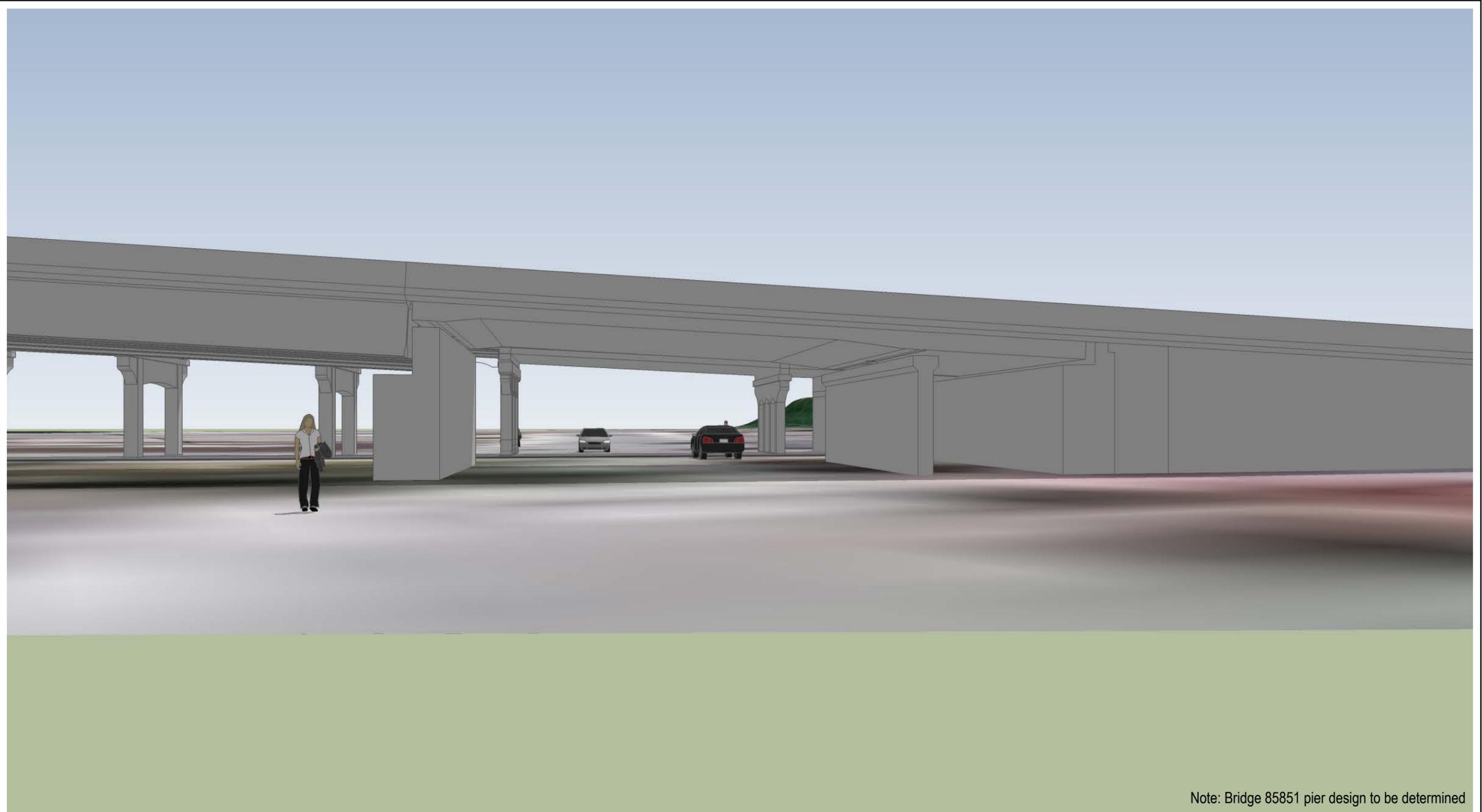
View 11B - View from 2nd Street Looking Southeast

DRAFT - work in progress



View 12A - View from 3rd Street (Commercial Historic District) Looking Northwest

DRAFT - work in progress



Note: Bridge 85851 pier design to be determined

View 12B - View from 3rd Street (Commercial Historic District) Looking Southeast

DRAFT - work in progress

View 13A - work in progress

DRAFT - work in progress

View 13B - work in progress

DRAFT - work in progress



View 14 - View from Latsch Island entering Minnesota

DRAFT - work in progress

PROGRAMMATIC AGREEMENT
PURSUANT TO SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION AND THE MINNESOTA
STATE HISTORIC PRESERVATION OFFICE
REGARDING THE WINONA BRIDGE (BRIDGE 5900) PROJECT (S.P. 8503-46), WINONA,
WINONA COUNTY, MINNESOTA

WHEREAS, the Minnesota Department of Transportation (MnDOT) is proposing a project (PROJECT) where the recommended option is to rehabilitate the Winona Bridge and construct a parallel bridge in Winona, Winona County, and the PROJECT is considered a federal undertaking for the Federal Highway Administration (FHWA) requiring consultation under Section 106 of the National Historic Preservation Act; and

WHEREAS, consultation for this PROJECT began under the 2005 *Programmatic Agreement Among the Federal Highway Administration, the Minnesota State Historic Preservation Office, the Advisory Council On Historic Preservation, the Department of the Army, Corps of Engineers, St. Paul District, and the Minnesota Department of Transportation Regarding Implementation of the Federal-Aid Highway Program in Minnesota*, various stipulations of which are incorporated by reference (hereafter, Statewide PA); and under the 2008 *Programmatic Agreement Concerning Pre-1956 Historic Bridges Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the Minnesota State Historic Preservation Officer, the Department of the Army, Corps of Engineers, St. Paul District, and the Minnesota Department of Transportation*; various stipulations of which are incorporated by reference (thereafter, Historic Bridge PA); and

WHEREAS, the MnDOT Cultural Resources Unit (MnDOT CRU), on behalf of the FHWA and in consultation with the Minnesota State Historic Preservation Office (SHPO) has defined the preliminary Area of Potential Effects (APE) of the undertaking as outlined in the December 24, 2012 letter from the MnDOT CRU to SHPO; and

WHEREAS, FHWA and MnDOT CRU, in consultation with the SHPO, have identified a number of historic properties in the PROJECT's APE listed in or eligible for listing in the National Register of Historic Places (National Register) as identified in Appendix A, and SHPO has concurred with these determinations; and

WHEREAS, the MnDOT CRU, on behalf of the FHWA, has conducted archaeological surveys in portions of the APE (where access was obtained) and to date has not identified any archaeological sites that are eligible for or listed in the National Register; and

WHEREAS, the MnDOT CRU, on behalf of FHWA has identified that the PROJECT will not have an adverse effect (direct or indirect) on one or more of the identified historic properties. However, the rehabilitation plan design for Bridge 5900 and the design for Bridge 85851 are currently in process and as plans are developed, further review is necessary to identify and seek avoidance of any adverse effect (direct or indirect) on one or more of the identified historic properties; and

WHEREAS, the FHWA will be responsible for ensuring that all aspects of PROJECT implementation meet the terms of this Programmatic Agreement (PA), and the MnDOT CRU has assisted the FHWA in coordinating the Section 106 process, will administer the implementation of the PROJECT, and will complete the stipulations of this PA; and

WHEREAS, this PA was developed with appropriate public involvement (pursuant to 36 CFR 800.2(d) and 800.6(a)) coordinated with the scoping, public review and comment, and public hearings conducted on October 21, 2009, October 27, 2010, and September 27, 2012 to comply with NEPA and its implementing regulations; and

WHEREAS, a Project Advisory Committee (PAC) consisting of the SHPO, neighborhood organizations, local historical society, city and county representatives, business representatives, and various agencies was established to keep these entities informed and provide feedback on issues related to the planning, design, and construction of the PROJECT; and

WHEREAS, MnDOT, as PROJECT sponsor, has been invited by the FHWA to sign this PA in accordance with 36 CFR 800.6(c)(4); and

WHEREAS, the City of Winona is an invited party and has been invited to sign this PA in accordance with 36 CFR 800.6(c)(3); and

WHEREAS, the Winona Heritage Preservation Commission (HPC), the Preservation Alliance of Minnesota, and the Winona Area Chamber of Commerce are consulting parties and have been invited to concur with this PA in accordance with 36 CFR 800 (c)(3); and

WHEREAS, upon initiation of the Section 106 consultation process and in accordance with 36 CFR 800.2(c)(2)(ii), the FHWA in a good faith effort contacted Indian tribes that might attach religious and cultural significance to properties within the APE, inviting their participation in consultation, and no tribe requested to be a consulting party; and

WHEREAS, the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its determination to enter into this PA, since not all effects can be determined until the pending additional design work in accordance with 36 CFR 800.6(a)(1) is completed, and has provided the documentation specified in 36 CFR 800.11(e), and the ACHP has chosen not to participate in the consultation; and

NOW, THEREFORE, the FHWA and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties:

STIPULATIONS

The FHWA will ensure that the following measures are carried out:

STIPULATION I: IDENTIFICATION OF HISTORIC PROPERTIES

- A. As PROJECT activities are further defined, the MnDOT CRU, on behalf of the FHWA, will refine the APE in consultation with SHPO, as needed.
- B. If the APE is revised to include areas not previously subject to historic property identification efforts conducted as part of this PROJECT, MnDOT will conduct additional investigations in those areas pursuant to Stipulation 3 of the Statewide PA.
- C. Once MnDOT acquires the PROJECT right-of-way, MnDOT CRU will conduct additional archaeological investigations for areas that were not accessible due to lack of landowner permission. This includes archaeological testing of Parcels 67 and 87 and possibly Parcel 68, if it is determined to be in the APE. If during the design process additional parcels are identified that may be impacted or acquired, MnDOT CRU will also conduct archaeological investigations for these areas. If archaeological sites are identified within the APE, FHWA will reopen consultation with Indian tribes that might attach religious and cultural significance to those properties under 36 CFR 800.2(c)(2)(ii).
- D. Any historic properties newly identified within the APE will be added to the list of properties included in Appendix A upon written concurrence by the SHPO. An amendment to the PA under Stipulation V is not necessary unless agreed upon by the signatories to the PA.
- E. If another PROJECT alternative is chosen besides the recommended option, MnDOT CRU will consult with SHPO to determine whether an amendment to this PA is necessary under Stipulation V.

STIPULATION II. PROJECT PLAN REVIEW (BRIDGE 5900 AND 85851) AND ADDITIONAL ASSESSMENT OF EFFECT

- A. MnDOT, or its design team, will prepare rehabilitation plans for the Winona Bridge (Bridge 5900) in accordance with the Secretary of the Interior's Standards for Rehabilitation (Standards) and work to avoid and minimize adverse effects on the historic property.
- B. MnDOT, or its design team, will prepare the plans for the parallel bridge (Bridge 85851) to avoid or minimize adverse effects to the Winona Bridge and other historic properties identified in Appendix A.
- C. During PROJECT development, MnDOT or its design team will provide PROJECT plans for Bridge 5900 and Bridge 85851 or an equivalent document at 30%, 60%, and 90% completion. At each stage of development, one set of plans will be submitted to MnDOT's Historic Bridge Expert and two sets of plans will be provided to MnDOT CRU. The Historic Bridge Expert will submit comments to the MnDOT CRU Project Manager. MnDOT CRU will submit the plans and their findings of effect to SHPO for review and comment. SHPO will have

30 days to review the document and MnDOT CRU's assessment of effect. Final plans (i.e., 100% completion) will also be submitted to the SHPO by MnDOT CRU for the project record.

STIPULATION III. RESOLUTION OF ADVERSE EFFECTS ON HISTORIC PROPERTIES

If the PROJECT is determined to have an adverse effect on historic properties that cannot be avoided, MnDOT CRU on behalf of FHWA will work with SHPO and other signatories to this PA to develop and complete appropriate mitigation measures. An amendment to the PA under Stipulation V is not necessary unless agreed upon by the signatories to the PA.

STIPULATION IV. DISPUTE RESOLUTION

Should any party to this PA object at any time to any actions proposed or the manner in which the terms of the PA are implemented, FHWA will consult with the objecting party (or parties) to resolve the objection. If FHWA determines the objection(s) cannot be resolved, FHWA will follow Stipulation 7 of the Statewide PA. FHWA's responsibility to carry out all other actions subject to the terms of this PA that are not subjects of the dispute remain unchanged pending resolution.

STIPULATION V. DURATION, AMENDMENTS, AND TERMINATION

A. This PA will remain in effect from the date of execution for a period not to exceed five (5) years. If the FHWA anticipates that the terms of the PA will not be completed within this timeframe, it will notify the signatories in writing at least thirty (30) days prior to the PA's expiration date. The PA may be extended by the written concurrence of the signatories. If the PA expires and the FHWA elects to continue with the undertaking, the FHWA will reinstate review of the undertaking in accordance with 36 CFR 800.

B. If any signatory to the PA determines the PA cannot be fulfilled, or that an amendment to the terms of the PA must be made, the signatories will consult to seek an amendment to its terms using the same consultation process as that exercised in creating the original PA. The FHWA shall file any amendments with the ACHP upon execution.

C. Any signatory to this PA may terminate the PA by providing thirty (30) days written notice to the other signatories, provided the signatories consult during the period prior to termination to agree on amendments or other actions that would avoid termination. If the PA is terminated and the FHWA elects to continue with the undertaking, the FHWA will reinstate review of the undertaking in accordance with 36 CFR 800.

STIPULATION VI: IMPLEMENTATION OF THIS PA

A. This PA may be implemented in counterparts, with a separate page for each signatory. This PA will become effective on the date of the final signature. FHWA will ensure each party is provided with a complete copy and that the final PA, updates to appendices, and any amendments filed with the ACHP.

B. Execution of this PA by the FHWA and the SHPO and implementation of its terms is evidence that the FHWA has taken into account the effects of its undertaking on historic

properties and has afforded the ACHP opportunity to comment pursuant to Section 106 of the National Historic Preservation Act.

SIGNATORIES
FEDERAL HIGHWAY ADMINISTRATION (FHWA)

Derrell Turner, Division Administrator Date

MINNESOTA STATE HISTORIC PRESERVATION OFFICE (SHPO)

Barbara Mitchell Howard, Deputy State Historic Preservation Officer Date

INVITED
MINNESOTA DEPARTMENT OF TRANSPORTATION (MnDOT)

Charles A. Zelle, Commissioner Date

CITY OF WINONA

Date

CONCURRING
WINONA HISTORIC PRESERVATION COMMISSION

Date

WINONA AREA CHAMBER OF COMMERCE

Date

Appendix A: Historic Properties Identified Within the Area of Potential Effect That Have Been Listed in or Determined Eligible for the National Register of Historic Places as of 1/20/2012

(Note: NRHP is noted after properties listed in the National Register of Historic Places. The remaining properties have been determined eligible for listing in the National Register of Historic Places.)

Winona Bridge (Bridge 5900) Interstate Bridge (WN-WAC-0477)
 North Channel Bridge (WN-WAC-1142)
 Municipal Marina (WN-WAC-1260)
 Winona Monument Co. (WN-WAC-0472)
 Peter F. and Anna Schmitt House (WN-WAC-0440)
 William F. and Louisa Kohler House (WN-WAC-0441)
 Winona Waterworks (WN-WAC-0482)
 Segment of the Chicago & North Western (C&NW) Railroad (WN-WAC-1246)
 Windom Park (WN-WAC-1247)
 First Baptist Church (WN-WAC-1300)
 Central Methodist Church (WN-WAC-0258)
 First Congregational Church (WN-WAC-0246)
 St. Paul's Episcopal Church (WN-WAC-1303)
 Winona County Courthouse (NRHP listed; WN-WAC-0460)
 Winona Lumber Exchange (WN-WAC-0260)
 YMCA (WN-WAC-0458)
 C&NW Railroad Bridge (WN-WAC-0568)

Winona Commercial District/Third Street Commercial District (NRHP listed)

Properties in the Winona Commercial District/Third Street Commercial District that are individually listed in the National Register of Historic Places

- Schlitz Hotel (WN-WAC-0469)
- Winona Hotel (WN-WAC-0470)

Broadway Residential Historic District (NRHP listed)

Properties within the Broadway Residential Historic District individually eligible for or listed in the National Register:

- Winona Free Public Library (NRHP listed; WN-WAC-0261)
- Winona Senior High School and Auditorium (NRHP listed; WN-WAC-0262)
- Central Jr. High School (NRHP listed; WN-WAC-0263)
- Huff-Lamberton House (NRHP listed; WN-WAC-0544)
- Winona Masonic Temple (NRHP listed; WN-WAC-0259)
- Hannibal Choate House (WN-WAC-0448)
- William S. and Caroline Drew House (WN-WAC-0453)
- Harry S. and Sadie Youmans House (WN-WAC-0550)
- Peter and Edna Hallenbeck House (WN-WAC-0548)
- Joseph A. and Rebecca Prentiss House (WN-WAC-1305)
- Chauncey and Sarah Doud House (WN-WAC-0102)
- Daniel and Melissa Sinclair House (WN-WAC-1312)

- Central Methodist Church Chapel and Gym (WN-WAC-0258)
- Joseph S. and Laura Hoard House (WN-WAC-1250)
- First Congregational Church (WN-WAC-0246)
- First Congregational Church Parsonage (WN-WAC-0247)
- Eben M. and Clara Roberts House (WN-WAC-0252)
- John R. and Mary Lamberton Mitchell House (WN-WAC-0253)
- Herbert C. and Louise D. Garvin House (WN-WAC-1251)
- Harry L. and Ida Buck House (WN-WAC-1252)
- Moses C. and Julia Varney House (WN-WAC-1253)
- Windom Park (First Ward) (WN-WAC-1247)
- Franklin and Augusta Rising House (WN-WAC-1049)
- First Baptist Church and Parsonage (WN-WAC-1300)
- Samuel L. and Maude Prentiss House (WN-WAC-1299)
- Emma Ball House (WN-WAC-0530)
- Frank and Mary Youmans House (WN-WAC-0524)
- Frederic and Frances Bell House (WN-WAC-0314)
- Abner F. Hodgins House (NRHP listed; WN-WAC-0315)
- St. Paul's Episcopal Church and Parish House (WN-WAC-1303)
- Central Methodist Church Parsonage (WN-WAC-1249)
- Allison W. and Anna Laird House (WN-WAC-1279)
- Otis M. and Lucretia Botsford House (WN-WAC-0255)
- Emory G. and Elizabeth Nevius House (WN-WAC-1278)
- Leslie L. and Lulu Brown House (WN-WAC-0305)
- George and Elizabeth Whitman House (WN-WAC-0293)
- Walter and Emma Anderson House (WN-WAC-1139)
- Dr. Linn A. and Abbie Kelly House (WN-WAC-0264)

APPENDIX F

NOISE REPORT

Traffic Noise Analysis Report

for

Winona Bridge Project
S.P. 8503-46

In the City of Winona, Winona County

July 2013

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A. Introduction

Purpose of Noise Analysis

The purpose of this noise analysis is to evaluate and document the effect of the proposed Winona Bridge Project (S.P. 8503-46) on traffic generated noise levels. This traffic noise analysis was completed consistent with the guidance and requirements of the Minnesota Department of Transportation (MnDOT) traffic noise policy (MnDOT Noise Policy for Type I Federal-aid Projects as per 23 CFR 772, effective June 1, 2011).¹

General Project Description

The proposed project includes construction of a new two-lane girder bridge (Bridge #85851) upstream of the existing Winona Bridge (TH 43) over the Mississippi River. Following new bridge construction, the existing bridge (Bridge #5900) would be rehabilitated while the new bridge carries traffic. The project also includes improvements to the 4th Street/Winona Street intersection.

Background Information on Noise

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

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

Table 1 provides a rough comparison of the noise levels of some common noise sources.

¹ The MnDOT Noise Policy is available online on the MnDOT Office of Environmental Stewardship website at <http://www.dot.state.mn.us/environment/noise/pdf/2011mndotnoisepolicy.pdf>.

**TABLE 1
DECIBEL LEVELS OF COMMON NOISE SOURCES**

Sound Pressure Level (dBA)	Noise Source
140	Jet Engine (at 75 feet)
130	Jet Aircraft (at 300 feet)
120	Rock and Roll Concert
110	Pneumatic Chipper
100	Jointer/Planer
90	Chainsaw
80	Heavy Truck Traffic
70	Business Office
60	Conversational Speech
50	Library
40	Bedroom
30	Secluded Woods
20	Whisper

Source: "A Guide to Noise Control in Minnesota," Minnesota Pollution Control Agency, <http://www.pca.state.mn.us/index.php/view-document.html?gid=5355>

Along with the volume of traffic and other factors (e.g., topography of the area and vehicle speed) that contribute to the loudness of traffic noise, the distance of a receptor from a sound's source is also an important factor. Sound level decreases as distance from a source increases. A general rule regarding sound level decrease due to increasing distance from a line source (roadway) that is commonly used is: beyond approximately 50 feet from the sound source, each doubling of distance from the line source over hard ground (such as pavement or water) will reduce the sound level by approximately 3 dBA, whereas each doubling of distance from a line source over soft ground (such as vegetated or grassy ground) results in a sound level decrease of approximately 4.5 dBA.

Federal Traffic Noise Regulations

The Federal Highway Administration's (FHWA) traffic noise regulation is described in 23 Code of Federal Regulations (CFR) Part 772 (Procedures for Abatement of Highway Traffic Noise and Construction Noise). 23 CFR 772 requires the identification of highway traffic noise impacts and the evaluation of potential noise abatement measures, along with other considerations, in conjunction with the planning and design of a Federal-aid highway project. The MnDOT policy for implementation of the requirements of 23 CFR 772 is described in the *MnDOT Noise Policy for Type I Federal-aid Projects* (effective June 1, 2011). The MnDOT Highway Noise Policy applies to all projects that receive Federal-aid funds or projects that are subject to FHWA approval.

A traffic noise impact analysis is required for all Type I Federal-aid projects. Type I projects are defined in 23 CFR 772.5. The proposed Winona Bridge Project meets the definition of a Type I project (bridge replacement projects that physically alter the existing highway). Therefore, a traffic noise analysis is required for the proposed action.

A traffic noise impact analysis is completed for all Federal or Federal-aid Type I projects meeting one or more of seven criteria defined in 23 CFR 772.5. If any segment or component of an alternative meets the definition of a Type I project, then the entire project is considered to be Type I and is subject to the noise analysis requirements. Noise impacts are determined based on land use activities and predicted worst hourly L_{10} noise levels under future conditions. For residential land uses (Activity Category B), the Federal Noise Abatement Criterion is 70 dBA (L_{10}). Federal Noise Abatement Criteria (L_{10}) are shown in Table 2.

TABLE 2
23 CFR 772: FEDERAL NOISE ABATEMENT CRITERIA

Activity Category	Activity Criteria ⁽¹⁾⁽²⁾	Evaluation Location	Activity Description
	$L_{10}(h)$		
A	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an 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⁾	70	Exterior	Residential
C ⁽³⁾	70	Exterior	Active sport areas, amphitheatres, 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	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⁾	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 L_{10} value.

⁽²⁾ The $L_{10}(h)$ 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.

Receptor locations where noise levels are “approaching” or exceeding the criterion level must also be evaluated for noise abatement feasibility and reasonableness. A noise impact is also defined as a “substantial increase” in the future modeled noise levels over the existing modeled noise levels. In Minnesota, “approaching” is defined as 1 dBA or less below the Federal Noise Abatement Criteria. For example, 69 dBA (L₁₀) is defined as “approaching” the Federal Noise Abatement Criteria for residential land uses (Activity Category B). A “substantial increase” is defined as an increase of 5 dBA or greater from existing to future conditions.

Minnesota State Noise Standards

Minnesota state noise standards have been established for daytime and nighttime periods. For residential land uses (identified as Noise Area Classification 1 or NAC-1), the Minnesota State standards for L₁₀ are 65 dBA for daytime and 55 dBA for nighttime; the standards for L₅₀ are 60 dBA for daytime and 50 dBA for nighttime. The Minnesota Pollution Control Agency (MPCA) defines daytime as 7:00 a.m. to 10:00 p.m. and nighttime from 10:00 p.m. to 7:00 a.m. State noise standards are depicted in Table 3. Minnesota State noise standards apply to the outdoor atmosphere (i.e., exterior noise levels).

**TABLE 3
MINNESOTA STATE NOISE STANDARDS**

MPCA State Noise Standards					
Land Use	Code	Daytime (7 a.m. – 10 p.m.) dBA		Nighttime (10 p.m. – 7 a.m.) dBA	
Residential	NAC-1 ⁽¹⁾	L ₁₀ of 65	L ₅₀ of 60	L ₁₀ of 55	L ₅₀ of 50
Commercial	NAC-2 ⁽²⁾	L ₁₀ of 70	L ₅₀ of 65	L ₁₀ of 70	L ₅₀ of 65
Industrial	NAC-3 ⁽³⁾	L ₁₀ of 80	L ₅₀ of 75	L ₁₀ of 80	L ₅₀ 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.

State noise standards apply to trunk highway facilities. TH 43 is a State Trunk Highway facility; therefore, the State noise standards apply to the existing and proposed TH 43 Winona Bridge. Exemptions to State noise standards are found in Minnesota Statutes 2000, Section 116.07 subd. (2a). There is stated the conditions and roadway types that are exempt from the State noise standards.

B. Analysis Methodology

Affected Environment

The purpose of this noise analysis is to determine the effect of the proposed project on traffic-generated noise levels. It is also important to note that the project setting includes other noise sources in the area that may have some effect on ambient noise levels.

The Winona Bridge Project is located in the City of Winona, Minnesota. Existing land uses within the vicinity of proposed Winona Bridge project include medium to high density residential, commercial, industrial, and park/trail land uses. Traffic noise is generated by vehicles traveling on TH 43 and other local roadways within the project area. There is also a low volume Union Pacific railway that runs parallel to the Mississippi River on the south side of the project area. For purposes of this traffic noise analysis, the project segment of TH 43 extends from 5th Street West on the south to the touchdown point of the northern back-channel bridge (Bridge #5930) on the north.

Noise Monitoring

Noise Level Monitoring

Noise level monitoring is commonly performed during a noise study to document existing noise levels. Existing noise levels were monitored at four sites adjacent to proposed construction areas and were chosen to represent areas of outdoor human activity. Noise monitoring locations are described below (see also Figure 1 in Appendix A of this report).

- Monitoring site 1 (Receptor A1) is located at the YMCA (207 Winona Street).
- Monitoring site 2 (Receptor H19) is located on the Levee Park Trail on the east side of the existing bridge.
- Monitoring site 3 (Receptor I1) is located at the Winona Marina (1 Latsch Island).
- Monitoring site 4 (Receptor J1) is located at the boathouses along the Mississippi River shoreline (101 Latsch Island).

Daytime noise levels were monitored on October 2, 2012. Noise levels were monitored at each location twice; once during the morning and again during the afternoon.² A trained noise monitoring technician was present at each session for the entire monitoring session to ensure correct operation of the instrumentation. Field measurements of daytime noise levels are tabulated in Table 4. Monitored daytime traffic noise levels ranged from 57.5 dBA (L₁₀) to 64.0 dBA (L₁₀).

² Note: Monitoring Site 1 (Receptor A1) was only monitored in the afternoon due to time constraints.

**TABLE 4
NOISE MEASUREMENT SUMMARY TABLE**

Receptor ID	Location Description	Measurement Time		Measured Level, dBA	
		Start	End	L ₁₀	L ₅₀
A1	Entrance of YMCA facing Winona Street	N/A	N/A	N/A	N/A
		4:33 p.m.	5:05 p.m.	64.0	58.5
H19	Levee Trail on east side of TH 43 bridge	10:39 a.m.	11:11 a.m.	61.0	56.0
		2:42 p.m.	3:22 p.m.	60.0	56.5
I1	At Marina on west side of TH 43	9:41 a.m.	9:13 a.m.	61.0	63.5
		1:35 p.m.	2:20 p.m.	59.5	54.0
J1	Near boathouses on east side of TH 43	8:55 a.m.	9:25 a.m.	59.0	54.0
		12:50 p.m.	1:20 p.m.	57.5	53.0

N/A: not applicable. No morning measurement at Receptor A1.

Noise Monitoring and Predicted Noise Levels

Noise monitoring results are presented in Table 5 along with the computer modeling results for existing daytime traffic noise levels using classified traffic counted during the measurement periods. The speeds used for the model predictions were posted speeds (e.g., 40 miles per hour [mph] on the existing TH 43 bridge). Noise monitoring results presented in Table 5 are an average of the morning and afternoon measurements described above.

**TABLE 5
NOISE MONITORING AND PREDICTED NOISE LEVELS**

Receptor ID	Field Measurements (dBA) ⁽¹⁾		Modeled Noise Levels (dBA) ⁽²⁾		Difference	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
A1	64.0	58.5	65.4	57.9	1.4	-0.6
H19	60.5	56.3	59.2	53.1	-1.3	-3.2
I1	59.5	54.0	62.5	55.8	3.0	1.8
J1	58.3	53.5	61.7	54.6	3.4	1.1

⁽¹⁾ Average of morning and afternoon field measurements.

⁽²⁾ Modeled noise levels using classified traffic counted during measurement periods.

A discrepancy equal to or less than 3.0 dBA between predicted levels and field measurements is considered acceptable for noise model validation. Monitored levels were between 1.3 dBA less to 3.4 dBA greater than modeled noise levels using classified traffic counted during

measurement periods (e.g., cars, medium trucks, heavy trucks). As shown in Table 5, monitored levels were within the 3.0 dBA threshold at three of the four receptor locations.

Although the discrepancy between field measurements and predicted levels was slightly greater than 3.0 dBA (L_{10}) for Receptor J1, considering the time of year (season) and variation in vehicle noise emissions, vehicle speeds, wind speed and direction, and ground cover, the differences are acceptable. It is known that the noise model will tend to predict high as it was developed and initially calibrated in truly neutral climatological conditions and with very uniform ground cover. Add to this that the noise emission levels used are average for the various vehicle classes used.

Worst Hourly Traffic Noise Analysis

In general, higher traffic volumes, vehicle speeds, and numbers of heavy trucks increases the loudness of highway traffic noise. The worst hourly traffic noise impact typically occurs when traffic is flowing more freely and when heavy truck volumes are the greatest. For determining the worst-case traffic noise hour, traffic noise levels for eight time periods were modeled at 12 representative receptor locations along the project corridor under existing conditions, taking into account the appropriate vehicle mix (i.e., cars, medium trucks, heavy trucks), seasonal traffic variations where appropriate, and directional split in traffic volume (i.e., northbound TH 43 versus southbound TH 43).³

The daytime L_{10} and L_{50} levels for each of the eight modeled time periods are summarized in Table 6 for the 12 representative receptor locations along the Winona Bridge project corridor. Based on this analysis, it was determined that the time period from 3:00 p.m. to 4:00 p.m. represents the worst-case traffic noise hour. The 3:00 p.m. to 4:00 p.m. represents a period of higher medium and heavy truck volumes, combined with higher overall traffic volumes, compared to other times of the day. The 6:00 a.m. to 7:00 a.m. hour was identified as the loudest hour of the nighttime period because of higher traffic volumes just prior to the start of the morning peak period.

³ Identification of the worst-case traffic noise hour was based on 24-hour vehicle classification counts on the TH 43 Winona Bridge in November 2012.

**TABLE 6
WORST HOURLY TRAFFIC NOISE SUMMARY**

Receptor ID	Existing Daytime Modeled Noise Level (dBA) by Time Period													
	7-8 a.m.		8-9 a.m.		9-10 a.m.		10-11 a.m.		3-4 p.m.		4-5 p.m.		5-6 p.m.	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
A1 (NRHP)	65.4	57.8	65.1	57.1	65.4	57.6	65.5	57.8	66.5	59.2	65.7	57.9	64.5	56.1
A3 (NRHP)	62.4	55.3	62.0	54.8	62.3	55.2	62.4	55.4	63.8	57.1	63.3	56.3	62.3	54.9
B6 (R)	60.8	55.5	60.4	54.7	60.6	54.9	60.7	55.1	61.6	56.8	60.7	55.8	59.5	54.4
C1 (R)	68.2	59.2	68.8	59.8	69.7	60.8	69.7	60.9	69.9	61.5	68.5	59.9	66.8	57.8
D2 (NRHP)	61.7	55.2	61.4	54.5	61.6	54.8	61.8	55.0	62.5	56.4	61.2	55.0	59.7	53.3
E1 (C)	63.6	58.2	63.8	58.1	64.3	58.7	64.4	58.9	64.6	59.7	63.2	58.1	61.6	56.2
F2 (C)	63.5	57.7	63.4	57.4	63.8	57.9	63.9	58.1	64.4	59.0	62.9	57.4	61.4	55.5
H1 (I)	62.3	55.9	62.3	55.8	62.8	56.4	62.9	56.6	63.1	57.1	61.3	55.0	59.5	52.7
H14a (R)	58.5	53.8	58.5	53.5	58.8	54.0	59.0	54.2	59.3	55.0	57.9	53.5	56.4	51.7
H19 (T)	56.6	51.9	56.4	51.4	56.6	51.7	56.8	51.9	57.3	53.0	55.9	51.5	54.4	49.7
I1 (NRHP)	61.4	55.4	60.9	54.4	61.0	54.5	61.2	54.7	62.1	56.3	60.7	54.9	59.2	53.1
J1 (R)	59.4	53.3	59.1	52.6	59.4	52.9	59.6	53.1	60.1	54.2	58.5	52.3	56.7	50.2
State Daytime Standard (NAC-1)	65	60	65	60	65	60	65	60	65	60	65	60	65	60
State Daytime Standard (NAC-2)	70	65	70	65	70	65	70	65	70	65	70	65	70	65
State Daytime Standard (NAC-3)	80	75	80	75	80	75	80	75	80	75	80	75	80	75
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	70	--	70	--	70	--	70	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	75	--	75	--	75	--	75	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

Traffic Noise Modeling

Traffic noise impacts were assessed by modeling noise levels at receptor sites likely to be affected by construction of the proposed project. Traffic noise levels were modeled at 89 representative receptor locations within the project area representing residential, commercial, industrial, and trail land uses. The locations of the model receptor locations are illustrated Figure 1 in Appendix A of this report. Land uses are listed with each modeled receptor location in Tables 7 and 8. Note that parcels planned for total acquisition under the proposed project were not assigned receptor locations because these residences/buildings will no longer exist under Build conditions (refer to the right of way discussion in Section IV.B of the EA/EAW). Properties that have been identified for total acquisition are also noted in Figure 1 in Appendix A.

Noise modeling was done using the noise prediction program “MINNOISEV31”, a version of the FHWA “STAMINA” model adapted by MnDOT. This model uses traffic volumes, speed, class of vehicle, and the typical characteristics of the roadway being analyzed (e.g., roadway horizontal and vertical alignment). The noise modeling assumed free-flow conditions (volumes and speeds) through signalized intersections along the project segment of TH 43. Traffic data input into the MINNOISEV31 noise model input files for the proposed project included existing (year 2009) and future (year 2038) No Build and Build forecast traffic volumes. Based on meeting discussions with MnDOT, City of Winona staff, and various other technical advisory committee members, it was determined that traffic forecasts would be developed for 20-year and 50-year horizons (year 2038 and year 2068). While any future bridge structure (rehabilitation or reconstruction) is expected to have a life span of 100 years, the 20-year and 50-year horizons provide timeframes that can be reasonably projected and analyzed with modest confidence. Therefore, year 2038 was identified as the future year for analysis for the traffic noise analysis.

The daytime hour of analysis was the 3:00 to 4:00 p.m. hour (see Worst Hourly Traffic Noise Analysis discussion above), which represents approximately 8.3 percent of average daily traffic (ADT) on the TH 43 bridge. The nighttime hour of analysis was the 6:00 to 7:00 a.m. hour, which represents approximately 5.4 percent of ADT. The identified vehicle class mix along TH 43 was 92 percent cars, 3 percent medium trucks, and 6 percent heavy trucks based on traffic data collected on the TH 43 Winona Bridge in November 2012.

C. Predicted Noise Levels and Noise Impacts

Noise Receptors

Traffic noise impacts were assessed by modeling noise levels at receptor sites that will be affected by the construction of the proposed project. Modeled receptor locations adjacent to the project corridor are described below.

Traffic noise levels were modeled at a total of 89 receptor locations in the project area. Of these modeled receptor sites, 50 represent residential land uses, 17 represent commercial/office land uses, 5 represent industrial land uses, 10 represent the Levee Trail, and 7 represent properties that are listed on the National Register of Historic Places (NRHP) or determined eligible for NRHP listing. Noise receptor locations are identified in Figure 1, Appendix A and their respective land

uses are listed in Tables 7 and 8. Modeled receptor locations adjacent to the project corridor are summarized below.

- Receptors G2 through G6 and H15 through H19 represent the Levee Trail, which is owned and maintained by the City of Winona. A portion of the trail is located within Levee Park along the south side of the Mississippi River and adjacent to the TH 43 Winona Bridge. Levee Park does not have any active outdoor use areas adjacent to the project area besides the trail. Representative receptor locations were placed at 100-foot intervals along the trail out to a distance of approximately 500 feet to the east of the existing TH 43 bridge and 500 feet west of the proposed bridge.
- Seven (7) modeled receptor locations were identified to represent properties that are listed on the NRHP or determined eligible for NRHP listing. These receptor locations are identified using the code “NRHP” in Table 7 and Table 8. The NRHP properties fall under Federal Activity Category C (see Table 2) and the applicable area classification under State Noise Standards (e.g., NAC-1 for residential uses, NAC-2 for commercial/retail/office uses) (see Table 3).
- Over half of the modeled receptor locations represent residential land uses. Modeled receptor locations for residential properties were placed between the right of way limits and the side of the home/apartment facing or nearest to TH 43 (i.e., at the front entrance to the residence). At several residential properties, representative receptor locations were placed in the backyard or along the side of the house if an area of frequent outdoor use was easily identifiable (e.g., pool, backyard patio/deck, playground, etc.).
- One residential condominium building (River View Condos) is located along the south side of the Mississippi River to the east of the existing TH 43 Winona Bridge. The condominium has balconies associated with individual units (Receptors H14a through H14p). These balconies represent the sole area of frequent outdoor use associated with each unit; therefore, modeled receptor locations were assigned to these balconies.
- Twenty-two (22) of the modeled receptor locations represent commercial or industrial land uses. If the commercial/industrial property had an area designated for outdoor activity (e.g., patios, benches, outdoor dining areas), then the modeled receptor was placed at this location. If no area of frequent outdoor use was identified, the modeled receptor point was placed at the entrance of the commercial/industrial building closest to TH 43 (i.e., along the façade of the building facing TH 43 or along the side of the building at the entrance closest to TH 43). Commercial and industrial land uses were identified using the City of Winona’s Existing Land Use Plan (August 2007).

Model Results

Results of the noise modeling analysis for existing (2009) conditions, the No Build Alternative (2038), and the Build Alternative (2038) are tabulated in Table 7 (daytime) and Table 8 (nighttime). The results of the traffic noise modeling analysis are summarized below.

Existing daytime L_{10} modeled noise levels at modeled receptor locations range from 58.7 dBA to 70.9 dBA, whereas nighttime L_{10} modeled noise levels range from 55.9 dBA to

67.6 dBA. Modeled daytime traffic noise levels exceed State daytime L_{10} standards at 14 modeled receptor locations under existing conditions. Modeled daytime traffic noise levels exceed State daytime L_{50} standards at 5 modeled receptor locations under existing conditions. Modeled nighttime traffic noise levels exceed State nighttime L_{10} standards at 51 modeled receptor locations under existing conditions. Modeled nighttime traffic noise levels exceed State nighttime L_{50} standards at 49 modeled receptor locations.

Future (2038) daytime L_{10} modeled noise levels under the No Build Alternative are predicted to range from 59.6 dBA to 72.2 dBA, whereas nighttime L_{10} modeled noise levels are predicted to range from 56.9 dBA to 69.0 dBA. Modeled daytime traffic noise levels are predicted to increase by 0.7 dBA to 1.7 dBA (L_{10}) under the No Build Alternative compared to existing conditions as result of forecast traffic growth on TH 43 and local roadways in downtown Winona. Modeled traffic noise levels are predicted to exceed State daytime L_{10} standards at 18 modeled receptor locations under the No Build Alternative. Modeled traffic noise levels are predicted to exceed State daytime L_{50} standards at 9 modeled receptor locations. Modeled nighttime traffic noise levels are predicted to exceed State nighttime L_{10} standards at 51 modeled receptor locations under the No Build Alternative. Modeled nighttime traffic noise levels are predicted to exceed State nighttime L_{50} standards at 50 modeled receptor locations under the No Build Alternative.

Daytime L_{10} modeled noise levels are predicted to range from 59.4 dBA to 71.9 dBA under the future (2038) Build Alternative, whereas nighttime L_{10} modeled noise levels are predicted to range from 56.9 dBA to 68.2 dBA under the future Build Alternative. Modeled daytime traffic noise levels are predicted to increase by up to 2.4 dBA (L_{10}) under the Build Alternative compared to existing conditions. Modeled L_{10} noise levels are predicted to exceed State daytime L_{10} standards at 17 modeled receptor locations under the Build Alternative. Modeled daytime traffic noise levels are predicted to exceed State daytime L_{50} standards at nine modeled receptor locations. Modeled nighttime traffic noise levels are predicted to exceed State nighttime L_{10} standards at 51 modeled receptor locations under the Build Alternative. Modeled nighttime traffic noise levels are predicted to exceed State L_{50} standards at 50 modeled receptor locations.

Modeled L_{10} noise levels are projected to approach or exceed the Federal Noise Abatement Criterion for Activity Category B (residential land uses) at seven modeled receptor locations (Receptors B8, B9, B11, B12, C1, C2, and C3) under the future (2038) Build Alternative. None of the modeled receptor locations are projected to experience a substantial increase in traffic noise levels from existing conditions to the future Build Alternative.

**TABLE 7
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME**

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
A1 (NRHP) (1) ⁽²⁾	64.0	58.5	66.5	59.2	67.7	60.9	1.2	1.7	67.5	60.6	1.0	1.4
A2 (R) (6)			66.4	58.1	67.2	59.3	0.8	1.2	67.2	59.2	0.8	1.1
A3 (NRHP) (1) ⁽³⁾			63.7	57.2	64.7	58.6	1.0	1.4	64.7	58.6	1.0	1.4
B1 (R) (12)			64.9	56.9	66.1	58.5	1.2	1.6	66.0	58.4	1.1	1.5
B2 (R) (1)			65.5	57.0	66.4	58.2	0.9	1.2	66.3	58.0	0.8	1.0
B3 (R) (1)			65.6	56.8	66.4	57.9	0.8	1.1	66.4	57.8	0.8	1.0
B4 (R) (14)			64.4	55.9	65.2	57.0	0.8	1.1	65.1	56.9	0.7	1.0
B5 (R) (1)			61.2	56.0	62.1	57.3	0.9	1.3	62.0	57.2	0.8	1.2
B6 (R) (1)			61.7	57.0	62.7	58.3	1.0	1.3	62.5	58.1	0.8	1.1
B7 (R) (1)			62.5	56.6	63.6	58.1	1.1	1.5	63.4	57.9	0.9	1.3
B8 (R) (1)			68.3	59.2	69.6	61.0	1.3	1.8	69.4	60.8	1.1	1.6
B9 (R) (1)			68.3	59.5	69.7	61.3	1.4	1.8	69.2	61.0	0.9	1.5
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

⁽²⁾ Receptor A1 represents the YMCA (historic property recommended eligible for NRHP listing), which falls under Federal Activity Category C and Minnesota State Noise Area Classification 2.

⁽³⁾ Receptor A3 represents the Huff-Lamberton House (historic property listed on the NRHP), which falls under Federal Activity Category B and Minnesota State Noise Area Classification 1.

TABLE 7 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
B10 (R) (1)			63.1	57.7	64.1	59.2	1.0	1.5	63.8	58.8	0.7	1.1
B11 (R) (1)			69.1	60.5	70.4	62.3	1.3	1.8	69.8	61.9	0.7	1.4
B12 (R) (1)			69.7	61.6	71.0	63.4	1.3	1.8	70.4	63.0	0.7	1.4
B13 (R) (1)			66.1	57.9	67.4	59.8	1.3	1.9	67.2	59.5	1.1	1.6
C1 (R) (3)			69.9	61.5	70.9	62.9	1.0	1.4	70.8	62.7	0.9	1.2
C2 (R) (1)			70.1	61.4	71.1	62.9	1.0	1.5	71.1	62.7	1.0	1.3
C3 (R) (4)			70.5	61.6	71.5	63.1	1.0	1.5	71.5	63.0	1.0	1.4
C4 (R) (6)			67.7	59.7	68.7	61.1	1.0	1.4	68.7	61.0	1.0	1.3
C5 (R) (1)			63.8	55.9	64.9	57.6	1.1	1.7	64.8	57.5	1.0	1.6
C6 (R) (4)			61.7	53.7	62.7	55.4	1.0	1.7	62.6	55.2	0.9	1.5
C7 (R) (2)			59.7	49.7	60.8	51.6	1.1	1.9	60.6	51.2	0.9	1.5
C8 (R) (1)			58.7	54.4	59.6	55.7	0.9	1.3	59.4	55.3	0.7	0.9
C9 (R) (1)			59.7	54.5	60.6	56.1	0.9	1.6	60.3	55.6	0.6	1.1
C10 (R) (1)			62.0	52.4	63.2	54.5	1.2	2.1	62.9	54.0	0.9	1.6
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

TABLE 7 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
C11 (R) (1)			62.7	53.2	64.0	55.2	1.3	2.0	63.7	54.7	1.0	1.5
C12 (C) (1)			64.4	55.2	65.6	57.1	1.2	1.9	65.4	56.7	1.0	1.5
D1 (C) (1)			65.3	59.7	66.5	61.3	1.2	1.6	66.4	61.2	1.1	1.5
D2 (NRHP) (1) ⁽²⁾			63.2	57.1	64.4	58.8	1.2	1.7	64.3	58.7	1.1	1.6
D3 (NRHP) (1) ⁽³⁾			61.1	55.5	62.4	57.0	1.3	1.5	62.4	56.9	1.3	1.4
E1 (C) (1)			65.9	60.3	67.0	61.9	1.1	1.6	65.5	60.1	-0.4	-0.2
E2 (C) (1)			67.8	59.8	68.9	61.3	1.1	1.5	68.7	60.9	0.9	1.1
F1 (C) (1)			70.9	63.2	72.2	65.0	1.3	1.8	71.9	64.7	1.0	1.5
F2 (C) (1)			65.6	59.3	66.8	61.0	1.2	1.7	66.5	60.8	0.9	1.5
F3 (R) (1)			62.5	57.6	63.5	59.1	1.0	1.5	63.4	59.0	0.9	1.4
F4 (C) (1)			62.7	57.2	64.0	58.7	1.3	1.5	63.8	58.6	1.1	1.4
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

⁽²⁾ Receptor D2 represents the Winona County Courthouse (historic property listed on the NRHP), which falls under Federal Activity Category C and Minnesota State Noise Area Classification 2.

⁽³⁾ Receptor D3 represents the Winona Hotel (historic property listed on the NRHP, part of Winona Commercial District), which falls under Federal Activity Category C and Minnesota State Noise Area Classification 1.

TABLE 7 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
F5 (NRHP) (1) ⁽²⁾			62.2	57.4	63.2	58.8	1.0	1.4	63.0	58.7	0.8	1.3
F6 (C) (1)			62.7	54.7	64.3	56.5	1.6	1.8	64.2	56.4	1.5	1.7
F7 (C) (1)			67.5	59.6	68.2	60.5	0.7	0.9	68.1	60.4	0.6	0.8
G1 (C) (1)			63.9	58.5	64.8	59.9	0.9	1.4	64.3	58.9	0.4	0.4
G2 (T) (1)			66.4	57.7	67.3	58.9	0.9	1.2	67.4	59.0	1.0	1.3
G3 (T) (1)			63.5	57.3	64.4	58.8	0.9	1.5	64.5	58.8	1.0	1.5
G4 (T) (1)			62.9	57.4	64.0	58.9	1.1	1.5	63.7	58.5	0.8	1.1
G5 (T) (1)			63.8	57.2	65.0	58.9	1.2	1.7	64.4	58.2	0.6	1.0
G6 (T) (1)			62.5	55.7	63.7	57.4	1.2	1.7	62.6	56.0	0.1	0.3
H1 (I) (1)			63.4	57.3	64.6	59.0	1.2	1.7	64.7	59.2	1.3	1.9
H2 (I) (1)			67.3	60.3	68.5	62.0	1.2	1.7	68.7	62.4	1.4	2.1
H3 (I) (1)			65.9	59.7	67.1	61.4	1.2	1.7	67.2	61.6	1.3	1.9
H4 (I) (1)			67.9	61.2	69.1	62.9	1.2	1.7	68.9	62.6	1.0	1.4
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

⁽²⁾ Receptor F5 represents the Winona Monument Company (historic property determined eligible for NRHP listing), which falls under Federal Activity Category C and Minnesota State Noise Area Classification 2.

TABLE 7 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
H5 (C) (1)			69.4	61.1	70.7	62.8	1.3	1.7	70.6	62.7	1.2	1.6
H6 (C) (1)			63.7	58.0	64.5	59.3	0.8	1.3	64.4	59.2	0.7	1.2
H7 (C) (1)			61.9	56.6	62.7	57.9	0.8	1.3	62.6	57.8	0.7	1.2
H8 (C) (1)			62.7	56.7	63.4	57.9	0.7	1.2	63.3	57.8	0.6	1.1
H9 (R) (1)			63.3	56.2	64.0	57.3	0.7	1.1	64.0	57.2	0.7	1.0
H10 (C) (1)			61.7	56.0	62.5	57.3	0.8	1.3	62.4	57.2	0.7	1.2
H11 (C) (1)			59.1	54.4	60.1	55.8	1.0	1.4	60.0	55.7	0.9	1.3
H12 (I) (1)			60.1	55.2	61.1	56.7	1.0	1.5	61.0	56.5	0.9	1.3
H13 (C) (1)			61.5	56.5	62.5	57.9	1.0	1.4	62.3	57.8	0.8	1.3
H14a (R) (1)			61.9	56.4	63.0	58.0	1.1	1.6	62.7	57.8	0.8	1.4
H14b (R) (1)			61.9	56.5	63.1	58.1	1.2	1.6	62.8	57.9	0.9	1.4
H14c (R) (1)			62.0	56.7	63.1	58.2	1.1	1.5	62.9	58.1	0.9	1.4
H14d (R) (1)			62.1	56.8	63.2	58.3	1.1	1.5	62.9	58.1	0.8	1.3
H14e (R) (1)			61.4	56.1	62.5	57.7	1.1	1.6	62.3	57.5	0.9	1.4
H14f (R) (1)			61.5	56.2	62.6	57.8	1.1	1.6	62.3	57.6	0.8	1.4
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

TABLE 7 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
H14g (R) (1)			61.5	56.3	62.6	57.9	1.1	1.6	62.4	57.7	0.9	1.4
H14h (R) (1)			61.6	56.4	62.7	58.0	1.1	1.6	62.4	57.8	0.8	1.4
H14i (R) (1)			60.9	55.8	62.0	57.3	1.1	1.5	61.8	57.2	0.9	1.4
H14j (R) (1)			61.0	55.9	62.0	57.4	1.0	1.5	61.8	57.2	0.8	1.3
H14k (R) (1)			61.0	56.0	62.1	57.5	1.1	1.5	61.9	57.3	0.9	1.3
H14l (R) (1)			61.1	56.0	62.1	57.6	1.0	1.6	61.9	57.4	0.8	1.4
H14m (R) (1)			60.4	55.4	61.4	56.9	1.0	1.5	61.3	56.8	0.9	1.4
H14n (R) (1)			60.4	55.5	61.5	57.0	1.1	1.5	61.3	56.9	0.9	1.4
H14o (R) (1)			60.5	55.6	61.5	57.1	1.0	1.5	61.3	56.9	0.8	1.3
H14p (R) (1)			60.5	55.6	61.6	57.1	1.1	1.5	61.4	57.0	0.9	1.4
H15 (T) (1)			59.2	53.7	60.4	55.3	1.2	1.6	61.6	55.7	2.4	2.0
H16 (T) (1)			61.7	55.3	62.9	57.0	1.2	1.7	63.5	57.4	1.8	2.1
H17 (T) (1)			63.0	56.5	64.2	58.2	1.2	1.7	63.9	58.0	0.9	1.5
H18 (T) (1)			61.7	55.8	62.9	57.5	1.2	1.7	62.6	57.3	0.9	1.5
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

TABLE 7 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored Noise Levels (dBA) ⁽¹⁾		Daytime Modeled Noise Levels (dBA)									
			Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
			L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
H19 (T) (1)	60.5	56.3	60.6	55.1	61.8	56.7	1.2	1.6	61.5	56.6	0.9	1.5
H20 (NRHP) (1) ⁽²⁾			59.3	54.3	60.4	55.8	1.1	1.5	60.2	55.7	0.9	1.4
I1 (NRHP) (1) ⁽³⁾	59.5	54.0	64.5	59.0	65.7	60.7	1.2	1.7	64.7	59.5	0.2	0.5
J1 (R) (5)	58.3	53.5	63.5	57.4	64.7	59.1	1.2	1.7	64.5	58.9	1.0	1.5
J2 (R) (2)			60.4	55.1	61.6	56.8	1.2	1.7	61.4	56.6	1.0	1.5
J3 (R) (1)			62.9	57.6	64.1	59.3	1.2	1.7	63.8	58.9	0.9	1.3
J4 (R) (6)			60.5	55.2	61.6	56.9	1.1	1.7	61.6	56.8	1.1	1.6
J5 (R) (5)			60.8	55.2	62.0	56.9	1.2	1.7	61.9	56.8	1.1	1.6
J6(R) (5)			62.7	56.4	64.0	58.1	1.3	1.7	63.9	58.0	1.2	1.6
J7 (R) (1)			64.5	57.6	65.8	59.5	1.3	1.9	65.7	59.3	1.2	1.7
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	5.0	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	5.0	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC) or have a “substantial increase” of 5 dBA or greater from existing to future Build conditions.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Average of daytime (morning and afternoon) monitored noise levels.

⁽²⁾ Receptor H20 represents the Winona Water Works (historic property recommended eligible for NRHP listing), which falls under Federal Activity Category C and Minnesota State Noise Area Classification 3.

⁽³⁾ Receptor I1 represents the Winona Municipal Marina (historic property recommended eligible for NRHP listing), which falls under Federal Activity Category C and Minnesota State Noise Area Classification 2.

**TABLE 8
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: NIGHTTIME**

Receptor*	Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
A1 (NRHP) (1) ⁽²⁾	63.3	55.2	64.7	56.8	1.4	1.6	64.8	56.9	1.5	1.7
A2 (R) (6)	63.0	53.5	63.8	54.8	0.8	1.3	63.8	54.8	0.8	1.3
A3 (NRHP) (1) ⁽³⁾	60.5	52.7	61.6	54.1	1.1	1.4	61.7	54.4	1.2	1.7
B1 (R) (12)	61.6	52.8	62.9	54.2	1.3	1.4	62.8	54.0	1.2	1.2
B2 (R) (1)	62.2	52.5	63.0	53.7	0.8	1.2	62.9	53.6	0.7	1.1
B3 (R) (1)	62.2	52.3	62.9	53.4	0.7	1.1	62.9	53.4	0.7	1.1
B4 (R) (14)	61.1	51.4	61.8	52.6	0.7	1.2	61.7	52.5	0.6	1.1
B5 (R) (1)	58.6	52.2	59.4	53.7	0.8	1.5	59.3	53.5	0.7	1.3
B6 (R) (1)	59.2	53.3	60.2	54.8	1.0	1.5	60.0	54.5	0.8	1.2
B7 (R) (1)	59.9	52.9	61.0	54.5	1.1	1.6	60.8	54.2	0.9	1.3
B8 (R) (1)	65.4	55.4	66.8	57.3	1.4	1.9	66.5	57.0	1.1	1.6
B9 (R) (1)	65.4	55.7	66.9	57.6	1.5	1.9	66.4	57.2	1.0	1.5
B10 (R) (1)	60.5	54.0	61.6	55.6	1.1	1.6	61.3	55.3	0.8	1.3
B11 (R) (1)	66.2	56.7	67.6	58.5	1.4	1.8	66.9	58.0	0.7	1.3
B12 (R) (1)	66.8	57.7	68.2	59.6	1.4	1.9	67.5	59.2	0.7	1.5
B13 (R) (1)	62.8	54.0	64.3	55.6	1.5	1.6	64.1	55.4	1.3	1.4
C1 (R) (3)	65.8	56.2	67.0	57.8	1.2	1.6	67.1	57.8	1.3	1.6
C2 (R) (1)	65.9	56.0	67.1	57.6	1.2	1.6	67.2	57.7	1.3	1.7
C3 (R) (4)	66.3	56.2	67.5	57.8	1.2	1.6	67.5	57.8	1.2	1.6
State Nighttime Standard (NAC-1)	55	50	55	50	-	-	55	50	-	-
State Nighttime Standard (NAC-2)	70	65	70	65	-	-	70	65	-	-
State Nighttime Standard (NAC-3)	80	75	80	75	-	-	80	75	-	-

Bold numbers are above State nighttime standards.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Receptor A1 represents the YMCA (historic property recommended eligible for NRHP listing), which falls under Minnesota State Noise Area Classification 2.

⁽²⁾ Receptor A3 represents the Huff-Lamberton House (historic property listed on the NRHP), which falls under Minnesota State Noise Area Classification 1.

TABLE 8 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: NIGHTTIME

Receptor*	Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
C4 (R) (6)	63.7	54.6	64.9	56.1	1.2	1.5	65.1	56.4	1.4	1.8
C5 (R) (1)	60.2	53.0	61.2	54.5	1.0	1.5	61.4	54.7	1.2	1.7
C6 (R) (4)	58.0	52.0	59.1	53.5	1.1	1.5	59.2	53.5	1.2	1.5
C7 (R) (2)	56.4	50.1	57.5	51.6	1.1	1.5	57.5	51.6	1.1	1.5
C8 (R) (1)	55.9	50.6	56.9	52.1	1.0	1.5	56.9	51.9	1.0	1.3
C9 (R) (1)	56.8	50.4	57.8	52.1	1.0	1.7	57.8	52.0	1.0	1.6
C10 (R) (1)	58.4	47.8	59.8	49.9	1.4	2.1	59.8	49.8	1.4	2.0
C11 (R) (1)	59.1	48.5	60.5	50.5	1.4	2.0	60.5	50.5	1.4	2.0
C12 (C) (1)	60.7	50.3	62.1	52.3	1.4	2.0	62.1	52.3	1.4	2.0
D1 (C) (1)	62.8	56.1	64.0	57.9	1.2	1.8	63.7	57.6	0.9	1.5
D2 (NRHP) (1) ⁽¹⁾	60.6	53.5	61.9	55.2	1.3	1.7	61.7	55.0	1.1	1.5
D3 (NRHP) (1) ⁽²⁾	58.3	51.6	59.8	53.3	1.5	1.7	59.7	53.1	1.4	1.5
E1 (C) (1)	63.0	56.2	64.3	57.9	1.3	1.7	63.4	56.7	0.4	0.5
E2 (C) (1)	64.0	54.8	65.2	56.4	1.2	1.6	65.2	56.3	1.2	1.5
F1 (C) (1)	67.6	58.8	69.0	60.7	1.4	1.9	68.2	60.1	0.6	1.3
F2 (C) (1)	62.9	55.3	64.1	57.1	1.2	1.8	63.3	56.7	0.4	1.4
F3 (R) (1)	59.7	53.7	60.9	55.3	1.2	1.6	60.5	55.0	0.8	1.3
F4 (C) (1)	59.9	53.2	61.3	54.9	1.4	1.7	60.9	54.5	1.0	1.3
State Nighttime Standard (NAC-1)	55	50	55	50	-	-	55	50	-	-
State Nighttime Standard (NAC-2)	70	65	70	65	-	-	70	65	-	-
State Nighttime Standard (NAC-3)	80	75	80	75	-	-	80	75	-	-

Bold numbers are above State nighttime standards.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Receptor D2 represents the Winona County Courthouse (historic property listed on the NRHP), which falls under Minnesota State Noise Area Classification 2.

⁽²⁾ Receptor D3 represents the Winona Hotel (historic property listed on the NRHP, part of Winona Commercial District), which falls under Minnesota State Noise Area Classification 1.

TABLE 8 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: NIGHTTIME

Receptor*	Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
F5 (NRHP) (1) ⁽¹⁾	59.4	53.4	60.5	55.0	1.1	1.6	60.2	54.8	0.8	1.4
F6 (C) (1)	59.4	50.3	61.1	52.2	1.7	1.9	61.0	52.0	1.6	1.7
F7 (C) (1)	63.7	54.5	64.4	55.6	0.7	1.1	64.3	55.3	0.6	0.8
G1 (C) (1)	61.0	54.4	62.0	55.9	1.0	1.5	62.0	55.5	1.0	1.1
G2 (T) (1)	63.0	53.2	64.0	54.5	1.0	1.3	64.2	54.7	1.2	1.5
G3 (T) (1)	60.6	53.4	61.7	54.9	1.1	1.5	61.9	55.0	1.3	1.6
G4 (T) (1)	60.3	53.6	61.5	55.2	1.2	1.6	60.6	54.3	0.3	0.7
G5 (T) (1)	61.1	53.4	62.4	55.1	1.3	1.7	60.7	53.5	-0.4	0.1
G6 (T) (1)	59.8	51.9	61.1	53.7	1.3	1.8	57.5	49.8	-2.3	-2.1
H1 (I) (1)	60.7	53.4	61.9	55.1	1.2	1.7	62.2	55.5	1.5	2.1
H2 (I) (1)	64.1	56.0	65.4	57.8	1.3	1.8	65.9	58.6	1.8	2.6
H3 (I) (1)	63.0	55.6	64.2	57.3	1.2	1.7	64.4	57.7	1.4	2.1
H4 (I) (1)	64.7	56.8	65.9	58.5	1.2	1.7	65.4	57.9	0.7	1.1
H5 (C) (1)	65.6	56.2	66.9	57.9	1.3	1.7	66.6	57.5	1.0	1.3
H6 (C) (1)	60.6	53.8	61.6	55.3	1.0	1.5	61.2	54.9	0.6	1.1
H7 (C) (1)	59.0	52.6	59.9	54.0	0.9	1.4	59.6	53.7	0.6	1.1
H8 (C) (1)	59.5	52.4	60.4	53.8	0.9	1.4	60.1	53.4	0.6	1.0
H9 (R) (1)	59.8	51.6	60.7	52.9	0.9	1.3	60.5	52.6	0.7	1.0
H10 (C) (1)	58.6	51.9	59.6	53.3	1.0	1.4	59.3	53.0	0.7	1.1
State Nighttime Standard (NAC-1)	55	50	55	50	-	-	55	50	-	-
State Nighttime Standard (NAC-2)	70	65	70	65	-	-	70	65	-	-
State Nighttime Standard (NAC-3)	80	75	80	75	-	-	80	75	-	-

Bold numbers are above State nighttime standards.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Receptor F5 represents the Winona Monument Company (historic property determined eligible for NRHP listing), which falls under Minnesota State Noise Area Classification 2.

TABLE 8 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: NIGHTTIME

Receptor*	Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
H11 (C) (1)	56.6	50.7	57.6	52.3	1.0	1.6	57.2	52.0	0.6	1.3
H12 (I) (1)	57.6	51.5	58.6	53.0	1.0	1.5	58.2	52.8	0.6	1.3
H13 (C) (1)	58.9	52.6	59.9	54.2	1.0	1.6	59.4	53.9	0.5	1.3
H14a (R) (1)	59.3	52.6	60.4	54.3	1.1	1.7	59.8	53.9	0.5	1.3
H14b (R) (1)	59.4	52.8	60.5	54.5	1.1	1.7	59.9	54.1	0.5	1.3
H14c (R) (1)	59.5	53.0	60.6	54.6	1.1	1.6	60.0	54.2	0.5	1.2
H14d (R) (1)	59.6	53.1	60.7	54.7	1.1	1.6	60.0	54.3	0.4	1.2
H14e (R) (1)	58.9	52.4	60.0	54.0	1.1	1.6	59.4	53.7	0.5	1.3
H14f (R) (1)	58.9	52.5	60.1	54.2	1.2	1.7	59.5	53.8	0.6	1.3
H14g (R) (1)	59.0	52.7	60.1	54.3	1.1	1.6	59.5	53.9	0.5	1.2
H14h (R) (1)	59.1	52.7	60.2	54.4	1.1	1.7	59.6	54.0	0.5	1.3
H14i (R) (1)	58.4	52.1	59.5	53.7	1.1	1.6	59.0	53.4	0.6	1.3
H14j (R) (1)	58.4	52.2	59.5	53.8	1.1	1.6	59.0	53.5	0.6	1.3
H14k (R) (1)	58.5	52.3	59.6	53.9	1.1	1.6	59.1	53.5	0.6	1.2
H14l (R) (1)	58.5	52.4	59.7	54.0	1.2	1.6	59.1	53.6	0.6	1.2
H14m (R) (1)	57.9	51.7	59.0	53.3	1.1	1.6	58.5	53.0	0.6	1.3
H14n (R) (1)	57.9	51.8	59.0	53.4	1.1	1.6	58.5	53.1	0.6	1.3
H14o (R) (1)	58.0	51.9	59.1	53.5	1.1	1.6	58.6	53.2	0.6	1.3
H14p (R) (1)	58.0	52.0	59.1	53.6	1.1	1.6	58.6	53.2	0.6	1.2
H15 (T) (1)	56.7	50.0	57.9	51.7	1.2	1.7	60.0	52.9	3.3	2.9
State Nighttime Standard (NAC-1)	55	50	55	50	-	-	55	50	-	-
State Nighttime Standard (NAC-2)	70	65	70	65	-	-	70	65	-	-
State Nighttime Standard (NAC-3)	80	75	80	75	-	-	80	75	-	-

Bold numbers are above State nighttime standards.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

TABLE 8 continued
WINONA BRIDGE PROJECT NOISE MODEL RESULTS: NIGHTTIME

Receptor*	Existing (2009)		No Build (2038)		Difference Between Existing (2009) and No Build (2038)		Build (2038)		Difference Between Existing (2009) and Build (2038)	
	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀
H16 (T) (1)	59.1	51.5	60.3	53.3	1.2	1.8	61.5	54.2	2.4	2.7
H17 (T) (1)	60.4	52.8	61.6	54.5	1.2	1.7	60.9	54.1	0.5	1.3
H18 (T) (1)	59.2	52.2	60.4	53.9	1.2	1.7	59.8	53.6	0.6	1.4
H19 (T) (1)	58.1	51.5	59.3	53.2	1.2	1.7	58.7	52.8	0.6	1.3
H20 (NRHP) (1) ⁽¹⁾	56.8	50.7	58.0	52.3	1.2	1.6	57.5	52.0	0.7	1.3
I1 (NRHP) (1) ⁽²⁾	62.2	55.8	63.4	57.5	1.2	1.7	62.4	56.3	0.2	0.5
J1 (R) (5)	61.1	54.0	62.3	55.7	1.2	1.7	61.9	55.5	0.8	1.5
J2 (R) (2)	58.1	51.8	59.2	53.5	1.1	1.7	58.8	53.3	0.7	1.5
J3 (R) (1)	60.6	54.4	61.8	56.1	1.2	1.7	61.5	55.6	0.9	1.2
J4 (R) (6)	58.2	51.9	59.4	53.7	1.2	1.8	59.3	53.5	1.1	1.6
J5 (R) (5)	58.5	51.9	59.7	53.7	1.2	1.8	59.6	53.5	1.1	1.6
J6 (R) (5)	60.3	53.0	61.6	54.8	1.3	1.8	61.5	54.6	1.2	1.6
J7 (R) (1)	62.0	54.2	63.3	56.0	1.3	1.8	63.2	55.8	1.2	1.6
State Nighttime Standard (NAC-1)	55	50	55	50	-	-	55	50	-	-
State Nighttime Standard (NAC-2)	70	65	70	65	-	-	70	65	-	-
State Nighttime Standard (NAC-3)	80	75	80	75	-	-	80	75	-	-

Bold numbers are above State nighttime standards.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

* Number in “receptor” column is the number of residences represented by each modeled receptor location.

⁽¹⁾ Receptor H20 represents the Winona Water Works (historic property recommended eligible for NRHP listing), which falls under Minnesota State Noise Area Classification 3.

⁽²⁾ Receptor I1 represents the Winona Municipal Marina (historic property recommended eligible for NRHP listing), which falls under Minnesota State Noise Area Classification 2.

D. Consideration of Noise Abatement

Noise Abatement Measures

The construction of the Winona Bridge Project is considered a Type I project for the purposes of traffic noise analysis (23 CFR 772.5). 23 CFR 772.15(c) describes noise abatement measures that are to be considered when a traffic noise impact has been identified with a Type I highway project. These noise abatement measures include:

- Construction of noise barriers, including acquisition of property rights, either within or outside the highway right of way. Landscaping is not a viable noise abatement measure.
- Traffic management measures including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
- Alteration of horizontal and vertical alignments;
- Acquisition of real property or interests therein (predominately unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise.
- Noise insulation of certain land use facilities, including: 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.

Noise Barrier Evaluation

MnDOT's policies and procedures for evaluating noise barrier feasibility and reasonableness are set forth in Chapter 5 of the MnDOT Highway Noise Policy (Analysis of Noise Abatement Measures). The factors for determining noise barrier feasibility and reasonableness as described in the MnDOT noise policy are summarized below.

Noise Barrier Feasibility

Noise barrier feasibility is determined based on a consideration of two factors: 1) acoustic feasibility and 2) engineering feasibility.

- **Acoustic feasibility:** For a noise barrier to be considered acoustically effective, it must achieve a noise reduction of at least 5 dBA at the impacted receptors for those receptors to be considered benefited by a noise barrier. Not every impacted receptor must receive this minimum 5 dBA reduction; however, at least one impacted receptor must meet the minimum 5 dBA reduction for a noise barrier to be considered acoustically feasible.
- **Engineering feasibility:** Engineering feasibility addresses whether or not it is possible to design and construct a proposed noise abatement measure. A sample of potential constructability considerations includes safety, topography, drainage, utilities, and maintenance considerations. Engineering considerations are also taken into consideration in determining noise barrier height. MnDOT has established a maximum noise barrier height of

20 feet above the finished ground line at the noise barrier. In addition, MnDOT has established a maximum noise barrier height of 10 feet above the bridge deck when it is necessary for a noise barrier to be attached to a bridge structure.

The feasibility of noise barrier construction is sometimes dependent on design details that are not known until the final design phase of the project. For the purpose of this traffic noise analysis, it was assumed that noise barriers were feasible with respect to engineering feasibility/constructability considerations. Specifically, it was assumed to be structurally feasible to construct a noise barrier along the existing TH 43 Winona Bridge (Bridge #5900). It was also assumed that utilities located within existing right of way could be relocated to accommodate modeled noise barriers, and existing and proposed drainage could be maintained. All modeled noise barriers were located within existing and/or proposed right of way limits.

Additionally, the existing TH 43 Winona Bridge is eligible for listing on the National Register of Historic Places (NRHP). As a NRHP-eligible property, the TH 43 Winona Bridge is protected under Section 106 of the National Historic Preservation Act. It is also subject to protection under Section 4(f) of the Department of Transportation Act of 1966. The initial mitigation analysis assumed that modeled noise barriers along the TH 43 Winona Bridge were feasible with respect to Section 106 and Section 4(f). If a noise barrier along the TH 43 Winona Bridge was found to be acoustically feasible (i.e., noise reduction of at least 5 dBA at a minimum of one impacted receptor) and reasonable (i.e., meet MnDOT's noise reduction design goal and cost effectiveness criteria), then additional feasibility considerations regarding potential impacts under Section 106 and Section 4(f) would be pursued.

Noise Barrier Reasonableness

Noise barrier reasonableness decisions are based on a consideration of three reasonableness factors: 1) noise reduction design goal, 2) cost effectiveness, and 3) the viewpoint of benefited residents and property owners.

- **Noise reduction design goal:** A minimum 7 dBA reduction must be achieved for at least one benefited receptor behind the noise barrier to meet noise reduction design goals.
- **Cost effectiveness:** To be considered cost-effective, the cost per individual benefited receptor (i.e., residence, commercial entity, industrial entity) should be equal to, or less than \$43,500. In order to assess cost effectiveness, at least one benefited receptor behind the noise barrier must meet the noise reduction design goal described above. The following formula is used to determine the cost-effectiveness of the barrier:

The cost-effectiveness index is equal to the cost of the noise barrier¹ divided by the number of individual benefited receptors (i.e., residences, commercial entities, industrial entities) that are predicted to experience noise level reductions of 5 dBA or more. Only those receptors that experience a 5 dBA or greater decibel decrease are considered in this formula. The result is a cost per benefited receptor value (residence, commercial entity, or industrial entity represented by each modeled

receptor). To be considered cost-effective, the cost per individual benefited receptor must be equal to or less than \$43,500 per receptor.

¹The cost of a noise barrier is calculated using \$20 per square foot of barrier, based on historical data over the five year period from 2005-2010. The cost of a noise barrier on bridges is calculated using \$24 per square foot of barrier.

There are several steps to assessing the cost-effectiveness of noise barriers. First, the cost-effective noise barrier height is determined for each segment of the project area, beginning with the evaluation of a 20-foot tall noise barrier (MnDOT's maximum height; see discussion of engineering feasibility above). If a 20-foot tall noise barrier meets the reasonableness criteria and is feasible, it would be proposed for construction. If the 20-foot tall barrier does not meet the reasonableness criteria, then noise barrier heights less than 20 feet are studied. If a noise barrier height less than 20 feet meets the reasonableness criteria and is feasible, it would then be proposed for construction.

- **Viewpoint of benefited residents and property owners:** The third criterion in determining noise barrier reasonableness is the viewpoint of benefited residents and property owners. A benefited property is defined as a receptor adjacent to a proposed noise abatement measure that receives a noise reduction equal to or greater than 5 dBA. If benefited residents and property owners indicate that a proposed noise barrier is not desired, then the noise barrier is removed from further consideration and would not be constructed with the project.

There are two steps in determining the desires of the benefited property owners and residents regarding the construction of a proposed noise abatement measures. First, the viewpoint of benefited property owners and residents is solicited through a public involvement process (e.g., open house meeting, direct mailing of a solicitation form). Second, the input received from benefited property owners and residents through this public involvement process is expressed in a vote that is weighted as follows:

The owner of a benefited property immediately adjacent to the highway right of way for the proposed project (i.e., first-row properties) receives 4 points and the resident (owner or renter) receives 2 points. The owner/resident of a benefited property receives a total of 6 points.

The owner of a benefited property not immediately adjacent to the highway right of way for the proposed project (e.g., second-row properties, third-row properties) receives 2 points and the resident (owner or renter) receives 1 point. The owner/resident of a benefited property receives a total of 3 points.

When there is no outdoor area of frequent human use associated with a benefited property, the owner of the benefited property receives a total of 4 points if the property is located immediately adjacent to the highway right of way (i.e., first-row properties). If the property is not immediately adjacent to

the highway right of way (i.e., second-row properties, third-row properties), the owner of the benefited property receives a total of 2 points.

Only those benefited property owners and residents, including individual units of multi-family residential buildings that are considered to be benefited receptors, regardless of floor location (e.g., first floor, second floor, etc.), have a vote according to the point system described above. Non-benefiting receptors do not receive points. A simple majority (greater than 50 percent) of all possible voting points for each of the proposed noise barriers must vote “down” the proposed abatement measure for it to be removed from further consideration.

Noise Barrier Analysis Results

Noise barriers were evaluated at all modeled receptor locations that are predicted to approach or exceed Federal Noise Abatement Criteria and/or exceed State daytime/nighttime noise standards under the future (2038) Build Alternative. As previously discussed, none of the modeled receptor locations are projected to experience a substantial increase in modeled noise levels from existing to future Build conditions. The locations of modeled noise barriers are illustrated in Figure 1, Appendix A.

Noise barriers were modeled within highway right of way on the curb line adjacent to travel lanes. Noise barriers were modeled along TH 43 and local roadways within the proposed construction areas, but were not modeled along local roadways outside of the project limits. Gaps were provided in the modeled noise barriers for intersecting driveways and/or crosswalks with this initial step, but were not provided for sidewalk connections between adjacent properties and existing sidewalks.

This evaluation assumed it would be feasible to construct a noise barrier along the curb line of project area roadways. However, there are several engineering feasibility considerations with a noise barrier at this location, including lateral clearance requirements from the curb face, space for snow storage along the roadway, and sight distance requirements at intersections. If a modeled noise barrier located along the curb line was found to be acoustically effective, meet MnDOT’s noise reduction design goal, and meet MnDOT’s cost effectiveness criteria, then additional barrier analyses would be completed to evaluate an alignment behind the curb line and adjacent sidewalks. This subsequent analysis would also take all necessary gaps into account to maintain driveway and sidewalk connections, as well as intersection sight distance requirements.

Noise barrier cost-effectiveness results are tabulated at the end of this report (see Table B-1 through Table B-10 in Appendix B). The discussion of noise barrier modeling results presented below includes only daytime results. For reference, nighttime noise barrier cost effectiveness results are also tabulated and presented at the end of this report with the daytime noise barrier cost effectiveness results. In general, results of daytime noise barrier cost effectiveness for the project are consistent with noise barrier cost effectiveness for nighttime conditions. The following discussion of noise barrier analysis results refers to L₁₀ modeled noise levels unless otherwise noted.

*Area A (west side of Winona Street between 5th Street and 4th Street and south side of 4th Street between Huff Street and Winona Street)
Receptors A1 through A3*

Modeled receptor locations on this block between 4th Street and 5th Street and Huff Street and Winona Street consist of one residential property and two properties that have been either determined eligible NRHP listing (Receptor A1, YMCA) or are currently listed on the NRHP (Receptor A3, Huff-Lamberton House). Traffic noise levels are projected to exceed State daytime standards by 2.2 dBA at Receptor A2 with the future (2038) Build Alternative, and exceed State nighttime standards by 8.8 dBA at Receptor A2 with the future (2038) Build Alternative.

An approximately 480-foot long, 20-foot high noise barrier was modeled within existing right of way along the curb lines of Winona Street and 4th Street. The modeled barrier included gaps for the YMCA driveway to Winona Street and crosswalks at the corner of Winona Street and 4th Street. The approximately 480-foot long, 20-foot high modeled barrier provides a reduction in daytime modeled traffic noise levels of 0.3 dBA to 4.0 dBA (see Table B-1, Appendix B). The approximately 480-foot long, 20-foot high modeled barrier does not meet MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, the analyzed barrier is not proposed.

*Area B (east side of Winona Street between 5th Street and 4th Street and south side of 4th Street/TH 43 between Winona Street and Washington Street)
Receptors B1 through B13*

Land uses on the block between 4th Street and 5th Street and Winona Street and Washington Street consist of residential uses. Traffic noise levels are projected to exceed State daytime standards by 0.1 to 5.4 dBA at nine of the receptor locations with the future (2038) Build Alternative. Traffic noise levels are also projected to approach or exceed Federal standards at four of the receptor locations with the future (2038) Build Alternative. Traffic noise levels are projected to exceed State nighttime standards by 4.3 dBA to 12.5 dBA with the future (2038) Build Alternative.

An approximately 675-foot long, 20-foot high noise barrier was modeled within existing right of way along the curb lines of Winona Street and 4th Street/TH 43. The barrier has gaps for several residential driveways along Winona Street and 4th Street, and crosswalks at the corner of Winona Street and 4th Street. The approximately 675-foot long, 20-foot high modeled barrier provides a reduction in daytime modeled traffic noise levels of 0.5 dBA to 6.3 dBA (see Table B-3, Appendix B). The approximately 675-foot long, 20-foot high modeled barrier does not meet MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, the analyzed barrier is not proposed.

*Area C (west side of TH 43/Winona Bridge between 4th Street and the Union Pacific Railroad)
Receptors C1 through C12*

Land uses on this block between 3rd Street and 4th Street and Harriet Street and Huff Street consist of residential and commercial uses. Traffic noise levels are projected to exceed State daytime standards by 3.7 dBA to 6.5 dBA at four residential receptor locations with the future (2038) Build Alternative. Traffic noise levels are also projected to approach or exceed Federal standards at three residential receptor locations with the future (2038) Build Alternative. Traffic noise levels are projected to exceed State nighttime standards by 1.9 dBA to 12.5 dBA at 11 residential receptor locations with the future (2038) Build Alternative.

An approximately 1,350-foot long noise barrier was modeled within highway right of way along the west side of the proposed TH 43 bridge (Bridge #85851). The barrier was modeled as a 20-foot tall barrier on top of a proposed retaining wall between 4th Street and 3rd Street. The barrier was modeled as a 10-foot tall barrier from approximately 3rd Street to the Union Pacific Railroad on the proposed TH 43 bridge. In addition to shielding Receptors C1 through C12, this modeled barrier would also shield Receptors E1, E2, and G1. The approximately 1,350-foot long modeled barrier provides a reduction in daytime modeled traffic noise levels of 0.2 dBA to 1.6 dBA (see Table B-5, Appendix B). The approximately 1,350-foot long modeled barrier does not meet MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, the analyzed barrier is not proposed.

*Area D (east side of TH 43 between 4th Street and 3rd Street)
Receptors D1 through D3*

Modeled receptor locations on the east side of TH 43 between 4th Street and 3rd Street consist of one commercial property and two properties that are currently listed on the NRHP (Receptor D2, Winona County Courthouse and Receptor D3, Winona Hotel). Modeled daytime and nighttime traffic noise levels at Receptors D1 through D3 are projected to be below State daytime and nighttime standards with the future Build Alternative. Modeled daytime noise levels are also projected to be below the Federal Noise Abatement Criterion for Activity Category C and Activity Category E under the future Build Alternative. Therefore, as none of the Area D receptors will be impacted, noise abatement measures were not evaluated.

*Area E (west side of proposed TH 43 bridge between 3rd Street and 2nd Street)
Receptors E1 and E2*

Land uses along the west side of the proposed TH 43 bridge between 3rd Street and 2nd Street consist of commercial uses. Modeled daytime and nighttime traffic noise levels at Receptors E1 and E2 are projected to be below State daytime and nighttime standards with the future Build Alternative. Modeled daytime noise levels are also projected to be below the Federal Noise Abatement Criterion for Activity Category E under the future Build Alternative. Therefore, as none of the Area E receptors will be impacted, noise abatement measures were not evaluated.

*Area F (east side of existing TH 43 Winona Bridge between 3rd Street and 2nd Street)
Receptors F1 through F7*

Modeled receptor locations east of the existing TH 43 Winona Bridge between 2nd Street and 3rd Street consist of five commercial receptors, one residential receptor (Receptor F3), and one receptor that has been determined eligible for NRHP listing (Receptor F5). Traffic noise levels at Receptor F1 are projected to exceed State daytime standards for commercial uses with the future (2038) Build Alternative. Traffic noise levels at Receptor F3 are projected to exceed State nighttime standards for residential uses with the future (2038) Build Alternative.

An approximately 2,200-foot long noise barrier was modeled along the east side of the existing TH 43 bridge (Bridge #5900). The barrier was modeled as a 20-foot tall barrier on top of a proposed retaining wall between 4th Street and 3rd Street. The barrier was modeled as a 10-foot tall barrier from approximately 3rd Street to approximately midway across the Mississippi River on the existing TH 43 bridge (Bridge #5900). In addition to shielding Receptors F1 through F7, this modeled barrier would also shield Receptors D1-D3 and H1-H20. The approximately 2,200-foot long modeled barrier provides a reduction in daytime modeled traffic noise levels of 0.2 dBA to 4.0 dBA (see Table B-7, Appendix B). The approximately 2,200-foot long modeled barrier does not meet MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, the analyzed barrier is not proposed.

*Area G (west side of TH 43 Winona Bridge between 2nd Street and Mississippi River)
Receptors G1 through G6*

Modeled receptor locations west of the TH 43 Winona Bridge between 2nd Street and the Mississippi River consist of one commercial receptor and five receptors that represent the Levee Trail along the south shoreline of the Mississippi River. Modeled noise levels at Receptor G1 through G6 were predicted to be below State daytime and nighttime standards with the future Build Alternative, and were also projected to be below the Federal Noise Abatement Criterion. Therefore, as none of the Area G receptors will be impacted, noise abatement measures were not evaluated.

*Area H (east side of TH 43 Winona Bridge between 2nd Street and Mississippi River)
Receptors H1 through H20*

Modeled receptor locations east of the TH 43 Winona Bridge between 2nd Street and the Mississippi River consist of seven commercial receptors, five industrial receptors, 17 residential receptors, and five receptors that represent the Levee Trail along the south shoreline of the Mississippi River. Traffic noise levels at Receptor H5 are projected to exceed State daytime standards for commercial uses with the future (2038) Build Alternative. Traffic noise levels at Receptors H9 and H14a through H14p are projected to exceed State nighttime standards for residential uses with the future (2038) Build Alternative.

The receptors in Area H, including the impacted receptors described above, would be shielded by modeled Barrier F. Barrier F is an approximately 2,200-foot long noise barrier that was modeled along the east side of the existing TH 43 bridge (Bridge #5900). Barrier F does not meet

MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable (see Table B-7, Appendix B). Therefore, the analyzed barrier is not proposed. Refer also to the discussion of Barrier F above under "Area F (east side of existing TH 43 Winona Bridge between 3rd Street and 2nd Street).

*Area I (west side of TH 43 on Latsch Island between Bridge #5900 and Bridge #5930)
Receptor I1*

Land uses along the west side of TH 43 between Bridge #5900 and Bridge #5930 consist of commercial uses (Receptor I1, Winona Marina). Modeled traffic noise levels at Receptor I1 are projected to be below State daytime and nighttime standards under the future Build Alternative. Modeled daytime noise levels are also projected to be below the Federal Noise Abatement Criterion for Activity Category C uses under the future Build Alternative. Therefore, as none of the Area I receptors will be impacted, noise abatement measures were not evaluated along the west side of TH 43 between Bridge #5900 and Bridge #5930.⁴

*Area J (east side of TH 43 on Latsch Island between Bridge #5900 and Bridge #5930)
Receptors J1 through J7*

Land uses on the east side of TH 43 on Latsch Island consist of the residential receptors representing a boathouse community. Traffic noise levels are projected to exceed State daytime standards by 0.7 dBA at one residential receptor with the future (2038) Build Alternative. Traffic noise levels are projected to exceed State nighttime standards by 3.8 to 8.2 dBA at all seven residential receptors (Receptors J1 through J7) with the future (2038) Build Alternative.

An approximately 915-foot long noise barrier was modeled within highway right of way along the east side of the existing TH 43 bridge (Bridge # 5900) and within existing right of way along the east side of TH 43 on Latsch Island. The barrier was modeled as a 10-foot tall barrier from approximately midway across the Mississippi River on the existing TH 43 bridge (Bridge #5900) to the bridge touchdown point on Latsch Island, and the barrier was modeled as a 20-foot tall barrier within existing right of way along the east side of TH 43 on Latsch Island. The barrier has a gap for the driveway to the boathouses. The approximately 915-foot long barrier provides a reduction in daytime modeled traffic noise levels of 1.1 to 2.5 dBA (see Table B-9, Appendix B). The approximately 915-foot long, 20-foot high modeled barrier does not meet MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, the analyzed barrier is not proposed.

⁴ The property represented by Receptor I1 was determined eligible for NRHP listing (Winona Municipal Marina). Modeled traffic noise levels for Receptor I1 were compared to Federal Activity Category C and Minnesota State Noise Area Classification 2.

Other Noise Mitigation Techniques

Noise abatement measures other than noise barriers were considered for proposed project. These measures are summarized below.

- Traffic Management Measures: These measures include such items as prohibition of certain vehicle types and time-use restrictions for certain vehicle types. These traffic management measures are not reasonable for the Winona Bridge Project because this would be inconsistent with the function of TH 43 as a principal arterial roadway and a designated truck route.
- Modified Speed Limits: In general, a decrease in speed of approximately 20 miles per hour is necessary for a noticeable decrease in noise levels. However, lower speeds would reduce the capacity of TH 43 and is therefore not consistent with the function of this roadway. In addition, motorists would likely not obey a substantially lower speed limit.
- Vertical and Horizontal Alignment: The proposed project includes construction of a new two-lane crossing of the Mississippi River and rehabilitation of the existing TH 43 Winona Bridge. The horizontal and vertical alignments of connecting roadways are determined by the crossing location and design. Further changes in the horizontal and vertical alignment of connecting roadways are not feasible without substantial impacts to surrounding properties.
- Landscaping/Natural Noise Screening: Vegetation is only effective for reducing noise levels if it is at least 100 to 200 feet deep, a minimum of 15 feet above the line of sight, and dense enough that it cannot be seen through (e.g., evergreen vegetation, which maintains its foliage year round). It is not reasonable to plant enough vegetation to achieve substantial noise level reductions. As such, vegetation is not a reasonable noise mitigation measure.
- Exclusive Land Use Designations: Buffer zones are undeveloped, open spaces adjacent to a highway corridor. Acquisition of property to serve as a buffer zone between the proposed roadway and adjacent lands is not feasible because the TH 43 corridor in Winona is fully developed.
- Acoustical Insulation of Houses: Acoustical insulation of individual residences is not reasonable. This noise abatement measure would not affect noise levels that approach or exceed Federal Noise Abatement Criteria or Minnesota State Noise Standards because these are intended for exterior uses only. Under 23 CFR 772.15(c) and MnDOT policy, only non-residential buildings such as schools, hospitals, and places of worship (Activity Category D, see Table 2) should be considered for acoustical insulation. These uses are not located within the area affected by the proposed project.

E. Conclusions and Recommendations

Construction of the proposed Winona Bridge Project will result in increases in traffic noise levels compared to existing conditions. Daytime L_{10} modeled noise levels are predicted to range from 59.4 dBA to 71.9 dBA under the future (2038) Build Alternative, whereas nighttime L_{10} modeled noise levels are predicted to range from 56.9 dBA (L_{10}) to 68.2 dBA (L_{10}) under the future Build Alternative. Changes in daytime and nighttime traffic noise levels are projected to range from 0.1 dBA to 3.3 dBA (L_{10}) from existing conditions to the future Build Alternative. In several

locations, traffic noise levels are projected to decrease from existing conditions to future Build conditions primarily due to the shifting of southbound traffic from the existing bridge to the new bridge. Modeled L_{10} noise levels are predicted to exceed State daytime standards at 17 modeled receptor locations under the Build Alternative, whereas modeled L_{50} noise levels are predicted to exceed State daytime standards at nine modeled receptor locations. Modeled nighttime noise levels are predicted to exceed State nighttime L_{10} standards at 51 modeled receptor locations under the Build Alternative. Modeled nighttime noise levels are predicted to exceed State L_{50} standards at 50 modeled receptor locations.

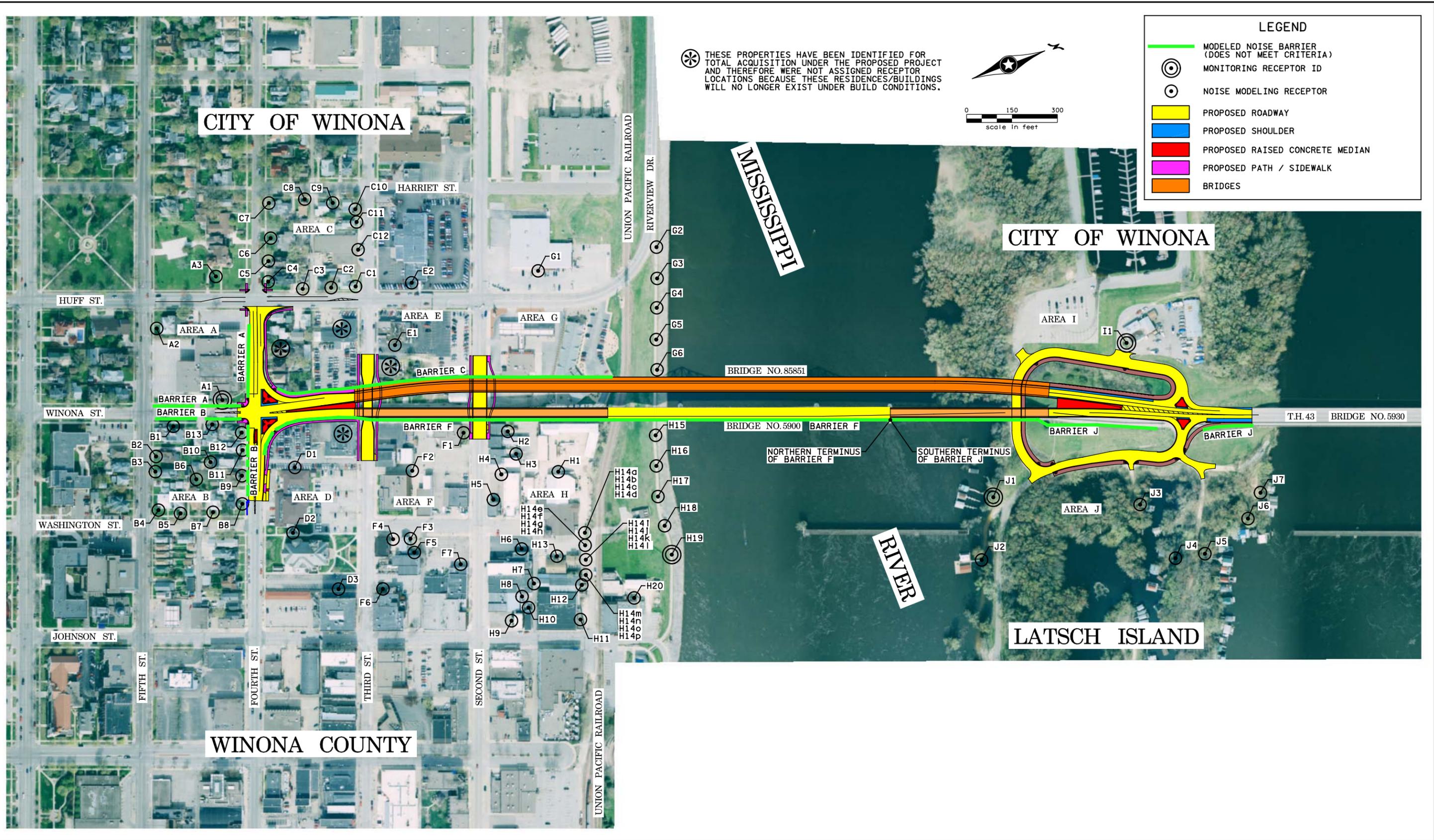
Modeled L_{10} noise levels are projected to approach or exceed the Federal Noise Abatement Criteria for Activity Category B (residential land uses) at seven modeled receptor locations with the future Build Alternative. None of the modeled receptor locations are projected to experience a substantial increase in traffic noise levels from existing conditions to the future Build Alternative.

Noise abatement measures were evaluated along the TH 43 Winona Bridge project area at modeled receptor locations that are projected to exceed State standards, approach or exceed Federal Noise Abatement Criteria, or experience a substantial increase in traffic noise levels from existing to future Build Alternative conditions. Noise barriers were modeled at five locations (see Figure 1 in Appendix A). None of the barriers met MnDOT's minimum 7 dBA noise reduction design goal to be considered reasonable. Therefore, none of the analyzed barriers are proposed.

Appendix A

Figures

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Appendix B

Noise Barrier Cost Effectiveness Results

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TABLE B-1

NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)

Modeled Barrier A (west side of Winona Street between 4th Street and 5th Street and south side of 4th Street between Huff Street and Winona Street)

Receptors	Daytime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft)	Total cost of barrier \$20/sq ft	Cost/ Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier										
A1 (NRHP)	67.5	63.5	4.0	1	0	0	480	9,600	\$192,000	N/A
A2 (R)	67.2	66.8	0.4	6	0	0				
A3 (NRHP)	64.7	64.4	0.3	1	0	0				

Bold numbers are above State daytime standards (L₁₀). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

TABLE B-2

NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)

Modeled Barrier A (west side of Winona Street between 4th Street and 5th Street and south side of 4th Street between Huff Street and Winona Street)

Receptors	Nighttime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft)	Total cost of barrier \$20/sq ft	Cost/ Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier										
A1 (NRHP)	64.8	61.5	3.3	1	0	0	480	9,600	\$192,000	N/A
A2 (R)	63.8	63.3	0.5	6	0	0				
A3 (NRHP)	61.7	61.4	0.3	1	0	0				

Bold numbers are above State nighttime standards (L₁₀).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

TABLE B-3

NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)

Modeled Barrier B (east side of Winona Street between 4th Street and 5th Street and south side of 4th Street/TH 43 between Winona Street and Washington Street)

Receptors	Daytime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft)	Total cost of barrier \$20/sq ft	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier										
B1 (R)	66.0	62.0	4.0	12	0	0	675	13,500	\$270,000	N/A
B2 (R)	66.3	65.8	0.5	1	0	0				
B3 (R)	66.4	65.9	0.5	1	0	0				
B4 (R)	65.1	64.6	0.5	14	0	0				
B5 (R)	62.0	60.9	1.1	1	0	0				
B6 (R)	62.5	60.6	1.9	1	0	0				
B7 (R)	63.4	61.4	2.0	1	0	0				
B8 (R)	69.4	64.0	5.4	1	1	0				
B9 (R)	69.2	64.2	5.0	1	1	0				
B10 (R)	63.8	60.9	2.9	1	0	0				
B11 (R)	69.8	64.6	5.2	1	1	0				
B12 (R)	70.4	64.1	6.3	1	1	0				
B13 (R)	67.2	64.0	3.2	1	0	0				

Bold numbers are above State daytime standards (L₁₀). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

TABLE B-4

NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)

Modeled Barrier B (east side of Winona Street between 4th Street and 5th Street and south side of 4th Street/TH 43 between Winona Street and Washington Street)

Receptors	Nighttime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft)	Total cost of barrier \$20/sq ft	Cost/ Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier										
B1 (R)	62.8	58.7	4.1	12	0	0	675	13,500	\$270,000	N/A
B2 (R)	62.9	62.2	0.7	1	0	0				
B3 (R)	62.9	62.4	0.5	1	0	0				
B4 (R)	61.7	61.1	0.6	14	0	0				
B5 (R)	59.3	58.1	1.2	1	0	0				
B6 (R)	60.0	58.0	2.0	1	0	0				
B7 (R)	60.8	58.8	2.0	1	0	0				
B8 (R)	66.5	61.2	5.3	1	1	0				
B9 (R)	66.4	61.3	5.1	1	1	0				
B10 (R)	61.3	58.2	3.1	1	0	0				
B11 (R)	66.9	61.7	5.2	1	1	0				
B12 (R)	67.5	61.7	5.8	1	1	0				
B13 (R)	64.1	60.4	3.7	1	0	0				

Bold numbers are above State nighttime standards (L₁₀).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

TABLE B-5

NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)

Modeled Barrier C (west side of TH 43 Winona Bridge between 4th Street and the Union Pacific Railroad)

Receptors	Daytime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
C1 (R)	<u>70.8</u>	<u>70.5</u>	0.3	3	0	0	1,350	16,350	\$369,600	N/A
C2 (R)	<u>71.1</u>	<u>70.8</u>	0.3	1	0	0				
C3 (R)	<u>71.5</u>	<u>71.3</u>	0.2	4	0	0				
C4 (R)	<u>68.7</u>	<u>68.4</u>	0.3	6	0	0				
C5 (R)	64.8	64.2	0.6	1	0	0				
C6 (R)	62.6	61.8	0.8	4	0	0				
C7 (R)	60.6	59.6	1.0	2	0	0				
C8 (R)	59.4	58.3	1.1	1	0	0				
C9 (R)	60.3	59.3	1.0	1	0	0				
C10 (R)	62.9	62.2	0.7	1	0	0				
C11 (R)	63.7	63.0	0.7	1	0	0				
C12 (C)	65.4	64.7	0.7	1	0	0				
E1 (C)	65.5	63.9	1.6	1	0	0				
E2 (C)	68.7	68.2	0.5	1	0	0				
G1 (C)	64.3	63.6	0.7	1	0	0				

Bold numbers are above State daytime standards (L₁₀). **Underlined** numbers approach/exceed Federal Noise Abatement Criteria.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 285 feet of Barrier C is a 20-foot tall barrier and a length of 1,065 feet of Barrier C is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

TABLE B-6

NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)

Modeled Barrier C (west side of TH 43 Winona Bridge between 4th Street and the Union Pacific Railroad)

Receptors	Nighttime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/ Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
C1 (R)	67.1	66.5	0.6	3	0	0	1,350	16,350	\$369,600	N/A
C2 (R)	67.2	66.7	0.5	1	0	0				
C3 (R)	67.5	67.2	0.3	4	0	0				
C4 (R)	65.1	64.7	0.4	6	0	0				
C5 (R)	61.4	60.7	0.7	1	0	0				
C6 (R)	59.2	58.2	1.0	4	0	0				
C7 (R)	57.5	56.4	1.1	2	0	0				
C8 (R)	56.9	55.4	1.5	1	0	0				
C9 (R)	57.8	56.4	1.4	1	0	0				
C10 (R)	59.8	58.6	1.2	1	0	0				
C11 (R)	60.5	59.3	1.2	1	0	0				
C12 (C)	62.1	61.0	1.1	1	0	0				
E1 (C)	63.4	60.8	2.6	1	0	0				
E2 (C)	65.2	64.3	0.9	1	0	0				
G1 (C)	62.0	60.7	1.3	1	0	0				

Bold numbers are above State nighttime standards (L₁₀).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 285 feet of Barrier C is a 20-foot tall barrier and a length of 1,065 feet of Barrier C is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

**TABLE B-7
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
Modeled Barrier F (east side of TH 43 Winona Bridge between 4th Street and Latsch Island)**

Receptors*	Daytime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/ Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
D1 (C)	66.4	62.4	4.0	1	0	0	2,200	26,000	\$592,000	N/A
D2 (NRHP)	64.3	63.3	1.0	1	0	0				
D3 (NRHP)	62.4	61.5	0.9	1	0	0				
F1 (C)	71.9	71.7	0.2	1	0	0				
F2 (C)	66.5	64.1	2.4	1	0	0				
F3 (R)	63.4	62.0	1.4	1	0	0				
F4 (C)	63.8	62.7	1.1	1	0	0				
F5 (NRHP)	63.0	61.9	1.1	1	0	0				
F6 (C)	64.2	63.4	0.8	1	0	0				
F7 (C)	68.1	67.7	0.4	1	0	0				
H1 (I)	64.7	62.9	1.8	1	0	0				
H2 (I)	68.7	68.4	0.3	1	0	0				
H3 (I)	67.2	66.4	0.8	1	0	0				
H4 (I)	68.9	68.0	0.9	1	0	0				
H5 (C)	70.6	70.1	0.5	1	0	0				
H6 (C)	64.4	63.4	1.0	1	0	0				
H7 (C)	62.6	61.5	1.1	1	0	0				
H8 (C)	63.3	62.5	0.8	1	0	0				
H9 (R)	64.0	63.3	0.7	1	0	0				
H10 (C)	62.4	61.4	1.0	1	0	0				
H11 (C)	60.0	58.1	1.9	1	0	0				
H12 (I)	61.0	59.0	2.0	1	0	0				
H13 (C)	62.3	60.5	1.8	1	0	0				

Bold numbers are above State daytime standards (L₁₀). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 400 feet of Barrier F is a 20-foot tall barrier and a length of 1,800 feet of Barrier F is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

TABLE B-7 continued
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
Modeled Barrier F (east side of TH 43 Winona Bridge between 4th Street and Latsch Island)

Receptors	Daytime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
H14a (R)	62.7	60.3	2.4	1	0	0	2,200	26,000	\$592,000	N/A
H14b (R)	62.8	60.4	2.4	1	0	0				
H14c (R)	62.9	60.5	2.4	1	0	0				
H14d (R)	62.9	60.7	2.2	1	0	0				
H14e (R)	62.3	60.0	2.3	1	0	0				
H14f (R)	62.3	60.1	2.2	1	0	0				
H14g (R)	62.4	60.2	2.2	1	0	0				
H14h (R)	62.4	60.3	2.1	1	0	0				
H14i (R)	61.8	59.6	2.2	1	0	0				
H14j (R)	61.8	59.7	2.1	1	0	0				
H14k (R)	61.9	59.8	2.1	1	0	0				
H14l (R)	61.9	59.8	2.1	1	0	0				
H14m (R)	61.3	59.2	2.1	1	0	0				
H14n (R)	61.3	59.3	2.0	1	0	0				
H14o (R)	61.3	59.3	2.0	1	0	0				
H14p (R)	61.4	59.4	2.0	1	0	0				
H15 (T)	61.6	60.5	1.1	1	0	0				
H16 (T)	63.5	61.5	2.0	1	0	0				
H17 (T)	63.9	60.6	3.3	1	0	0				
H18 (T)	62.6	59.8	2.8	1	0	0				
H19 (T)	61.5	58.9	2.6	1	0	0				
H20 (NRHP)	60.2	57.9	2.3	1	0	0				

Bold numbers are above State daytime standards (L₁₀). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 400 feet of Barrier F is a 20-foot tall barrier and a length of 1,800 feet of Barrier F is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

**TABLE B-8
NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)
Modeled Barrier F (east side of TH 43 Winona Bridge between 4th Street and Latsch Island)**

Receptors*	Nighttime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
D1 (C)	63.7	60.0	3.7	1	0	0	2,200	26,000	\$592,000	N/A
D2 (NRHP)	61.7	61.0	0.7	1	0	0				
D3 (NRHP)	59.7	59.1	0.6	1	0	0				
F1 (C)	68.2	68.0	0.2	1	0	0				
F2 (C)	63.3	62.3	1.0	1	0	0				
F3 (R)	60.5	59.8	0.7	1	0	0				
F4 (C)	60.9	60.3	0.6	1	0	0				
F5 (NRHP)	60.2	59.6	0.6	1	0	0				
F6 (C)	61.0	60.5	0.5	1	0	0				
F7 (C)	64.3	64.0	0.3	1	0	0				
H1 (I)	62.2	61.7	0.5	1	0	0				
H2 (I)	65.9	65.8	0.1	1	0	0				
H3 (I)	64.4	64.1	0.3	1	0	0				
H4 (I)	65.4	65.0	0.4	1	0	0				
H5 (C)	66.6	66.4	0.2	1	0	0				
H6 (C)	61.2	60.8	0.4	1	0	0				
H7 (C)	59.6	59.1	0.5	1	0	0				
H8 (C)	60.1	59.7	0.4	1	0	0				
H9 (R)	60.5	60.1	0.4	1	0	0				
H10 (C)	59.3	58.9	0.4	1	0	0				
H11 (C)	57.2	56.6	0.6	1	0	0				
H12 (I)	58.2	57.5	0.7	1	0	0				
H13 (C)	59.4	58.8	0.6	1	0	0				

Bold numbers are above State nighttime standards (L₁₀).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 400 feet of Barrier F is a 20-foot tall barrier and a length of 1,800 feet of Barrier F is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

TABLE B-8 continued
NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)
Modeled Barrier F (east side of TH 43 Winona Bridge between 4th Street and Latsch Island)

Receptors	Nighttime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
H14a (R)	59.8	59.0	0.8	1	0	0	2,200	26,000	\$592,000	N/A
H14b (R)	59.9	59.1	0.8	1	0	0				
H14c (R)	60.0	59.2	0.8	1	0	0				
H14d (R)	60.0	59.3	0.7	1	0	0				
H14e (R)	59.4	58.6	0.8	1	0	0				
H14f (R)	59.5	58.7	0.8	1	0	0				
H14g (R)	59.5	58.8	0.7	1	0	0				
H14h (R)	59.6	58.9	0.7	1	0	0				
H14i (R)	59.0	58.2	0.8	1	0	0				
H14j (R)	59.0	58.3	0.7	1	0	0				
H14k (R)	59.1	58.3	0.8	1	0	0				
H14l (R)	59.1	58.4	0.7	1	0	0				
H14m (R)	58.5	57.8	0.7	1	0	0				
H14n (R)	58.5	57.8	0.7	1	0	0				
H14o (R)	58.6	57.9	0.7	1	0	0				
H14p (R)	58.6	57.9	0.7	1	0	0				
H15 (T)	60.0	59.7	0.3	1	0	0				
H16 (T)	61.5	60.9	0.6	1	0	0				
H17 (T)	60.9	59.9	1.0	1	0	0				
H18 (T)	59.8	58.9	0.9	1	0	0				
H19 (T)	58.7	57.9	0.8	1	0	0				
H20 (NRHP)	57.5	56.7	0.8	1	0	0				

Bold numbers are above State nighttime standards (L₁₀).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 400 feet of Barrier F is a 20-foot tall barrier and a length of 1,800 feet of Barrier F is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

TABLE B-9

NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)

Modeled Barrier J (east side of TH 43 Winona Bridge on between Latsch Island and Bridge #5930)

Receptors	Daytime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
J1 (R)	64.5	62.3	2.2	5	0	0	915	14,300	\$302,000	N/A
J2 (R)	61.4	59.5	1.9	2	0	0				
J3 (R)	63.8	61.3	2.5	1	0	0				
J4 (R)	61.6	60.1	1.5	6	0	0				
J5 (R)	61.9	60.6	1.3	5	0	0				
J6 (R)	63.9	62.8	1.1	5	0	0				
J7 (R)	65.7	64.6	1.1	6	0	0				

Bold numbers are above State daytime standards (L₁₀). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 515 feet of Barrier J is a 20-foot tall barrier and a length of 400 feet of Barrier J is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

TABLE B-10

NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)

Modeled Barrier J (east side of TH 43 Winona Bridge on between Latsch Island and Bridge #5930)

Receptors	Nighttime L ₁₀ Noise Level (dBA)		Reduction (in dBA) with noise barrier	Number of residences, commercial or industrial establishments	Number of benefited residences, commercial or industrial establishments ⁽¹⁾	Design goal reduction >7 dBA ⁽²⁾	Length of barrier (feet)	Barrier Area (sq ft) ⁽³⁾	Total cost of barrier ⁽⁴⁾	Cost/Benefited Receptor
	Build year 2038 (no barrier)	Build year 2038 (with noise barrier)								
20-foot tall modeled barrier (10-foot tall modeled barrier on bridge structure)										
J1 (R)	61.9	60.8	1.1	5	0	0	915	14,300	\$302,000	N/A
J2 (R)	58.8	57.9	0.9	2	0	0				
J3 (R)	61.5	59.2	2.3	1	0	0				
J4 (R)	59.3	57.9	1.4	6	0	0				
J5 (R)	59.6	58.3	1.3	5	0	0				
J6 (R)	61.5	60.3	1.2	5	0	0				
J7 (R)	63.2	62.0	1.2	6	0	0				

Bold numbers are above State nighttime standards (L₁₀).

(R) – Residential; (C) – Commercial/Office; (I) – Industrial; (T) – Trail; (NRHP) – Property is listed or eligible for the National Register of Historic Places

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

⁽¹⁾ Number of benefited residences, commercial or industrial establishments with a minimum 5 dBA reduction.

⁽²⁾ Noise barrier must meet MnDOT’s noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

⁽³⁾ A length of 515 feet of Barrier J is a 20-foot tall barrier and a length of 400 feet of Barrier J is a 10-foot tall barrier on the bridge structure.

⁽⁴⁾ The cost of a noise barrier is calculated using \$20 per square foot of barrier and \$24 per square foot of barrier on structure.

APPENDIX G

ENVIRONMENTAL JUSTICE TABLES

Table G-1
Income and Poverty - 2007-2011 American Community Survey (ACS)

Demographic Group	State of Minnesota		Winona County		City of Winona		Tract 6704 - Block Group 1		Tract 6705 - Block Group 1		Tract 6705 - Block Group 2		Tract 6705 - Block Group 4	
	Estimate	MOE (% of Estimate)	Estimate	MOE	Estimate	MOE	Estimate	MOE	Estimate	MOE	Estimate	MOE	Estimate	MOE
Population	5,278,190	*****	51,394	*****	27,671	0.1%	671	37%	955	25%	724	39%	775	33%
Number of Households	2,094,265	0.3%	19,292	2%	10,643	3%	290	27%	667	19%	362	30%	338	33%
Number of Families	1,363,384	0.4%	11,632	3%	5,225	5%	129	N/A	56	N/A	118	N/A	191	N/A
Poverty Status														
Percent of households below poverty (income in 2012 below poverty level)	10.6%	0.9%	16.6%	10%	23.2%	12%	18.6%	133%	53.1%	42%	41.7%	66%	56.5%	62%
Percent of family households below poverty (income in 2012 below poverty level)	7.1%	1.8%	6.9%	22%	9.5%	32.1%	0.0%	0.0%	76.8%	109.3%	48.3%	119.3%	28.3%	159.3%
Additional Income Measures														
Median household income in 2012 (2012 dollars)	\$58,476	0.4%	\$44,848	4%	\$35,964	7%	\$49,750	21%	\$12,034	17%	\$20,870	40%	\$6,833	467%
Median family income in 2012 (2012 dollars)	\$73,046	0.4%	\$63,838	4%	\$61,334	5%	\$70,694	64%	\$16,111	93%	\$38,056	228%	\$57,862	57%
Per capita income in 2012 (2012 dollars)	\$30,310	0.5%	\$22,327	3%	\$20,194	5%	\$21,738	21%	\$11,281	17%	\$16,556	44%	\$15,021	41%

Source: Year 2007 -2011 American Community Survey (Tables S1101, S1702, B17017, B01001, B19013, B19113, B19301, B10010)

MOE: Margin of Error, measured as (margin of error/estimate), has a 90% Confidence Interval

An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

Table G-2
Population, Households, and Race - 2010 Census

Demographic Group	State of Minnesota		Winona County		City of Winona		Tract 6704 Block Group 1		Tract 6705 Block Group 1		Tract 6705 Block Group 2		Tract 6705 Block Group 4	
	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.
Households	2,087,227	N/A	19,554	N/A	10,449	N/A	282	N/A	511	N/A	315	N/A	320	N/A
Population	5,303,925	100%	51,461	100%	27,592	100%	638	100%	781	100%	708	100%	801	100%
Race:														
WHITE	4,524,875	85.3%	48,579	94.4%	25,661	93.0%	601	94.2%	722	92.4%	655	92.5%	743	92.8%
NON-WHITE	779,050	14.7%	2,882	5.6%	1,904	6.9%	37	5.8%	59	7.6%	53	7.5%	58	7.2%
- <i>Black</i>	274,024	5.2%	669	1.3%	524	1.9%	9	1.4%	23	2.9%	17	2.4%	16	0.0%
- <i>ALAN</i> ⁽¹⁾	60,681	1.1%	154	0.3%	83	0.3%	3	0.5%	1	0.1%	1	0.1%	1	0.1%
- <i>Asian</i>	214,336	4.0%	1,081	2.1%	800	2.9%	6	0.9%	15	1.9%	15	2.1%	26	3.2%
- <i>NHPI</i> ⁽²⁾	972	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- <i>Other Race</i>	103,824	2.0%	360	0.7%	138	0.5%	7	1.1%	2	0.3%	4	0.6%	1	0.1%
- <i>Two or More Races</i>	125,214	2.4%	618	1.2%	359	1.3%	12	1.9%	18	2.3%	16	2.3%	14	1.7%
Ethnicity:														
· Hispanic or Latin Origin	249,521	4.7%	1,235	2.4%	469	1.7%	9	1.4%	10	1.3%	11	1.6%	10	1.2%
· Non-Hispanic or Latin Origin	5,054,404	95.3%	50,226	97.6%	27,123	98.3%	629	98.6%	771	98.7%	697	98.4%	791	98.8%

Source: Year 2010 U.S. Census Data SF 1 (Tables QT-P4 and QT-P11)

(1) AIAN = American Indian or Alaska Native (2) NHPI = Native Hawaiian & Other Pacific Islander

APPENDIX H

SECTION 4(F) RELATED CORRESPONDENCE



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

Minnesota Division

July 19, 2013

380 Jackson Street
Cray Plaza, Suite 500
St. Paul, MN 55101-4802
651.291.6100
Fax 651.291.6000
www.fhwa.dot.gov/mndiv

Judy Bodway
City Manager
City of Winona
207 Lafayette Street
Winona, MN 55987

Re: Winona Bridge Project
State Project Number 8503-46
Waterfront Trail
Temporary Occupancy & Intent to Make a De Minimis Determination

Dear Ms. Bodway:

As part of the construction for the Winona Bridge Project, the Minnesota Department of Transportation (MnDOT) plans to acquire two easements over portions of the Waterfront Trail. Waterfront Trail is a recreational trail, owned and managed by the City of Winona, which runs along the riverfront underneath the existing bridge. The Waterfront Trail is approximately 0.2 miles long and connects Levee Park to Riverview Drive.

As a recreational resource, Waterfront Trail is subject to Section 4(f) of the Department of Transportation Act of 1966. The Section 4(f) process addresses temporary and permanent impacts to Section 4(f) resources. The Winona Bridge project would rehabilitate the existing bridge and add a new permanent bridge over the trail, but would not construct new permanent structures in the trail corridor. The Waterfront Trail would be temporarily detoured during project construction.

MnDOT will acquire a **temporary easement** over the west portion of the property for construction access only (no long term access needed). The work in this temporary easement constitutes a temporary occupancy of a Section 4(f) resource. The duration of the occupancy will be temporary in nature and there will be no change in ownership of the resource (i.e., the Waterfront Trail). There are neither anticipated permanent adverse physical impacts nor anticipated interference with the activities or purposes of the trail, on either a permanent or temporary basis (as a detour will be provided during construction). The land being used will be fully restored to a condition that is at least as good as the one that existed prior to the project.

To proceed with the construction in this area as a temporary occupancy of a Section 4(f) resource, there must be documented agreement that the officials having jurisdiction over the resource concur with the assessment of impacts to the Waterfront Trail, the work to be completed, and agree that the conditions described in the above paragraph are met.

A **permanent easement** over the east portion of the trail is needed for construction vehicle access for construction of the new bridge and rehabilitation of the existing bridge, and for future bridge maintenance access in perpetuity. The enclosed figure shows the permanent easement as “total acquisition.” This permanent easement is considered a use of a Section 4(f) resource.

The Federal Highway Administration (FHWA) intends to make a *de minimis* determination for the permanent easement on Waterfront Trail because the anticipated impacts will not adversely affect the activities, features, or attributes which qualify a resource for protection under Section 4(f). The Section 4(f) process is simplified when there are only *de minimis impacts* to Section 4(f) properties. If the FHWA makes a *de minimis* determination of a project’s Section 4(f) impacts, the Section 4(f) process is satisfied and no further analysis is needed. We are requesting concurrence from the City, as the official with jurisdiction over the trail, that acquisition of the permanent easement will not adversely affect the activities, features, or attributes of the Waterfront Trail.

The intent to make a *de minimis* determination would be included in the Environmental Assessment (EA) for the project that is expected to be published this fall. As part of the EA public comment period, the public will be afforded an opportunity to review and comment on the effects of the project on the activities, features, or attributes of the property. Following the EA public comment period, FHWA will make a final determination regarding *de minimis* impacts.

A preferred alternative has not been declared for the Winona Bridge project. FHWA will engage the City, as appropriate, with any changes to the anticipated impacts on City-owned Section 4(f) resources.

Please review the enclosed map and indicate your concurrence with the work proposed, and that the above temporary occupancy **and** *de minimis* conditions are met, by responding to this letter in writing. We request your response within 30 days of receiving this letter.

If you have questions regarding this matter, feel free to contact me at your earliest convenience at (651) 291-6110 or phil.forst@dot.gov.

Sincerely,



Philip Forst
2013.07.19
11:03:19 -05'00'

Philip Forst
Environmental Specialist

Enclosure

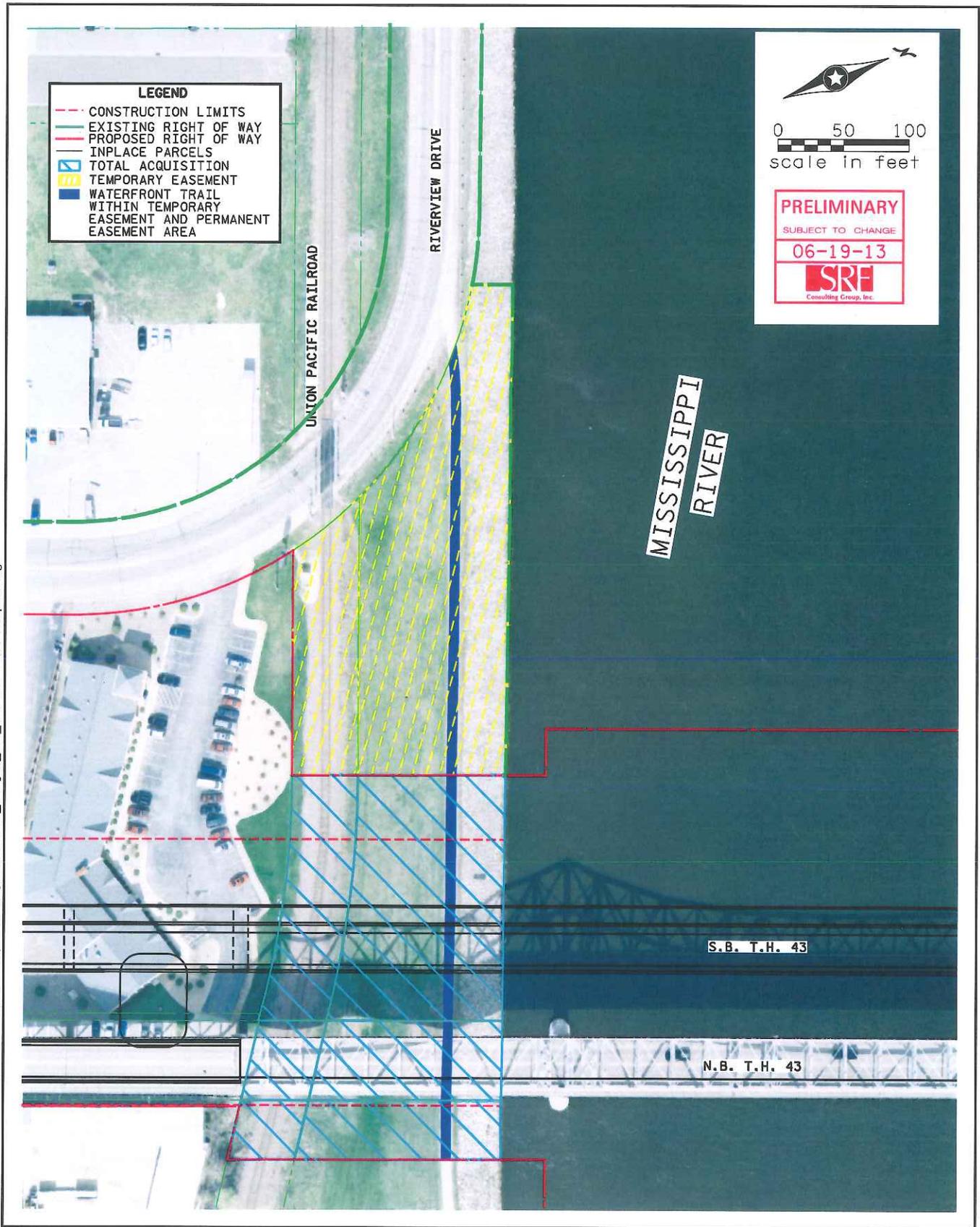
PJF/alk

cc: 1 MnDOT – Ward, e-copy w/enclosure (terry.ward@state.mn.us)
1 MnDOT – Moynihan, e-copy w/enclosure (debra.moynihan@state.mn.us)
1 City of Winona Parks & Recreation, e-copy w/enclosure (mjohnson@ci.winona.mn.us)
1 FHWA – Ginsberg, e-copy w/enclosure (abbi.ginsberg@dot.gov)

DMS – [MN DOC LIBRARY-#38379-SP 8503-46 - Winona Bridge - Intent to Make De Minimis Determination for Waterfront Trail - Winona County](#)

Enclosure – 6-19-13 Figure of Waterfront Trail Easements

H:\Projects\6802\Design\EA Graphics\Right of Way\cd850346_bdrgra_EA_8.5 x11 Trail Graphic.dgn



Waterfront Trail Easements

Winona Bridge Project
S.P. 8503-46
Winona, Minnesota

Figure 1



CITY HALL

207 Lafayette Street
P.O. Box 378
Winona, MN 55987-0378
FAX 507/457-8293

August 23, 2013

Phillip Forst
Environmental Specialist
US Department of Transportation
Federal Highway Administration
380 Jackson Street
Cray Plaza Suite 500
St. Paul, MN 55101-4802

Re: Winona Bridge Project
State Project No. 8503-46
Temporary Occupancy and Intent to Make a De Minimis Determination

Dear Mr. Forst,

The City of Winona has received and reviewed your request for comments concerning the Waterfront Trail and the Section 4(f) process. The City of Winona approved Municipal Consent with MnDOT on August 19, 2013 which approves the layout of the Winona Bridge Project. Within the layout is the Waterfront Trail.

The City understands that temporary easement over the west portion of the property is needed for construction access only. The land will be fully restored to pre-construction condition once construction has been completed. A detour will be provided during construction. We understand that comments can be made as part of the public comment process for the Environmental Assessment.

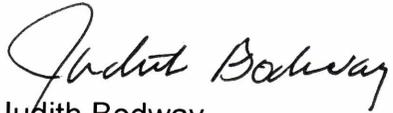
MnDOT will also need a permanent easement over the east portion of the trail for construction access during the new bridge construction, during rehabilitation of the existing bridge and for future bridge maintenance in perpetuity. The City understands the need for permanent easement for future bridge maintenance over the Waterfront Trail. We understand that comments can be made on this issue as part of the public comment process for the Environmental Assessment.

The City believes that the temporary and permanent easements should not adversely affect the activities, feature or attributes of the Waterfront Trail. The Winona Bridge project allows for the Waterfront Trail to continue in the future but will require a detour during the construction period.

The City may make comments on the final design of the trail during the Visual Quality Committee process with MnDOT and during the public comment period for the Environmental Review process. Such comments may include issues related to the final condition of the trail once the bridge project is completed. We further understand that MnDOT intends to return the Waterfront Trail to an equal or better condition when construction is completed.

Please feel free to call with any comments or questions you may have on this issue.

Sincerely,

A handwritten signature in black ink that reads "Judith Bodway". The signature is written in a cursive style with a large initial "J".

Judith Bodway
City Manager

Cc: Terry Ward

State Historic Preservation Office

August 13, 2013

Ms. Kristen Zschomeler
Cultural Resources Unit
MN Dept. of Transportation
Transportation Building, MS620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

Re: S.P. 8503-46
Winona Bridge Project
Winona, Winona County
MN SHPO No. 2009-3391

Dear Ms. Zschomler:

Thank you for submitting additional information regarding the parallel bridge design, noise analysis, and potential effects on the C&NW Railroad Segment, the YMCA, and the Huff-Lamberton House. These materials have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and its implementing regulations for the Protection of Historic Properties (36 CFR Part 800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

We agree with your assessment that the noise analysis has shown there will be no adverse auditory effect on historic properties in the APE. We also agree that the temporary occupancy of the C&NW Railroad, the YMCA, and the Huff-Lamberton House will have no adverse effect on those historic properties. Further, we agree the permanent easement over the C&NW Railroad will have no adverse effect. The historic railroad segment will not be physically impacted by the new bridge and the visual impact on the setting is minimal. The historic corridor will still be recognizable as such and remain in use.

Concerning the proposed design for the parallel bridge, we would like to reiterate our previous comment that although the box girder is not our preferred design, we believe all three alternatives—including the box girder—can meet the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Any new construction within the viewshed of the bridge will have a visual impact to the setting of the historic property. Despite our tendency to consult on individual project items as information becomes available, the SHPO's role in consultation is to comment on the effect of the project as a whole on the historic property. Regardless of the bridge design chosen, we believe the adverse effect to the historic bridge has been minimized because the new bridge has allowed the historic bridge to remain in use, rehabilitated, and preserved for future generations. The

project will allow the historic bridge to retain integrity of location, design, materials, and workmanship, all of which are critical character-defining features for the historic property.

We understand a Visual Quality Committee is being appointed to review and assess design elements for the new structure. Per the terms of the programmatic agreement that is being negotiated for this project, we look forward to further consultation on these design elements to ensure the visual impact to the historic bridge will be minimized to the greatest extent possible. Please contact me at 651-259-3466 with any questions you may have regarding this review.

Sincerely,



Barbara M. Howard
Deputy State Historic Preservation Officer

cc: Phil Forst, FHWA
Mark Moeller, Winona Heritage Preservation Commission
Mark Peterson, Winona County Historical Society

APPENDIX I

MITIGATION COMMITMENTS

APPENDIX I – COMMITMENTS LIST

Environmental Assessment/Environmental Assessment Worksheet Winona Bridge Project S.P. 8503-46

This list below presents the commitments to be carried out by the project proposers to offset or minimize impacts, comply with agency requests, or complete agreements made during agency coordination. The resources are presented in the order they are addressed in the EA/EAW.

Project Description

The Build Alternative (recommended alternative) includes:

- Rehabilitation/reconstruction of existing bridge including
 - full deck removal and replacement with a light-weight concrete deck¹
 - removal of the pedestrian cantilevered walkway on the existing bridge
 - removal and replacement of the approach spans and piers
 - replacement in kind of the deck truss spans and piers based on detailed study of condition and ability to retain historic integrity
 - repair, cleaning and painting of the main through truss and piers
- Construction of a new bridge parallel to existing bridge, with the following features
 - girder-type²
 - on the Winona Street West alignment
 - including a 12-foot wide pedestrian/bike way on the upstream (west) side.
- Improvements to the Winona Street-4th Street intersection including turn lanes, signalization, and pedestrian improvements.
- Reconstruction of portions of 2nd and 3rd Streets.
- Reconstruction of the TH 43-Latsch Island road access intersection including turn lanes and trail connections.

Upon completion of the project, the existing bridge would carry two lanes of traffic in the northbound direction and the new bridge would carry two lanes of traffic in the southbound direction.

¹ The preliminary design assumptions that dictate the level to which rehabilitation is needed on the through truss will be further evaluated in the final design phase. As final design progresses, if these initial assumptions are found to require modification, further coordination and collaboration will be conducted with MnDOT CRU, SHPO, and FHWA.

² Specific girder bridge type to be determined; Section IV. Social, Economic and Environmental Impacts describes impacts based on generic girder-type bridge.

The recommended Build Alternative includes staging that constructs the new bridge first while traffic continues to be carried on the existing bridge, then moving traffic to the new bridge while rehabilitation/reconstruction of the existing bridge is completed. Upon project completion, the two bridges would operate as a one-way pair, tying into the improved Winona Street/4th Street intersection at the south terminus and tapering to tie into the two lane TH 43 section at the north terminus.

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Table I-1. Commitments

Commitment	Date	Staff	Notes
Bridge 5900 Deck Truss Testing			
<p>Project funds will be used for an independent study to deconstruct, transport and forensically analyze select portions of the Bridge 5900 deck trusses slated for replacement, to objectively characterize their condition and material properties, to evaluate their effect on load capacity in laboratory conditions, to compare to assumptions of the Bridge 5900 rehab study, and contribute to a body of knowledge in the structural community to help inform future rehab studies of steel trusses. Procedures (including any necessary contract special provisions) for preserving the extant integrity of select portions of the deck trusses for study will be written and included in the contract for bridge construction. FHWA and MnDOT will be among the participants providing input on the scope of the study.</p>			
Potential Environmental Hazards			
<p>Known or potentially contaminated sites will be investigated further before property acquisition occurs. A plan for proper handling, treatment, and disposal of contaminated materials will be developed in cooperation with the Minnesota Pollution Control Agency (MPCA).</p>			
<p>Regulated wastes may be encountered during bridge rehabilitation/reconstruction and building demolition. These materials will be handled and disposed of according to applicable state, federal, and Minnesota Department of Transportation (MnDOT) policies and regulations.</p>			
<p>In the event that a leak or spill occurs during construction, it will be responded to in accordance with MPCA containment and remedial action procedures.</p>			

Commitment	Date	Staff	Notes
Vegetation/Habitat/Sensitive Species			
A vegetation plan will be prepared that includes efforts to avoid and/or minimize these impacts during both the design and construction phase. The vegetation plan will be based on MnDOT Standard Specification for Construction 2572 (Protection and Restoration of Vegetation).			
Mitigation measures such as the use of temporary fence for tree protection will be used. These areas should be identified in the plan and Standard Detail Sheets that are available for these items included in the plan package.			
The vegetation plan will also be followed for vegetation replacement. Re-vegetation within the project area will attempt to control invasive species. The contractor will be required to control state listed noxious weeds.			
No untreated ash or walnut wood can be brought into Minnesota from Wisconsin, including timber mats, without a compliance agreement from the Minnesota Department of Agriculture (MDA). The contractor must follow all MDA quarantine requirements.			
If infested soils are removed from the project site and not brought to an approved facility, the contractor will be responsible for obtaining a permit from the MDA for disposal.			
A potential exception to the use of native plants as provided for in MnDOT's recommended vegetation replacement guidelines is surrounding new stormwater treatment ponds, where specific plant species would be used if requested to prevent bird collisions with aircraft, due to the proximity to the Winona Airport.			

Commitment	Date	Staff	Notes
The land staging areas will be restored to existing conditions with tree plantings after construction is complete. Trees will be replaced according to MnDOT specifications.			
Trees removed will be subject to Emerald Ash Borer special provisions, as Winona County and Wisconsin are considered infested.			
Trees cut in wetland areas will be replaced in accordance with U.S. Army Corps of Engineers (USACE) requirements (0.25 to 1).			
Coordination with the U.S. Fish and Wildlife Service (USFWS) service will continue through final design to identify opportunities to minimize the potential for impacts to migratory birds.			
The bridge will be inspected for the presence of nesting activity prior to the start of work on the existing bridge. If nesting activity is identified, appropriate measures will be taken in accordance with the provisions of the Migratory Bird Treaty Act.			
Tree removal will be done outside of the nesting season, when possible. USFWS will be coordinated with for any tree removal activities that may be scheduled during the nesting season due to special circumstances.			
MnDOT will continue to coordinate with USFWS staff regarding the measures to identify and address the potential for impacts to bald eagle nests throughout the duration of the project, which may include annual field surveys.			

Commitment	Date	Staff	Notes
MnDOT will continue its coordination with USFWS to complete the Section 7 consultation process, which will include MnDOT formally requesting concurrence from the USFWS on this determination and USFWS issuing of a concurrence letter in response.			
Stringent erosion and sediment control measures and water quality protection measures will be used. Best Management Practices (BMPs) will minimize impacts to water quality during and after construction. In-water BMPs will be utilized to control turbidity within the Mississippi River. On-land erosion and sedimentation BMPs will be utilized to control sediment from entering the Mississippi River. The project includes provisions to treat stormwater from the roadway prior to discharge into the river.			
Construction operations that may impact the river bed will not occur during fish spawning and migration periods (approximately April 15 to June 15) without approval from the Minnesota Department of Natural Resources (DNR). Exact dates and allowable work in the river during this time period will be subject to DNR permit conditions.			
Minnesota Rule 6216.0265 prohibits the transport of water from infested waters, except by permit. Currently, DNR General Permit to MnDOT (GP 2004-0001) authorizes work in infested waters and requires that all equipment, used in state waters that are known to contain aquatic invasive species and that are designated as infested waters, shall be inspected by MnDOT or its contractors and adequately decontaminated prior to being transported. The DNR is available to train MnDOT site inspectors and may be able to assist in these inspections.			

Commitment	Date	Staff	Notes
Contractors will be made aware of the presence of invasive species in waters along the project, and suitable precautions will be taken to prevent their spread. This includes limiting the movement of excavated material from wet ditches or wetlands from one area to another, as well as not allowing water for local dust control to be pulled out of designated infested waters.			
Public Waters and Wetlands			
Project construction activities will be conducted in accordance with the conditions of the Amended MnDOT Statewide General Public Waters Work Permit.			
BMPs will be utilized during dredging in the Mississippi River, placement of fill in the river, and construction of in-water bridge piers. The river fill would need to be removed at the conclusion of the project. The fill would be removed using heavy equipment and trucks. The river bottom and surrounding area would be restored to its original or permitted condition. This would likely include restoring the wing dams ³ [1] to an accepted condition and removing the floating silt fence used for sedimentation control.			
Wetlands within the construction limits of the TH 43 Bridge and approach are potentially subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), the Wetland Conservation Act (WCA) Local Governmental Unit (LGU), and the Minnesota DNR. Mitigation for wetland fill impacts will likely occur at a 2:1 (mitigation:impact) ratio based on acreage of impacts.			
Mitigation for tree-cutting wetland impacts will likely occur at a 0.25:1 mitigation ratio.			

³ wing dams in this case refer to manmade fill in the river placed to slow water flow near the river banks.

Commitment	Date	Staff	Notes
Mitigation plans will be created during the final design and permitting process. It is anticipated that mitigation for wetland fill impacts and wetland tree cutting impacts will be accomplished through debiting of credits from an existing MnDOT wetland bank in Hokah, Minnesota. The Hokah Bank is located on the Root River and is anticipated to have sufficient acreage available to meet the mitigation requirements for the Winona Bridge project.			
The wetland staging area will be restored to pre-construction conditions with appropriate tree planting. The wetland construction tree cutting area will be restored to pre-construction grade and planted with an appropriate wetland seed mix though trees will not likely be planted under the bridge.			
Water Use			
Construction activities will be coordinated with the Minnesota Department of Health (MDH) to prevent drinking water contamination due to construction activities.			
The appropriate permits will be obtained from the DNR for any temporary dewatering activities.			
Water Surface Use/River Navigation			
The contractor will be responsible for coordination with the U.S. Coast Guard (USCG). The USCG will review plans for bridge construction to minimize impacts to river navigation during construction. The navigation channel will remain open during construction to the extent possible and no disruption is anticipated except for temporary short term closures to be coordinated with the USCG. These impacts will apply to barge and recreational boaters. Recreational boats may be subject to a “no wake” restriction during construction in lieu of closures.			

Commitment	Date	Staff	Notes
The USCG, USACE, and the contractor will coordinate construction activities with river users for safety of construction workers and boaters by using Navigational Safety Zones. Notifications about temporary disruptions will be provided at local marinas and public accesses.			
Construction of the south main span pier will use fill and sheet pile on the levee. The sheet pile will be cut off and abandoned rather than removed to prevent compromising the integrity of the levee. Fill on the land side of the levee will not be used. Any activities on the levee will be coordinated with the USACE.			
Dredging of the river will be coordinated with the DNR and MPCA.			
Water Quality			
Stormwater BMPs, such as wet basins and infiltration basins, will be constructed to mitigate for the additional impervious area. The BMPs will provide water quality treatment and rate control and will be designed to meet National Pollutant Discharge Elimination System (NPDES) standards.			
Design of stormwater treatment ponds will be coordinated with the City of Winona.			
Erosion and Sedimentation			

Commitment	Date	Staff	Notes
<p>Erosion and sedimentation of all exposed soils within the project area will be minimized by utilizing appropriate BMPs during construction. All vegetated areas would be reseeded or sodded where appropriate and slopes protected using staked wattles (erosion control stakes which catch material). Temporary and permanent erosion control plans will be identified in the final site grading and construction plans as required by the National Pollutant Discharge Elimination System - State Disposal System (NPDES-SDS) permitting for construction sites in accordance to the Minnesota Pollution Control Agency (MPCA) standards.</p>			
<p>A Storm Water Pollution Prevention Plan (SWPPP) that includes erosion control and sediment management practices is required to be submitted in partial fulfillment of the NPDES permit. Erosion and sedimentation control measures will be in place and maintained throughout the entire construction period for on land and in water activities. Permanent erosion control measures will be implemented when disturbed areas have been stabilized.</p>			
<p>Areas of fill and sheet pile would be used to access the southernmost river piers and from Latsch Island. A floating silt fence would be required around these areas to capture silt. Construction of the fill areas would require permitting through the DNR and USACE. The contractor would be required to obtain permits for its preferred construction method.</p>			
<p>Solid Wastes, Hazardous Wastes, Storage Tanks</p>			
<p>MnDOT is preparing an asbestos and regulated waste assessment. Hazardous materials will be handled and disposed of according to applicable state, federal, and MnDOT policies and regulations.</p>			
<p>Paint removal and application of new paint will follow MPCA regulations.</p>			

Commitment	Date	Staff	Notes
Appropriate measures will be taken during construction to avoid spills that could contaminate groundwater or surface water in the project area. In the event that a leak or spill occurs during construction, it will be responded to in accordance with MPCA containment and remedial action procedures.			
Vibrations, Dust, and Noise			
While vibration impacts to structures in the project area are not anticipated to result from the project, the location and magnitude of construction vibrations will be assessed further during final design. Vibration impacts 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.			
Dust impacts will be minimized through standard dust control measures such as watering.			
Construction equipment will be required to be properly muffled and in proper working order.			
While MnDOT and its contractor are exempt from local noise ordinances, it is the practice to require contractors to comply with applicable local noise restrictions and ordinances to the extent that it is reasonable. Advance notice will be provided to the affected communities of 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 will be limited to daytime hours as much as possible.			
The use of jack hammers and pavement sawing equipment will be prohibited during nighttime hours.			

Commitment	Date	Staff	Notes
Archaeological/Historic Resources			
<p>A Programmatic Agreement (PA) will provide for a review process as the rehabilitation/reconstruction design and new bridge plans move forward. Federal Highway Administration (FHWA), MnDOT Cultural Resources Unit (CRU), and State Historic Preservation Office (SHPO) will have opportunity to review design plans at 30, 60, and 90 percent completion milestones. The PA also will provide for consultation and the development of mitigation if, during subsequent design, the project is determined to have an adverse effect on historic properties that cannot be avoided.</p>			
<p>Archaeological testing of parcels to be acquired for the project will occur when MnDOT has acquired these parcels. The PA provides for the avoidance, minimization, and mitigation of any impacts to eligible sites if identified during testing.</p>			
Parks/Trails			
<p>MnDOT will have a temporary and a permanent easement over Waterfront Trail for construction and staging access and long term access to the bridge. The trail will be temporarily impacted, but restored following project construction.</p>			
<p>The area under the bridge may include a bicycle/pedestrian facility connecting the bridge to the existing trail facility along the riverfront underneath the bridge. If it is decided to implement this amenity, the specific design will be coordinated with the City of Winona.</p>			
Visual Impacts			

Commitment	Date	Staff	Notes
Aesthetic aspects of the project will be guided by the Visual Quality Manual currently under development by MnDOT. A Visual Quality Review Committee (VQRC) comprised of agency representatives and select public representatives is advising the project team on visual quality aspects of the design including any potential avoidance, minimization, or mitigation strategies.			
Infrastructure/Community Facilities			
MnDOT will coordinate with the City and utility owners for necessary City storm sewer upgrades and adjustment/relocation of utilities.			
Right of Way Acquisition and Relocation			
Property acquisitions and any relocations will 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). Resources are available to all relocated residents and businesses without discrimination.			
MnDOT will work with and City of Winona staff to assist in identifying relocation properties for displaced businesses.			
The boathouses located on new MnDOT right of way over the Mississippi River will be addressed as encroachments.			
Remnant parcels will be given or sold to other parties in accordance with MnDOT policy regarding surplus or excess right of way. Properties may be offered to or sold to public or private entities for a variety of future uses; these future uses will not be considered part of the project.			
Aviation			

Commitment	Date	Staff	Notes
<p>The Federal Aviation Administration (FAA) is reviewing bridge type alternatives. A Determination of No Hazard to Air Navigation for the preferred bridge type is expected because the project lies outside of the Runway Protection Zone, as defined in FAR Part 77; consultation with FAA has indicated that this formal determination will be made closer to construction. MnDOT will continue coordination with the FAA and the Winona Municipal Airport as the design progresses.</p>			
<p>The detention ponds will be designed to meet current AOA regulations if requested by the FAA and an agreement between MnDOT and the City of Winona will be developed to ensure the regulations are being implemented.</p>			