HWY 61
HASTINGS BRIDGE
PROJECT

ENVIRONMENTAL ASSESSMENT AND DRAFT SECTION 4(F) EVALUATION

MINNESOTA
DEPARTMENT OF TRANSPORTATION
Metropolitan District
S.P. 1913-64
Project Limits: Canadian Pacific Railroad to Fourth Street

ENVIRONMENTAL ASSESSMENT

Trunk Highway 61
State Project: 1913-64
Minnesota Project Number: not applicable – no federal funds at this time

Project Limits
Fourth Street (117+00.337) to the bridge over the Canadian Pacific Railway (118+00.295)
Cities: Hastings
County: Dakota and Washington
Dakota -- Section 7, Township 26N, Range 20W
Washington -- Sections 21 and 22, Township 115N, Range 17W

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
T.H. 61 Hastings Bridge over the Mississippi River

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4/9/09
Mn/DOT Metro District – Program Delivery Director Date

Approved by:

4/14/09
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4/24/09
FHWA – Project Development Engineer Date

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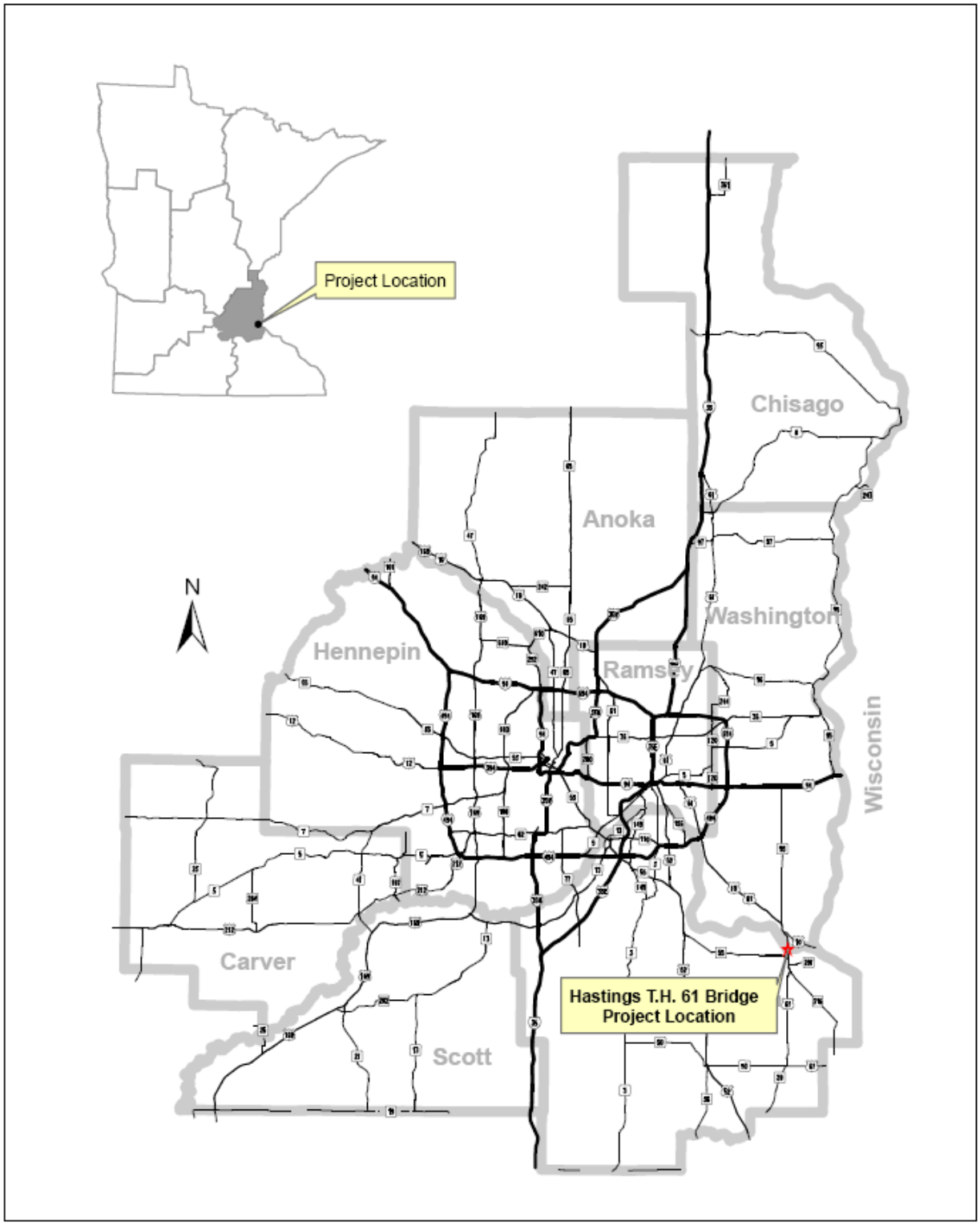

Area Location *Figure 1*

Hastings TH 61 Bridge Project
SP: 1913-64

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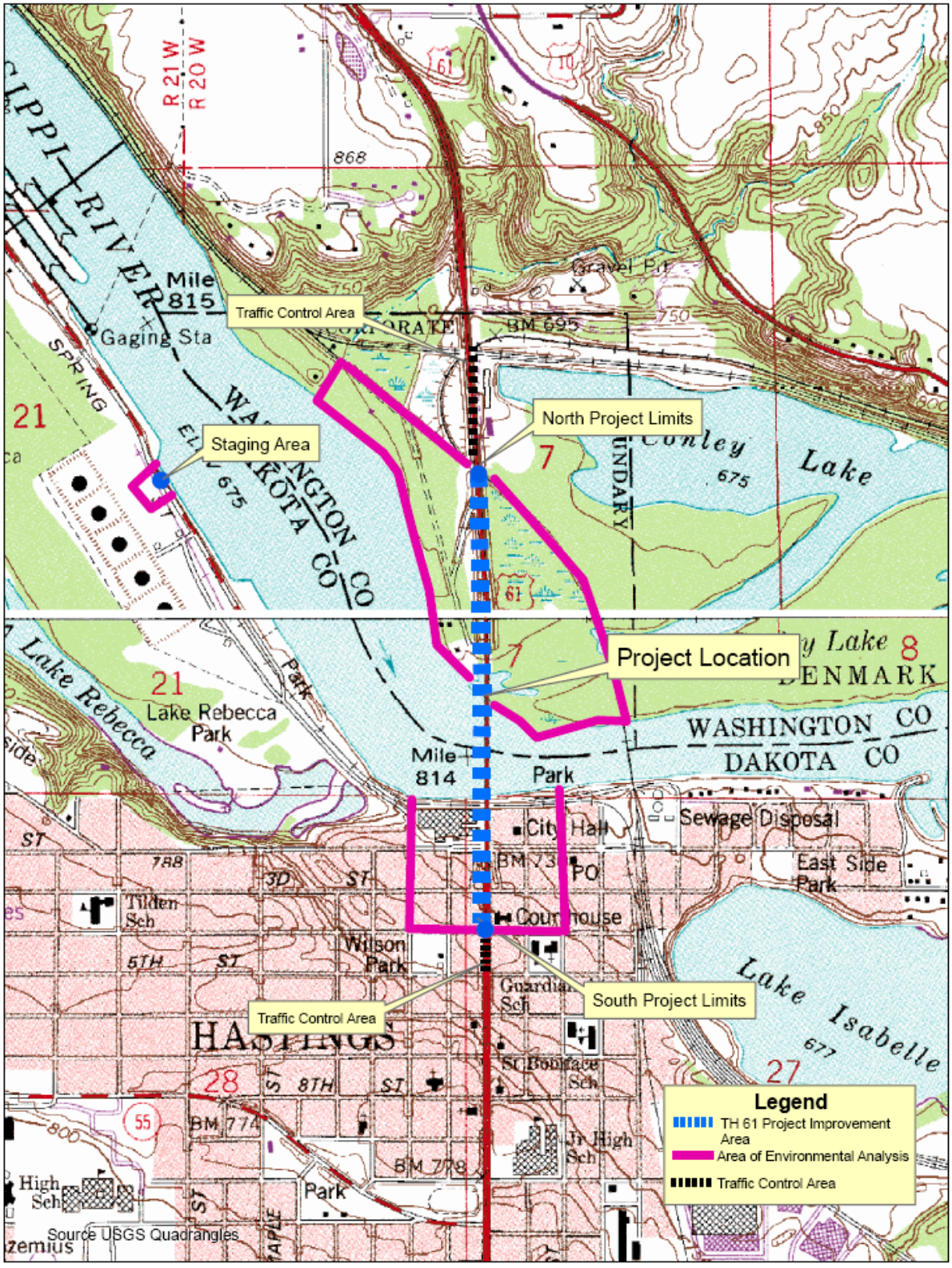
Figure 2 - USGS map



Project Location *Figure 2*

Hastings TH 61 Bridge Project
SP: 1913-64

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1. REPORT PURPOSE

This Environmental Assessment (EA) provides background information for the proposed bridge replacement and road construction project on Trunk Highway (T.H.) 61. This document includes discussion of:

- ·Need for the proposed project;
- ·Alternatives considered;
- ·Environmental impacts and mitigation; and,
- ·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 is the proposer and the state Responsible Governmental Unit (RGU) for this project. Preparation of an EAW for this project is not mandatory under Minnesota Rules 4410.4300. However, Mn/DOT has elected to follow the state EAW process in conjunction with the federal EA process.

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.

2. PURPOSE AND NEED FOR PROJECT

The proposed project is located in the City of Hastings, Minnesota, located on the banks of the Mississippi River, approximately 21 miles southeast of the St. Paul metropolitan area (See Figure 1 and Figure 2). The T.H. 61 Bridge across the Mississippi River in Hastings has been identified as a bridge which does not have redundancy[1] and is in need of rehabilitation or replacement.

This section of the EA is divided into three subsections: Historical Background, Project Needs, and Purpose. The Historical Background provides historical information about the City of Hastings and the unique location of the project area. The Project Needs section discusses transportation problems identified in the project area. The Purpose section lists objectives addressing the project's needs that are to be met by alternatives considered for construction and also summarizes other project area concerns that were taken into account when developing and evaluating alternatives. Alternatives that do not meet the transportation purpose are not considered viable, and therefore, are not analyzed in this EA.

[1] Redundancy means that multiple supporting elements exist such that if one of those supporting elements fails, the load previously carried by the failed supporting element will be redistributed to other supporting element.

Historical Background

City of Hastings Origin

The City of Hastings has a rich history that began in 1850 when the first cabin was built by a fur trader who hoped to lay claim to the area. The claim was surveyed in 1853 and the name for the city was drawn from a hat by the fur trader and his three partners. By January 1856, Hastings' population was 650 people; one year later it was nearly 2,000[2]. Exhibit 1 is an 1860 photo of the town's river front structures. Much of the history of the town has been preserved with two nationally designated urban historic districts, in addition to locally designated historic areas and several buildings on and/or eligible for the National Register of Historic Places (NRHP). Exhibit 2 is a recent photo along East Second Street; the T.H. 61 Bridge can be seen in the background on the photo, at the lower left.

Exhibit 1: Levee on First Street in 1860

Exhibit 2: East Second Street Commercial Historic District

Spiral Bridge – Hastings First River Crossing

The first highway bridge crossing the Mississippi River at Hastings was constructed in 1895 and became known as the Spiral Bridge (Exhibit 3: Spiral Bridge), for its unique spiral structure that connected the south end of the bridge directly to the Hastings business district.

The Spiral Bridge served as the local crossing from 1895 to 1951. It was removed after the construction of the current T.H. 61 Bridge, however; it is still an important part of the City's history and community identity.

[2] City of Hastings Downtown Business Association Website

Exhibit 3: Spiral Bridge

Current Hastings Bridge

The existing Hastings Bridge was constructed mostly in 1950, shown in Exhibit 4, and opened in 1951. The T.H. 61 Bridge is eligible for listing on the National Register of Historic Places.

Exhibit 4: Construction of the T.H. 61 Bridge

Project Setting

As shown in Exhibit 5 the proposed project is located in a unique setting adjacent to some of Hastings' historic districts and structures. In addition, the project crosses a section of the Mississippi River that is part of the federally-designated Mississippi National River and Recreational Area (MNRRA). The river is also important for sport fishing, and sections of the river are inhabited by rare aquatic species. Other features of note in the project area include wetlands, trail corridors, and parkland. These elements, as well as other ecological and cultural features, were taken into consideration when developing and evaluating alternatives, in order to minimize project impacts.

Regional and Local Traffic Link

The T.H. 61 Hastings Bridge over the Mississippi River provides a vital link for the City and surrounding area to the Twin Cities regional highway system. In addition, T.H. 61 provides a regional connection across the state. T.H. 61 travels from the southeastern corner of the state, starting just south of Dresbach, Minnesota, through Saint Paul, to the Canadian border near Grand Portage in northeastern Minnesota, a corridor of approximately 439 miles.

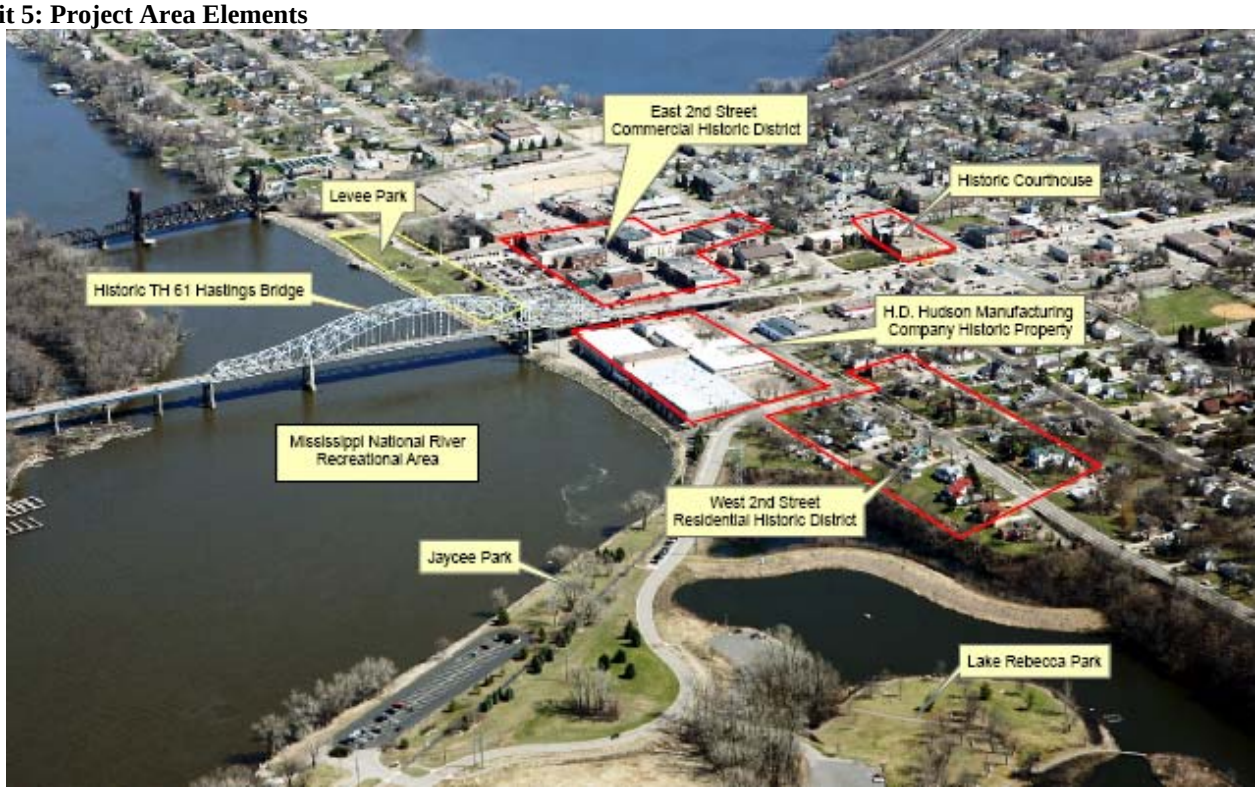
Mn/DOT has identified key transportation corridors in Minnesota in order to recognize and support efficient connections among regional trade centers. These corridors provide safe, timely, and efficient movement of goods and people across Minnesota. Mn/DOT has recognized T.H. 61 as a regional corridor between Interstate 494 (I-494) in Newport and T.H. 316 south of Hastings (including the study area).[3] A travel demand modeling report completed by Mn/DOT in March 2008[4] confirmed the importance of T.H. 61 as a travel corridor, noting a high concentration of trips along the T.H. 61 route, and further noting that without the Hastings river crossing on T.H. 61, traffic would be directed to long detours on roadways not designed to accommodate higher levels of traffic.

The river crossings closest to the T.H. 61 Hastings Bridge are the I-494 Wakota Bridge, approximately 18 miles upstream, and the T.H. 63 Bridge at Red Wing, approximately 42 miles downstream. The shortest detour from the T.H. 61 Hastings Bridge crossing (to the I-494 crossing of the Mississippi River) is approximately 36 miles. Currently, truck traffic with gross weights over 40 tons are restricted from crossing the T.H. 61 Hastings Bridge. At this time, these trucks are required to cross the Mississippi River at other locations.

[3] See *Interregional Corridor and Regional Trade Centers Map,* Mn/DOT, 2005 at: http://www.oim.dot.state.mn.us/IRCApril2005.pdf

[4] *US 61 Hastings Bridge Travel Demand Modeling Report & Planning Context,* URS, March 27, 2008, at EDMS document 612084.

Exhibit 5: Project Area Elements



Project Needs

This section discusses transportation problems in the project area.

Structural Needs

The primary need for the proposed Hastings T.H. 61 Bridge Project is related to structural concerns. The T.H. 61 Bridge, Mn/DOT bridge number 5895, is reaching the end of its service life. The bridge was constructed in 1950. The bridge's main span, constructed as a steel truss (see Figure 3 in Appendix 1), is recognized as the first of its type in Minnesota. The entire structure consists of thirteen spans with a total length of 1,857 feet.

Sufficiency Rating

The latest National Bridge Inspection Standards condition rating indicates that the superstructure's primary structural elements (the main truss members) have some section loss; thinning of the structural elements in areas resulting from corrosion. This condition rating identifies the T.H. 61 Bridge as being structurally deficient, and in part, has lowered the bridge's sufficiency rating to 38.1. Mn/DOT assigns a sufficiency rating to all of the 3,600 state-owned bridges.[5] The sufficiency rating is based on a 100-point scale that assesses the following on each bridge: (1) structural adequacy; (2) serviceability and functional obsolescence; and (3) necessity for public use. The median bridge sufficiency rating for Mn/DOT's bridges is 94.0. Fewer than 1% of the bridges in the state have sufficiency ratings of less than 38.1.

[5] Mn/DOT bridges are defined as those structures located on the Trunk Highway system with a minimum span of 20 feet.

Non-Redundant Members

The T.H. 61 Bridge has a non-redundant design. This means that the bridge's superstructure consists of numerous steel members, many of which are arranged in a manner whereby if one fails, the bridge could collapse because there is no backup or redundant structural support.

In 1998, a crack was discovered in one of the main structural members and has since been repaired. Further investigation into the nature of the crack revealed that the material used in this design has less fatigue resistance than required (fatigue resistance is the ability to prevent structural failure caused by repeated loadings).

Bridge Width

The low bridge sufficiency rating includes a factor for bridge width, since width can affect design/safety factors. The following deficiencies related to bridge width have been identified for the T.H. 61 Bridge:

- Shoulder width: The shoulders on the existing bridge are only 2-feet wide. The Mn/DOT Road Design Manual states that shoulders should be a minimum of 6-feet wide on a low-speed highway facility, such as the T.H. 61 Bridge.

- Snow Removal: State and Federal regulations state that snow plowed from roadways is not to be directly discharged into rivers. There is no room to store snow plowed to the side of the roadway, because there are only 2-foot wide shoulders on the existing bridge. As a result snow is pushed directly into the Mississippi River, which is acceptable because State and Federal regulations make exceptions to existing and deficient roadway facilities. However, a new bridge would need to have enough room to temporarily store snow plowed to the edge of the roadway without discharging any of it into the Mississippi River. Wider shoulders will accommodate this requirement.

- Disabled vehicle emergency parking: Because there is only a 2-foot wide shoulder on the bridge, there is no room for a disabled vehicle to pull over without blocking a traveled lane. The T.H. 61 Bridge is 1,857 feet long, and a vehicle that stalls on the bridge may not be able to coast off of the bridge to seek refuge in the wider shoulders or parking areas on either end of the bridge.

- Law enforcement parking: Because there is only a 2-foot wide shoulder on the bridge, there is no room for a law enforcement officer to conduct a traffic stop without blocking a travel lane.

- Structural steel separation from corrosive roadway spray: The existing bridge has structural elements above the roadway. It is preferred to have at least a standard shoulder width to separate the road spray created by vehicles driving over wet pavement in the travel lanes from the structural steel elements above the road deck. This helps minimize corrosion on those elements and the number of times those elements need to have corrosion control coatings re-applied.

Pier Scour

Bridge pier inspections at the T.H. 61 Bridge have found that the soil surrounding the bridge foundation at two of the piers is susceptible to water-induced erosion, called scour that could lead to bridge failure during floods. Mn/DOT has developed a bridge scour, action plan that consists of monitoring the bridge during high flows and closing the bridge if it is in danger of imminent failure. Within the last 15 years, the scour action plan has been put into effect three times, most recently in 2003, when work was required to address scour holes that had formed at both scour-prone pier locations.

Vehicle Weight and Size Limits

As noted above in the Regional and Local Traffic Link section, the T.H. 61 Bridge has a gross vehicle weight limit of 40 tons. This restriction is due to the bridge's structural deficiencies. Trucks carrying more than the 40-ton legal load limit are not given a permit to cross the bridge and are directed to other routes across the Mississippi River. Similarly, trucks that are wider than 11 feet are not permitted to cross the bridge, due to inadequate bridge width.

Structural Concerns and Maintenance Issues

Of the many maintenance concerns associated with the bridge, the following are those of greatest importance:

- *Pack rust*: This is a thick build-up of localized corrosion that develops between adjoining steel members. Pack rust has a detrimental effect, as it tends to pry members apart, is difficult to correct because it develops between steel members, and is not fully visible to inspectors. The prying force is great and has been known to fracture bolted or riveted connections. Mn/DOT's experience with pack rust is that once it is detected, maintenance efforts can be undertaken that will slow its development, but the members affected will eventually need to be replaced before they lose substantial structural capacity. Pack rust is prevalent throughout the T.H. 61 Bridge, specifically in areas near the roadway, where it is subjected to salt splash, which affects nearly all lower chord gusset plates.

- *Tack welds:* These are temporary welds used to hold adjoining pieces of steel together in proper position during bridge erection. It was a common practice when this bridge was constructed to leave these temporary welds in place. Because tack welds change the physical characteristics of the members where they are joined, their presence can result in localized areas of high stress. This high stress can lead the tack weld to crack, precipitating further cracks in the main members that ultimately can cause the bridge to fail. There are approximately 2,800 tack welds located throughout the truss spans of the T.H. 61 Bridge. It is noted that these welds are generally of poor quality, and inspectors have observed cracks in 76 of these welds. Many of these tack welds are located on main structural members.

- *Gusset plates:* These plates are the connecting elements used to transfer loads among adjoining members on the bridge. Gusset plates have been identified as the cause of failure of the I-90 Bridge spanning the Grand River in Ohio. The concern over the condition of gusset plates, in light of their critical role in load transfer, has lead to both permanent and temporary closures and restrictions on multiple bridges in Minnesota. The gusset plates on the T.H. 61 Bridge are non-redundant and are showing signs of section loss. Pack rust located between the gusset plates and

adjoining truss members is already causing gusset plate distortion. Mn/DOT has determined that the gusset plates are adequate for the loads they are designed to carry, but further deterioration could result in decreased structural capacity. In addition to repairing or replacing multiple gusset plates, in order to provide for redundancy, an alternate load path would need to be created at the site of each gusset plate. Completing a repair of this magnitude on the gusset plates would be difficult, as they are an essential structural element of bridge support.

- *Steel section loss:* As noted above, there are areas of section loss on various truss members that need to be addressed. These members include those on the main truss as well as floor beams and stringers (members located below the deck which support the deck and distribute load). Some of the section loss concerns were addressed in a 2008 maintenance and preservation project; however, those repairs were not intended to be part of a long-term solution to these concerns. While Mn/DOT has determined that the section loss exhibited at this time does not warrant further load restrictions, in the future as additional section loss occurs, the affected members will need to be strengthened, and/or further load restrictions put in place.

- *Pier and abutment movement:* The northern abutment and pier locations are under continued monitoring by Mn/DOT inspectors for vertical settlement and horizontal movement. Since construction of the bridge in 1950, movement of these members has been excessive. Substantial modifications to the north abutment are noted in the bridge inspection report as early as 1968. This has warranted major rehabilitation of these bridge members to ensure they operate as designed. Most recently, in 2008, the top of the northern-most pier was widened to accommodate the potential for additional movement. Increased weight to these supporting members would require that their stability be monitored by maintenance staff.

Mobility Needs

Highway Capacity Constraint on Two-Lane Bridge

T.H. 61 is a four-lane highway from I-94 in St. Paul to T.H. 316 in Hastings (T.H. 316 is roughly 1.8 miles south of the Mississippi River), except for a two-lane, half-mile section of T.H. 61 over the Mississippi River at the T.H. 61 Bridge. South of T.H. 316, T.H. 61 is a two-lane road.

The two-lane section of T.H. 61 over the Mississippi River carries the highest daily traffic volume of any two-lane trunk highway in the state. In 2006, the average daily traffic (ADT) volume of T.H. 61 over the Mississippi River was 31,500 vehicles per day. The Level of Service[6] (LOS) for this two-lane section is at LOS E during the morning and afternoon peak periods. Traffic forecast results completed in the *US 61 Hastings Bridge Travel Demand Modeling Report & Planning Context,* March 27, 2008, forecast traffic volumes of 45,000 vehicles per day in 2030. This will degrade morning and afternoon peak periods traffic operations to LOS F, where the traffic flow is unstable and vehicles are

[6] The Transportation Research Board (TRB) *Highway Capacity Manual 2000* (HCM 2000) states that LOS is a quality measure describing operational conditions within a traffic stream. Traffic flows are stable between LOS A through E, which means vehicles can maintain a constant speed on a roadway segment with travel times at LOS A being faster than travel times at LOS E. The traffic flows are unstable at LOS F, which means vehicles are constantly stopping and starting on the roadway segment.

constantly stopping and starting on the roadway segment. A summary of the report's traffic forecasts for the T.H. 61 Bridge is shown in Table 1.

Bridge Capacity Needs

As noted above, the two-lane T.H. 61 Bridge currently operates at a LOS E and will further degrade to LOS F under the forecast traffic volumes (45,000 vehicles per day in 2030) making it evident that a four-lane bridge design is required to meet the traffic volumes forecast for 2030. While a six-lane bridge would attract a slightly higher number of trips than would a four-lane bridge, such excess capacity would be inconsistent with urban arterial conditions within Hastings, specifically along T.H. 61, from Third Street. to T.H. 316. This stretch of TH 61 has a dense concentration of residential single family homes, and businesses immediately adjacent to the highway. Such expansion would be inconsistent with Metropolitan Council's 2030 Framework Planning Area that identifies land south of Hastings as agricultural[7].

Table 1: T.H. 61 Bridge Forecasts

Scenario	Daily Traffic	Roadway Capacity[8]
2000 Counts	28,500	14,500
No Build Forecasts		
2020 No-Build / 2-Lane	35,000	14,500
2030 No-Build / 2-Lane	37,000	14,500
2030 Design Year		
4-Lane Bridge	45,000	56,400
6-lane Bridge	46,000	84,700

Longer-range Traffic Forecasts

Connecting the four-lane highways to the north and south of the T.H. 61 Bridge with a four-lane bridge will provide adequate traffic operations (LOS C) through 2030. Traffic studies that forecast more than 20 to 30 years are not conducted due to the uncertainty of potential changes in travel patterns and growth. The forecasts tend to lose there credibility beyond a 20-year time frame. A forecast to determine when four lanes on the bridge would result in LOS E or F traffic operations is difficult to determine. However, because the trends in traffic volumes have historically been upwards, and since the T.H. 61 Bridge's capacity to convey traffic is limited by its width, it would be prudent to accommodate transit advantages on this bridge should there be a need in the future.

[7] *2030 Planning Framework Areas*, Metropolitan Council, January 2004 at: http://www.metrocouncil.org/planning/framework/PlanningAreas8X11.jpg

[8] Bridge roadway capacities based on Level of Service (LOS) D/E threshold for 4- and 6-lane uninterrupted flow highways (for 4- and 6-lane bridge scenarios), and 2-lane state, undivided highway (for current 2-lane bridge), for areas transitioning to urban areas/areas over 5,000 not in urbanized areas; source: Florida DOT. LOS is the primary measure used by transportation professionals to assess traffic operations. Six levels of operation are defined by the Transportation Research Board's Highway Capacity Manual, ranging from A to F, with LOS A representing the best operations and LOS F the worst. A commonly used threshold for determining a roadway's capacity is the LOS D/E threshold.

Safety Needs

A safety analysis was conducted in the project area that examined crash data over a three-year period from 2005 to 2007. The crash data was compared to expected conditions based on Mn/DOT's Transportation Information System (TIS) Crash Database and statewide average crash rates by highway type from the Traffic Safety Fundamentals Handbook, 2008. Crash data was grouped and evaluated at both highway segments and intersections. Table 2 displays the three highway segments identified in the project area, their geometry, and speed limits.

Table 2: Roadway Segment Speed and Geometry Summary

		Distance	Grade	Speed Limit	Roadway Geometry
Segment 1 (North)	S. end of CP railroad bridge (118+00.096) To Hubs Land access (118+00.021)	0.08 miles (396 feet)	+0.5%	60 mph	four-lane divided rural
Segment 2 (Bridge)	Hubs Landing access (118+00.021) to S. end of T.H. 61 Bridge (117+00.458)	0.56 miles (2,965 feet)	+/- 2.4%	40 mph	two-lane
Segment 3 (South)	S. end T.H. 61 Bridge (117+00.458) to Fourth Street (117+00.337)	0.1 miles (528 feet)	-2.3%	30 mph	four-lane divided urban

Segment Crash Analysis

The number of crashes by severity for the entire project area is summarized in Table 3. The full segment crash rate, from the south end of the Canadian Pacific Railway bridge to Fourth Street, is 2.3 crashes per million vehicle miles traveled (MVM). Because the three distinct highway types are shorter than a mile (rural expressway, the bridge segment, and urban arterial), it is difficult to make a direct comparison to an expected crash rate. To provide some context, trunk highways in Minnesota have an average crash rate of 1.1 crashes per MVM, city streets 2.7 crashes per MVM, and the statewide average is 1.4 crashes per MVM.

Table 3: T.H. 61 Segment Crash Summary (2005-2007)

3-year Summary	60 crashes; 1 fatal, 2 minor injury, 9 possible injury, 48 property damage
2005	18 crashes; 3 possible injury, 15 property damage
2006	13 crashes; 1minor injury, 2 possible injury, 10 property damage
2007	29 crashes; 1 fatal, 1 minor injury, 4 possible injury, 23 property damage
Segment Crash Rate	2.3 crashes per million vehicle miles traveled

Source: Mn/DOT Crash Data

Table 4 summarizes the crashes by type. The percentage of rear-end crashes (82.8 percent) is much higher than the expected value of 34 percent. Rear-end crashes are more prevalent in locations with poor traffic operations (congestion) and a lack of lane continuity—both characteristics of the two-lane segment that includes the T.H. 61 Bridge and approach roadways.

Table 4: T.H. 61 Segment Crash Distribution (2005-2007 data)

	Rear End	Sideswipe passing	Ran off road	Right Angle	Other
Number of Crashes (2005-2007)	43	5	5	4	3
Percent Crash Distribution	71.7%	8.3%	8.3%	6.7%	5%
Expected Percent Crash Distribution (1)	34%	12%	9%	21%	20%

(1) Source: Mn/DOT Traffic Safety Fundamentals Handbook, 2008 – Urban

Intersection Crash Analysis

Three years of crash data were documented (2005 through 2007) at the intersection of T.H. 61 and Fourth Street. There were 18 intersection-related crashes including one minor injury and four possible injury crashes. The summary of the crashes by year is shown in Table 5.

The intersection crash rate was 0.49 crashes per million vehicles entering the intersection.[9] This is less than the expected signalized intersection crash rate of 0.7 crashes per million vehicles entering the intersection.[10]

Table 5: T.H. 61 and Fourth Street Intersection Crash Analysis Summary (2005-2007)

Summary:	18 crashes; 1 minor injury, 4 possible injury
By Year:	2007: 7 crashes, 2 possible injury 2006: 5 crashes, 1 minor injury, 1 possible injury 2005: 6 crashes, 1 possible injury
Intersection Crash Rate:	0.49 crashes per million vehicles entering the intersection

Source: Mn/DOT Crash Data

The other intersection locations within the study area experienced few intersection-related crashes. The Third Street right-in/right-out access experienced no intersection-related crashes and the local access north of the bridge, serving mainly Hubs Landing & Marina and Captain's Bay Marina, experienced only one intersection-related crash (left-turn crash type: northbound car turning left, struck southbound car going straight).

From a safety perspective, the three-year crash analysis indicated that the crash problem in the study area is not high enough to statistically identify any of the segments as unsafe when compared to similar highway segment types in Minnesota. However, the project area as a whole has a high percentage of rear-end crashes, which are common in areas with congestion or a lack of lane continuity.

[9] The intersection crash rate was calculated using 33,850 vehicles per day as the average number of entering vehicles. The volume was calculated based on a 50/50 directional split and an average of the annual average daily traffic volumes for the years 2005 and 2007 shown on Mn/DOT's Traffic Volume Maps.

[10] *Traffic Safety Fundamentals Handbook*, Mn/DOT, 2008

Transit Needs

Red Rock Commuter Rail Corridor

Hastings is the southern terminus for the proposed Red Rock Commuter Rail Corridor, which will run along existing railroad right-of-way that is parallel to T.H. 61 and I-94 into downtown St. Paul. The Alternatives Analysis report for the corridor was completed in 2007 by the Washington Regional Rail Authority. The Alternatives Analysis concluded that bus service should be increased in the corridor to build a ridership base prior to implementing commuter rail service. To help build this ridership base, the 2008 Metropolitan Council's 2030 Transit Master Study[11] identifies future bus service on T.H. 61 to Hastings. A park-and-ride lot is also proposed for Hastings.

Bus service

Currently, Metro Transit bus service on T.H. 61 terminates near the Cottage Grove park-and-ride lot, approximately sevenmiles northwest of the projects area[12]. The Metropolitan Council vision through 2030 for transit advantages on T.H. 61 in this area are for southbound bus-only shoulders that start at County Road 19/Keats Avenue and end north of the T.H. 61 Bridge.

Pedestrian/Bicycle Needs

Existing Condition

The bridge provides a 4.5-foot wide sidewalk along the east side of the bridge, plus 2-foot outside shoulders adjacent to existing 14-foot wide traffic lanes. The sidewalk on the bridge ends at the north abutment of the bridge. There are no pedestrian or bicycle traffic accommodations on the north side of the bridge other than the T.H. 61 shoulder. The sidewalk on the bridge continues south of the bridge to Third Street. This sidewalk is 5.5 feet wide and is separated from the roadway with a curb and a 2-foot shoulder. Although pedestrian volume counts were not conducted on the bridge, it has been observed that the sidewalk has light pedestrian usage.

The existing bridge does not meet Mn/DOT's current Bridge Design Manual minimum 6-foot width for a sidewalk on a bridge. In addition, the bridge does not meet Mn/DOT's Bikeway Facility Design Standards recommendation of a 10-foot wide trail for a facility intended to accommodate both pedestrians and bicyclists.

The Mississippi River Trail uses the shoulder of T.H. 61 as a bicycle route between St. Paul and Red Wing in Minnesota. The Mississippi River Trail is a multi-state trail that begins in Louisiana and ends in Minnesota. This trail is one of 16 nationwide Millennium Trails that were designated at the turn of the 21st century by the Clinton Administration[13]. This is an on-road facility using the shoulders of the highway and is intended for use by experienced long-distance bicyclists. The bridge is currently striped with 2-foot outside shoulders. The Mn/DOT Bikeway Facility Design Manual recommends a 6-foot wide bike lane adjacent to roadway traffic where bicycles share a 40 mile per hour roadway with vehicles.

[11] *2030 Transit Master Study*, Metropolitan Council, August 2008 can be viewed at: http://www.metrocouncil.org/planning/transportation/TPP/2008/TMSReport.pdf
[12] Metro Transit interactive transit map at http://www.metrotransit.org/serviceinfo/mapsystem.asp#
[13] For more information about the Millennium Trails, see http://clinton4.nara.gov/Initiatives/Millennium/trails_doc.html

Beginning at Third Street on the south end of the project area, sidewalks are provided on both the east and west sides of T.H. 61. The sidewalks have curb ramp provisions for handicapped crossings at both the slip ramps at Third Street and at the Fourth Street signal; however, these do not meet the current standards required by the Americans with Disabilities Act (ADA).

The Hastings Loop Trail is a 15-mile long pedestrian and biking trail that circles the City of Hastings. The trail travels under the T.H. 61 Bridge, along the south river bank. The sidewalk on the T.H. 61 Bridge is not directly connected to the Hastings Loop Trail. The bridge provides a sidewalk connection to Third Street which is two blocks south of the Hastings Loop Trail.

Future Connections

On the north side of the bridge, a multi-agency planning effort is underway to create the Point Douglas Trail, which would connect Hastings to Prescott, Wisconsin via the T.H. 61 Bridge. While no user counts are available for pedestrian or bicycle traffic across the T.H. 61 Bridge, development of the Point Douglas Trail would likely result in more bicyclists and pedestrian trail users. The Mn/DOT Bikeway Facility Design Manual recommends a 10-foot width for bicycle and pedestrian shared-use trails that are not on a bridge, and a 12-foot wide trail on bridges.

Signal Needs

There is one traffic signal on T.H. 61 in the project area. The signal at T.H. 61 and Fourth Street was constructed in 1980 and has reached the end of its lifecycle.

Additional Considerations

The following additional considerations have been identified in the project area.

River Navigational Needs

Navigation Channel

The U.S. Army Corps of Engineers (COE) maintains a 300-foot wide navigational channel on the Mississippi River. Due to the river bend upstream from the T.H. 61 Bridge, a 450-foot-wide navigational channel has been recommended by the U.S. Army Corps of Engineers at the T.H. 61 Bridge location for the ease of river traffic navigation. Figure 3 in Appendix 1 illustrates the navigational channel location on a side-view drawing of the T.H. 61 Bridge. Any new bridge must accommodate this navigation channel with the horizontal and vertical clearances approved by the U.S. Coast Guard (Coast Guard). The minimum vertical clearance requirement for this portion of the Mississippi River is 737.05 feet above sea level[14]. The low member elevation of the existing T.H. 61 Hastings Bridge is approximately 738.68 feet above sea level.

The Coast Guard has identified the location of the first pier immediately to the north of the navigable channel as being critical to maintaining navigation. The existing pier location, coupled with the bend in the river discussed above, provide challenges to barge traffic. It is anticipated that the new pier for each alternative under investigation will need to be placed no more than 130 feet upstream (west) of the existing pier location. Any new pier at this location will have to be set further north from the existing pier location due to the bend in the river and channel navigation requirements.

[14] 52 feet above the 2% flowline or 60 feet above normal pool, whichever is greater.

River Vessel Usage

The U.S. Army Corps of Engineers operates Lock and Dam #2 approximately one mile upstream from the project area. They estimate that 7,867 vessels passed through the lock in 2007. Approximately 818 of these vessels were commercial barges. The typical size of barge traffic for this area is a twelve to fifteen tow barge. The maximum barge size for the lock is a fifteen tow barge. The remaining 7,049 were recreational vessels.

Information from Mn/DOT's Director of the Office of Waterways estimated that the 2007 commercial barge tonnage under the T.H. 61 Bridge totaled 9.1 million tons. That is down from the high of 14 million tons in 1999. In addition, all of Minnesota's ports reported a decline in tonnage in 2008[15]. It is predicted that growth in commercial vessels will be flat over the next ten years. The Hastings 2020 Comprehensive Plan states that the marinas in the area are almost at capacity, and therefore, no major marina expansions would occur because of environmental constraints. Based on this information, the numbers of recreational vessels in the area is likely to remain steady.

Consistent with the Historic Downtown

As noted in the historical background discussion above, the City of Hastings has preserved many of the original downtown structures from the late 1800s. The downtown historic district is one of the essential elements that sets Hastings apart from other cities. The proposed project needs to be consistent with the adjacent neighborhoods.

Utility Accommodation

A minimum 35-foot clearance from the 69 kilo-volt (kV) overhead transmission line is required for any structure element that could interfere with the line.

Social Economic and Environmental Considerations

The social, economic, and environmental elements of the project area were considered during the development of alternatives for this project, including the downtown historic districts, commercial properties, wetlands, floodplains, state or federal threatened species and location within the Mississippi National River Recreation Area (MNRRA). Section 4 of this EA, beginning on page 29, discusses impacts on the social, economic and environmental elements of the project area

Project Purpose

The purpose of the proposed project is to address the transportation needs described in the previous section. The project purposes alternatives are expected to meet are listed below:

- Perpetuate the T.H. 61 Mississippi River crossing in Hastings, Minnesota;
- Provide a bridge that is structurally sound and built to current design standards, including:
- A 100-year life span;
- A solution to the current corrosion, scour, and maintenance issues; and
- A structure that is redundant;

[15] Mn/DOT's Water Ways web page http://www.dot.state.mn.us/ofrw/waterways.html

- Provide sufficient vehicle capacity and system continuity on T.H. 61 in Hastings to support local and interregional travel demands, including access to downtown Hastings;
- Reduce the number of rear-end crashes;
- Provide for potential future transit needs and/or other possible transportation needs that may arise within the life span of the bridge;
- Provide pedestrian and bicycle travel facilities to accommodate the existing Mississippi River Trail and proposed Point Douglas Trail across the Mississippi River that meet current Mn/DOT design recommendations and ADA standards; and
- Provide shoulders that meet design standards, and accommodate temporary snow storage, stalled vehicles, law enforcement traffic stops, separation of structural steel from road spray, and potential transit advantages.

Project alternatives will be developed and evaluated with respect to their ability to address these transportation needs. In addition, given the cultural and environmental setting of the project area, additional considerations will be taken into account in alternatives development/evaluation. Some of these additional considerations are listed below:

- Historical and archaeological resources within the area of potential effect of the project;
- Parks and trails in and adjacent to the project area;
- Mississippi National River and Recreation Area policies applicable to the project;
- Potential impacts to sensitive aquatic species and fisheries, including minimizing water quality impacts to the river from the bridge/roadways;
- Minimize traffic disruptions across the river;
- Minimize impacts to wetlands;
- Minimize right-of-way acquisition and impacts;
- Provide vertical and lateral clearances for river navigation under the bridge, as set forth by the Coast Guard;
- Replace the signal at T.H. 61 and Fourth Street with a new signal; and
- Minimum 35-foot clearance from the 69 kV overhead transmission line.

3. ALTERNATIVES

This section of the EA is divided into two subsections: Alternatives Considered but Rejected, and Alternatives under Consideration. The discussion under Alternatives Considered but Rejected identifies alternatives that were initially considered but have been discarded, and also includes the reasoning for no longer continuing their consideration. The Alternatives under Consideration section provides project details of the three proposed alternatives that are being brought forward for this project.

Project Termini

The project termini are the same for each of the three alternatives under consideration: Fourth Street is the southern terminus and the northern terminus is the bridge over the Canadian-Pacific Railway. The project termini were established based on the need for additional lanes on the T.H. 61 Bridge, to match the existing four-lane section on each side of the bridge (see discussion in Section 2 – Purpose and Need). The total project corridor length is 4,051 feet, or 0.767 miles

In order to facilitate construction, the traffic control areas for the project extend beyond the final project limits, generally shown on Figure 2 in Appendix 1. The project layout for each alternative illustrates this area in detail; see Figure 11, Figure 13, and Figure 15. Traffic on T.H. 61 will need to shift back and forth, from northbound to southbound on both ends of the project, before encountering the construction site. Work in these traffic control areas includes removing and replacing median curbs and bituminous pavement, and working within the existing roadway footprint. Since this minor work is within the existing roadway footprint, and is the same with all alternatives, it was not included in the environmental analysis.

Alternatives Considered but Rejected

New Bypass Alignment

The existing bridge is in a unique location, sandwiched between local parks, nationally designated historic areas, and positioned on the Mississippi River where the river width narrows. The width of the river at the existing crossing is approximately 930 feet. The New Bypass Alignment alternative considered constructing a new river crossing that would bypass the historic areas of downtown Hastings, local parks, and Lock and Dam #2.

On the west side of the project area, a bypass upstream of Lock and Dam #2 was examined. Figure 4 in Appendix 1 illustrates the river area examined for this alternative. This location would bypass the West Second Street residential historic area, Lake Rebecca Park and Lock and Dam #2. However, the river at this location is over eight times the width of the current crossing; approximately 4,100 to 4,400 feet. The cost to construct a bridge at this location would be substantially greater than the existing location, or require substantial fill placed in the floodplain for a new roadway embankment. In addition, rerouting the highway though rural Nininger Township would create significant social, economic, and environmental impacts when compared to maintaining the existing alignment.

On the east side of the project area, a bypass was considered between the Canadian-Pacific Railroad Bridge over the Mississippi River and the confluence of the Mississippi and St. Croix Rivers. As shown in Figure 4, this area has a wide floodplain area on the south side of the river. This area is also designated by the Minnesota Department of Natural

Resources (DNR) as ecologically sensitive. A bridge over the river in this area would need to be in approximately 650 feet long. However, additional bridges would also be necessary in the floodplain areas as well. The floodplain in this area stretches over 6,000 feet, starting from the bank of the river and ending at the Canadian-Pacific Railroad. In addition to crossing the river/floodplain, this alternative would require crossing two railroad lines, the Canadian-Pacific Railway to the south and the Burlington Northern Santa Fe Railway to the north. The cost for the various bridges necessary for an eastern bypass would be substantially greater than the existing crossing. An eastern bypass traveling through ecologically sensitive areas and rural Ravenna Township would also have significant social, environmental, and economic impacts when compared to maintaining the existing alignment.

Neither a west nor an east bypass of Hastings was considered prudent due to the substantially higher construction costs, as well as the significant social, environmental, and economic impacts that these alternatives would create when compared to maintaining the existing alignment.

Scoping Study Alternatives Evaluated and Eliminated

Scoping Study Alternative Development and Screening Process

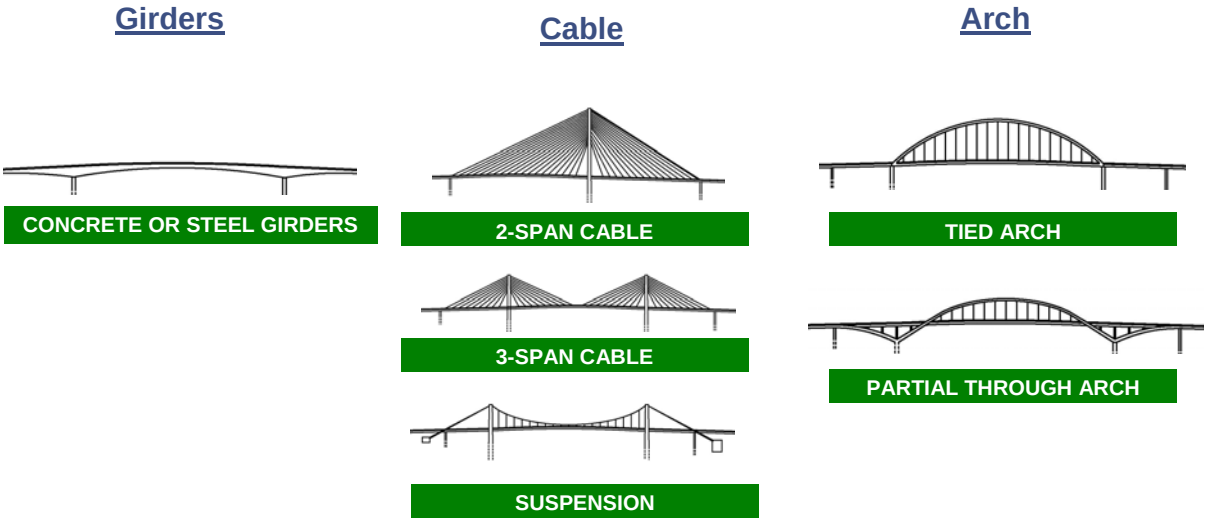
The T.H. 61 Bridge Scoping Study[16] (Scoping Study) developed and evaluated a wide range of bridge options, beginning in May of 2008 and ending in December of 2008. It used three rounds of screening and stakeholder input to narrow down the world of possibilities to the four most promising alternatives: Box Girder Twin Bridges Alternative, Tied Arch Single Bridge Alternative, Rehabilitate the Existing Bridge Next to New Arch Bridge Alternative, and Cable Single Bridge Alternative. (The rehabilitation alternative was eliminated after the completion of this study.)

The study sought input from stakeholders, including the public, through group and individual meetings. Thirteen Study Advisory Committee (SAC) meetings and three public information meetings were held. The members of the SAC represented over twelve local, state, and federal agencies, and included private and public entities. SAC representatives are listed on page 128 of this EA. Mn/DOT also met individually with staff from Xcel Energy, the National Park Service (NPS), the City of Hastings, the Coast Guard, and the COE.

With input from stakeholders, three rounds of screening were completed with each round further narrowing the possible alternatives. The first round of screening identified seven alternatives, the second round narrowed from seven alternatives to five, and the third round narrowed from five alternatives to the four most promising alternatives. At each step of the screening process, a greater level of engineering analysis was available to support comparison of the alternatives and decision-making.

[16] *Hasting Bridge Scoping Study Final Report,* December 2008, available upon request from Mn/DOT. Contact information is provided on the first page of Section 5.

Exhibit 6: Alternative Bridge Families Considered in Scoping



Bridge and Roadway Concepts Initially Developed and Considered

Initially, the Scoping Study looked at a broad range of bridge concepts and four roadway alignment options within and directly adjacent to the existing T.H. 61 corridor. The bridge concepts were arranged into three bridge families: Girder Family, Cable Family, and Arch Family (see Exhibit 6). In addition to a rehabilitation concept, these families represented all bridge types that could potentially meet the project's purpose. These bridge families provided the project team and stakeholders the opportunity to look at many possible approaches—allowing a creative, unconstrained discussion of goals, challenges, and tradeoffs.

Four roadway alignment options (shown on Figure 5 in Appendix 1) were developed to avoid parkland, buildings, or sites that were eligible for or listed on the National Register of Historic Places. Given the proximity of the East Second Street Commercial Historic District and Veterans Memorial Levee Park, all of the alignment options either largely followed the existing highway alignment or were offset to the west of the existing alignment.

Alignment A: twin bridges next to the existing bridge

This concept consists of two two-lane bridges both of which would be offset to the west of the existing bridge. This alignment represents the furthest westerly shift from the existing alignment, which would result in the greatest right-of-way impacts.

Alignment B: single bridge next to the existing bridge

This concept consists of a single four-lane bridge offset to the west of the existing bridge. This alignment is the most efficient from a construction perspective as it involves only two construction stages over the Mississippi River: 1) construction of the new bridge; and 2) demolition of the existing bridge. Some bridge approach span work and some roadway work will occur during and after the demolition of the existing bridge. Similar to Alignment A, it introduces more horizontal curvature on each side of the bridge to transition the roadway back to the existing alignment.

Alignment C: twin bridges overlapping the existing bridge
This concept consists of a two-lane bridge offset to the west of the existing bridge and a second two-lane bridge closely following the alignment of the existing bridge. This concept would involve three construction stages over the Mississippi River:

1) construction of the first new bridge to the west of the existing bridge;
2) demolition of the existing bridge; and
3) construction of the second new bridge on the alignment of the existing bridge.

Although less efficient from a construction perspective, this option reduces right-of-way and other impacts by reusing the footprint of the existing bridge. Similar to Alignment C, was the alignment for the rehabilitation alternative. For this alternative a new two-lane bridge would be constructed to the west of the existing bridge. But instead of removing the existing bridge, it would be rehabilitated to correct structural deficiencies.

Alignment D: single bridge overlapping the existing bridge
This concept consists of a single four-lane bridge closely following the alignment of the existing bridge. This concept makes the greatest use of the existing bridge footprint and has the least right-of-way impact. However, it requires the bridge to be closed for most of the construction period. Otherwise, a greater level of construction complexity would be required in order to maintain traffic during construction.

First Level of Screening to Seven Promising Alternatives
The first level of screening combined the bridge families and roadway alignments. It identified six replacement alternatives (in addition to the rehabilitation alternative). Figure 6 in Appendix 1 highlights the six replacement alternatives. The alternatives shown in gray were eliminated from further study for the following reasons:

1) No alternatives with Alignment A (twin bridges next to the existing bridge) were identified as most promising. This alignment has the greatest right-of-way impacts yet provides no substantial advantages that the other alignment options could not offer;
2) Alignment C (twin bridges overlapping the existing bridge) in combination with the cable family of bridges was not carried forward. A single cable bridge would be much more cost effective than twin cable bridges. In addition, a single cable bridge would be more visually desirable; and
3) For Alignment D (single bridge overlapping the existing bridge), only the girder family of bridges was carried forward for further analysis. The cable and arch families were seen as less promising with this alignment because of increased construction complexity and longer periods of highway closure.

In order to provide a more detailed analysis and better comparison of the six replacement alternatives and the rehabilitation alternative, a specific bridge from within each bridge family was identified using site constraints and bridge feasibility. Each of the bridge families was evaluated and a specific bridge for each family was identified:

<u>Girder Family Evaluation</u>
The Steel Plate Girder Bridge was identified as less feasible at the Hastings location for the reasons listed below:

- Roadway geometry - Horizontal curvature on the south end will be required to transition the new bridge alignment to the existing roadway alignment and could cause structural difficulties for this bridge type; and
- Cost - No steel plate girder bridges with a span of 600 feet or more have been constructed in the United States in nearly 50 years. Developments in technology have made other bridge types more cost competitive for longer spans.

The Box Girder Bridges (concrete or steel) did not have substantial feasibility issues. A concrete box girder bridge was selected for developing more detailed information and was identified as the most feasible bridge from within the Girder family.

Cable Family Evaluation

Suspension Bridge - the following issues make a suspension bridge less feasible at the Hastings location:

- Roadway Geometry - The roadway geometry would need to be straight enough to avoid conflict with the backstays (the cables that connect the anchorages to the tops of the towers). This would be problematic on the south end where horizontal curvature is required to transition the new bridge alignment to the existing roadway alignment;
- Soils and Foundations - A suspension bridge requires suitable foundation conditions for construction of large anchorages. However, soil conditions are unfavorable on the north end, with rock 100 feet or more below the river. This would result in a much more expensive foundation system for a suspension bridge; and
- Power Lines at the South End of the Bridge - For a 3-span suspension bridge the height of the two towers would be approximately 60 to 75 feet above the bridge deck. This would be problematic on the south end where the overhead electric transmission lines would conflict with the tower or cables.

3-Span Cable Bridge - A 3-span cable bridge is less feasible at the Hastings location for reasons similar to those for a suspension bridge:

- Roadway Geometry - Horizontal curvature on the south end could cause structural difficulties if the cable-supported portion of the bridge extends into the curved segment of the alignment (which would be necessary with a 3-span cable bridge). While a limited number of horizontally-curved cable bridges exist in Asia, none have yet been constructed in the United States; and
- Power Lines at the South End of the Bridge - In addition, a 3-span cable bridge would have towers extending about 120 to 150 feet above the bridge deck. This would be problematic on the south end where the overhead electric transmission lines would conflict with the south tower or cables.

2-Span Cable Bridge - The most feasible cable bridge type would be a 2-span cable bridge, where the cable portion of the bridge is on the straight segment of the bridge and positioned so that there is sufficient clearance from the electric transmission lines. A 2-span cable bridge was identified as one of the promising alternatives.

Arch Family Evaluation

Partial Through-Arch Bridges - the following issues make a partial through-arch bridge less feasible at the Hastings location:

- Roadway Geometry - Horizontal curvature on the south end that will be required to transition the new bridge alignment to the existing roadway alignment could cause structural difficulties for this bridge type;
- Soils and Foundations - A partial through-arch bridge would require suitable foundation conditions on both sides of the river. However, soil conditions are unfavorable on the north end, with rock 100 feet or more below the river. This would result in a much more expensive foundation system; and
- Proximity to Navigation Channel—With a partial through-arch bridge, some of the arch elements extend below the deck of the bridge. The proximity of these elements to the navigation channel increases the risk of impacts with shipping vessels.

Tied Arch Bridges — A tied arch bridge fits the geometric constraints in the Hastings setting; however, tied arch bridges are traditionally fracture critical bridges. Specific design details are necessary that address the fracture critical nature of a tied arch bridge before this type can move forward as a potential Preferred Alternative. A steel tied arch bridge was selected for developing more detailed information for comparing the promising alternatives.

For the six replacement alternatives, a concrete box girder was used for the girder family, a 2-span cable bridge was used for the cable family, and a tied arch was used for the arch family. The rehabilitation alternative consisted of rehabilitating the existing bridge and pairing it with a two-lane tied arch bridge. The combination of six replacement alternatives and the rehabilitation alternative resulted in the seven Most Promising Alternatives shown on Figure 7 in Appendix 1:

- ***Alternative 1: Box Girder Bridge (Single Bridge)*** - a single box girder bridge on alignment Option B (single bridge next to the existing bridge);
- ***Alternative 2: Box Girder Bridges (Twin Bridges)*** - twin box girder bridges on alignment Option C (twin bridges overlapping the existing bridge);
- ***Alternative 3: Arch Bridge (Single Bridge)*** - a single arch bridge on alignment Option B (single bridge next to the existing bridge);
- ***Alternative 4: Rehab Existing Bridge next to New Arch Bridge*** - the rehabilitated existing bridge next to a new arch bridge. An arch bridge was selected because it would be the most visually compatible with the existing bridge;
- ***Alternative 5: Cable Bridge (Single Bridge)*** - a 2-span cable bridge on alignment Option B (single bridge next to the existing bridge);
- ***Alternative 6: Box Girder Bridge (Single Bridge)*** - a single box girder bridge on alignment Option D (single bridge overlapping the existing bridge); and
- ***Alternative 7: Arch Bridges (Twin Bridges)*** - twin arch bridges on alignment Option C (twin bridges overlapping the existing bridge).

Second Level of Screening to the Five Promising Alternatives

The second level screening compared the seven Most Promising Alternatives (from Figure 7 in Appendix 1) in four categories of evaluation criteria:

1) Design Criteria: conformance of the alternative to roadway geometric criteria and the requirement for structural redundancy. This portion of the evaluation was based on preliminary design work and drawings that are included in the Bridge Feasibility Memorandum[17];
2) Construction Criteria: relative risk and complexity of the alternative based on the assessment of team construction and design engineering staff. The estimated duration of construction was based on detailed schedules developed for each alternative and included in the Cost and Constructability Memorandum[18];
3) Construction and Maintenance Costs: relative range of construction costs and qualitative assessment of long term maintenance requirements. Conceptual level cost estimates were developed for each alternative and included in the Cost and Constructability Memorandum; and
4) Community and Planning Issues: compatibility with criteria related to community identity, trail and transit accommodation, and social/environmental impacts was evaluated.

Alternatives 1 through 5 were carried forward for further evaluation. Alternatives 6 and 7 were not.

Alternative 6 was not carried forward for the following reasons:

- ***Construction complexity*** - In order to maintain traffic on the existing bridge during construction, difficult construction work beneath the existing bridge would be required; and
- ***Relative advantage of Alternative 2*** - Twin girder bridges (Alternative 2) could be designed such that they function and are aligned in a way that is not substantially different than Alternative 6, but with much less construction complexity.

Alternative 7 was not carried forward because of complicated construction staging that would be required for building two arch bridges.

Third Round of Screening to the Four Promising Alternatives

In the final round of screening, Alternative 1, the single box girder, was compared with Alternative 2, the twin box girder. Alternative 1, a single box girder, was eliminated from further consideration, for the reasons listed below:

1) Alternative 1 has a footprint equal to the largest proposed footprint. In comparison, Alternative 2 is partially constructed within the footprint of the existing bridge, and as a result has reduced impacts on adjacent properties.
    a. Greater impact to H.D. Hudson Manufacturing Company;
    b. Greater land and river impacts.

[17] *Hastings Bridge Feasibility Memorandum – Hastings Bridge Scoping Study*, December 2008, available upon request from Mn/DOT. Contact information is provided on the first page of Section 5.
[18] *Cost and Constructability Memorandum – Hastings Bridge Scoping Study* October 2008, available upon request from Mn/DOT. Contact information is provided on the first page of Section 5.

2) Alternative 1 has the worst case geometrics. The girder bridge type has the steepest grade of all proposed bridge types. Coupling this bridge type on alignment B produced an alternative with the most horizontal curvature and the steepest grade.

3) Alternative 1 is a single bridge. The girder bridge type was the only remaining bridge type with an alternative proposed with a twin bridge option. Stakeholders preferred the option of twin bridges over a single bridge.

4) Alternative 1 was viewed as less aesthetically pleasing to stakeholders because it did not provide a gap between bridges to provide additional natural lighting.

Scoping Study Alternatives Carried Forward

The Scoping Study concluded with the four alternatives shown in Figure 8 in Appendix 1 being carried forward for further environmental, engineering, and visual quality analysis and review.

Rehabilitation Bridge Alternative

In an effort to avoid adversely affecting the existing bridge, a rehabilitation alternative was developed that would meet the project's purpose. This alternative proposed rehabilitating the existing bridge and building a new arch bridge to the west. The alternative was brought forward from the Scoping Study which conducted preliminary engineering analysis on the feasibility of rehabilitating the exiting bridge.[19] Mn/DOT Bridge Office further refined the engineering analysis of several rehabilitation options.[20] Mn/DOT's Cultural Resources Unit (CRU) determined the rehabilitation options had an adverse affect on the T.H. 61 Bridge as described in a January 14, 2009 letter to the State Historic Preservation Office (SHPO). A copy of this letter is in Appendix 2. As a result, the Rehabilitation Bridge alternative was eliminated from further consideration; see the Draft Section 4(f) Evaluation in Appendix 3 for additional information.

Remaining Alternatives Carried Forward

The following three remaining alternatives have been carried forward and are described in detail in the next section: Alternatives under Consideration.

- Box Girder Twin Bridges Alternative (Scoping Study Alternative 2);
- Tied Arch Single Bridge Alternative (Scoping Study Alternative 3);
- Cable Single Bridge Alternative (Scoping Study Alternative 5).

As a note to readers, the EA did not continue the alternative number used in the Scoping Study to distinguish between the alternatives. The EA uses the description of each bridge type to name each alternative.

Alternatives under Consideration

Due to the elimination of the Rehabilitation Alternative in January of 2009, the alternatives under consideration and described in the EA include the remaining three alternatives carried forward from the Scoping Study, as well as the No-Build Alternative. The following discussion describes each alternative in detail.

[19] *Bridge Rehabilitation Study Report – Hastings Bridge Scoping Study*, December 2008, available upon request from Mn/DOT. Contact information is provided on the first page of Section 5.

[20] *Bridge Rehabilitation Report for SP: 1913-64 T.H. 61 Mississippi River Crossing in Hastings,* Mn/DOT, 1/13/09, available upon request from Mn/DOT.

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. Under the No-Build alternative, necessary routine repairs will continue to be made as long as possible; however, the bridge will continue to deteriorate and the bridge load posting will have to be reduced. This will likely start by diverting trucks and buses, but later, after further deterioration, it could be necessary to reduce the bridge to one lane of traffic. Ultimately, the bridge will become structurally insufficient to the point that it will be closed to all traffic, and all vehicles will be detoured to other routes indefinitely. Complete bridge closure under the No-Build scenario could occur within the next ten years.

Three Build Alternatives

The following three proposed Build Alternatives carried forward from the Scoping Study meet the purpose of the project.

- Box Girder Twin Bridges Alternative;
- Tied Arch Single Bridge Alternative and;
- Cable Single Bridge Alternative.

The project termini for the three Build Alternatives are the same; Fourth Street is the southern terminus, and the bridge over the Canadian-Pacific Railway is the northern terminus. The total project length is 4,051 feet or 0.767 miles.

Similar Design Elements of the Three Build Alternatives

The following mainline elements are the same for all three Build Alternatives. These are shown on the layouts for each alternative in Figure 10 through Figure 15 in Appendix 1.

T.H. 61 Northern Mainline Segment

This segment of T.H. 61 mainline extends from the bridge over the Canadian-Pacific Railway (Bridge no. 82021) to the north abutment of the T.H. 61 Bridge over the Mississippi River. All proposed Build Alternatives have the following feature elements:

- Design speed of 70-50 miles per hour;
- 12-foot driving lanes;
- 10-foot paved outside shoulder with curb and gutter;
- 4-foot inside shoulder with concrete median barrier;
- Right-turn lane for southbound T.H. 61 to the north local road entrance south of bridge 82021; and
- Two cell stormwater treatment ponds on the west side of T.H. 61 on the northern end of the project area.

North Local Road

Two local roads intersect T.H. 61 in the project area north of the Mississippi River; one on the west side leading to Hubs Landing, and one on the east side of the highway which serves as a field entrance. These local access points form the only intersection in the project area north of the river. The access roads are currently allowed left turning movements onto T.H. 61. A center median barrier will be built on T.H. 61 north of the

River, which will eliminate left turn movements. This will reduce the risk of severe crashes at these access points.

A new north local road will connect the two access roads by wrapping around the north abutment of the new T.H. 61 Bridge, while passing under the bridge. The road will provide access from either side of T.H .61 to northbound and southbound T.H. 61.

T.H. 61 Southern Mainline Segment

This segment of T.H. 61 mainline extends from the south abutment of the Mississippi River Bridge to Fourth Street. All proposed Build Alternatives have the following feature elements:

- Design speed of 30 miles per hour;
- 12-foot driving lanes;
- Raised median and curb;
- Shoulders that vary from 0 to 8-feet;
- Right-turn lane for southbound T.H. 61 to Fourth Street;
- Shared use pedestrian and bicycle trail; and
- Dry infiltration basin or underground filtration basin located under the new bridge.

T.H. 61 Bridge Segment

This segment of T.H. 61 is the bridge portion between the northern and southern mainline segments. All proposed Build Alternatives have the following feature elements:

- The navigational channel vertical clearance will be 52 feet above the 2% flow line elevation of 685.05 ft (NAVD 88 datum);
- The total bridge length could vary from the existing 1,857 feet to 2,400 feet;
- Design speed of 40 miles per hour;
- The navigational channel width can be increased by moving the pier on the north side of the channel further north, see the Coast Guard's minimum recommendation for pier locations in their February 9, 2009 letter in Appendix 2;
- 12-foot driving lanes;
- 4-foot inside should next to a raised concrete median barrier;
- 8-foot outside shoulder; and
- Deck width will accommodate future bus shoulder needs.
- 12-foot pedestrian sidewalk on the east side of the bridge.
- Widened sidewalk areas at the south and north ends of the bridge for river viewing.

Anti-Icing Facility

An anti-icing facility will be constructed for the T.H. 61 Hastings Bridge. The anti-icing building will be approximately 20 feet by 40 feet and up to 25 feet high. This building will house tanks, pumps, and chemicals used to treat the bridge deck to prevent ice formation.

The anti-icing facility has three potential locations, as shown on Figure 9 in Appendix 1, and described below:

- On the west side of the Mississippi River bridge just south of the Mississippi River shoreline. This is the site of the existing Hudson Manufacturing loading dock. This property needs to be acquired to accommodate the new road right-of-way and the existing building will be demolished. The anti-icing building would be located under the proposed bridge.
- On the north side of the Mississippi River between T.H. 61 and Hubs Landing.
- For the single bridge option only (cable or arch supported) – On the abandoned T.H. 61 northern roadway segment at the north abutment of the existing bridge.

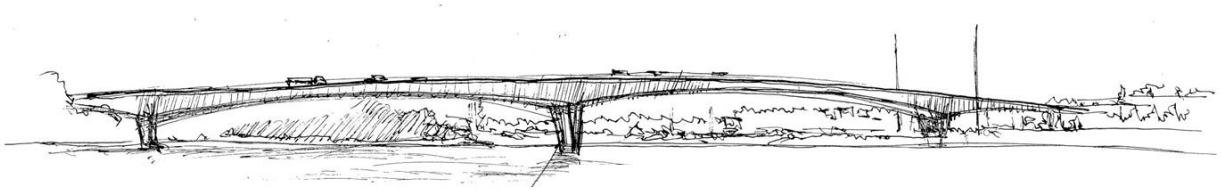
Busses on shoulders

To meet future transit needs of the project area, all of the proposed Build Alternatives are designed to accommodate busses on shoulders. Operating busses on shoulders increases the person-carrying capacity of a highway, and lessens travel delays caused by mainline lane congestion. Busses are permitted to use shoulders when the traffic speed on the mainline lanes drops below 35 miles per hour. Bus shoulders allow busses to bypass congested and slow moving traffic, until they can merge back onto the mainline lanes when traffic is going 35 miles per hour or faster. This keeps travel times for busses consistent, and shorter than mainline traffic. Because the vehicle capacity of a four-lane T.H. 61 Bridge may be exceeded within its 100-year design life, and because it can be cost-prohibitive and/or structurally-prohibitive to add bus-shoulder width to a bridge after it has been constructed, all of the proposed Build Alternatives are designed to accommodate bus shoulders.

Box Girder Twin Bridge Alternative

This proposed bridge alternative would construct twin box girder bridges on Alignment C (see Figure 5 in Appendix 1). The box girder bridge depicted in the sketch in Exhibit 7 is a haunched box girder as the structure depth varies due to the presence of a parabolic bottom slab. Haunched cross sections are common on longer span bridges to satisfy engineering, aesthetic, and economic requirements.

Exhibit 7: Sketch Drawing of a Box Girder Bridge



A box girder bridge has a hollow, trapezoidal cross section. The box girder bridge is a deeper structure because the main load carrying members are all at or below deck level. The structure depth at the pier controls the vertical profile for the entire bridge. Figure 10 and Figure 11 in Appendix 1 illustrate the profile and layout of the Box Girder Twin Bridge Alternative.

Tied Arch Single Bridge Alternative

This proposed bridge alternative would construct a single tied arch bridge on Alignment B (see Figure 5 in Appendix 1). An arch bridge uses an arch structure (known as the arch rib) to support the bridge deck, as depicted in the sketch in Exhibit 8. This bridge type has a shallow structure depth compared to the girder due to the location of the arch rib's load carrying members at and above the deck. In addition to the arch rib, other prominent members on arch bridges are the tie beam (a horizontal beam that runs next to and parallel with the bridge deck) and hangers (vertical members that connect the arch rib and tie beam.) Typical girder-type bridges would be constructed for both the northern and southern approaches to the main span. Figure 12 and Figure 13 in Appendix 1 illustrate the profile and layout of the Tied Arch Single Bridge Alternative.

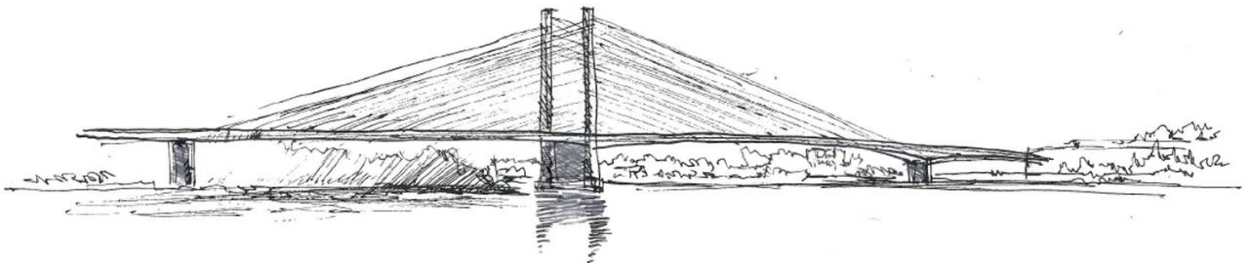
Exhibit 8: Sketch Drawing of a Tied Arch Bridge

Cable Single Bridge Alternative

This proposed bridge alternative would construct a single cable-supported bridge on Alignment B (see Figure 5 in Appendix 1). A cable-supported bridge uses cables to support the bridge deck resulting in a shallow structure depth, when compared to a girder type bridge. The signature of a cable bridge is the result of members located high above the deck, as depicted the sketch in Exhibit 9. Many bridges fall under the umbrella of cable-supported bridges, including cable-stayed bridges and suspension bridges.

This bridge type has design limitations due to horizontal curvature. Due to the curvature at the south end of alignment B, this alternative includes a 2-span bridge with cables supporting the deck that are anchored at the first pier on the north side of the river. Typical girder-type bridges would be constructed for both the northern and southern approaches to these spans. Figure 14 and Figure 15 in Appendix 1 illustrate the profile and layout of the Cable Single Bridge Alternative.

Exhibit 9: Sketch Drawing of a Cable Bridge



Typical Bridge Cross Section

Figure 17 in Appendix 1 shows a cross section at the middle of the each bridge alternative's main span. This provides a comparison of bridge widths between the Build Alternatives and No-Build Alternative.

Bridge Design Element Comparison

Table 6 on page 28 provides a comparison of the variable bridge design elements that differentiate the proposed bridge alternatives from one another.

Table 6: Comparison of the Proposed Bridge Alternative Design Elements

Bridge Elements	Existing Bridge	Tied Arch Single Bridge	Cable Single Bridge	Girder Twin Bridge
Total Bridge Width	44 feet	105 feet	105 feet	102 feet
Distance from East Edge of Proposed Bridge to west edge of Existing Bridge	0 feet (same location)	20 feet.	20 feet	0 feet (same location)
Distance from West Edge of Proposed Bridge to west edge of Existing Bridge	0 feet (same location)	125 feet	125 feet.	58 feet
Structure Depth, Main Span	4 feet	8 feet	8 feet	12 feet
Structure Depth, Approach Span	8-10 feet (north approach)	4-8 feet	4-8 feet	30 feet (at main span piers)
Maximum profile grade, between bridge crest and south touchdown point	3.5%	3.5%	3.5%	5%
Maximum Height of structure above bridge deck measured from the bridge deck	94 feet	90-150 feet	150-300 feet	None
Location of Pedestrian Trail	East side	East side	East side	East side

4. SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS

This section discusses environmental impacts of alternatives identified in the Alternatives section. 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 outlined in Minnesota Rule 4410.4300. Federal environmental regulations not addressed in the EAW are addressed in the Additional Federal Issues sub-sections.

ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to writers: This form is available at www.mnplan.state.mn.us. EAW Guidelines will be available in spring 1999 at the web site. The Environmental Assessment Worksheet provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit or its agents to determine whether an Environmental Impact Statement 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 45-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:

T.H. 61 Bridge Project

2. Proposer	Minnesota Department of Transportation, Metro District	**3.RGU**	**MINNESOTA DEPARTMENT OF TRANSPORTATION**
Contact Person	**Steve Kordosky**	Contact Person	**Rick Dalton**
Title	**Project Manager**	Title	**Environmental Coordinator**
Address	**1500 W Co. Rd. B2**	Address	**1500 County Road B2**
City, state, ZIP	**Roseville, MN 55113**	City, state, ZIP	**Roseville, MN 55113**
Phone	**651 234-7880**	Phone	**651-234-7677**
Fax	**651-2347608**	Fax	**651-234-7608**
E-mail	hastingsbridge@dot.state.mn.us	E-mail	hastingsbridge@dot.state.mn.us

4 - Reason for EAW preparation

EIS scoping	Mandatory EAW	Citizen petition	RGU discretion	Proposer volunteered

If EAW or EIS is mandatory, give EQB rule category subpart number 22 *and subpart name.* Not Mandatory

5 - Project location

Dakota and Washington County	City of Hastings	Township	Range	Section(s)
		26 North	20 West	7
		115 North	17 West	21 and 22

GPS Coordinates: NA

Parcel Number: NA

Attach each of the following to the EAW:

- County map showing the general location of the project (see page vi)
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable) (see page vii);
- Site plan showing all significant project and natural features (see project layouts and project area figures in Appendix 1, Figure 11 thru Figure 32)

6 - Description

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

This project proposes to replace the existing T.H. 61 Bridge over the Mississippi River in the City of Hastings with a four-lane bridge. The project proposes constructing a ring road on the north side of the river for safer vehicle access to T.H. 61 and safer pedestrian crossing of the highway.

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.*

Major project features

A detailed description of features for each proposed bridge and roadway alternative under consideration is found in Section 3, beginning on page 23.

Construction methods

This proposed project will follow a design-build process for construction. This process is different from a typical design-bid-build process in which Mn/DOT develops final design plans, and requests contractor bids for a specific design. A design-build process is one in which Mn/DOT partially completes plans, and then requests contractor bids for final design plans and construction. Commitments identified in this EA will be fulfilled by either Mn/DOT or the design-build contractor.

Construction is anticipated to begin in fall 2010. The duration of construction varies depending upon the alternative chosen, although construction is generally expected to take about three years. Each of the alternatives has construction-related impacts, though the nature of these impacts varies depending upon bridge type. A brief summary of the key construction features for each bridge alternatives is described below, followed by a discussion of the construction-related impacts that would be encountered with the Build Alternatives.

Tied Arch Single Bridge Alternative

Refer to Figure 13 in Appendix 1 for the Tied Arch Single Bridge Alternative layout. Construction time is estimated to be 3 to 3.5 years.

Main Span Structural Construction Methods

It is expected that the arch span would be built offsite and floated into place. Potential off site locations include:

- Flint Hills Nature Preserve (see Figure 16 in Appendix 1) - It is expected that temporary bridge piers would be constructed in this staging area and the arch structure erected on these piers;
- Partially in the river and partially on land south of the navigational channel in the Flint Hills Nature Preserve area. It is expected that temporary bridge piers would be constructed and the arch structure erected on these piers; and
- In the river north of the navigational channel east of Lock & Dam #2 and west of the existing bridge. In this potential scenario the new arch could be constructed on barges or on temporary piers in the river.

It is expected that construction activities for all of these off-site locations would last 10-15 months.

These offsite locations for constructing the Tied Arch Single Bridge Alternative would likely require some dredging of the river. The dredging is needed to create adequate water depth under the arch such that barges could be floated under the arch and used to pickup and transport it to its finished location. Offsite locations that partially obstruct the navigational channel will require coordination with the COE and the Coast Guard. If the navigational channel is shifted to accommodate these off site locations, more dredging for navigation purposes may be required.

Temporary sheeting would be installed along the riverbank at the Flint Hills Nature Preserve to allow for tug boats and barges to be temporarily docked along the shore. This temporary docking would allow for loading and unloading of materials, equipment, and workers and may require some dredging. The staging area is also the COE and City of Hastings dredge material transfer site. The temporary sheeting may be installed permanently to better aid the transfer of dredged material from the water to the land

Pier Construction Methods

The northern pier of the main span would be located west of the existing bridge and north of the existing main span pier. Due to the presence of silt soils, the footings for this pier would likely be constructed with deep foundations such as drilled shafts or piling that could extend to over 200 feet in depth. It would likely be constructed with cranes on barges and crane operations utilizing a temporary cofferdam around the pier. Barges and crane operations, cofferdams, launching of materials, and tug boats all cause temporary navigational obstructions. These temporary navigational obstructions could be in place for hours (a barge utilizing the channel) or up to six months (cofferdam around the pier extending into the channel). The contractor will be required to coordinate such obstructions with the Coast Guard and COE. Coordination would include radio communication, a helper boat, and buoys in the construction work areas.

The southern pier of the main span would be located west of the existing bridge, south of the river, and north of the existing Hudson Manufacturing plant. This pier would be built from equipment operating on land. Due to the presence of shallow bedrock near the surface of the ground, this pier would be built on spread footings about seven feet in depth and will require some bedrock removal.

Approach Span

The piers north of the main span for the Tied Arch Single Bridge Alternative would likely be supported by drilled shafts or pilings. The river north of the main river span is shallow in depth and has a large amount of driftwood and dead trees.

It is expected that the contractor would need to remove the wood debris and construct a temporary land peninsula about 150 feet wide from the north side of the river out towards the river. The contractor would use this temporary peninsula as a working platform from which to construct piling, footings, piers and erect bridge beams. Construction of such a peninsula would require coordination with the DNR and the COE. This peninsula would require temporary sheeting or large rip rap surrounding to it prevent erosion during construction.

Demolition of the Existing Bridge

Bridge demolition during the Mississippi River navigation season would require temporary navigational restrictions and need to be coordinated with the COE and the Coast Guard in a manner similarly described for bridge pier construction. A bridge demolition plan is the responsibility of the contractor; it is submitted by the contractor to COE, Coast Guard, and DNR for their approval.

It expected that the demolition would occur in the following manner:

- Remove the concrete deck using jack hammers. The concrete rubble would fall onto barges below;
- Remove the horizontal stringers and floor beam using cutting torches, cranes and barges;
- Remove the vertical hangers that support the deck using cutting torches, cranes, and barges;
- Remove the structural truss starting at the midpoint of the river span. The truss would be removed piece by piece using cutting torches, cranes, and barges. The contractor may use cranes located on barges, cranes located on shore, or cranes on the new bridge as a work platform for removing the truss; and
- Remove the bridge piers. Barges and jackhammers would be used to remove the piers in the river to an elevation approved by the appropriate agencies. The piers on land would be removed using jack hammers.

Cable Single Bridge Alternative

Refer to Figure 15 in Appendix 1 for the Tied Arch Single Bridge Alternative layout. Construction time is estimated to be 3 to 3.5 years.

Main Span Structural Construction Methods

The structural elements of a cable bridge, the cables and deck, are constructed in segments at the bridge site. The cable bridge is constructed in approximately 20-foot segments. Construction would begin from the northern main span river pier and construct outward in each direction from the pier. The 20-foot segments of the deck would likely be floated to the pier on barges, lifted from the barges with cranes, and attached. These deck segments would then be secured with cables. The cables would attach to these segments, go over the top of the river pier, and attach to a segment at an equal distance on the other side of the pier.

Installing these 20-foot segments would require short term closures (4 to 8 hours) of the navigational channel. These short term closures would need to be coordinated with the Coast Guard and COE. It is possible that the 20-foot segments closest to the northerly main span pier may not require closure, but may require a helper boat or some other

measures. It is expected that installing these segments would occur through an entire navigational season.

The Flint Hills Nature Preserve area, illustrated in Figure 16 in Appendix 1, would likely be used as a staging area. Equipment, materials, and labor would be moved from land to barges at this location. In addition, this area could become an area where the 20-foot segments for the cable bridge deck would be manufactured. Constructing these 20-foot segments consists of building forms, installing reinforcing steel into the forms, post tensioning duct work, and pouring the concrete.

Pier Construction Methods

Pier construction would be similar to those describe above for the Tied Arch Single Bridge Alternative.

Approach Spans

The Cable Single Bridge Alternative eliminates piers north of the northern main span river pier. The cable bridge spans to the north abutment. However, it is expected the contractor would construct a temporary peninsula from the north abutment into the river from which to build the bridge, similar to the construction of the Tied Arch Single Bridge Alternative. This temporary peninsula would be approximately 150 feet wide and require coordination with the COE and the DNR. The contractor could construct the bridge between the northern main river pier and the north abutment on barges. This would require dredging to create adequate water depths for barges.

Demolition of the Existing Bridge

Demolition activities would be similar to those described above for the Tied Arch Single Bridge Alternative.

Box Girder Twin Bridge Alternative

Refer to Figure 11 in Appendix 1 for the Box Girder Twin Bridge Alternative layout. Construction time is estimated to be about 3.5 to 4 years.

Main Span Structural Construction Methods

The Box Girder Twin Bridge Alternative has a concrete box as its main bridge span. The box section of this alternative would either be cast in-place utilizing a form traveler, or pre-cast pieces would be fastened together. The box section is built in approximately 20-foot sections. Construction would begin from the main span river piers and move outward from these piers in both directions. The segments are staggered (a 20-foot section north of the pier, then a 20-foot section south of the pier) to keep a balanced weight load around the pier. It is expected that constructing the deck would take eight to ten months

Using the form traveler construction method would result in less navigational obstruction and require less coordination than using the construction method with pre-cast segments. This is because the form traveler is suspended above the navigational channel by attaching to previously constructed segments. The form traveler is a mold that attaches to previous bridge segments and allows bridge construction without cranes on barges in the river. Dredging or constructing a temporary peninsula would not be needed between the northern river pier and the north abutment if the from traveler method was used; however, either dredging or constructing a temporary peninsula would be necessary for pre-cast installation.

The Flint Hills Nature Preserve area would likely be used as a staging area to move equipment, materials, and labor from land to barges. It may also be used to cast the 20-foot segments if the pre-cast construction method were used. Constructing these 20-foot segments consists of building forms, installing reinforcing steel into the forms, post tensioning duct work, and pouring the concrete.

Pier Construction Methods
Both the southern and northern main spans piers would be constructed in similar fashion as described above for the Tied Arch Single Bridge Alternative.

Approach Spans
Approximately 360 feet of the approach spans on both ends of the bridge are constructed in conjunction with the main river span in 20-foot segments, thereby reducing the number of piers for the Box Girder Twin Bridge Alternative. The remaining portion of the approach span would be constructed in similar fashion to those describe above for the Tied Arch Single Bridge Alternative.

Demolition of the Existing Bridge
Demolition activities would be similar to those described above for the Tied Arch Single Bridge Alternative.

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, the three proposed Build Alternatives would all require some river impacts, including demolition, dredging, building a temporary peninsula/causeway, and removal after construction.

Dredging
Dredging is the process of removing sediment from the bottom of the river to create adequate water depth. It is expected that dredging would occur along the shoreline of the staging near the lock and dam. Dredging could also occur with the Tied Arch Single Bridge Alternative to accommodate a shifted navigational channel or a staging area north of the river channel.

It is expected that the 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. This 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. The sediment in this area of the river is granular (sand like) and is not silty.

Dredging in this portion of the river requires permitting through the DNR and the Minnesota Pollution Control Agency (MPCA). The contractor would be required to obtain these permits and perform such dredging as necessary for the contractor's preferred construction method.

Temporary Causeway
A temporary causeway allows the bridge to be built from land rather than from a barge. A causeway is a temporary land peninsula which could be used for construction of all three Build Alternatives. The likely location of a causeway would be on the west side of the

exiting bridge in the northern Mississippi river portion of the project. This area has shallow water depth, and contains large amounts of driftwood.

It is expected that the causeway would be built from the land towards the river. A floating silt fence would be required around the entire area to capture silt. It is expected that the sediment in this area of the river is more silty than the area where dredging occurs. Driftwood would be pulled from the river bottom, and fill would be added using heavy equipment and trucks. Driftwood removal and adding fill would occur simultaneously as the work progresses outward into the river.

The causeway would be lined with rip rap or sheeting to protect it against erosion during construction.

Construction of the causeway requires permitting through the DNR and the COE. The contractor would be required to obtain permits for its preferred construction method.

The causeway will need to be removed at the conclusion of the project. The causeway would be removed starting from the river and working towards the shoreline. 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 wing dams to an accepted condition and removing the floating silt fence.

Navigation Channel

All of the Build Alternatives involve interruption to, or closure of, the navigation channel at various stages of construction to allow for pier construction, launching of materials, use of tug boats, work on the bridge structure, and demolition. These closures would need to be coordinated with the COE and Coast Guard and would impact commercial and recreational water users. The timing and duration of closures vary depending upon bridge type. It is anticipated that the Box Girder Bridge Alternative would result in the least impact to the navigation channel.

Pier Construction/Staging Area

Main span pier construction for all Build Alternatives would use cranes working on barges and require use of a temporary cofferdam and temporary dewatering. This work would take approximately six months. The appropriate permits would be obtained for dewatering prior to construction and coordination with the DNR and MPCA would occur as necessary should groundwater contamination be present in dewatering areas. Dewatering is not anticipated to have an adverse effect on ground water levels in the area.

The area in and around the Flint Hills Nature Preserve east of Lock and Dam #2 would be used as a staging area during construction. This area could also become a concrete casting yard where bridge segments are manufactured. Because of the existing soil and groundwater contamination present at the Flint Hills Nature Preserve site, in addition to a restrictive covenant on the property, approval for all construction staging activities will be obtained from the MPCA and current and previous property owners, as specified in the restrictive covenant.

Temporary sheeting would be installed along the edge of the Flint Hills Nature Preserve 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 water depth for barges. In addition, construction of piers north of the main span would require either construction of a temporary land peninsula in the shallow area

north of the main river pier to create a working platform or dredging of the shallow area to accommodate a working platform on barges. The peninsula would require temporary sheeting or large rip rap surrounding it to prevent erosion during construction. Coordination with the DNR and the COE would be required for this activity.

Dewatering

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

Vibrations, Dust, and Noise

Pile driving and bedrock removal for pier construction 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.

Mn/DOT will require that construction equipment be properly muffled and in proper working order. While Mn/DOT and its contractor(s) are exempt from local noise ordinances, it is the practice to require contractor(s) to comply with applicable local noise restrictions and ordinances to the extent that is reasonable. Advanced notice will be provided to affected communities of any planned abnormally 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 location and magnitude of construction vibrations cannot be fully assessed until the final design phase of the project. Vibration impacts will be monitored by performing pre-project 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.

Air quality impacts during construction could include increased dust and airborne particulates caused by grading, filling, 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 possibly from traffic stopped at intersecting roadways. These impacts are expected to be minimal and of short duration. Refer to EAW Item 24 on page 72 for more information.

Erosion

There is the potential for erosion during construction where stabilized surfaces such as ground cover and pavement are disturbed. All disturbed vegetated areas would be reseeded or sodded. Shoreline disturbance will be minimized to the extent feasible and shoreline vegetation will be preserved where practical. Best Management Practices (BMPs) as identified in the MPCA's National Pollution Discharge Elimination System (NPDES) permit for construction sites will be implemented to minimize erosion and water quality impacts. Refer to EAW Item 17 on page 63 for more information.

Tree Removal

The proposed project will remove approximately five acres of trees during construction. The majority of permanent tree loss will be on the north side of the project area. In addition, there will also be some urban landscape impacts in the downtown portion of the project, as well as temporary tree impacts in the staging area along the riverbank. Mn/DOT examined the project area during the summer of 2008 to determine potential vegetation impacts from the proposed project. The area was broken down into three zones in addition to the staging area, as shown in Figure 21 in Appendix 1.

Protection of Vegetation

As part of the design-build contract, a vegetation plan will be required that determines vegetation impacts from the proposed project. The plan will include efforts to avoid and/or minimize these impacts during both the design and construction phase. When precise construction limits are determined vegetation protection measures will be applied to the construction plan. These vegetation protection measures will 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 will be paid to 2572.3A, including but not limited to the use of temporary fence for tree protection. These areas should be identified in the plan and Standard Detail Sheets that are available for these items included in the plan package. Tree removal will be conducted in the winter in order to minimize impacts to migratory birds that may have nests in the project area.

Vegetation Replacement

Vegetation replacement will follow a required Vegetation Plan. Mn/DOT will require that replacement follow the agency's recommended replacement guidelines. Areas A and B (see Figure 21) and the staging area are categorized as Category 1-Native Plant Community types. The guidelines for re-vegetation of these areas recommend indigenous/native plant materials in the most cost effective and efficient manner that restores the impacts of construction in harmony with the surrounding native plant community.

Area C is categorized as Category 2- Landscape Vegetation. The guidelines recommend that boulevard trees be replaced at a 1:1 ratio with consideration to size and spacing of replacement trees. Landscaped areas are recommended for replacement on a one to one acreage lost, using landscape grade plant materials, provided that there are suitable soil and site conditions in place to support plant health and the safety clear zone is not violated.

Re-vegetation within the project area will try to control invasive species. Particular concern will be to top soil brought to the site. The contractor will be required to control the eleven state listed noxious weeds. These can be found at:
http://www.mda.state.mn.us/news/publications/pestsplants/badplants/noxiousplantsminnesota.pdf).

Potential Contaminated Substance Spills/Leaks

The presence of bed rock near the surface at the south approach increases the need for preventative measures prior to a leak during construction. Preventative measures include concrete truck washout areas, designated equipment maintenance pads, and certified spill staff on site during the project construction. Any contaminated substance spills or leaks that occur during construction will be responded to according to MPCA containment and remedial action procedures. Refer to EAW Item 20 on page 67 for more information.

Traffic and Access

For all Build Alternatives existing traffic movements over the river will be maintained to the extent possible during construction; however, closing the bridge crossing for short periods of one to two days is anticipated with this project. Likewise, access to businesses will be maintained during construction, though businesses with multiple access points may experience closure of an access point. In addition, lane closures and shifts at the south and north approaches will be needed during various stages of roadway and bridge construction.

Project schedule

The project is planned for letting in June 2010, with construction beginning in the fall of 2010 and completed in the fall of 2013 for the Single Arch Bridge and the Single Cable Bridge. The anticipated completion of the Twin Box Girder Bridge is the summer of 2014.

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

Project purpose

The purpose of this project is described in Section 3 on page 14.

The beneficiaries of this project are motorists, pedestrians, and bicyclists crossing the Mississippi River in the project area.

d. *Are future stages of this development, including development on any outlots, 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	**87.9 acres**	
Number of Residential units:	Unattached: NA	Attached: NA
Commercial, industrial or institutional building area (gross floor space): Total Square Feet = NA		

The length of the project along T.H. 61 is approximately 4,051 feet, or 0.767 miles.

Indicate areas of specific uses (in square feet):

Office	**NA**	Manufacturing	**NA**
Retail	**NA**	Other industrial	**NA**
Warehouse	**NA**	Institutional	**NA**
Light industrial	**NA**	Agricultural	**NA**
Other commercial (specify)	**NA**		
Building height. If over two stories, compare to heights of nearby buildings	**NA**		

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 Mn Rules Chapter 4410.3100

Unit of government	Type of application	Status		
		To be requested	Requested	Complete
Federal				
FHWA	Environmental Assessment			X
FHWA	EIS need determination	X		
FHWA	Section 4(f) determination	X		
FHWA	Section 106 (Historic / Archeological) determination			X
U.S. Army Corps of Engineers	Section 10/404 Permit – Individual	X		
U.S. Coast Guard	Section 9 Permit (navigable waters)	X		
U.S. Fish and Wildlife Service	Endangered Species Act Section 7	X		
U.S. National Park Service	Compatibility with the MNRRA Comprehensive Management Plan	X		
U.S. National Park Service	Nationwide Rivers Inventory impacts			X
State				
Mn/DOT	Environmental Assessment Worksheet			X
Mn/DOT	EIS need determination	X		
Mn/DOT	Minnesota Wetland Conservation Act review	X		
Mn/DOT for FHWA	Endangered Species Act Section 7	X		
Mn/DOT with review by Board of Soil and Water Resources	Minnesota Wetland Conservation Act (Replacement Plan)	X		
Minnesota Department of Natural Resources	Public Waters Work Permit Program	X		

Unit of government	Type of application	Status		
		To be requested	Requested	Complete
Minnesota Department of Natural Resources	Dewatering Permit	X		
Minnesota Pollution Control Agency	Section 401 Water Quality Certification	X		
Minnesota Pollution Control Agency	Dredge disposal permit, if needed	X		
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System construction stormwater permit	X		
Minnesota State Historic Preservation Officer (SHPO)	Section 106 (Historic / Archeological) consultation		X	
Local				
City of Hastings	Municipal Consent Stormwater Management Coordination	X		
Vermillion River Watershed Joint Powers Organization	Stormwater Management Coordination	X		
Lower St. Croix Water Management Organization	Stormwater Management Coordination	X		

Funding

The project will be funded with state funds. The project was amended to the 2009-2012 State Transportation Improvement Program (STIP) under S.P. 1913-64. The bridge, the approach roadways, associated roadways, and utility work will be funded by the Chapter 152 Article 6 section 5 funding package passed in the 2008 legislative session. Any right-of-way necessary for this project will be purchased using state construction funds.

There are three different Build Alternatives being considered for this project. The estimated bridge cost for these three alternatives, in calendar year 2013 dollars, is shown in the table below. Approach roadway cost, associated roadway costs, utility costs, right-of-way costs, design cost, and project delivery costs are about the same for all of these alternatives. Adding in these other costs, the total project cost from project development to completed project, is also shown in the table below.

Table 7: Project Alternative Costs (2013 dollars)

Alternative	Bridge Cost	Total Cost
Box Girder Twin Bridge	$ 139M	$ 245M - $260M
Tied Arch Single Bridge	$ 144M	$ 255M - $280M
Cable Single Bridge	$ 163M	$ 275M - $300M

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.

The southern portion of the project area is a mixed land use district, including industrial, commercial, utility, and residential land uses. The north side of the existing bridge includes residential and commercial properties. The Right-of-Way section on page 114 discusses the properties that will be impacted. The City's current comprehensive plan identifies the need for replacing and expanding the current bridge to meet the transportation needs of the city.

Potential Environmental Hazards

Affected Environment

A Phase I Environmental Site Assessment (Phase I ESA) was performed to provide information on potentially contaminated properties within the project impact area and vicinity. Potentially contaminated properties are identified through review of historic land use records and aerial photographs, federal Environmental Protection Agency (EPA), MPCA, and county/city records, as well as through reconnaissance of current property conditions. Mn/DOT 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 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 Phase I ESA was completed in September 2008 for the project area depicted in Figure 18 in Appendix, 1 and the proposed construction staging area (staging area) in Figure 19 in Appendix 1. A copy of the entire Phase I ESA report is on file and available for review at the Mn/DOT Office of Environmental Services at 395 John Ireland Boulevard in St. Paul, Minnesota.

Environmental Consequences

The purpose of the Phase I ESA was to identify all known or potentially contaminated properties in the project area and the staging area. 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 contaminated properties with a potential to be impacted by the project will be investigated (through detailed review of MPCA 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.

The Phase I ESA completed for this project identified a total of forty-seven (47) sites of environmental concern located within or adjacent to the project area and potential staging area. In general, the sites were located south of the Mississippi River. No sites were identified within the project area north of the T.H. 61 Bridge, except for an area of tree debris and siltation just beneath the north end of the bridge. With an active history of commercial and industrial development dating back to the 1850s, the downtown Hastings area has a high density of properties with potential or documented environmental concerns. Identified medium and high risk sites generally are coincident with waterfront properties and main commercial and transportation thoroughfares including the East Second Street Commercial Historic District and T.H. 61 (Vermillion Street). All high, medium, and low risk sites are depicted in Figure 18 in Appendix 1.

High Risk Sites

Properties identified with a high potential of contamination are clustered in three main areas within the project area; they are generally located on the south side of the Mississippi River on either side of T.H. 61.

Two high risk properties, an Xcel substation with known releases of oil containing polychlorinated biphenyls (PCBs) (Site 47) and a manufacturer of spraying equipment for commercial agricultural and consumer pest control applications (H. D. Hudson Manufacturing Company (H. D. Hudson), Site 15), are located along the riverfront adjacent to the east and west sides of the bridge, respectively. H. D. Hudson is a hazardous waste generator and hazardous waste treatment, storage, and disposal facility. A list of wastes generated on site can be found in the Phase I ESA report[21]. Several dumps are located on the H. D. Hudson property. A listing of dumped wastes on site can be found in the Phase I ESA report. Additionally, groundwater contamination is documented within the bedrock aquifer underlying the project area in downtown Hastings; groundwater in the area of these sites also may be contaminated. These sites will likely be affected by project construction, including excavation and groundwater dewatering. The mitigation section below describes measures that will be taken to properly handle and treat contaminated soil and/or groundwater during construction to avoid or minimize risk of contamination releases.

Numerous high risk properties are located on the east side of the project area between First and Second Streets East on either side of Tyler Street. These properties, all owned by the Hastings Housing and Redevelopment Authority (HRA), are associated with the Northeast Hastings Groundwater Plume (petroleum and chlorinated solvent contamination), a Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) site (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). The Hastings Wastewater Treatment Plant and the CMC Heartland Site are located in this same general area. However, at this time, project work is not anticipated to involve acquisition of or earthwork in any portion of this area.

The third high risk area is situated at the northwest corner of Ramsey and Third Streets where chlorinated solvent contamination of groundwater has been documented adjacent to

[21] Contact Mn/DOT's Office of Environmental Services, see website for contact information http://www.dot.state.mn.us/environment/

Zephyr Cleaners (Site 8). Again, project work and acquisitions are not anticipated to extend into this area.

The proposed staging area at the former Koch Terminal (Lake Rebecca Park, Site 104) also is considered to pose a high risk to the project, due to a history of bulk petroleum storage and the documented soil and groundwater contamination present at the site. Soil and groundwater are contaminated with petroleum compounds, and shallow soils are contaminated with lead and chromium from storage tank demolition. Metals-contaminated soil was managed onsite in 2001, and a restrictive covenant was placed on the management areas. Two soil stockpiles currently present on the site contain suspect tank debris. This site will be acquired in easement for the project, and construction work will involve subsurface disturbance (e.g., utility relocation, tilling for site restoration, pile driving), possibly groundwater dewatering, and storage of construction chemicals/fuels. The mitigation section below describes measures that will be taken to properly handle and treat contaminated soil and/or groundwater during construction to avoid or minimize risk of contamination releases.

Medium Risk Sites

Many medium risk sites are located along the T.H. 61 project corridor south of the T.H. 61 Bridge. All but two of the medium risk sites located south of the T.H. 61 Bridge are located within one block of T.H. 61. Numerous auto repair shops and former filling/service stations (including closed leaking underground storage tank sites) were identified along T.H. 61, as well as a few small print shops and machine shops. Numerous tanks were also identified, although many were reported as removed. Field reconnaissance of the East Second Street Commercial Historic District revealed evidence of several suspect tanks not listed in databases searched. Based on the age and use of buildings, the potential for orphan heating oil tanks in this area is high.

Kings Cove Marina (Site 5), a medium risk site, is located just outside the northern extent of the project area. The marina's boat storage area is located within 150 feet of the end of the project area, and at least one release (unspecified) has occurred in this area.

An area of tree debris and siltation was identified beneath the north end of the T.H. 61 Bridge and was assigned a medium risk based on the potential for sequestration of contaminants released upstream in the river. The potential also exists for undocumented/unreported spills on the railway line passing along the northeast edge of the project area.

Minimal acquisitions in fee or easement and mostly shallow earthwork will be completed in these areas in which medium-risk sites are concentrated. Construction activities may encounter soil and groundwater in excavation and dewatering areas. The mitigation section below describes measures that will be taken to properly handle and treat contaminated soil and/or groundwater during construction to avoid or minimize risk of contamination releases.

Low Risk Sites

Low risk sites are clustered on the south end of the project corridor and within the East Second Street Commercial Historic District. These sites are primarily dentists and chiropractors that formerly generated regulated hazardous waste in small quantities. Acquisition and construction activities are not anticipated to encounter contamination at or from these sites.

Summary of Environmental Consequences

Construction activities likely will encounter contaminated materials, soil, and groundwater in most project excavation and dewatering areas due to the high density of high and medium risk contaminated sites in those areas. However, none of the sites within the potential project impact area have been identified as highly-contaminated (e.g., CERCLIS) sites. Mitigation of contaminated sites within the project impact area will be provided as described below.

Mitigation

Acquisitions will not be made until all acquired portions of the site have been thoroughly investigated for soil and groundwater contamination and the appropriate clearances have been obtained from the MPCA Voluntary Investigation and Cleanup program and/or the Petroleum Brownfields or Remediation programs, as needed. The results of the soil and groundwater investigations will be used to develop a plan or plans for properly handling and treating contaminated soil and/or groundwater during construction. That plan will be submitted for approval by MPCA and incorporated into special provisions of the construction plan.

Use of the Former Koch Terminal as a staging area will be carefully coordinated with MPCA, as the site currently has a restrictive covenant placed upon it for subsurface work in certain areas. Additionally, an engineered barrier (impermeable membrane with a variable depth leveling pad) will be constructed on top of the existing surface of the staging area to physically separate staging operations and equipment and chemical/fuel storage from pre-existing site contamination.

The MPCA will be requested to issue a No Further Action Determination (environmental closure) for the portion of the H. D. Hudson site that is purchased by Mn/DOT for new right-of-way.

Soil and groundwater sampling will also be performed in all areas of earthwork within the project area adjacent to remaining medium risk sites to determine the nature and extent of contamination that could be encountered by construction. Cleanup plans for these areas will be prepared and submitted to MPCA for approval prior to completion of the design. These cleanup plans also will be incorporated as special provisions to the construction plan.

10 - Cover types

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

The land area within the project limits is approximately 87.9 acres. The staging area is approximately 19.9 acres. These areas have been classified by the type of coverage identified in Table 8 and Table 9 below and in Figure 20 in Appendix 1. The worst case scenario has been assessed to determine the impact it would have to these cover types. It should be noted that only impacts to land area have been assessed in Table 8; the area of the bridge over the river is not included in Table 8. See EAW Item 14 on page 55 for the floodplain assessment and impacts to the Mississippi River.

Table 8: Cover Type Impacts by Alternative

Cover Type	Before (Acres)	Box Girder After Acres	Cable After Acres	Tied Arch After Acres
Type 1-8 wetlands	28.3	26.7	26.7	26.7
Wooded/forest-	20.8	15.4	15.4	15.4
Brush/grassland	4.2	9.2	9.2	9.2
Cropland	0.0	0.0	0.0	0.0
Lawn/landscaping	4.1	3.7	3.7	3.7
Impervious surfaces	13.7	17.2	17.2	17.2
Stormwater Pond	7.4	7.9	7.9	7.9
Gravel Road/Lot	4.2	3.2	3.2	3.2
Other/Structures	5.2	4.6	4.6	4.6
TOTAL	**87.9**	**87.9**	**87.9**	**87.9**

Table 9: Cover Type Impacts for Staging Area

Cover Type	Staging Area Before (Acres)	Staging Area After (Acres)
Type 1-8 Wetlands	0.8	0.8
Wooded/Forest	0.0	0.0
Brush/Grassland	16.4	15.9
Cropland	0.0	0.0
Lawn/Landscaping	0.3	0.3
Impervious Surfaces	2.4	2.9
Stormwater Pond	0.0	0.0
Gravel Road/Lot	0.0	0.0
Other/Structures	0.0	0
TOTAL	**19.9**	**19.9**

*If **before** and **after** totals are not equal, explain why:*

11 - Fish, wildlife and ecologically sensitive resources

a. *Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.*

Existing Habitat

The project area on the south side of the river will occur in a fully developed downtown area that has been previously disturbed by commercial and industrial development and previous bridge construction. Wildlife in the area is limited to those species that have adapted to live in developed areas. These species likely include raccoons, squirrels, rabbits, and various birds.

The project area on the north side of the river will occur in a rural residential area that includes commercial marinas and disturbed property used for dredged material and dewatering. Habitats in this area include wooded floodplain and wetlands. Species include those commonly occurring in Minnesota such as deer, fox, raccoons, squirrels, rabbits, and various birds.

Habitat Impacts

The proposed improvements will result in the removal of trees along the corridor. Refer to EAW Item 6 on page 38 for a discussion of construction impacts to trees. The proposed project will also result in 1.6 acres of wetland impacts. Refer to EAW Item 12 on page 49 for more information on project impacts to wetlands.

The proposed project will also have work conducted in the Mississippi River, a habitat for aquatic species. The work exclusion dates for this portion of the Mississippi River, April 15 through June 15, will be followed to minimize impacts to fish species. In the event work in the river is needed during these dates, Mn/DOT and its contractor will coordinate with the DNR to receive prior written approval, as noted in the correspondence from the DNR dated August 6, 2008, in Appendix 2.

BMPs will minimize impacts to water quality during construction (see EAW Item 16 on page 62 for more information). As described in EAW Item 17 on page 63, the project includes provisions to treat stormwater from the roadway prior to discharge into the river.

Bird Impacts

The Mississippi River is part of a migration corridor for migratory waterfowl and shore birds, known as the Mississippi Flyway. Migratory bird species are protected by the federal Migratory Bird Treaty Act of 1918. The potential for bird/bridge structure collisions and potential mitigation strategies to reduce the risk for collisions was assessed for this EA by reviewing previous studies of factors involved in bird/bridge structure collisions.

A review of available literature on bird/bridge structure collision studies found few comprehensive studies or definitive findings regarding factors affecting the incidence/rate of migratory bird collisions with bridge structures. Although the studies to date have not identified specific risk thresholds, there have been a number of factors identified that appear to influence the incidence/risk of bird fatalities at bridge structures, including: 1) structure height, 2) proximity to migratory feeding/nesting areas, 3) bridge lighting, and 4) weather conditions.

Studies have indicated that the risk for bird/structure collisions generally increases as the bridge structure height increases. Height of the bridge structure with respect to the surrounding landscape may also be a factor, but there is no conclusive evidence to support this. A comparison of the bridge alternatives structure heights was made to assess relative heights compared to the existing TH 61 Hastings Bridge height, the surrounding landscape, and height differences among alternatives. The top truss of the existing bridge is about 160 feet above normal river pool elevation, and the top of the Mississippi River bluffs is approximately 195 feet above normal pool. The top of the arch for the Tied Arch Single Bridge Alternative would be about 195 feet above the normal pool – 35 feet taller than the top of the existing bridge, and approximately the same elevation as the surrounding bluffs. The towers for the Cable Single Bridge Alternative would be 225 to 375 feet above normal pool (depending on the design) – 65 to 215 feet taller than the existing bridge and approximately 30 to 180 feet above the surrounding bluffs.

The T.H. 61 Hastings Bridge is located in a developed area (i.e., within the City of Hastings) and not within an area of extensive natural riverine habitat that would attract concentrations of migratory birds.

Some research has indicated that the risk for bird/structure collisions may be reduced if down-facing lights are used (instead of unshielded up-facing lights) and if lower wavelength lights (violet, blue, green) are used instead of red or yellow lights. If aviation

lights are used they should be blinking, and not continuously lit. Bridge lighting has been identified as a likely contributing factor in bird/bridge structure collisions during low visibility (e.g., fog) conditions. Also, bridge lighting may be a contributing factor in attracting insect congregations at certain times of the year (e.g., mayfly hatch). Since these congregations can attract birds, reducing the light attraction may reduce bird strike risks on bridges. Therefore, the potential bird collision risk for any of the proposed bridge alternatives could be reduced by using appropriate lighting, and possibly by decreasing lighting during key times/weather conditions (e.g., during heavy spring/fall bird migration periods, mayfly hatches and during low visibility conditions). Lighting for the T.H. 61 Hastings Bridge will be designed to minimize hazards to migrating birds, while providing adequate illumination to maintain roadway safety.

In addition to bird/structure collision considerations, potential impacts to nesting migratory birds were considered. Because this project is located in a migratory bird flyway, trees will be removed only in the winter months when nesting migratory birds are not present. The existing bridge was checked for swallow nests prior to the recent 2008 bridge repairs. Nests were not found at that time. The bridge will be checked again prior to the beginning of project construction.

A Bald Eagle's nest has been reported in the Lake Rebecca Park area. The Bald Eagle is no longer a federal threatened and endangered species. The bird was taken off the list in 2007 when the population was determined stable. The proposed project does not anticipate any impacts to the bird nest or trees in Lake Rebecca Park.

b. *Are any state-listed (endangered, threatened, or special concern) species, rare plant communities, or other sensitive ecological resources such as native prairie habitat, colonial water bird nesting colonies or regionally rare plant communities on or near the site?*

X Yes _ No

If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Non-game Research program has been contacted, give the correspondence reference number: ERDB file 20040270*. Describe measures to minimize or avoid adverse impacts.*

Available information regarding reported occurrences of rare, threatened, and endangered species or critical habitats in proximity to the proposed alignment was obtained from the Mn/DOT Office of Environmental Services for federally-listed species, and from the DNR National Heritage Program for state-listed species.

State-listed species

Peregrine falcon

The DNR identified 46 rare features in a one-mile radius of the T.H. 61 Hastings Bridge (see correspondence dated August 6, 2008, Letter 5 in Appendix 2). Within the direct project vicinity, the DNR identified the Peregrine falcon as having potential to be impacted by the proposed project. Peregrine falcons (*Falco peregrinus*), a state-listed threatened species, have been documented in the vicinity of the T.H. 61 Hastings Bridge during the breeding season, and in the last few years have nested on the Canadian-Pacific Railway lift bridge located one-quarter mile downstream and east of the T.H. 61 Hastings Bridge.

Mn/DOT will take the necessary measures to avoid and/or minimize any impacts to peregrine falcons. Construction activities at the T.H. 61 Hastings Bridge site should not affect these birds as long as the birds do not choose the T.H. 61 Hastings Bridge as a nest site. As requested by the DNR, if construction activities will take place during the breeding season (April through July), the bridge will be inspected prior to the onset of any construction work to determine whether the falcons are using the bridge as a nesting site. In the event nestlings are found Mn/DOT will coordinate with the DNR and U.S. Fish and Wildlife Service (FWS) and take appropriate actions. If the bridge is being actively used by peregrine falcons, seasonal work restrictions may be required.

Mussels

The DNR also stated in its August 6, 2008 letter that impacts to state-listed mussels are possible from the proposed project, and a mussel survey is needed. Mn/DOT is aware of the potential for state and/or federal endangered mussel species in the project area. A biological survey and relocation plan is being developed by Mn/DOT and FWS staff that will establish survey and relocation protocol. Mn/DOT is working with staff from the DNR to conduct the survey in the summer of 2009.

Federally-listed species

There is also the potential for impacts to federally threatened and endangered mussel species in the Mississippi River within the project area. As noted above, Mn/DOT is working with the FWS to develop a biological survey. The survey will be conducted in the summer of 2009 and any listed mussels found during the survey will be relocated as specified by the established protocol.

The FWS has a specific concern regarding the federally-endangered Higgins eye pearlymussel (*Lampsilis higginsi*) species. If fewer than five Higgins eye pearlymussel are found during the mussel survey, they may be relocated per the established protocol. If five or more Higgins eye pearlymussels are found at any time during the mussel survey, the mussel survey would terminate immediately, and Mn/DOT would reinitiate Section 7 consultation with the FWS.

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? _**X**_ 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: ***N/A****. Describe alternatives considered and proposed mitigation measures to minimize impacts.*

The proposed project may include dredging in the Mississippi River, a DNR public waterway. It is expected that dredging will occur along the shoreline of the staging near the lock and dam. Dredging could also occur with the Tied Arch Single Bridge Alternative to accommodate a shifted navigational channel or a staging area north of the river channel; refer to EAW Item 6 on page 35 for more information.

All of the proposed Build Alternatives include removal of the existing T.H. 61 bridge piers in the river and placing new piers into the river. A Floodplain Assessment was conducted to assess impacts from new bridge piers in the river, refer to EAW Item 14 on page 55 for more information. The analysis shows no permanent impacts to the floodplain.

The proposed project will also include fill in wetland areas. Federal and state laws protect wetlands and require highway projects to avoid, minimize, and/or mitigate wetland impacts. In order to meet federal and state requirements, wetlands in the project area were identified, inventoried, and classified.

Wetland Analysis

Existing Wetlands

The wetlands of the project area are primarily floodplain forest, characterized by an overstory of second-growth tree species and an undergrowth of an invasive, non-native grass species. The vegetative diversity of the wetlands is low. A wetland review was conducted during the summer of 2008 to identify and categorize wetlands in the project area. Figure 22 in Appendix 1, and Table 10 summarize wetland locations, types, and impacts. Due to water controls from Lock and Dam #2 upstream of the project area, it was decided that for purposes of this EA, to base the wetland delineation on the DNR Ordinary High Water (OHW) elevation, aerial photos, and field observations was used. The elevation of 682.0 feet, in the 1929 datum, was agreed upon by Mn/DOT, DNR, and COE. A Technical Evaluation Panel (TEP) will review the project area during the spring/summer of 2009 to assess the delineation and determine if any wetland delineation boundaries need to be modified.

Ten basin areas were identified and are shown on Figure 22, however not all basins displayed the features required to be classified as a wetland. The Kings Cove treatment ponds (basins 8 and 9) are not classified as wetland basins since they are de-watering basins for dredge material. Therefore, they are not included in Table 8. In addition, basins 4, 6, and 7 are ditches and may be classified as incidental wetlands. This will be verified by the TEP in the spring/summer of 2009.

Wetland Impacts

The No-Build Alternative will not impact any wetlands. Due to the close proximity of wetlands to the highway, the three proposed Build Alternatives will all partially fill the seven wetland basins identified in Table 10 on page 51 and shown in Figure 22. Wetland impacts will be the same for all of the Build Alternatives. The impacts shown in Table 10 include the 0.47-acre impact resulting from construction of stormwater treatment ponds (see discussion in sequencing, below)

Sequencing of Impacts on Wetlands

Sequencing is the practice of avoiding and minimizing wetland impacts and mitigating for non-avoidable impacts. Alignment options that avoid wetland impacts for all of the proposed alternatives are limited due to the close proximity of wetlands on the east and west sides of T.H. 61 at the north end of the bridge; there are no wetlands on the south side of the bridge. Thus, aside from the No Build alternative, which will not meet the project purpose, complete avoidance is not feasible. All of the proposed alternatives locate the highway expansion to the west of the existing bridge to avoid negative impacts to the historic district located on the south side of the river and east of the bridge.

Table 10: Project Area Wetland Basin Features and Impacts

Basin Number	Vegetation	Circular 39 Type	Cowardin Type	DNR Protected Water	Total Wetland Area (Acres)	Impacted Wetland Area (Acres)
1	Cottonwood	1	PFO1A	Yes	5.0	0.0
2	Cottonwood	1	PFO1A	No	4.7	0.3
3	Cottonwood	1	PFO1A	No	0.4	0.3
4 [(1)]	Cottonwood	1	PFO1Ad	No	0.3	0.3
5	Reed Canary Grass, Cottonwood	3	PEMC	No	5.9	0.2
6 [(1)]	Cottonwood	1	PFO1Ad	No	0.2	0.1
7 [(1)]	Cottonwood	1	PFO1Ad	No	0.3	0.3
10	Driftwood (entire trees), Cottonwood	1	PFOA1	No	11.5	0.1
TOTAL				Yes		**1.6**

[1]Ditches
[2]The impact areas calculated include the 0.55 acre stormwater pond impacts (from Table 11)

Impacts to wetlands will be minimized to the greatest extent possible by constructing roadway embankments as steep as safe roadway design standards allow. This will reduce the width of the roadway embankment and minimize the roadway footprint where feasible, thus reducing the amount of wetland fill required. Construction could be completed in the winter when the surface is frozen to minimize compaction. Temporary impact areas will be restored after disturbance. Further minimization is not feasible without compromising project goals.

Minimizing wetland impacts to the extent practicable was done when the ring road portion of the project was designed. The southern portion of this road it is located under the proposed new bridge. Wetland basin 10, a protected DNR water, is located in this area. The ring road was moved north out of the DNR OHW elevation by lengthening all proposed bridge alternatives, refer to Figure 23. This reduced the original wetland impacts in basin 10 from 0.5 acres to 0.1 acres.

Minimizing wetland impacts to the extent practicable was also considered in the selection of the type and location of the water quality treatment system designed for the north end of the project area. Three configurations of stormwater rate and volume control facilities were investigated with regard to impact upon wetlands as well as construction cost, maintenance requirements, and compatibility with NPDES standards and other stormwater BMP standard practices.

Table 11 below shows the wetland impacts from the three water quality treatment options considered. (The impacts from Option 3 are included in Table 8.) The following discussion identifies the reasons for rejecting Options 1 and Option 2.

Table 11: Wetland Impacts by Stormwater Pond Options

	Eliminated Option 1 Structure Pollution Control Devise (SPCD)	**Eliminated Option 2** Wet Stormwater Pretreatment Basin with Retaining Walls	**Selected Option 3** Wet Stormwater Pretreatment Basin with earthen berms
Total Wetland Impact by Water Quality Option	0.0 acres	0.0 to 0.2 acres*	0.55 acres

*Dependent on extent of retaining wall proposed

The first eliminated option was a Structural Pollution Control Device (SPCD) on the east side of T.H. 61 for pretreatment of water quality, followed by an underground detention/filtration system within the embankment. This option attempts to avoid substantial wetland impacts by placing the system within Mn/DOT right-of-way and within the existing embankment of T.H. 61. This option was rejected for the following reasons:

- The system conflicts with the construction of a new local road in the same area;
- The system conflicts with the shared-use bicycle and pedestrian trail crossing the river;
- The soils in this area are not suitable to support a buried system of this size. Substantial settlement could occur, causing fractures and leaks in the system. Any leaks would further destabilize the soils resulting in a potential embankment failure. It is cost prohibitive to stabilize the soils to the extent needed. The retaining walls would need extensive and costly pile foundations;
- It is cost prohibitive to stabilize the soils to the extent needed. The retaining walls would need extensive and costly pile foundations. It is estimated that the retaining walls, pile, and soil stabilization would cost over $1,000,000.
- The system would require more frequent maintenance than the Option 3.
- The maintenance involved would be more extensive than Option 3 due to the difficultly in accessing the underground system for cleaning and replacement;
- Replacement of the system may have increased risk by compromising the embankments integrity resulting in extensive temporary sheet pile to protect the embankment; and
- It is difficult and/or expensive to provide sufficient volume to attenuate peak flow rates to existing levels. In view of the relative flow in the Mississippi River, reduction of peak rate to existing levels may not be as substantial as other circumstances.

The second eliminated option was to construct a wet stormwater pretreatment basin using cast in place concrete retaining walls on the east side of T.H. 61 followed by an open infiltration basin benched into the existing T.H. 61 embankment. This option attempts to avoid/minimize wetland impacts by placing the system within Mn/DOT right-of-way and within the existing embankment of T.H. 61. This option was rejected for the following reasons:

- The system conflicts with the construction of a new local road in the same area. For this reason the pond would need to be located outside the existing Mn/DOT

right-of-way on private property. This property is currently used by the landowner and acquisition would negatively impact the owner;

- The system conflicts with the shared-use bicycle and pedestrian trail crossing the river;
- The soils in this area are not suitable to support a pond benched into the embankment by using retaining walls. The retaining walls would need extensive pile foundations. The water from the pond itself would destabilize the poor soils causing a failure in the embankment;
- The system would cost more to construct, because retaining walls would need to be installed to keep the system within the right-of-way, pile would need to be installed to support the walls and the weight of the pond, the soil would need to be stabilized to support the walls and pond, and a liner would need to be installed to prevent the storm water from permeating below the pond and behind the retaining wall and into the highway embankment, which could cause a failure in the wall and embankment. It is estimated the walls, pile, and soil stabilization would add over $1,000,000 to the cost of the system.
- The system would require more frequent maintenance than Option 3.
- The maintenance involved would be more extensive than Option 3 due to the difficulty to access the pond with equipment; and
- Maintenance would be potentially risky, because crews would need to insure that the retaining walls, pond liner, and embankment were not damaged.

The stormwater treatment alternative carried forward for inclusion in the project is a wet stormwater pretreatment pond followed by open infiltration basin design constructed with earthen berms within the northwest quadrant of T.H. 61 and Mississippi River. The wet pretreatment pond is designed to settle out larger sediment particles and nutrients from the water before flowing into the infiltration basin. This option was selected for the following reasons:

- Although the pond is located outside the existing Mn/DOT right-of-way, the land at the proposed location appears to be tax-forfeited land owned by the State of Minnesota. Therefore, there will not be any impacts to land owners or costs for acquisition;
- The pond does not use retaining walls or extensive underground structures, so settlement from the poor soils is not an issue;
- The system is the least cost to construct, because it uses traditional embankment construction. This results in a minimum of $1,000,000 in savings.
- The system would require less maintenance;
- The maintenance required is not as involved, because equipment can easily access the pond; and
- Because the pond is located below the highway embankment, there is no risk to destabilizing the embankment.

Based on the evaluation of wetland impacts, it was determined that Option 3 best meet the transportation facility improvement needs while minimizing wetland impacts to the greatest extent possible.

Impacts to wetland water quality functionality will be minimized by the use of water quality improvement BMPs. Erosion prevention and sediment control during construction will include silt fences and traps, temporary seeding and mulching, and use of erosion control blankets on slopes. Permanent ponds will be constructed as early in the project as practicable in order to trap sediment during construction. Excess fill material will not be deposited in wetlands or other environmentally-sensitive areas.

Regulatory Jurisdiction

Application for permits for wetland impacts must be made to the COE, and DNR. Mn/DOT is the local governmental unit (LGU) for the Minnesota Wetland Conservation Act. Refer to EAW Item 8 on page 40 for a list of permits and approvals related to wetland impacts.

Mitigation

A wetland mitigation plan for replacement of the affected wetland areas will be developed consistent with state and federal wetland regulatory requirements. That plan will reassess the areas of wetland impacts (and mitigation needed) based on final plans, wetland delineations, and the current and applicable wetland mitigation guidelines and regulations. The intent of the wetland mitigation plan will be to replace lost wetland functions in the project area where possible and possibly create an off-site wetland mitigation area to accomplish the remainder of the required mitigation.

Wetland mitigation is an on-going development during the early stages of project design, and therefore subject to change. Replacement sites are sought first within the area of the project, which is seen as not feasible for this project, and next within the same watershed, then within the same county, next within an adjacent county, and finally within the reminder of the state. This concentric approach assures that lost wetland acreage, along with functions and values, are replaced as close to the impacts as possible. All replacement sites are monitored to assure that targeted wetland size and type have been attained. Additionally, they are protected by covenants and restrictions, as required by the Minnesota Wetland Conservation Act (WCA).

Wetland impacts for this project may also be mitigated by using Mn/DOT wetland bank credits from a bank site as close to the project area as feasible. The mitigation process will involve consultation with the DNR. Replacement of lost wetlands will be in accordance with current WCA criteria, Clean Water Act Section 404, and when applicable the DNR Public Waters requirements and will occur prior to or concurrent with the impacts. Efforts will be made to replace all lost wetland functions and values with similar wetland types.

Every effort will be made to mitigate losses close to the project site. This project will achieve a no net loss of wetland quantity and quality through wetland replacement, and will preserve and enhance the natural and beneficial values of replacement and avoided wetlands.

Wetland Finding

The project alternatives described in Section 3 of this EA were evaluated in accordance with Executive Order 11990, as described above. Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measure to minimize harm to wetlands which may result from such use.

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 de-watering)? __Yes _**X**_ 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.

Using the County Well Index (CWI), no wells were found to be within the project site. If any wells are discovered during right-of-way acquisition or construction, they will be abandoned and sealed in accordance with Minnesota Department of Health Regulations.

14 - Water-related land use management district

Does any part of the project involve a shore land zoning district, a delineated 100-year floodplain, or a state- or federally-designated wild or scenic river land use district?

_X_ Yes __ No

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

Shoreland Zoning District

While state highways are not subject to the local regulations, the compatibility of the proposed project with local ordinances is an important consideration. The proposed project is within the Hastings shoreland zoning district. In regards to roadway development the Hastings shoreland zoning district ordinance is concerned with erosion control and screening of public waterways. Mn/DOT's BMPs for erosion control during construction are discussed in EAW Item 16 on page 62. The project will also include re-vegetating areas adjacent to wetland in the northern portion of the project area; refer to EAW Item 6 on page 38 for more information.

Floodplain Assessment

Purpose

This floodplain assessment was prepared in accordance with Executive Order 11988 and Minnesota Statues 103F.101 - 103F.155.

Project Location

The project is located at Hastings Minnesota, and is focused on the T.H. 61 Bridge over the Mississippi River (River Mile 813.9). Hastings is in the southeastern part of the seven-county metropolitan area. The elevation of the Mississippi River is controlled by the COE's Lock and Dam #3 near Red Wing, Minnesota (River Mile 796.9), 17 miles downstream of Hastings. The bridge is located in Pool #3 of the Mississippi River.

Proposed Project

The project consists of reconstructing the existing river bridge. As part of the scoping study, several alternatives were studied. A Preferred Alternative will be identified in the summer of 2009. Any proposed bridge(s) will be constructed either immediately upstream of the existing bridge, or partially upstream and partially in the footprint of the existing bridge.

The analysis of floodplain impacts was completed prior to the elimination of the Rehabilitation Alternative. Analysis was conducted for the No-Build and two Build Alternatives: Rehabilitation Alternative and the Tied Arch Single Bridge Alternative. These two Build Alternatives are representative of potential floodplain encroachment and resulting impacts for any of the proposed alternatives. The Rehabilitation Alternative represents the "worst case scenario", because it would have had the most piers in the water in the final configuration. Other alternatives being considered have comparable obstruction to flow and wetted perimeter to that of the Rehabilitation Alternative. The alternative with the second-most piers in the water is the Tied Arch Single Bridge Alternative; therefore this alternative was also evaluated.

Federal Insurance Administration Flood Boundary and Floodway (Flood Insurance or FIS) maps for Washington and Dakota Counties were examined for this project. The FIS maps are listed in Table 12. The approximate 100-year floodplain boundaries are shown on Figure 24 in Appendix 1.

Table 12: Floodplain Insurance Maps

FIS Map	Community Panel No.	Map Date
Hastings, MN Dakota and Washington Counties	270105 0005 D	December 18, 1981
County of Washington, MN Unincorporated Areas Panel 75 of 175	270499 0075 B	May 17, 1982
County of Washington, MN Unincorporated Areas Panel 100 of 175	270499 0100 B	May 17, 1982

Encroachment

No encroachment will occur due to the No-Build Alternative.

The two Build Alternatives have the encroachments identified in Table 12:

Table 13: Encroachments

Floodplain	Type of Encroachment	Length (ft)
Mississippi River	Transverse (bridge)	3920[a]
Mississippi River	Transverse (temp causeway)	550
Mississippi River	Longitudinal (temporary causeway)	200
Mississippi River	Longitudinal (temporary staging area)	1000

a. the bridge traverses the entire 100-year floodplain

Encroachment description

Permanent

The existing bridge and approach roadways cross the 100-year floodplain. The proposed project on the north side of the river, will widen the existing T.H. 61 roadway embankment to the west and a new local ring road will be constructed on both the east and west side of

T.H. 61. The new roadway embankments will place fill below the 100-year floodplain. The existing bridge and its abutments are above the 100-year flood elevation. In this area the floodway encompasses the 100-year floodplain.

Temporary

Mn/DOT anticipates that a temporary causeway will be necessary for the construction of the north pier of the main bridge span. The estimated elevation of the temporary causeway will be 685.5 feet. Mn/DOT has also identified a portion of Flint Hills Preserve property owned by the City of Hastings as possible construction staging area. In order for this area to be used as staging, or contractor storage, Mn/DOT anticipates that the contractor will place temporary fill to raise the level to an elevation of 692 feet. Figure 24 in Appendix 1 shows the temporary causeway and the staging area.

The length of time these temporary encroachments will be in the river varies depending on the type of bridge, on the contractor's preferred construction methods, and other conditions. At this time, it is anticipated that the construction of the Tied Arch Single Bridge Alternative will take about three years to complete.

Impact Analysis

The Tied Arch Single Bridge Alternative will not result in any significant impacts. The Rehabilitation Alternative will not result in any significant impacts.

Project Elements were evaluated to identify areas of substantial encroachment on floodplains in the following areas:

1) The potential for interruption of a transportation facility;
2) The potential impacts on natural and beneficial floodplain values;
3) The potential risks of significant increases flooding; and
4) The potential for incompatible floodplain development.

1. No significant potential for interruption of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route.

The proposed roadway and bridge will be above the 100-year flood elevation of 693.69 feet.[22]

The existing bridge was built in 1950. The Flood of Record for the location occurred in April of 1965, and reached an elevation of 695.15 feet[23] (approximate 200-year event). The flood water elevation during that 1965 event was well below the elevation of the existing bridge. Therefore no overtopping has ever occurred at the existing bridge in the length of its service.

2. No significant impact on natural and beneficial floodplain values.

A) The new bridge will not increase the flow velocities; therefore it will have no effect on fish movements.

[22] NAVD 88 Datum, From the USACE Upper Mississippi River System Flow Frequency Study, January 2004
[23] Ibid

B) There will be no changes to public access, or permanent channel changes or wetlands. The 1.6 acres of wetland impacts will be mitigated; see EAW Item 12 on page 49 for more information on water resources. Wetland mitigation is discussed on page 54.

C) The proposed bridges will accommodate navigational traffic; Mn/DOT is currently working with the Coast Guard and has determined acceptable horizontal and vertical clearances for the proposed Build Alternatives. Refer to letter from the Coast Guard dated February 9, 2009 in Appendix 2 for additional information.

D) Runoff from the bridge will be collected and directed to water quality treatment devices. The runoff will be treated before outletting to any water body. The runoff treatment will minimize water quality impacts, consistent with NPDES requirements. Refer to EAW Item 17, on page 63 for more information on water quality treatment.

E) Threatened or endangered plants or animals: There will be a survey of mussel species in the summer of 2009 to determine the potential effects from the project; refer to EAW Item 11, Federally-listed species, on page 49 for additional information on this subject.

F) A Storm Water Pollution Prevention Plan will be developed by the final designer. The Plan will include appropriate temporary and permanent erosion and sediment control measures that will be required. Refer to EAW Item 16 - Erosion and sedimentation, on page 62 for additional information on this subject.

3. No significant increased risk of flooding will result.

Table 14 presents a summary of the hydraulic modeling for various cases.

Table 14: Change in Water Surface Elevations by Scenario

Scenario	Change in Water Surface Elevation (ft) compared to existing condition	
	100 year event	500 year event
Permanent – Rehab	+0.02	+0.03
Permanent – Tied Arch Single Bridge	-0.01	-0.01
Temporary – Existing Bridge + Arch	+0.01	+0.01
Temporary – Existing Bridge + Arch + Causeway	+0.06	+0.08
Temporary – Existing Bridge + Arch + Temporary Staging Area	+0.01	+0.02

For the permanent conditions, the Tied Arch Single Bridge Alternative will result in a decrease in water surface elevation for the 100 year flood event of 0.01 ft. The Rehabilitation Alternative resulted in a water surface increase for the 100 year flood of 0.02 ft; however this alternative has been eliminated.

For the temporary conditions, slight increases in water surface elevations are predicted for the various temporary scenarios. There is no anticipated impact on building foundations due to the increase of flood elevation for the temporary conditions.

4. This project should not result in any incompatible floodplain development.

A) The City of Hastings has in its ordinances "Chapter 151 Floodplain Regulations" and "Chapter 153 Shoreland Management" that regulate development. The project is compatible with those ordinances.

B) No new access to the floodplain is being created by the project. The proposed ring road will use existing private access points.

Summary

Based on the above assessment, no significant floodplain impacts are expected due to this project. The selected Design-Build contractor will be required to model temporary and permanent floodplain impacts from their bridge design and apply for required permits.

Mississippi National River and Recreational Area

The Mississippi National River and Recreation Area (MNRRA), a 72-mile long corridor of the Mississippi River that includes the project area was established by Congress in 1988 to protect and enhance the nationally significant historical, recreational, scenic, cultural, natural, economic, and scientific resource of the river corridor. The MNRRA is a unit of the national park system under the jurisdiction of the NPS. The MNRRA Comprehensive Management Plan, 1995 (MNRRA Plan), available from the NPS, incorporates by reference requirements of the state Mississippi River Critical Area (discussed in the next section), Shoreland, and Floodplain programs. The proposed project is consistent with the MNRRA Plan and will not have an adverse effect on the corridor. The impact of the project and its consistency with the MNRRA Plan are discussed below.

The MNRRA Plan states that new development in the riverfront area should have a relationship to the river, a need for a river location, or the capability to enhance the river environment. Although the proposed project is a bridge replacement (therefore, not a 'new' development), the bridge design will take compatibility with the riverfront environment into account.

The MNRRA plan specifically states that none of its site development policies are intended to prohibit the construction, reconstruction, or maintenance of bridges crossing the river and their associated approach roads, rails, or trails. Site development policies include the following: provide bicycle/pedestrian paths to connect the river to the downtowns, neighborhood areas, and parks and open spaces; protect views as seen from designated overlooks in the corridor and develop new overlooks at strategic locations offering significant views of the river corridor; and incorporate scenic road design concepts and architectural treatments into road construction, reconstruction, or capital improvement projects in the corridor, with primary emphasis on parallel roads in the riverfront area and bridges over the river.

The MNRRA Plan supports the regional transportation process, especially the use of mass transportation and pedestrian/bicycle trail linkages. The MNRRA Plan envisions a continuous trail along or near both sides of the river, building on the existing system. Encouraging and coordinating the completion of missing links in the trails system is a high priority for MNRRA Plan implementation. Locating trails as close to the river as practical

and providing strategic connections to other trails in the area is a goal. The proposed bridge includes an improved trail accommodation with widened area for river viewing. There are also discussions of providing gateway signage to inform users that they are entering the MNRRA. Additional details about the design of the bridge will consider the MNRRA site development policies and be developed in consultation with the City and the NPS.

A working river is important to the economy of the metropolitan area. The MNRRA Plan recognizes the need to continue the commercial navigation transportation system, including barge fleeting, in the corridor for agriculture, construction, and energy commodities. The new bridge will not infringe on the commercial navigation system in the corridor. The U.S. Coast Guard was consulted during preliminary bridge design. See page 13 for a discussion of River Navigational Needs.

Regarding natural resource management, the MNRRA Plan recommends that runoff be reduced through coordinated efforts of state and local agencies to update development and enforcement standards for major new construction and redevelopment projects and by promoting increased storm water retention in new construction and redevelopment projects. See EAW Item 17 on page 63 for more information on treatment of storm water runoff.

The MNRRA Plan also encourages efforts to develop and implement spill prevention and response plans for the river. See EAW Item 20 on page 67 for more information on contaminated materials/spill prevention.

Protection of endangered species is also a high priority of the MNRRA Plan. See EAW Item 11 on page 49 for more information on federal endangered species.

Mississippi River Critical Area

The project limits are located in the Mississippi River Critical Area (the critical area boundary is identical to MNRRA boundary). The purpose of the Mississippi River Critical Area Program is to preserve this unique and valuable resource and to protect and preserve the Mississippi River Corridor as an essential element in the federal, state, regional, and local recreation, transportation, sewer, and water systems thereby maintaining the river corridor's value and utility for residential, commercial, industrial, and public uses and purposes.

While the DNR has review authority for projects occurring within the Critical Area, the DNR is deferring its review authority on federally-funded bridge replacements across the Mississippi River to the NPS. Instead, the DNR is focusing its authority and input on Mn/DOT bridge design and concerns through interagency coordination and with the Public Waters Work Permit Program.

According to the DNR, the project requires a Public Waters Work Permit. The DNR stated the design of the crossing should meet the conditions listed in Bridge and Culvert General Permit (GP) Number 2004-0001 (see DNR letter 8/6/08 in Appendix 2);

The Hastings 2001 Critical Area Plan, Mississippi River Corridor Plan found in Chapter 4 of the Hastings 2020 Comprehensive Plan, states that "Transportation facilities, such as the reconstruction of the Mississippi River bridge, shall be planned and designed with consideration to: aesthetics, scenic overlooks, sidewalks, pedestrian/bicycle crossings, access to public riverfront, adjacent land uses, and its symbol to the cultural and environmental heritage of Hastings.." As discussed in EAW Item 26 on page 87, Mn/DOT is developing a Visual Quality Manual (VQM) in consultation with the Visual Quality

Team (VQT) that will address the design of the bridge and its architectural elements; the reconstructed bridge will be located in the same corridor as the structure it is replacing. Based on the assessment above and consultation with City staff, the proposed project is consistent with the City's Critical Area Plan.

Wild and Scenic Rivers - Nationwide Rivers Inventory

This segment of the river is also identified as eligible for inclusion on National Wild and Scenic Rivers System and is identified in the Nationwide Rivers Inventory (NRI). However, this stretch of the river is not on the federal or state list of designated wild and scenic rivers. The National Park Service (NPS) has review authority for federally-funded projects. The river's outstandingly remarkable values (ORVs) that qualify it for listing on the NRI are scenery, recreational opportunities, geology, wildlife, and history; these ORVs are discussed below. The proposed project will not have an adverse effect on the river's status on the NRI and will not preclude the river's potential to be a designated river on the NRI.

Scenery

The project will not introduce a structure where none is currently present since the proposed bridge is a replacement bridge, not a new river crossing. The location of the new bridge will be very similar to the existing structure due to the local setting constraints of the historic districts, and ecologically sensitive areas upstream and downstream of the project.

Based on comments from the NPS, MNRRA signage will be a component of the new river crossing. The VQM process currently underway, and described in EAW Item 26 on page 87, will ensure that the aesthetic impact of the project is considered during development of the bridge design. Mn/DOT will continue to consult with the NPS as the VQM process proceeds.

Recreational Opportunities

Recreational opportunities will be enhanced with the proposed bridge. The bridge will provide a pedestrian/bicycle connection across the river where only a substandard sidewalk currently exists. This will continue the connection to the existing City sidewalk. In addition, a pedestrian bridge is proposed for the eastern side of the bridge and would provide a new connection to the Hastings Loop Trail that runs along the Mississippi River through Levee Park. A MNRRA gateway sign could also be a component of the new bridge sidewalk.

Geology

Geologic features of the river corridor in the project area will not be impacted by the new bridge.

Wildlife

Given the downtown urban setting of the project area, potential impacts to wildlife populations and habitats are limited. Mn/DOT will conduct a mussel survey of the project area and relocate any listed species found. EAW Item 11 on page 46 discusses wildlife, and state and federal-listed species. While the bald eagle has been de-listed from the list of federal threatened and endangered species, it continues to be protected by the Migratory Bird Treaty Act. Since there are eagle nests within one mile of the existing bridge, it is important to retain existing tall trees in the area. The project includes efforts to minimize

impacts to vegetation (see EAW Item 6 on page 38 for more information on vegetation impacts). EAW Item 11 on page 46 describes other wildlife considerations.

History

The Hastings T.H. 61 Bridge is eligible for the National Register of Historic Places (NRHP). In addition, the downtown has a commercial historic district adjacent to the bridge on the east side. Approximately one block west of the bridge is a historic residential district. See Section 5 on page 116 for discussion of historic and archeological resources impacts, and compliance with Section 106 (federal cultural resources) regulations.

Conclusions

According to the NPS the project is expected to have little if any impact on the free flowing condition of the river and the ORVs, provided the project has proper site management systems and mitigative measures in place. In the letter dated February 10, 2009 in Appendix 2, NPS recommended twelve measures to protect and enhance the values for which the river was designated. Mn/DOT will continue working with the NPS to incorporate these measures into the project development process, to the extent practicable.

15 - Water surface use

*Will the project change the number or type of watercraft on any water body? __Yes _**X**_ No*

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

16 - Erosion and sedimentation

Give the acreage to be graded or excavated and the cubic yards of soil to be moved: **See Table Below** *Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.*

	Girder Twin Bridge Alt.	**Tied Arch Single Bridge Alt.**	**Cable Single Bridge Alt.**
Total Acres	~ 21.7 acres	~ 21.7 acres	~ 21.7 acres
Cubic Yards of Cut	~ 23,000	~ 23,000	~ 23,000
Cubic Yards of Fill	~ 24,000	~ 52,000	~ 52,000

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

The Washington and Dakota County Soil Surveys suggest that steep slopes/highly erodible soils may be encountered in some sand, sandy loam and loamy sand found south of the Mississippi River in the City of Hastings as shown in Figure 26 in Appendix 1. Given the location of these soils, they may be unaffected by the construction project. It is also likely that few native soils exist in this area due to disturbance or replacement from past construction.

b. 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 corridor will be minimized by employing BMPs during construction. Implementation of BMPs during construction greatly reduces the amount of construction-related sedimentation and helps to control erosion and runoff. Ditches, dikes, silt fences, bale checks, sedimentation basins, and temporary seeding will be used as temporary erosion control measures during construction grading. Temporary and permanent erosion control plans will be identified in the final site grading and in construction plans for each stage, as required by the NPDES permitting for construction sites. Erosion control measures will be in place and maintained throughout the entire construction period. Removal of erosion measures will not occur until all 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 storm water pollution prevention plans.

Note: The impervious surface areas listed below do not match the impervious surface areas listed in Table 8, under EAW Item 10 (Cover Types) on page 46. Overall, the impervious surfaces areas quantified in these EA sections do not serve the same function. The Cover Type discussion, figure and table show all impervious surfaces that are found in the Area of Potential Effect (APE) and lay directly on top of the land. Therefore, the bridge was excluded from this impervious surface calculation. The Water Quality: Surface Water Runoff discussion and table show any impervious surface that directly receives rain, snow, or sleet during a weather event. Areas directly under the bridge are not included in this calculation; because, the rain/sleet/snow would have already been collect on the bridge surface.

Currently within the project limits, runoff is produced on 9.3 acres of impervious surface. The existing bridge accounts for 1.6 acres of this impervious surface which drains directly into the Mississippi River without any treatment or rate control.

The north side of the project area, along T.H. 61 from the northern abutment of the existing bridge to the southern abutment of the Canadian-Pacific Railway Bridge, runoff is produced from 3.3 acres of impervious surface. The runoff collected in this area is discharged into adjacent wetlands and the Mississippi River without any prior treatment or rate control.

The south side of the project area, along T.H. 61 from the southern abutment of the existing bridge to Fourth Street, the two ramps from Second Street to Third Street, and the area under the bridge, accounts for 4.4 acres of impervious surface. Runoff from this impervious surface is conjoined with runoff from 13.2 tributary acres of County/City land into a common storm sewer at Second Street. Neither the Mn/DOT storm sewer system nor the County/City storm sewer system provides any treatment, and their discharge rates are only limited by the storm sewers' pipe size.

The proposed project will increase the quantity of runoff due to an additional 4.5 acres of impervious surface. The northern half of the project area, from the bridge's crest to the northern project limits, would include 5.8 acres of impervious surface. The southern half of the project area, from the bridge's crest to the southern project limits, would include 7.5 acres of impervious surface. As part of the proposed project, Mn/DOT will provide stormwater treatment facilities within the project limits. In addition, the project may include offsite stormwater treatment mitigation.

On the north side of the project area, a wet stormwater pond will pretreat 4.75 acres of impervious surface through subsequent infiltration and filtration pond. The layout for each proposed Build Alternative illustrates the north pond location; layouts are in Figure 11, Figure 13 and Figure 15 in Appendix 1. These infiltration and filtration basins will be constructed to NPDES standards and would provide treatment for runoff from the increased impervious surfaces associated with the project. In addition to providing water quality treatment, the stormwater conveyance system will also provide volume control and rate control. The proposed stormwater treatment is also consistent with the Lower St. Croix Water Management Organization (LSCWMO) standards.

The approximately one acre of impervious surfaces along the Northern Loop Road will be at an elevation lower than the pond and will not be treated through the pond. However, when comparing the existing surface runoff quantity and quality with the proposed surface runoff quantity and quality, overall the area will benefit from the project. The quantity of surface runoff will be reduced and the quality of the runoff will be improved. For 1-inch rain event, in the existing condition 0.22 acre-feet of surface runoff enters the Mississippi River untreated; while only 0.07 acre-feet of untreated runoff will enter in the proposed condition.

On the south side of the project area, Mn/DOT is working with the MPCA and the Vermillion River Watershed Joint Powers Organization (VRWJPO) to determine the best treatment method for treating surfacewater runoff from local, county, and/or state roadways in the downtown area. Options include: 1) just treating T.H. 61 runoff, or 2) treating T.H. 61 stormwater runoff and runoff from county/city areas. Options for treatment being considered include:

- An above ground filtration system;
- A structural pollution control device (swirl separator);
- A below ground filtration system (which the city would own and maintain);
- Offsite stormwater treatment mitigation.

The treatment system for the south side of the project area is not shown on the Build Alternative layouts because the treatment option has not been determined, but may be a combination of a structural pollution control device and an offsite stormwater treatment system.

In addition to the new impervious surfaces described above, the staging area will have an additional 0.5 acres of new impervious surface which will be to accommodate a 10 foot wide trail. This new impervious surface will be more than 0.25 miles from the project site and will not be included as new impervious surface associated with the project. (Therefore, this additional impervious surface is not included in Table 15.) The width of the surface is only 10 feet, no sand or salt will be applied to the surface during winter conditions and all rainwater will runoff and infiltrate into the adjacent prairie land.

Table 15 - Impervious Surface Area summary

Locations of Impervious Surface and Totals	Area of Impervious Surface (Acres)
Existing: Bridge	1.6 acres
Existing: North Side of Project	3.3 acres
Existing: South Side of Project	4.4 acres
Existing Total	9.3 acres
Change in Impervious Surface	4.0 acres
Proposed Total	13.3 acres
Proposed: Drains to the North	5.8 acres (4.75 treated in pond and 1.05 untreated)
Proposed: Drains to the South	7.5 acres

Note: Gravel Surfaces were calculated using the following conversion: 1 acre of gravel surface = ⅔ acre of impervious surface.

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 water for aquatic consumption. The pollutants of concern that were identified are polychlorinated biphenyl (PCB) in fish tissue and perfluorooctane sulfonate (PFOS) in fish. However, these pollutants are not generally associated with stormwater discharges from construction sites, such as the proposed project. The MPCA has jurisdiction over the project via the NPDES permit process. Mn/DOT will coordinate all permitting requirements for the NPDES with the MPCA to minimize water quality impacts, consistent with NPDES requirements.

18 - Water quality: wastewaters

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

None.

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.*

None.

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.*

None.

19 - Geologic hazards and soil conditions-

a. *Approximate depth (in feet) to ground water:* **see description below;** *minimum:* **0 feet;** *average to bedrock:* **see description below;** *minimum:* **4 feet**

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.

Ground Water

The ground water depth in the project area fluctuates on a seasonal basis, and with changes in surface topography. Depths to ground water range from the elevation of the Mississippi River and associated backwater areas, to an approximate maximum of 50 feet near the southern project boundary (Fourth Street). Although ground water information specific to the staging area is not available, ground water will likely be encountered within 5 to 10 feet of the surface based on proximity to the Mississippi River. Groundwater flows toward the Mississippi River in both Washington and Dakota counties.

Bedrock and Geologic Hazards

Depth to bedrock information is based on borings obtained by Mn/DOT's Foundations Unit drill crew and recent consultant contract work completed for Mn/DOT. Bedrock information was also derived from the Washington and Dakota County Geologic Atlases created by the Minnesota Geological Survey (MGS). Bedrock depths are at a minimum depth of 4 to 5 feet below surface between Third Street and the north side of H.D. Hudson, and descend to over 220 feet below surface in areas north of the Mississippi river. Bedrock depths at the staging area will also be over 200 feet below surface, based on the Dakota County Geologic Atlas (Plate 4; created by the MGS). Prairie du Chien Group dolostone will be the first rock type encountered south of the riverbank on the Hastings side of the river. St. Lawrence silty dolostone is likely present below the staging area. Prairie du Chien Dolostone, Jordan Sandstone and the St. Lawrence silty dolostone will be found within and north of the Mississippi River.

Because bedrock is found at appreciable depth in the staging area as well as in the area within and north of the Mississippi River, geologic site groundwater hazards related to sinkholes, shallow limestone or karst conditions will likely not be encountered. However, between the downtown-side shoreline and the southern project boundary dolostone bedrock of the Prairie du Chien Group is found within 4 to 12 feet from surface and is overlain in most areas by sandy soils. The Prairie du Chien Group coupled with the underlying Jordan Sandstone constitutes the most heavily used aquifer in Dakota County, according to the Dakota County Geologic Atlas (Plate 7). The sensitivity of the Prairie du Chien-Jordan aquifer to contamination via surface-borne pollutants was deemed 'Very High' suggesting that contaminants could reach the aquifer within hours to months.

Mn/DOT's BMPs for chemical management and recovery during construction will be contained within the project Storm Water Pollution Prevention Plan (SWPPP), detail sheets, and/or special provisions of the construction plan; these management and recovery measures will prevent migration of potential chemical releases to surface water and groundwater during construction operations (e.g., surface milling, concrete sawing, equipment maintenance, washing, and refueling, chemical and equipment storage). Additionally, project stormwater features are designed and maintained to manage stormwater quality and infiltration over the long term.

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

According to USDA/SCS soil survey maps for Washington and Dakota County, surficial soils in the project area consist predominantly of silt loam or sandy soils. Figure 27 in Appendix 1 shows soil-type locations in the project area. In Washington County, the bulk of the project area at surface is comprised of silt loam; loamy sand can be found west of existing T.H. 61. The silt loam is likely flood plain alluvium and recent borings suggest it is between 3 and 30 feet thick. The silt loam is overlain by fill in the roadway areas and underlain by sandy soils. In Dakota County, native soils in the downtown Hastings portion of the project area have been replaced by a thin veneer of fill materials which are mostly sandy and gravelly. Some silty clay loam was observed in recent borings but thicknesses are minor. Soils at the staging area have been disturbed by past excavations but will likely consist of local sandy, floodplain soils.

The Sensitivity of Groundwater Systems to Pollution plate produced by the MGS for the Washington County Geologic Atlas assigns a very high sensitivity rating for the water table present in the Washington County portion of the project area. Despite the presence of silt loams near the surface, the rating was based mostly on the shallow water table depths found consistently in the area. This environment would promote quick contamination from water-borne pollutants originating at the land surface. The amount of time for contaminants to reach the water table aquifer was estimated at hours to months. A water table sensitivity map was not generated for Dakota County. However, given the preponderance of sandy soils and shallow water table depths present at the staging area and a lack of a confining layer within sands and fractured bedrock in the downtown portion of the project, it can be concluded that sensitivity to the water table will also be very high in these areas.

The proposed staging area is a known contaminated site. In the event the design-build contractor proposes to use this site, they will be required to place a soil layer/cap at the surface consisting of a low permeability material over the staging area to prevent any further potential for contamination.

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.*

Existing Bridge Contamination Analysis

The existing bridge was examined by a certified asbestos inspector during the summer of 2008.

The bridge contains 200 linear feet of asbestos containing material (ACM). ACM bituminous felt was found on the south end of the bridge located in sidewalk seams and around gutters in spans 1 through 6.

Lead material was also found in the bridge structure; approximately 50 square feet of peeling lead paint was identified on the concrete parking lot curbs around the base of piers 2 through 6, and 285 lead plates/gaskets.

The high-intensity discharge (HID) lights (Sodium lights) contain mercury and the ballasts contain PCBs in the 13 lighting structures on the bridge.

Approximately 100 square-feet of green-treated wood was found on the south-side retaining wall at the sidewalk and bridge abutment. There are also 52 green-treated wood posts used to support the guard rails on the north end of the bridge.

Removal of Contaminated Items

Mn/DOT will hire a certified asbestos abatement contractor to remove the asbestos contaminated ACM bituminous felt on the south end of the bridge. A contractor will also encapsulate peeling lead paint prior to any demolition. The contractor will extract the lead plates during demolition of the existing bridge. The lead plates will be brought to a lead smelter, or ownership transferred, with either option being documented.

The HID bulbs and ballasts will be brought to the Mn/DOT approved contractor; Green Lights Recycling. This transaction will be documented, ownership transferred, or the HID bulbs and ballasts will be reused on the project and noted.

The green-treated wood will be brought to an MPCA permitted Mixed Municipal Solid Waste (Sanitary) landfill or Industrial Landfill with documentation or transfer of ownership.

Bridge demolition material will be managed following Mn/DOT guidelines outlined at http://www.dot.state.mn.us/environment/regulated-materials/index.html. Only Mn/DOT certified and approved companies will be used to manage the bridge demolition material.

Disposal of solid waste

All regulated materials/wastes, including hazardous waste, will be removed under separate contract prior to demolishing buildings. The buildings can be treated as demolition debris.

Demolition debris is inert material that can include concrete, brick, bituminous, untreated wood, glass, trees, rock, and plastics. All material must be disposed of in an MPCA permitted demolition landfill, or separated and recycled. Management of this material will be in accordance with state guidelines and regulations.

Disposal of Trees

The exact volume and quality of trees to be disposed with this project is uncertain at this time. However, for marketable timber that exceeds a volume of 100 cubic yards, Mn/DOT Standard Specification 2101.3D (D1) may be followed. Under these standards, the Design-builder contractor will be responsible for carrying out the requirements of this specification including providing written proof from three wood-using industries or individuals that the wood is not wanted before disposing of the wood or wasting it. Another acceptable method for wood utilization, which may apply on this project, would be to chip or grind up all wood debris from clearing and grubbing operations and use it on the project where applicable for erosion control and compaction control within and around the project limits.

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 used on the project may include petroleum products, as discussed in EAW Item 20c, below, or chemical products used routinely in construction

(concrete sealants, etc). Toxic or hazardous materials present on the project site are discussed in EAW Item 9 - Potential Environmental Hazards, on page 42.

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 roadway construction. 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, appropriate action to remedy the situation will be taken immediately in accordance with MPCA guidelines and regulations.

21 - Traffic

Parking spaces added ***None*** *. Existing spaces (if project involves expansion)* ***N/A*** *. Estimated total average daily traffic generated (indicate source of trip generation rates used in the estimate)* ***None*** *. Estimated maximum peak hour traffic generated and time of occurrence* ***None*** *. (If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceed 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%206.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.*

Congestion Analysis

The proposed Build alternatives will decrease traffic congestion by providing additional roadway capacity. This will alleviate existing and future congestion (see Section 2 – Purpose and Need).

Operational Analysis

North Side of the Mississippi River

On the west side of T.H. 61 between the Mississippi River and the Canadian-Pacific Railway Bridge is a full-access intersection, which serves Hubs Landing & Marina, and Captain's Bay Marina. At this intersection, the center-median is roughly 20-feet wide, so there is not enough median width to store left-turning long vehicles (vehicles pulling boat trailers) from the marinas. When these vehicles make a left-turn onto T.H. 61, they have to make the turn in one movement, which requires a sufficient gap in traffic from both directions. Modifying this intersection to avoid conflicts with left-turning long vehicles would be a proactive safety measure.

Installing a signal at this location is not a viable option; a signal at this location does not meet signal warrants due to the low cross-traffic volume.

Closing the existing median opening was considered a viable option; however, a feasible turn-around (u-turn) location north of the project is not available, so closing the median is not feasible.

Therefore, a local ring road was designed that connects the east and west side of T.H. 61 under the north end of the bridge. This design closes the median opening, eliminates left-turn movements, and provides both northbound and southbound access to T.H. 61.

South Side of the Mississippi River

The Third Street ramps and the Fourth Street intersection with T.H. 61 were examined for operational problems and necessary improvements.

Third Street ramps

The Third Street ramps have not had any accidents during the three year period from 2005-2007, and they provide a more direct access to the East Second Street business district than the Fourth Street intersection. For these reasons, it was decided to keep the Third Street ramps in the Build alternatives.

Fourth Street intersection

An Intersection Control Evaluation (ICE) was conducted for the Fourth Street intersection to determine improvements needed to ensure adequate operation in the future (2030).

The possible alternative intersection improvements included the following:

- ***No Build*** – No improvements to the intersection;
- ***Alternative 1*** - Add left-turn lanes on Fourth Street (eastbound and westbound) with permissive signal phasing;
- ***Alternative 2*** - Add right-turn lanes on T.H. 61 (northbound and southbound);
- ***Alternative 3*** - Add both right-turn lanes on T.H. 61 and left-turn lanes on Fourth Street with protected/permissive signal phasing for T.H. 61 left turns and permissive for Fourth Street left turns;
- ***Alternative 4*** - Add right-turn lane on T.H. 61 southbound and left-turn lanes on Fourth Street with protected/permissive signal phasing for T.H. 61 left turns and permissive signal phasing for Fourth Street; and
- ***Alternative 5*** - Roundabout – this alternative was considered, but based on right-of-way impacts, the alternative was considered not feasible due to right of way needs from adjacent parcels.

The ICE report concluded that the existing intersection will continue to operate at acceptable levels through 2030; however, some of the approaches will need improvements to provide adequate capacity to minimize queuing. The report recommended Alternative 4 to address the queuing on Fourth Street and right turning vehicles on southbound T.H. 61 to westbound Fourth Street. Mn/DOT is working with the city regarding the recommendation in addressing the needs at the Fourth Street intersection.

The *2008 Hastings Intersection Control Evaluation Report,* and *2008 Hastings Bridge Scoping Study Traffic Operations and Safety Memorandum* can be obtained from Mn/DOT's project manager. Contact information is provided on the cover of the EAW.

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.

The 1990 Clean Air Act Amendments require that State Implementation Plans (SIP) must demonstrate how states with non-attainment and maintenance areas will meet federal air quality standards. The EPA has designated all of Hennepin, Ramsey, Anoka and portions of Carver, Scott, Dakota, Washington and Wright counties as a maintenance area for carbon monoxide (CO). This area includes the project area, which is in Dakota and Washington Counties.

The EPA issued final rules on transportation conformity (amended as 40 CFR 93 in 1999) which describe the methods required to demonstrate SIP compliance for transportation projects. These guidelines indicate that non-exempt transportation projects such as this project may need to be included in a regional emissions analysis to demonstrate the project will not increase regional CO emissions and will not increase the frequency or severity of existing violations. The regional analysis must be part of the metropolitan planning organization's long range plan and the three-year Transportation Improvement Program (TIP).

Accordingly, this project is consistent with the 2030 Twin Cities Metropolitan Council's Transportation Policy Plan (TPP), and in the 2009-2012 Twin Cities TIP. This project is included in the transportation conformity section of the TPP and the TIP. The regional analysis shows that emissions are below the EPA-established emissions budget for the region. This project does not interfere with implementation of any transportation control measures included in the SIP.

The TPP was determined to conform to the requirements of the 1990 Clean Air Act (per 40 CFR 51 and 93) by the FHWA and the Federal Transit Administration (FTA) on February 1, 2005. A TIP conformity determination was made by those agencies on September 10, 2008. The project's design concept and scope are not significantly different from that used in the TIP and TPP conformity analyses.

As demonstrated by the above information, this project conforms to the requirements of the Clean Air Act Amendments and to the Conformity Rules, 40 CFR 93.

Although this project is located in an area where conformity requirements apply, the scope of the project does not indicate that air quality impacts would be expected. Furthermore, the EPA has approved a screening method to determine which intersections need hot-spot analysis. Mn/DOT demonstrated by the results of the screening procedure that there are no signalized intersections included in this project area that require hot-spot analysis. Therefore, no further air quality analysis is necessary.

The purpose of this project is to provide a structurally sound river crossing that will alleviate congestion on the T.H. 61 Bridge over the Mississippi River in Hastings, Minnesota. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that will cause an increase in emissions impacts relative to the No-Build Alternative. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxics (MSAT) concerns. Consequently, this effort is exempt from analysis for MSATs.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent

increase in vehicle miles traveled (VMT), FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

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 EAW 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.*

This project will not have stationary source air emissions concerns.

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, Noise, and Dust during Construction

The proposed project will not generate substantial odors during construction. Potential odors could include exhaust from diesel engines and fuel storage. Dust generated during construction will be minimized through standard dust control measures, such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions. Construction contractors will be required to control dust and other airborne particulates in accordance with Mn/DOT specifications. After construction is complete, dust levels are anticipated to be minimal because all soil surfaces exposed during construction will be in permanent cover (i.e., paved or re-vegetated areas).

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. An adjustment, or weighting, of the high- and low-pitched sounds, is made to approximate the way that an average person hears sounds. The adjusted sound levels are stated in units of "A-weighted decibels" (dBA). Decibels (dBA) represent the logarithmic increase in sound energy relative to a reference energy level. A sound increase of three dBA is barely perceptible to the human ear, a five dBA increase is clearly noticeable, and a ten dBA increase is heard as twice as loud. For example, if the sound energy is doubled (e.g., the amount of traffic doubles), there is a three dBA increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases to where there is ten times the sound energy level over a reference level, then there is a ten dBA increase and it is heard as twice as loud.

The following chart provides a rough comparison of the noise levels of some common noise sources.

Sound Pressure Level (dBA)Noise Source

140----------Jet Engine (at 25 meters)

130----------Jet Aircraft (at 100 meters)

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/programs/pubs/noise.pdf and *Highway Traffic Noise*, FHWA, http://www.fhwa.dot.gov/environment/htnoise.htm

Construction Noise

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

Table 16 shows peak noise levels monitored at 50 feet from various types of construction equipment. This equipment is primarily associated with site grading/site preparation, which is generally the roadway construction phase associated with the greatest noise levels.

Table 16: 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. Mn/DOT will require that construction equipment be properly muffled and in proper working order. While Mn/DOT and its contractor(s) are exempt from local noise ordinances, it is the practice to require the contractor(s) to comply with applicable local noise restrictions and

ordinances to the extent that is reasonable. Advanced notice will be provided to the City of Hastings of any planned, abnormally 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 duration of construction depends on the construction alternative chosen. The construction duration of the various alternatives varies from about three to six years.

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

State of Minnesota Noise Analysis Methods and Regulations

In Minnesota, traffic noise impacts are evaluated by measuring and/or modeling the traffic noise levels that are exceeded ten percent and 50 percent of the time during the hour of the day and/or night that has the heaviest traffic. These numbers are identified as the L10 and L50 levels. The L10 value is compared to FHWA noise abatement criteria. State noise standards are for a one-hour period and apply to outdoor areas. The standards are in terms of the L10 and L50 noise descriptors. The L10 is the sound level exceeded ten percent of the time, or six minutes out of an hour. The L50 is the sound level exceeded 50 percent of the time, or 30 minutes out of an hour.

Table 17 provides the Minnesota State Noise Standards for three Noise Area Classifications (NAC), and for daytime, nighttime, L10, and L50. The standards for NAC-1 apply to residential areas and other uses intended for overnight sleeping (hotels, motels, mobile homes, etc.). The NAC-1 standards also apply to schools, churches, medical services, and park areas. The nighttime standards differ from the daytime standards only in areas intended for overnight sleeping. After consultation with the MPCA, it was determined that the marina should be classified as a commercial land use type for daytime levels (70 dBA) and a nighttime level of 55 dBA (similar to residential land uses) to account for overnight lodging.

Table 17: Minnesota State Noise Standards

Noise Area Classification	General Land Use Type	Sound Level (dBA)			
		Day (0700-2200)		Night (2200-0700)	
		L10	L50	L10	L50
1	Residential	65	60	55	50
2	Commercial	70	65	70	65
3	Industrial	80	75	80	75

Federal Noise Abatement Criteria

The Federal Noise Abatement Criteria (23 CFR, Procedures for Abatement of Highway Traffic Noise and Construction Noise) are in terms of the Leq or L10 descriptor. In Minnesota, the L10 descriptor is used to identify impacts and, therefore, has been used to assess federal criteria conformance in this analysis. The criteria for activity category E, shown in Table 18 are in terms of interior noise levels and are applied where there are no exterior activities to be affected by traffic noise. All other criteria are in terms of exterior noise levels.

In the Federal Noise Abatement criteria, a noise impact is defined as occurring when the predicted traffic noise levels:

> Approach or exceed the noise abatement criteria (see Table 18);
> Substantially exceed the existing noise levels.[24]

The State of Minnesota has defined "approach or exceed" as being within one dBA or less of the activity category of the NAC, and "substantially exceed" as an increase of five dBA or more over existing noise levels.

Table 18 - FHWA Noise Abatement Criteria (Hourly A-Weighted Sound Level in Decibels (dBA)

Activity Category	L_{10} (h)	Description of Activity Category
A	60 dBA (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	70 dBA (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	75 dBA (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	No Limit	Undeveloped Lands
E	55 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Traffic-Related Noise Analysis

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 affect on ambient noise levels.

Methodology

Existing (2008) and future (2030) noise levels were modeled using the FHWA noise prediction model STAMINA 2.0, as modified for use by Mn/DOT. Noise projections were based on 2006 traffic counts (assumed to be equivalent to 2008 conditions), 2030 forecasted peak-hour traffic volumes, time of day, vehicle speeds, mix of vehicles, roadway grades, and the distance from the roadway center-of-lanes to the receptor (horizontal and vertical).

Noise Analysis Results

The noise analysis considers four scenarios for comparison of noise level impacts. The scenarios are: 1) Existing conditions (2008); 2) No-Build Alternative (2030); 3) Build Alternative (2030) with no noise barriers along the corridor; and 4) Build Alternative (2030) where 10-foot high barriers were analyzed on bridges and 20-foot high barriers

[24] FHPM 7-7-3 *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, FHWA, October 1997, http://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0772.htm

were analyzed everywhere else, where noise impacts are expected to occur. For scenarios 3 and 4, the Build Alternative assumes the maximum re-alignment of the T.H. 61 corridor to the north, as a 'worst case' noise condition (at the marina receptors).

Changes in noise levels within the project area are expected to range from a decrease of 2.1 dBA to an increase of 1.6 dBA as a result of project. As noted above, changes in highway traffic noise levels of less than three dBA are not perceptible to the average human ear. It should also be noted that for the Build scenario, a concrete barrier was included in the noise analysis on the new bridge structure which resulted in a decrease in noise levels at receptors 15-18 (which are located in Hubs Landing) compared to the existing bridge structure.

Analysis results are provided in Table 19 on page 77 and Table 20 on page 78, for the daytime L50, nighttime L10, and nighttime L50 noise levels, for purposes of addressing the Minnesota nighttime and L50 standards.

Noise modeling was conducted at 19 receptor sites some of which may represent 1 or more residential units. Twelve of the 19 receptors are considered to be within commercial/industrial areas. The seven remaining receptors are considered residential with similar noise characteristics. Table 19 and Table 20 show the results of the noise analysis, and compare them to the Minnesota State Noise Standards and the Federal Noise Abatement Criteria.

Figure 28 in Appendix 1 illustrates the noise receptor locations used in the noise analysis.

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Table 19: Peak Nighttime Noise Levels (6-7 A.M.)

Peak Nighttime Noise Levels (6-7 A.M.)

Receiver # (# of units)	Land use	Existing (2008) L10	No-Build (2030) L10	Build (2030) L10	Existing (2008) L50	No-Build (2030) L50	Build (2030) L50
1 (2)	Residential	**62.6**	**63.7**	**64.0**	**52.9**	**54.5**	**54.9**
2 (2)	Residential	**63.8**	**64.9**	**65.1**	**54.0**	**55.7**	**56.1**
3 (3)	Commercial	**71.2**	**71.8**	**72.6**	64.1	65.0	**66.0**
4 (1)	Residential	**64.5**	**65.2**	**65.6**	**59.8**	**60.9**	**61.6**
5 (2)	Commercial	64.2	64.9	65.4	59.7	60.7	61.4
6 (2)	Residential	**63.4**	**64.6**	**64.8**	**55.0**	**56.6**	**56.9**
7 (2)	Residential	**60.3**	**61.1**	**61.4**	**53.8**	**55.2**	**55.7**
8A (2)	Commercial	**62.9**	**63.6**	**64.0**	**58.6**	**59.6**	**60.3**
8 (1)	Commercial	66.0	66.8	67.3	61.0	62.1	62.8
9 (1)	Commercial	63.7	64.4	64.8	58.8	59.9	60.6
10 (1)	Residential	**64.7**	**65.8**	**66.0**	**55.6**	**57.3**	**57.6**
11 (1)	Residential	**62.8**	**63.8**	**64.0**	**54.8**	**56.3**	**56.8**
12 (1)	Industrial	64.2	64.8	65.4	59.4	60.3	61.1
13 (1)	Commercial	62.5	63.1	63.6	58.3	59.2	59.9
14 (1)	Residential	**59.0**	**59.6**	**60.1**	**55.7**	**56.5**	**57.2**
15 (1)	Residential	**63.1**	**63.7**	**61.0**	**59.1**	**59.9**	**56.6**
16 (1)	Residential	**61.3**	**61.9**	**60.0**	**57.5**	**58.3**	**55.8**
17 (1)	Residential	**63.5**	**64.0**	**61.4**	**59.2**	**59.9**	**56.5**
18 (1)	Residential	**61.9**	**62.4**	**60.4**	**57.9**	**58.6**	**55.9**

Notes:

Bold noise levels exceed Minnesota State Standards

Receivers 15-18 represent a marina with commercial standards during the day and residential standards at night

Table 20: Peak Daytime Noise Levels (4-5 P.M.)

Peak Daytime Noise Levels (4-5 P.M.)

Receiver # (# of units)	Land use	Existing (2008) L10	No-Build (2030) L10	Build (2030) L10	Existing (2008) L50	No-Build (2030) L50	Build (2030) L50
1 (2)	Residential	63.0	64.3	64.6	53.4	55.1	55.5
2 (2)	Residential	64.2	**65.6**	**65.8**	54.7	56.5	56.8
3 (3)	Commercial	**70.7**	**71.5**	**72.1**	64.0	65.0	**65.9**
4 (1)	Residential	64.4	**65.2**	**65.6**	59.9	**61.0**	**61.7**
5 (2)	Commercial	64.1	64.9	65.3	59.9	61.0	61.6
6 (2)	Residential	64.0	**65.4**	**65.5**	55.7	57.5	57.8
7 (2)	Residential	60.5	61.6	61.9	54.2	55.6	56.1
8A (2)	Commercial	63.0	63.8	64.2	58.8	60.0	60.5
8 (1)	Commercial	66.0	66.8	67.2	61.1	62.2	62.9
9 (1)	Commercial	63.7	64.6	65.0	58.9	60.1	60.7
10 (1)	Residential	**65.2**	**66.5**	**66.7**	56.3	58.2	58.4
11 (1)	Residential	63.1	64.3	64.6	55.3	56.9	57.3
12 (1)	Industrial	63.8	64.4	65.0	59.4	60.3	61.1
13 (1)	Commercial	62.2	62.9	63.4	58.4	59.3	60.0
14 (1)	Residential	58.7	59.3	59.9	55.7	56.5	57.3
15 (1)	Commercial	62.9	63.4	60.8	59.3	60.0	56.9
16 (1)	Commercial	61.1	61.6	60.1	57.7	58.4	56.4
17 (1)	Commercial	63.3	63.8	61.6	59.4	60.2	57.4
18 (1)	Commercial	61.7	62.2	60.7	58.1	58.8	56.7

Notes:

Bold noise levels exceed Minnesota State Standards

Receivers 15-18 represent a marina with commercial standards during the day and residential standards at night

Cost-Effectiveness Analysis

A noise wall mitigation cost-effectiveness analysis has been conducted for this project. For noise walls to be considered reasonable, the cost effectiveness shall not exceed $3,250 per decibel of reduction per residence. The cost-effectiveness is calculated for individual barrier segments. For barriers to be warranted, they must be acoustically effective by providing a meaningful reduction in noise, defined as a five decibel reduction or more. Noise walls might not be cost-effective for the following reasons:

- Topography may create a situation where a noise wall cannot effectively block the line of sight from the roadway to the receptor;
- Existing noise mitigation may cause a situation where additional mitigation does not provide additional noise-level reduction;
- Cross-streets may create a situation where noise mitigation cannot be constructed continuously along the noise source;
- Existing structures may reduce noise wall effectiveness; and
- Residential density is low.

The noise wall cost-effectiveness calculations are provided in Table 21 and Table 22 on pages 81 and 82. None of the noise wall segments analyzed met the "reasonable" criteria, therefore no noise walls are being considered for the proposed project.

Evaluation of Other Noise Abatement Measures

Noise walls were identified as having the best potential for cost-effective noise mitigation for this project. Other noise mitigation measures listed in 23 CFR 772.13(c) have also been considered, as discussed below:

Traffic Management Measures: The primary purpose of the facility is to move people and goods. Restrictions of certain vehicles or speeds would be inconsistent with the purpose of the project.

Alternation of horizontal and vertical alignments: The project was realigned for practical reasons based on grade and safety. The chosen alignment results in a minimum of impacted sensitive receptor sites.

Acquisition of property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise: Acquisition of property for noise mitigation purposes is not a part of the project scope, since it is not feasible in this city downtown location.

Noise insulation of public use or nonprofit institutional structures: This is a noise abatement measure that would not affect the noise level violations of Minnesota State Noise Standards because these standards are exterior standards. FHWA guidelines and Mn/DOT policy recommend that only public buildings, such as schools and hospitals, be considered for acoustical insulation.

Conclusion:

Construction of the project will result in increases in traffic noise at some locations, due in part to increased traffic and the proposed changes in the horizontal and vertical alignments of T.H. 61. Cost-effectiveness of noise barriers was calculated; none of the modeled walls that were acoustically effective were found to meet Mn/DOT's $3,250/dBA/receptor

criterion to be considered cost-effective and therefore are not proposed as part of the project.

Table 21: Nighttime Barrier Results

Nighttime Barrier Results

Area	Receptor (units represented)	Land Use Activity	Build No Barrier	Build w/ Barrier	Reduction	No. of units with 5 dBA reduction	Approx. Segment Length	Approx. Wall Height	Average dBA Reduction	Cost-Effectiveness Cost/dBA/Res	Proposed
A	1 (2)	Res	**64.0**	**63.4**	0.6	0	223'	20'	5.4	$4,130	No
	2 (2)	Res	**65.1**	**64.6**	0.5	0					
	3 (3)	Comm	**72.6**	67.2	5.4	3					
	4 (1)	Res	**65.6**	**64.1**	1.5	0					
B	5 (2)	Comm	65.4	62.5	2.9	0	273'	20'	Not Acoustically effective	N/A	No
	6 (2)	Res	**64.8**	**64.3**	0.5	0					
	7 (2)	Res	**61.4**	**60.8**	0.6	0					
C	8A (2)	Comm	64.0	61.8	2.2	N/A	N/A	N/A	N/A	N/A	No
D	8 (1)	Comm	67.3	65.2	2.1	0	235'	20'	Not Acoustically effective	N/A	No
	9 (1)	Comm	64.8	63.4	1.4	0					
	10 (1)	Res	**66.0**	**65.6**	0.4	0					
	11 (1)	Res	**64.0**	**63.2**	0.8	0					
E	12 (1)	Indust	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No
F	13 (1)	Comm	63.6	58.4	5.2	1	609	10'	5.2	$17,567	No
	14 (1)	Res	**60.1**	**57.3**	2.8	0					
G	15 (1)	Res	**61.0**	**58.6**	2.4	0	820'	10'	Not Acoustically effective	N/A	No
	16 (1)	Res	**60.0**	**57.5**	2.5	0					
	17 (1)	Res	**61.4**	**58.4**	3	0					
	18 (1)	Res	**60.4**	**57.7**	2.7	0					

Notes:
Bold refers to L10 values exceeding State Standards

Table 22: Daytime Barrier Results

Daytime Barrier Results

Area	Receptor (units represented)	Land Use Activity	Build No Barrier	Build w/ Barrier	Reduction	No. of units with 5 dBA reduction	Approx. Segment Length	Approx. Wall Height	Average dBA Reduction	Cost-Effectiveness Cost/dBA/Res	Proposed
A	1 (2)	Res	64.6	64.1	0.5	0	223'	20'	5.1	$4,373	No
	2 (2)	Res	**65.8**	**65.3**	0.5	0					
	3 (3)	Comm	**72.1**	67	5.1	3					
	4 (1)	Res	**65.6**	64.2	1.4	0					
B	5 (2)	Comm	65.3	62.7	2.6	0	273'	20'	Not Acoustically effective	N/A	No
	6 (2)	Res	**65.5**	**65.1**	0.4	0					
	7 (2)	Res	61.9	61.3	0.6	0					
C	8A (2)	Comm	64.2	62.3	1.9	0	N/A	N/A	N/A	N/A	No
D	8 (1)	Comm	67.2	65.4	1.8	0	235'	20'	Not Acoustically effective	N/A	No
	9 (1)	Comm	65	63.7	1.3	0					
	10 (1)	Res	**66.7**	66.3	0.4	0					
	11 (1)	Res	64.6	63.8	0.8	0					
E	12 (1)	Indust	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No
F	13 (1)	Comm	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No
	14 (1)	Res	59.9	N/A	N/A	N/A					
G	15 (1)	Comm	60.8	N/A	N/A	0	N/A	N/A	N/A	N/A	No
	16 (1)	Comm	60.1	N/A	N/A	0					
	17 (1)	Comm	61.6	N/A	N/A	0					
	18 (1)	Comm	60.7	N/A	N/A	0					

Notes:
Bold refers to L10 values exceeding State Standards

25 - Nearby resources

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

Archaeological, historical or architectural resources? **X** Yes ___No

Prime or unique farmlands or land within an agricultural preserve? __Yes __**X** No

Designated parks, recreation areas or trails? __**X**__ Yes __No

Scenic views and vistas? _X_ Yes __No

Other unique resources? __Yes _X_ 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 Cultural Resources-Historic and Archaeological, and Section 106 Evaluation in Section 5, page 116 provides a full description of the historical and archeological analysis conducted for this project.

Farmlands

There is no farmland within the project area.

Designated parks, recreation areas or trails

The proposed project is located in the Mississippi National River and Recreation Area. The project will also have temporary and/or permanent impacts to five city parks and one city monument within or adjacent to the project area. All of the proposed Build Alternatives will have the same temporary construction and/or permanent right-of-way impacts to these parks. The following discussion provides a summary of impacts, refer to Figure 29 for a location of park areas. The Draft Section 4(f) Evaluation in Appendix 3 provides additional information and illustrative figures.

Mississippi National River and Recreational Area

The project area is located within the boundaries of the Mississippi National River and Recreation Area (MNRRA) corridor, which is a unit of the national park system under the jurisdiction of the National Park Service (NPS). Scenic resources are important components of the MNRRA, state Mississippi River Critical Area (MRCA), and the Nationwide Rivers Inventory. Refer to EAW item 14 for additional information on issues related to the MNRRA, MRCA and the Nationwide Rivers Inventory.

Hastings Loop Trail

The Hastings Loop Trail is a 15-mile long walking and biking trail, which functions as a linear green space circling through the city. The trail is a paved bituminous path approximately eight feet wide for most of its length. The trail is located along the shoulder of a local street or county road in spot locations. The trail will be temporarily rerouted through the project area during construction. Detour signs will be posted to direct users safely around the construction site. The exact detour will be determined during the final design stages of the project.

The proposed project will not affect the trail's function. However, Mn/DOT will take over ownership of the portion of the trail that travels under the new bridge, as illustrated on Figure 29 in Appendix 1. The city will be provided a limited use permit on Mn/DOT's right-of-way for the trail.

The Hastings Loop Trail will be rerouted during bridge construction. Detour signs will be posted to direct users safely around the construction site. The exact detour will be determined during the final design stages of the project.

Levee Park

Levee Park is a 3.8-acre park located at 300 First Street, along the south banks of the Mississippi River. The main function of Levee Park is to provide public open green space along the bank of the Mississippi River. The park has picnic tables for picnicking. The Hastings Loop Trail travels through the park.

The proposed project may include a trail connection from the bridge to the Hastings Loop Trail in Levee Park. Current discussions with the City indicate that a helix-type, pedestrian ramp structure connecting the Hastings Loop Trail to the bridge is a preferred option. This structure would be located in Levee Park. However, this proposal needs further evaluation. The visual quality process will determine whether this type of structure fits with the historic East Second Street Commercial District. In addition, agency ownership of the structure is not clear at this time in project development.

Jaycee Park

Jaycee Park is a 6-acre park located at 420 Lock and Dam Road, along the south banks of the Mississippi River, west of H.D. Hudson. The park's amenities include a boat launch to the Mississippi River, vehicle and boat trailer parking, and picnic tables. The Hastings Loop Trail also travels through this park.

The proposed project will have temporary impacts to an existing roadway located in the park, as illustrated on Figure 29 in Appendix 1. This roadway will be needed for rerouting H.D. Hudson truck traffic to their loading docks. The roadway will be repaved to strengthen the roadway and allow for use by heavy trucks.

Flint Hills Nature Preserve

The Flint Hills Nature Preserve is a public open space adjacent to the river, located between the COE Lock and Dam #2 property and Jaycee Park. The Hastings Loop Trail travels through the preserve. A portion of the preserve has been restored with prairie land plantings. The City also uses a portion of the preserve to store salt and dredge material.

The proposed project will have temporary impacts during construction on the preserve. A staging area has been identified in the park, as illustrated on Figure 29 in Appendix 1. The Hastings Loop Trail will be relocated along Lock and Dam Road. The lighting and electrical lines will also be relocated. The proposed staging area will be capped with a liner to prevent potential contamination. At the conclusion of the construction project, the original trail location will be restored. The City has requested to keep the detour trail route along Lock and Dam Road at the conclusion of the project. Prairie restoration and tree plantings will be conducted to restore the site to its original state.

Lake Rebecca Park

Lake Rebecca Park, 415 Lock & Dam Road, is located along the west bank of the Mississippi River. The park is generally bordered on the south by private residential development, on the north and east by Flint Hills Nature Preserve and Jaycee Park, and on the west by property owned by Flint Hills Resources. Lake Rebecca Park is used for picnicking, walking, biking, and boating. A rain garden provides capacity and treatment for stormwater runoff. Three paved off-street parking lots with space for approximately 60 vehicles serve the park. Water access is provided at the southeastern portion of the park.

The proposed project will use the existing parking lot as a turn-around for truck traffic accessing the temporary H.D. Hudson access in Jaycee Park, as illustrated on Figure 29 in Appendix 1. The park roadway and parking lot will be repaved to allow for heavy truck traffic. There will be no impacts to park amenities.

City Monument on Mn/DOT Right-of-Way

The Hastings interpretive monument located on Mn/DOT right-of-way on the east side slope of T.H. 61 and Second Street will be relocated as part of this project. The monument was constructed in 1982 with local donations, as well as state and city partnership funding. The proposed project will relocate the monument in close proximity to its existing location.

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? **X** Yes _No

If yes, explain.

The project includes proposed changes to the existing bridge and roadway. Since it is located in an existing highway/bridge corridor, no significant visual impacts will result from any of the Build Alternatives. However, given the project's location within the City of Hastings and along the Mississippi River (part of the MNRRA, discussed in the response to EAW Item 14 on page 59), a visual assessment was conducted, consistent with Mn/DOT's Visual Impact Assessment (VIA) process.

The proposed project will create adverse and beneficial impacts to the visual character and visual qualities of the project area because of changes to the transportation elements (bridges, roadways, retaining walls, etc.). Visual character is what forms the basis of the landscape (i.e., landform, water, vegetation, and manmade development). These are the resources that form the stimuli upon which visual experience is based. Visual quality is what viewers like and dislike about the visual resources that compose a particular scene.

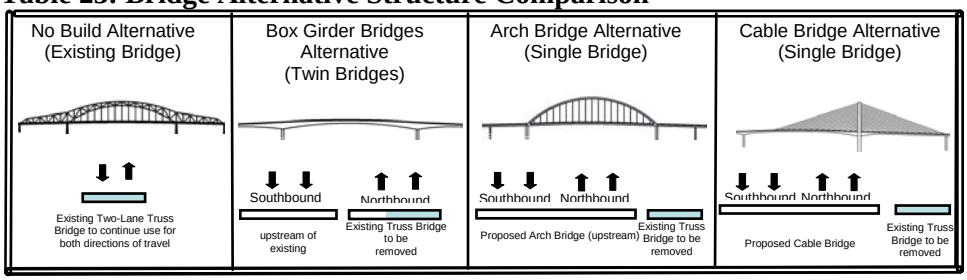
The project is located in the Mississippi River Valley within a reach of the river just below Lock and Dam #2. The river is bordered by wooded bluffs and floodplain, back water areas, and developed park land, including a trail system along the south riverbank. Hastings, one of the oldest Minnesota settlements along the Mississippi, flanks the south riverbank. The south end of the existing T.H. 61 river bridge is flanked by an historic commercial neighborhood on the down stream side of the bridge and an historic residential neighborhood on the upstream side of the bridge.

Existing T.H. 61 is a four-lane divided highway, narrowing to a two-lane roadway and bridge over the Mississippi River, and carrying northbound and southbound traffic over the bridge into and out of the City of Hastings. The bridge provides the only local crossing of the Mississippi. The river is a main shipping arterial for barge traffic moving a variety of cargo both upstream and downstream. The river is also a valuable recreational resource to the communities in the region. Two major railroads run along the north side of the river valley with one crossing the river over a lift bridge located a short distance downstream of the T.H. 61 Bridge.

The No-Build Alternative will not alter the visual character of the area. The proposed Build Alternatives will modify the visual character of the river valley as viewed from the river, the City of Hastings, and both the north and south approaches to the bridge. There are two primary modifications to be considered: one is the river crossing itself; the other is the expansion of the

roadway from two lanes to a four-lane section. Table 23 provides a structure comparison between the proposed alternatives.

Table 23: Bridge Alternative Structure Comparison



One bridge alternative under consideration is a twin deck supported concrete box structures, one bridge carrying two northbound travel lanes and one bridge carrying two southbound travel lanes. The northbound bridge will also carry a bicycle/pedestrian path along the downstream side of the structure separated from vehicles by a traffic barrier. This alternative will require a grade raise over the main navigation channel of approximately 10 feet above the profile grade of the existing structure, and the main river span will be increased beyond that of the existing bridge to improve the width of the navigation channel. Views from the bridge will be unobstructed except for the barriers at the outside edges of the bridge deck.

A second bridge alternative under consideration is an arch structure, which would carry four traffic lanes, two northbound and two southbound, as well as a bicycle/pedestrian path along the downstream side of the bridge, separated from vehicles by a traffic barrier. The main structural support for this bridge rises above the bridge, which allows the profile of the bridge deck to remain in close proximity to the elevation of the existing bridge deck. As is true in the first alternative, the main river span will increase beyond the existing span to improve river navigation. While views of the arch span will be visually similar to the existing bridge from locations around the bridge, the views from the bridge may be somewhat restricted by the above deck structural members.

Lastly, a third bridge alternative under consideration is a cable supported structure, which would carry four lanes of traffic, two northbound and two southbound, and a bicycle/pedestrian path along the downstream side of the bridge, separated from vehicles by a traffic barrier. The cable supported structure offers longer spans than the existing bridge, but the height of the supporting tower will be much higher than the existing bridge or any of the other alternatives being considered. The two cable supported spans will span the river in its entirety, eliminating almost all piers present in the existing bridge. The cable bridge will dominate the views of the structure from the surrounding area, and the views from the bridge will be somewhat restricted by the support cables.

At the south end of the bridge from the river's edge to the intersection of T.H. 61 and Third Street, the area at the west side of the bridge will be affected by the increased width of any new bridge alternative. Land is limited to reconfigure the connections to local streets, which will require a conscious effort to address landscape and drainage issues that affect the visual appearance of areas around and under the south end of the bridge.

At the north end of the bridge, the approach to the bridge and the area around the bridge will be affected by the increase in roadway width and the addition of an access road that will carry local traffic parallel to the mainline and under the bridge in front of the north abutment. Access to this end of the bridge will provide a view of the river and the bridge not currently available to the traveling public. Because of limited right-of-way, retaining systems may be required to support the

mainline. In addition, wooded landscape which is now present very close to the existing roadway will be removed to construct the new four-lane roadway and access roads.

Views for travelers and neighbors along this segment of the T.H. 61 corridor will change as the highway is upgraded from a two-lane highway to a four-lane highway with an adjacent bicycle/pedestrian trail. Significant characteristics in the views of any of the alternatives being considered will be realized when compared to the existing structure. Views of the bridge from the roadway and within the context of the river valley will be affected by the selection of bridge type. All structure types under consideration offer specific characteristics that could enhance or detract from the significance of this bridge in the surrounding environment.

Primary views to be considered during the Visual Quality Process for the project are the following:

- Looking north toward the river crossing from Vermillion Street near the intersection of Fourth Street;
- Looking east toward the bridge on Second Street from the historic residential neighborhood in the vicinity of the H.D. Hudson;
- Looking toward the river from Second Street just west of the proposed bridge encompassing the area beneath the bridge;
- Looking west toward the bridge from Second Street in the Hastings historic Downtown;
- Looking upstream toward the bridge from Veterans Memorial Levee Park along the south river bank;
- Looking downstream toward the bridge from Lake Rebecca Park along the south river bank;
- Looking upstream toward the bridge from the river downstream of the bridge near the railroad lift bridge;
- Looking downstream toward the bridge from the river upstream of the bridge and below the lock and dam;
- Looking south toward Hastings from the high point on the bridge;
- Looking south toward the bridge along T.H. 61 from a point just south of the Canadian-Pacific Railway crossing at the north end of the project area; and
- Looking south toward Hastings beneath the proposed bridge from in front of the north bridge abutment.

Visual Quality Manual Development Process

Visual quality for the project will be addressed through a Visual Quality Manual (VQM) Development Process.

Stakeholder Representation on a Hastings Bridge Visual Quality Team

Mn/DOT has assembled a Visual Quality Team (VQT) composed of a broad range of community stakeholders, including resource agencies, local government representatives, and other community representatives. In addition to Mn/DOT and other county/local transportation interests, key agencies considered for the VQT include the State Historic Preservation Office (SHPO), the NPS, the DNR, local and county historic preservation representatives, local and county parks/recreation specialists, and City of Hastings representatives—including citizen and business representatives. Mn/DOT, with assistance from a consultant team, will manage work of the VQT. Mn/DOT will

provide visualization support to the VQT through the development of concept and alternative photo simulations. Visualizations developed by the VQT will be shared at open houses for additional input from the general public.

Role of the Visual Quality Team

The role of the VQT is to provide input, review, and comment throughout the T.H. 61 Bridge preliminary engineering project and the Design-Build project on design issues that may potentially impact the visual aspects of the T.H. 61 Bridge. Recommendations from the VQT will be incorporated in a VQM that is the result of the Visual Quality Process described below.

The broader mission of the VQT can be summarized as follows:

- Provide a public, facilitated visual quality planning process toward development of a Visual Quality Manual for the T.H. 61 Bridge Project; and
- Articulate community values to ensure sensitive visual quality and aesthetic design results while at the same time satisfying transportation needs and avoiding adverse impacts to the area's social, economic, cultural, and environmental resources.

Process

The process by which the VQM will be developed is described below. Work was initiated during development of the EA document, and will continue through the EA public comment period, and after determination of a Preferred Alternative:

- *Step 1*. Establish the Project Context and Work Program with the VQT (December 2008 through January 2009)— The earliest efforts on the T.H. 61 Bridge project's visual quality process focused on project context and process. This step emphasized working with the VQT to promote understandings among stakeholders with reference to the project area's valued resources, visual characteristics, visual quality criteria/aspirations, and the processes for decision-making, design, and construction;
- *Step 2*. Compare the Bridge Design Alternatives and Recommend a Preferred Alternative (approximately May 2009 through July 2009)— Work during this step emphasizes documentation of criteria, efforts to refine the bridge design alternatives to satisfy those criteria, and balancing of visual quality against other evaluation factors—for example, environment, cost and constructability. The VQT members have been encouraged to participate in the public decision-making process, which revolves around the EA and the selection of a Preferred Alternative;
- *Step 3.* Refine the Preferred Alternative and Set Design Criteria (approximately July 2009 through November 2009)— Upon selection of a Preferred Alternative, the visual quality emphasis will shift toward resolution of project design details, choices, or related objectives. For example, shape and form, textures, colors, and patterns can be selected; or visual quality objectives and guidance can be documented for refinement by the selected contractor; and
- *Step 4*. Develop and Publish a VQM (end of November 2009) — The advice and recommendations of the VQT will be compiled into a VQM that will evaluate the surroundings in which the project is located (its context) to consider opportunities for making the bridge and other project elements aesthetically compatible. The VQM will be developed in conjunction with overall project decision-making for a Preferred Alternative and provide guidance for the development of design criteria for a design-build contractor to follow through construction.

Public Involvement

Three public open houses (not including the EA Public Hearing held during the official EA comment period) will be held as part of VQM development. The public involvement process mirrors key decision points and offers an opportunity for the general public to provide input about the project. With regard to visual quality, the open houses have been or will be oriented around the following topics:

- *Open House #1 (February 2009)* – Describe the visual context of the project area and some of the key views to be considered in comparison of bridge alternatives.
- *Open House #2 (August 2009)* – Present the Preferred Alternative and opportunities for further refinement of the project's visual components.
- *Open House #3 (November 2009)* – Present final findings of the VQM, providing an overview of the design-build process and how visual quality aspects of the project are related.

The following are some of the urban design and landscaping treatments and elements which have been discussed and could be incorporated into the T.H. 61 corridor design to provide visual mitigation and enhance the corridor image and appearance. Use of these elements will be discussed with project stakeholders involved in the VQT.

Gateway Monument/Signs

Gateway monuments or signs may be developed to better define the project within the community and within MNRRA. A gateway sign for the City could be used to strengthen its "sense of place" and to welcome visitors to the City by creating a "sense of arrival." Gateway signage at the river could be used to inform travelers that they are traveling through the MNRRA.

Pedestrian and Bicycle Trail System

A pedestrian and bicycle trail system with amenity elements will be developed to increase community connectivity, increase intermodal and multimodal transportation system choices, and provide local connections to regional and statewide trail networks.

Landscaping

Landscaping could effectively improve the appearance of this project in the T.H. 61 corridor and within the City of Hastings. Existing trees along T.H. 61 north of the river crossing and existing landscaping treatments within the City will be removed or disturbed during construction. Incorporating new trees and landscaping into the project would enhance the visual quality of the corridor and the areas surrounding the touchdowns at both the north and south ends of the bridge.

Structural Element Enhancement

Consistent use of architectural details and special aesthetic treatments on the bridge, retaining walls, and other highway elements will be considered. Creative architectural design and use of special concrete finishes, color, ornamental bicycle/pedestrian railings, "see through" traffic barriers and other corridor-specific treatments will also be considered. Unifying the visual character along the route would improve the project's connection with the community and surrounding environment.

To document the visual quality recommendations that have been made by the VQT and to guide the visual quality planning and development process for this project, a detailed VQM described above will be completed. This document will establish the architectural and aesthetic design framework for Hastings T.H. 61 Bridge Project which will affect its relationship with the

surrounding community and natural environment. The VQM preparation will be coordinated by Mn/DOT's Metro Division and the Mn/DOT Bridge Office.

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 X 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 subject to the plans cited below, the compatibility of the proposed project with local planning efforts is a consideration. This section describes the areas that the proposed project will intersect, specifically the City of Hastings, Dakota County, and Washington County. The proposed project is consistent with the transportation plans for the City of Hastings and for Dakota and Washington counties.

City of Hastings 2020 Comprehensive Plan

Transportation

The Transportation Plan component of the City of Hastings 2020 Comprehensive Plan identifies transportation issues and provides policies and strategies to aid the City in improving the transportation system to accommodate 2020 planned land uses. According to the Plan, T.H. 61 was 70 percent over the capacity of a two-lane roadway in 1997 when the volumes were 26,000 vehicles per day. A new four-lane bridge is identified in the Plan as a needed future roadway improvement to relieve congestion. The Plan states that the City and Mn/DOT need to ensure that the replacement bridge design complements the function and aesthetics of the river and adjacent historic nature of the downtown.

Dakota County Transportation Plan

The portion of the City of Hastings south of the Mississippi River lies within Dakota County. The 2025 Dakota County Transportation Plan states that from 1990 to 2000 Dakota County experienced 29.3 percent growth, which is posing transportation challenges for the County. Hastings does not show deficiencies on their county roads based in the Plan. The T.H. 61 Hasting Bridge is identified for improvement in the Plan as part of Mn/DOT's proposed regional improvements.

Washington County Transportation Plan

The portion of the City of Hastings north of the Mississippi River lies within Washington County. This small portion of the City is rural and lies in the floodways of the Mississippi River. Washington County is in the process of updating their 2020 Comprehensive Plan. Based on their 2030 update demographic data, Hastings will continue to be less than one percent of the County's population into 2030. The portion of T.H. 61 through Hastings is identified as congested on the Washington County 2030 Comprehensive Plan Update in the figure labeled 2005 Congestion and Number of Lanes.

Mississippi River Critical Area Plan

See EAW Item 14 on page 60 for a discussion of compatibility with the Critical Area Plan.

Mississippi National River and Recreation Area

See EAW Item 14 on page 59 for details and compatibility with the MNRRA Plan.

28 - Impact on infrastructure and public services

Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? X 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.)*

Although no new or expanded infrastructure is needed for the proposed project, it will require utility relocation and/or modification.

Utilities

Three utilities are located on the existing bridge: an Embarq communication line; a Qwest communication line; and an Xcel local electrical power line. These companies will need to develop plans for relocating their utilities onto the new bridge. Mn/DOT has contacted these companies regarding this project.

Xcel Energy Utilities

Xcel Energy owns a 69 kV electric transmission line that crosses the south end of the bridge. The transmission line connects to Xcel Energy's substation located roughly 100 feet east of the bridge. Exhibit 10 shows the location of the transmission line and substation.

Mn/DOT and Xcel Energy met in the summer of 2008 to discuss potential impacts on the transmission line and substation.

The transmission line is supported across T.H. 61 by two lattice towers, one located within the substation, and one located roughly 60 feet west of the existing bridge. All of the project Build Alternative alignments pass over the area occupied by the west tower. Therefore, either the tower must be relocated to support the transmission line, or the transmission line must be relocated.

Burying the transmission line is considered desirable by the City, however, burying the transmission line costs roughly six to ten times more than replacing the support tower. A specially designed tower is required where the transmission line reverts from an underground to an above ground location.

Rerouting the transmission line around the south end of the project area was also considered but there are aesthetic issues with rerouting the lines.

Relocating the existing tower further to the west appears to be the best option. The new tower will be a monopole design, which is more aesthetically pleasing to stakeholders. The monopole will be located on riverside property owned by the City, roughly on the existing alignment of the existing transmission line.

Exhibit 10: Xcel Energy Substation and Power Line

City and County Utilities

Mn/DOT, Dakota County, and the City of Hastings own storm sewer systems between the river and Fourth Street. Mn/DOT owns the storm sewer system along T.H. 61, Dakota County owns the storm sewer system along County Road 42, and the City of Hastings owns the storm sewer system along Second Street. All three of these systems converge under the existing bridge and have a common outlet into the Mississippi River. These systems will be modified and replaced according to their condition and location. EAW Item 17, beginning on page 63, has more details about the stormwater drainage system.

The City of Hastings owns and operates water main, fire hydrants, and sanitary sewer systems within the project limits. Portions of these systems are nearly 100 years old. These systems within the project limits will be modified and replaced according to their condition and their location.

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 impacts. 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 impacts 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 effect under appropriate Item(s) elsewhere on this form).

In addition to the state definition of cumulative potential effects described above, cumulative impacts are defined by the federal 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. In the discussion that follows, the terms "cumulative potential effects" and 'cumulative impacts' are used interchangeably.

Cumulative potential effects are not necessarily causally linked to the reconstruction of the Hastings Bridge and related improvements. Rather, they are the total effect of all known actions (past, present, and future) in the vicinity of the proposed bridge with impacts on the same types of

resources. The purpose of cumulative potential impacts analysis is to look for impacts that may be individually minimal, but which could accumulate and become significant and adverse when combined with the effects of other actions.

Scope of Cumulative Potential Effects

The cumulative potential effects analysis is limited to those resources, ecosystems, and human communities directly affected by the proposed project, i.e., wildlife, listed threatened and endangered species, wetlands, floodplains, storm water quality and quantity, and cultural resources.

The geographic scope of this analysis varies by the resource under examination, as described in each sub-section below. 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 projections are generally available up to that date. Thus, year 2030 is used as the temporal horizon for assessing future cumulative impacts.

Past Actions

Past actions in the project area include decades of agricultural, residential, industrial, commercial development. In addition, there has been extensive highway, heavy rail and both recreational and commercial navigation infrastructure development. All these have resulted in the current state of built environment in the vicinity of the Hasting Bridge.

Future Actions Anticipated

The projects listed below that were considered as future actions in this analysis are consistent with the recent Minnesota State Supreme Court Ruling regarding cumulative potential effects. 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 following projects are the currently known future planned projects in the City of Hastings:

- Water main and sanitary sewer project from Third Street to Ninth Street, spring 2009;
- Mill and overlay of T.H. 55 from T.H. 52 to Jacob Avenue in Nininger Township, spring 2009;
- Mill and overlay T.H. 61 from Cannon Street to Fourth Street, summer/fall 2009;
- Hubs Marina – land reclamation project;
- Three Rivers Place – mixed residential/commercial development in downtown Hastings.

Impacts from the Hasting Bridge project have been discussed previously. The main project impacts are wildlife, listed threatened and endangered species, wetlands, floodplains, storm water quality and quantity, and cultural resources. Cumulative impacts to these resources from the proposed project and anticipated future projects listed above are discussed in the following sections.

Listed Threatened and Endangered Species

Existing Conditions

The section of the Mississippi River in the project vicinity is known to have state and/or federally-listed threatened or endangered mussel species. However, the precise location and extent of listed mussel populations is not known.

Impacts from Proposed Action
The project may disturb state-listed mussel species in the construction area and/or the project staging area. Mn/DOT and MnDNR are coordinating a mussel survey for the project area in summer of 2009. Mussel relocation will be combined with the survey work if state-listed species are found. Protocols for addressing any federally-listed species found during the survey have also been established with the U.S. Fish and Wildlife Service (see EAW Item #11).

Impacts from Other Actions
The land reclamation project planned by Hubs Marina could impact listed mussel species, since it would involve manipulation of the river bottom. The marina project will require review and permits from the Minnesota DNR and U.S. Corps of Engineers. Any impacts identified during this process would be subject to such permit conditions as the agencies would deem necessary to adequately mitigate any identified impacts.

Cumulative Potential Effects
Potential impacts will be off-set by mitigation measures agreed to as part of regulatory agency review/permitting. Therefore, adverse cumulative effects are not anticipated to result.

Wildlife

Existing Conditions
The Mississippi River corridor is a flyway for migratory birds. There are numerous existing developments/urban areas along the corridor, including building structures, communications towers, utility lines, bridge structures, etc. Therefore, it is likely that there are existing bird/structure collisions occurring along this flyway, although there is little/no data on the extent or frequency of these collisions.

Impacts from Proposed Action
The potential for increased bird/structure collisions was assessed for the proposed Hastings Bridge project. This assessment, described in the response to Item #11 of the EAW form, identified potential risk factors related to bird mortality at bridge structures, including bridge structure height and use of lighting on bridges. The assessment found that the top of the arch for the Tied Arch Single Bridge Alternative would be about 35 feet taller than the top of the existing bridge, and approximately the same elevation as the surrounding bluffs. The towers for the Cable Single Bridge Alternative would be 65 to 215 feet taller than the existing bridge and approximately 30 to 180 feet above the surrounding bluffs. As discussed in greater detail in EAW Item 11, the potential bird/bridge structure collision risk for any of the build alternatives may be reduced by using appropriate lighting. Lighting for the TH 61 Hastings Bridge will be designed to reduce hazards to migrating birds, while providing adequate illumination to maintain roadway safety.

Impacts from Other Actions
The known foreseeable future development projects in the vicinity of the T.H. 61 Hastings Bridge would likely be in the same general height ranges as existing development, so the future development would not likely increase the potential for bird/structure collisions. 'Other future actions' considered in the assessment of potential migratory bird impacts also included the potential replacement of various bridges along the Mississippi River that is anticipated to occur over time as existing infrastructure ages. Each of these bridges will be subject to environmental review, including assessment of potential impacts and identification of avoidance/minimization measures.

Cumulative Potential Effects
Based on the assessment of the potential for impacts above, adverse cumulative impacts to migratory birds are not anticipated to result from the proposed project and foreseeable future actions.

Wetlands

Existing Conditions
Wetlands in the vicinity of the project area have been affected directly or indirectly over time as a result of past human settlement/development.

Impacts from Proposed Action
As described in EAW Item 12 – Physical Impacts on Water Resources, each of the three Build Alternatives would partially fill seven wetland basins resulting in approximately 1.6 acres of permanent wetland impacts. These impacts will be mitigated in accordance with state and federal regulatory requirements either through banking and/or on-site mitigation.

Impacts from Other Actions
Wetlands in the project vicinity may be affected by anticipated future development projects listed above (e.g., Hubs Marina, Three Rivers Place). However, these impacts will be mitigated.

Cumulative Potential Effects
Wetlands in Minnesota are protected by Federal law (the Clean Water Act – Section 404) and State law (Minnesota Wetland Conservation Act and Executive Orders) that mandate "no net loss" of wetland functions and values. These federal and state laws require the avoidance of wetland impacts when possible, and when avoidance is not possible, impacts must be minimized and compensated. Both federal and state laws require permits. The Minnesota Wetland Conservation Act requires mitigation of wetland impacts be provided at a minimum 2:1 ratio. Therefore, no substantial cumulative wetland impacts are anticipated to result from the Hastings T.H. 61 Bridge Project plus other foreseeable actions.

Floodplains

Existing Conditions
The Mississippi River floodplain has been affected by past development and by control of the river levels through construction of the lock and dam system on the river.

Impacts from Proposed Action
As discussed in EAW Item 14, depending on the selected alternative, the new bridge will be constructed either immediately upstream of the existing bridge or partially upstream of and partially in the footprint of the existing bridge. Both permanent and temporary encroachments into the floodplain will occur under each of the Build Alternatives. However, as discussed in the response to Item 14, the hydraulic analysis indicates that significant floodplain impacts are not expected from the project.

Impacts from Other Actions
Future actions that may affect floodplain areas of the river are regulated by DNR and the COE. Any future project with potential to impact the floodplain (e.g., Hubs Marina) would be required to undertake hydraulic analyses to determine the potential for floodplain impacts. If such impacts were identified, mitigation measures would be required

Cumulative Potential Effects
Review and regulation of floodplain impacts by DNR and the COE result in a low potential for substantial cumulative floodplain impacts as a result of the proposed project plus other foreseeable actions.

Stormwater Quality and Quantity

Existing Conditions
Under existing conditions stormwater runoff from impervious surfaces in developed areas drains to the Mississippi River. Recent developments have been required to provide storm water treatment. However, some older developments (including the existing TH 61 Hastings Bridge) do not treat stormwater prior to discharge to the storm sewer and/or the Mississippi River.

Impacts from Proposed Action
The proposed project will result in additional areas of impervious surface due to the widening of the bridge, as discussed in EAW Item 17. The proposed project will pre-treat storm water runoff and/or provide infiltration through best management practices being incorporated into the project design. These BMPs help mitigate the adverse effects of the increased impervious surfaces. They will improve the quality of storm water being discharged compared to existing (untreated) condition.

Impacts from Other Actions
Future developments and/or roadway projects may result in increased impervious surfaces and/or storm water quality/quantity (discharge rate) effects. However, these projects will be required to provide mitigation in conformance with NPDES and/or watershed regulations, minimizing surface water impacts.

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

Cultural Resources

Existing Conditions
Numerous archaeological and historic resources exist throughout the project area reflecting nineteenth and early twentieth century development patterns. Historic resources in the area include archeological sites as well as built structures. Two designated historic districts are located in the City of Hastings. Historic property types present in the area include residences, commercial buildings, institutional buildings, industrial structures, and the existing T.H. 61 Hastings Bridge. The T.H. 61 Hastings Bridge is one of a number of bridges over the Mississippi River in Minnesota that are potentially eligible for inclusion in the National Register of Historic Places (NRHP).

Impacts from the Proposed Action
The effects to historic properties resulting from the proposed Build Alternatives are identified in Section 5.3.3 – Cultural Resources – Historic and Archeological, and Section 106 Evaluation. Regardless of which build alternative is selected adverse effects have been identified for two properties, St. John's Hotel and Saloon site and the T.H. 61 Hastings Bridge. Adverse effects may result for six other properties, depending upon the alternative chosen. Consultation with SHPO

regarding potential effects and mitigation, as required by the federal Section 106 process, will avoid and/or minimize potential project impacts to cultural resources.

Impacts from Other Actions

The City has controls to protect historic properties, and can enact others. Designation of historic properties by a local government can provide some protection for their preservation, as well as design review to guard against inappropriate changes that can destroy the historic characteristics of properties.

Changes to National Register-listed or eligible properties will be reviewed under the Section 106 process if federal funds, permits, or licenses are required as part of an undertaking. National Register listing, however, does not prevent demolition or other negative effects on properties if federal funds, permits, or licenses are not required. Privately funded development related to historic properties is not regulated under federal regulations and will only be reviewed if located in a local historic district or applied to a locally designated property.

The replacement/rehabilitation of various bridges along the Mississippi River corridor is anticipated to occur over time as existing infrastructure ages. Like the T.H. 61 Hastings Bridge, which is eligible for the NRHP, other bridges along the river corridor that are slated for replacement may be potentially eligible for the NRHP. Mn/DOT and FHWA recognized that replacement of multiple historic bridges in the river corridor (and throughout the state of Minnesota) could potentially result in a cumulative loss of historic bridge resources. Therefore, the Mn/DOT Cultural Resources Unit, on behalf of the FHWA and in consultation with the MnSHPO completed a statewide inventory and evaluation of all bridges constructed before 1956 and identified the list of eligible pre-1956 bridges owned by Mn/DOT or local governments. This inventory was used to identify bridges that should be preserved. The T.H. 61 bridge in Hastings is not included on the list of bridges identified for preservation. As other bridges over the Mississippi River are proposed for rehabilitation/replacement, similar cultural resources assessment, coordination and mitigation for identified impacts would be undertaken, consistent with Section 106 requirements.

Cumulative Potential Effects

With respect to cultural resources in the vicinity of the T.H. 61 Hastings Bridge, according to City staff, there are no substantial development, redevelopment, or infrastructure improvements planned that could result in pressure to demolish vacant or underutilized historic buildings or result in substantial changes in land use or access that could impact the setting and views of historic property. A MOA between Mn/DOT, FHWA, and the SHPO will be developed to address and to identify mitigation for adverse effects to NRHP-listed or eligible resources affected by the TH 61 project. It is anticipated that similar assessment, coordination and mitigation would be undertaken for all bridge replacement/rehabilitation projects along the Mississippi River corridor. Therefore, substantial adverse cumulative effects on cultural resources in the project vicinity and with respect to other NRHP eligible bridges along the Mississippi River corridor in Minnesota are not anticipated.

Conclusion

The potential impacts to resources identified can be avoided or minimized through existing regulatory controls, as described above. During the development of this Environmental Assessment, no potentially significant cumulative impacts to the resources affected by the TH 61 project have been identified.

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.

No additional adverse environmental impacts were identified. Social and economic impacts (right-of-way acquisition, etc.) are discussed in Section 5 – Additional Federal Issues, beginning on page 109.

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 mitigation 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 Table 24 provides an overview of design elements and project impacts of each proposed Build Alternative. The table shows that impacts for each Build Alternative are not substantially different. A summary of mitigation measures follows Table 24.

Table 24: Summary of Build Alternative Design Elements and Impacts

	No-Build	Box Girder Twin Bridge	Tied Arch Single Bridge	Cable Single Bridge
Description	Project length: 4,051' Bridge length: 1,860' - Number of piers in river:6 - Number of piers on land: 6 Bridge width: 44 Height above bridge deck: 94' Lanes on bridge: 2	Project length: 4,051' Bridge length: 2140' - Number of piers in river: less than arch equal to cable - Number of piers on land: Less than arch and cable Bridge width: 102' Lanes on bridge: 4	Project length: 4,051' Bridge length: 2070' - Number of piers in river: more than cable and box girder - Number of piers on land: More than girder equal to cable Height above bridge measured from the bridge deck : 90 to 150' Lanes on bridge: 4	Project length: 4,051' Bridge length: 2070' - Number of piers in river: equal to girder less than arch - Number of piers on land: more than girder equal to arch Bridge width: 105' Height above bridge measured from the bridge deck : 150'-300' Lanes on bridge: 4
Costs (2013 $'s) • **Bridge Only Cost** • **Total Project Cost**	N/A	• $139M • $245M - $260M	• $144M • $255M - $280M	• $163M • $ 275M - $300M
Perpetuates River Crossing	No	Yes	Yes	Yes
Long Term Maintenance Costs and Critical Items[1]	N/A	Low–moderate maintenance costs (two bridges). Deterioration of top structural deck is critical, as repair is difficult. .	Moderate maintenance costs (more than girders). Many above deck structural elements exposed to road spray, and requiring inspection with special access equipment.	Moderate maintenance costs, but more than the single arch. Deterioration of deck is critical, as repair is difficult. Many above deck elements exposed to road spray, and requiring specialized inspection.
Structurally Sound Bridge • **100 year life span** • **solution corrosion, scour, and maintenance issues;** • **Structure that is redundant**	Does not meet these project needs	• Yes • Yes • Yes	• Yes • Yes • Yes	• Yes • Yes • Yes
Construction Duration	N/A	3.5 to 4 years	3 to 3.5 years	3 to 3.5 years
Construction Impacts on Land	N/A	Traffic, dust, noise, access impacts are the same with all alternatives	Traffic, dust, noise, access impacts are the same with all alternatives	Traffic, dust, noise, access impacts are the same with all alternatives

	No-Build	Box Girder Twin Bridge	Tied Arch Single Bridge	Cable Single Bridge
Construction Impacts in the River	N/A	- Staging Area - Temporary Causeway - Bridge Foot Print	- Staging Area - Temporary Causeway - Bridge Foot Print - One of the following is likely a) Into the Channel at Staging Area b) North of Channel at Staging area c) North Edge side of channel from staging area to Bridge	- Staging Area - Temporary Causeway - Bridge Pier Foot Print
Lane Continuity between Roadway and Bridge	No	Yes	Yes	Yes
Transit Accommodation	Buses operate in travel lanes on bridge	Buses can operate in shoulders on bridge	Buses can operate in shoulders on bridge	Buses can operate in shoulders on bridge
River Navigation Needs	Maintains existing navigational channel	Widens navigational channel	Widens navigational channel	Widens navigational channel
Bridge Shoulders	Do not meet standards	Meet standards	Meet standards	Meet standards
Pedestrian/Bicycle Accommodations	Existing sidewalk does not meet standards	Trail on east side of Highway 61 corridor	Trail on east side of Highway 61 corridor	Trail on east side of Highway 61 corridor
Visual[1]	No Change	Common bridge type in river corridor. Bridge form might not match closely with community expectations for scale and profile.	Scale and profile view of this bridge is most similar to the existing bridge.	Modern design departs from previous bridges at Hastings and other nearby river crossings. Tall tower, but scale similar to existing. A distinct bridge.
Capacity • **2030 ADT** • **2030 LOS**	 • 45,000 • LOS F	 • 45,000 • LOS C	 • 45,000 • LOS C	 • 45,000 • LOS C
Safety Rear-end crashes	This crash type will continue to be high without lane continuity	Decrease in crashes with lane continuity	Decrease in crashes with lane continuity	Decrease in crashes with lane continuity
Project Acres **Cubic yards of cut** **Cubic yards of fill**	N/A	• 21.7 acres • 23,000 • 24,000	• 21.7 acres • 23,000 • 52,000	• 21.7 acres • 23,000 • 52,000
Contaminated Sites that may be acquired or have easement • High • Medium	 • N/A • N/A	 • 3 • 18	 • 3 • 18	 • 3 • 18

	No-Build	Box Girder Twin Bridge	Tied Arch Single Bridge	Cable Single Bridge
Federal and State-listed Mussel Species	No impact	May be impacted	May be impacted	May be impacted
Wetland Impact	N/A	1.6 acres	1.6 acres	1.6 acres
Ring Road: Provides local access to T.H. 61 and pedestrian crossing	N/A	- Increases safety by closing the cross median opening; - Safe pedestrian crossing - Located outside of the DNR Ordinary High Water elevation	- Increases safety by closing the cross median opening; - Safe pedestrian crossing - Located outside of the DNR Ordinary High Water elevation	- Increases safety by closing the cross median opening; - Safe pedestrian crossing - Located outside of the DNR Ordinary High Water elevation
100-Year Flood Impacts[2]	NA	Designed for no increase in 100-year flood stage	Designed for no increase in 100-year flood stage	Designed for no increase in 100-year flood stage
Impervious Surface • Increase in impervious area	N/A	• 4.5 acres	• 4.5 acres	• 4.5 acres
Noise	N/A	Imperceptible change	Imperceptible change	Imperceptible change
Cultural Resource Adverse Effect (Section 106): • Archeology Site • Bridge • Other Historic Properties[3]	 No No No	 1 Yes 6	 1 Yes 6	 1 Yes 6
Parks and Trails (Section 4f): • Permanent impacts • Temporary impacts	 No No	 • 1 Trail and 1 Park (see Note 1) • 4 Parks and 1 Trail	 • 1 Trail and 1 Park (see Note 1) • 4 Parks and 1 Trail	 • 1 Trail and 1 Park (see Note 1) • 4 Parks and 1 Trail
Right-of-Way (see Note 1) • Partial Acquisitions • Total Acquisitions • Business Relocation • Residential Relocation	 N/A N/A N/A N/A	 • 5 affected parcels and 1 potential parcel, see note 1 • 1 affected parcel • 0 businesses • 1 rental unit	 • 5 affected parcels and 1 potential parcel, see note 1 • 1 affected parcel • 0 businesses • 1 rental unit	 • 5 affected parcels and 1 potential parcel, see note 1 • 1 affected parcel • 0 businesses • 1 rental unit
Permanent H.D. Hudson Manufacturing Impacts	N/A	Allows more opportunity for Hudson to mitigate project impacts compared to arch or cable alternatives	Allows less opportunity for Hudson to mitigate project impacts compared to girder alternative	Allows less opportunity for Hudson to mitigate project impacts compared to girder alternative

	No-Build	Box Girder Twin Bridge	Tied Arch Single Bridge	Cable Single Bridge
Social Impacts • Emergency Services • School Buses • Prairie Island Evacuation • Vulnerable Adults	Existing bridge continues to serve community until closure is required (2019). Permanent closure eliminates river crossing option.	Temporary closures anticipated during the construction period, may impact travel times and options.	Temporary closures anticipated during the construction period, may impact travel times and options.	Temporary closures anticipated during the construction period, may impact travel times and options.

[1] This information is from the Scoping Study, also shown in Figure 7 – Most Promising Alternatives Matrix

[2]The girder and cable bridges were not included in the floodplain assessment. The arch and rehab alternatives, prior to the elimination of the rehab alternative, were assessed since they represent the worst case scenarios.

[3]Two of the historic properties are historic districts which contain several individual structures.

Note 1: Currently, the concept of providing a direct connection from the bike/pedestrian trail on the bridge to the Loop Trail under the bridge is being considered. This direct connection could consist of a helix or switch back bridge. If this concept is determined acceptable by stakeholders, funding and design would be needed. A portion of the Xcel property and Levee Park immediately adjacent to the project right-of-way would be needed for purposes of locating the helix or switchback connection. It has been determined through a Phase 1 Archeological Investigation, that there is a potential of archeological findings on the Xcel parcel. A final decision regarding a pedestrian bridge has not been made at this point in project development, however; a decision will be made by the conclusion of the environmental review process.

EAW Item 6 - Construction Impacts

Vegetation Impacts

This project will impact trees, landscaping vegetation and a native prairie planning. As part of the Design-Build contract a vegetation plan, consistent with Mn/DOT standards, will be required to address all temporary and permanent vegetation impacts. To minimize potential impacts to bird nests, trees will be removed during the winter months.

EAW Item 9 - Potential Environmental Hazards

The project area has three high risk hazardous sites and 32 medium risk hazardous sites. No site acquisitions will be made until all acquired portions of the site have been thoroughly investigated for soil and groundwater contamination and the appropriate clearances have been obtained from the MPCA Voluntary Investigation and Cleanup program and/or the Petroleum Brownfields or Remediation programs, as needed. The results of the soil and groundwater investigations will be used to develop a plan or plans for properly handling and treating contaminated soil and/or groundwater during construction. That plan will be submitted to the MPCA for approval and incorporated into special provisions of the construction plan.

Use of the Former Koch Terminal as a staging area will be carefully coordinated with MPCA, as the site currently has a restrictive covenant placed upon it for subsurface work in certain areas. Additionally, an engineered barrier (impermeable membrane with two feet of sand) will be constructed on top of the existing surface of the Staging Area to physically separate staging operations and equipment and chemical/fuel storage from pre-existing site contamination.

The MPCA will be requested to issue a No Further Action Determination (environmental closure) for the portion of the H. D. Hudson site that is purchased by Mn/DOT for new right-of-way.

Soil and groundwater sampling will also be performed in all areas of earthwork within the project area adjacent to remaining medium risk sites to determine the nature and extent of contamination that could be encountered by construction. Cleanup plans for these areas will be prepared and submitted to MPCA for approval prior to completion of the design. These cleanup plans also will be incorporated as special provisions to the construction plan.

EAW Item 11 - State-Listed Endangered Species

Birds

Mn/DOT will take the necessary measures to avoid and/or minimize any impacts to Peregrine falcons if found to be nesting on the exiting bridge. As requested by the DNR the bridge will be inspected prior to any construction to determine whether there are any nesting sites. In the event nest(s) are found, Mn/DOT will coordinate with the DNR and FWS for appropriate actions.

Although no swallow nests have been observed on the exiting bridge, the bridge will be checked for swallow nests prior to construction. In the event nests are found, appropriate action to avoid impacts to nesting birds will be taken.

As noted in EAW Item 11 on page 48, trees will be removed during the winter months to minimize potential impacts to migratory birds.

The potential for bird/structure collisions was assessed in the EA. The potential collision risk for any of the bridge alternatives can be reduced by using appropriate lighting. Lighting for the T.H. 61 Hastings Bridge will be designed to minimize hazards to migratory birds, while providing adequate illumination to maintain roadway safety.

Mussels

The DNR stated in its August 6, 2008 letter that impacts to state-listed mussels are possible from the proposed project, and a mussel survey is needed. Mn/DOT is aware of the potential for state and/or federal endangered mussel species in the project area. A biological survey and relocation plan is being developed with Mn/DOT and the DNR. Mn/DOT is working with staff from the DNR to conduct the survey in the summer of 2009. If any state endangered mussel species are found, they will be relocated.

EAW Item 11- Federally Listed Endangered Species

There is the potential for impacts to federally threatened and endangered mussel species in the Mississippi River within the project area. As noted in EAW Item 11 on page 49, Mn/DOT is working with the FWS to develop a biological survey. The survey will be conducted in the summer of 2009 and any listed mussels found during the survey will be relocated as specified by the established protocol. If fewer than five Higgins eye pearlymussels are found during the mussel survey, all mussels captured by the DNR during the survey will relocated per the established protocol. If five Higgins eye pearlymussels are found at any time during the mussel survey, the mussel survey terminates immediately. Subsequently, Mn/DOT will reinitiate Section 7 consultation with FWS in this event.

EAW Item 12 - Physical Impacts on Water Resources

This project will result in 1.6 acres of permanent wetland impacts. A wetland mitigation plan for replacement of the affected wetland areas will be developed consistent with state and federal wetland regulatory requirements. That plan will reassess the areas of wetland impacts (and mitigation needed) based on final plans, wetland delineations, and the current and applicable wetland mitigation guidelines and regulations in effect at that time. The intent of the wetland mitigation plan will be to replace lost wetland functions in the project area where possible, and possibly create an off-site wetland mitigation area to accomplish the remainder of the required mitigation.

Wetland impacts for this project may also be mitigated by using Mn/DOT wetland bank credits from a bank site as close to the project area as feasible. The mitigation process will involve consultation with the DNR and COE. Replacement of lost wetlands will be in accordance with current WCA criteria, Clean Water Act Section 404, and the DNR Public Waters requirements and will occur prior to or concurrent with the impacts. Efforts will be made to replace all lost wetland functions and values with similar wetland types.

EAW Item 14 - Flood Plain Assessment

Both permanent and temporary encroachments of the floodplain occur under Build conditions. The proposed bridge and approach roadways cross the 100-year floodplain; the proposed bridge and its abutments are above the 100-year flood elevation. Temporary floodplain impacts may result in the event the Design Builder used a temporary causeway to construct the north pier of the main bridge span and from creation of an area for staging and contractor storage. No significant floodplain impacts are expected due to the project. The selected design-build contractor will be required to model temporary and permanent floodplain impacts from their bridge design and apply for required permits.

EAW Item 14 - Mississippi National River and Recreational Area

MNRRA gateway signage will be provided on the new bridge.

EAW Item 16 - Erosion and Sedimentation

Erosion and sedimentation of all exposed soils within the project corridor will be minimized by using appropriate best management practices during construction. Erosion practices will be identified in the final site grading and construction plans, as required by the NPDES permit for construction sites.

EAW Item 17 - Water quality: surface water runoff

The project will increase impervious surface by 4.5 acres due to the widening of the bridge, and a new ring road on the north side, which will result in additional runoff. To mitigate the northern portion of the project area, a wet stormwater pond will be used for pretreatment with subsequent infiltration and filtration pond.

On the south side of the project area, Mn/DOT is working with the MPCA, the City of Hastings, and the VRWJPO to determine the best treatment method with consideration of surface runoff from local, county and state roadways in the downtown area. Options includes: 1) just treating T.H. 61 runoff, or 2) treating T.H. 61 stormwater runoff and runoff from county/city areas. Options for treatment being considered include:

- An above ground filtration system;
- A structural pollution control device (swirl separator);
- A below ground filtration system (which the city would own and maintain);
- Offsite stormwater treatment mitigation.

EAW Item 19 - Bedrock and Geologic Hazards

The proposed staging area in Flint Hills Nature Preserve is a known contaminated site. In the event the design-builder contractor proposes to use this site, they will be required to place a soil layer/cap at the surface consisting of a low permeability material over the staging area to prevent any further potential for groundwater contamination.

EAW Item 20 - Solid Wastes Hazardous Waste and Storage Tanks

Removal of Regulated Waste

A certified asbestos abatement contractor will remove the asbestos contaminated ACM bituminous felt on the south end of the bridge.

A contractor will also be hired to encapsulate the peeling lead paint prior to any demolition.

The lead plates will be extracted during demolition of the existing bridge. These will be brought to a lead smelter or transfer of ownership, with either option being documented.

The high-intensity discharge (HID) bulbs and ballasts will be brought to the Mn/DOT approved contractor; Green Lights Recycling and documented, or transfer of ownership, or reused on project and noted. This transaction will be documented, ownership transferred, or the HID bulbs and ballasts will be reused on the project and noted.

The green-treated wood will be brought to an MPCA permitted Mixed Municipal Solid Waste (Sanitary) landfill or industrial landfill.

Bridge demolition material will be managed following Mn/DOT guidelines outlined at http://www.dot.state.mn.us/environment/regulated-materials/index.html. Only Mn/DOT certified and approved companies will be used to manage the bridge demolition material.

Disposal of solid waste
Excess materials and debris from this project, such as concrete and asphalt, will be disposed of in accordance with Mn/DOT Standard Specification for Construction, 2104.3C and Minnesota Rule 7035.2825.

Disposal of Trees
For marketable timber that exceeds a volume of 100 cubic yards Standard Specification 2101.3D (D1) may be followed. The design-builder contractor will be responsible for carrying out the requirements of this specification including providing written proof from three wood using industries or individuals that the wood is not wanted before disposing of or wasting. Another acceptable method for wood utilization is to chip or grind up all wood debris from clearing and grubbing operations and use it on the project for erosion control and compaction control within and around the project limits.

EAW Item 24 - Odors, noise and dust

Dust generated during construction will be minimized through standard dust control measures, such as applying water to exposed soils and limiting the extent and duration of exposed soil conditions. Construction contractors will be required to control dust and other airborne particulates in accordance with Mn/DOT specifications.

Mn/DOT will require that construction equipment be properly muffled and in proper working order. While Mn/DOT and its contractor(s) are exempt from local noise ordinances, it is the practice to require the contractor(s) to comply with applicable local noise restrictions and ordinances to the extent that is reasonable. Advanced notice will be provided to the City of Hastings of any planned, abnormally 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 pile drivers will be prohibited during nighttime hours.

Changes in noise levels within the project area are expected to range from a decrease of 2.1 dBA to an increase of 1.6 dBA as a result of project. Changes in highway traffic noise levels of less than three dBA are not perceptible to the average human ear. No traffic noise mitigation (e.g. noise walls) is proposed.

EAW Item 25 - Nearby resources

Historical and Archeological Resources
Mn/DOT is working with FHWA and the SHPO to develop a Programmatic Agreement (PA) that will establish mitigation for identified historical and archeological resource impacts.

Hastings Loop Trail
There will be a permanent change in ownership of the portion of the Hastings Loop Trail located beneath the bridge. Mn/DOT will acquire the right-of-way beneath the bridge that is occupied by the Hastings Loop Trail from the City of Hastings.

Mn/DOT will provide the City of Hastings with a limited use permit for the trail to reside in its existing location. The project will result in temporary impacts during construction. Mn/DOT will provide temporary signage to direct trail users around the construction site. The trail detour will be determined during the final design stage of the project.

Levee Park

Right-of-way impacts may occur if a pedestrian bridge connecting the T.H. 61 Hastings Bridge to the Hastings Loop Trail is constructed. However, overall characteristics and uses at Levee Park would not be affected if the pedestrian bridge were to be constructed.

Temporary Park Impacts

There will be temporary impacts during construction to the Flint Hills Nature Preserve (staging area), Jaycee Park (truck access to H.D. Hudson), Lake Rebecca Park (truck turnaround for H.D. Hudson) and Levee Park (possible trail connection). The parks will be restored to their original state or better (see Temporary Occupancy Letter in Appendix 2).

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_____ Date _____

Title _____

Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for EAW Guidelines, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or **hptt://www.eqb.state.mn.us**

5. ADDITIONAL FEDERAL ISSUES

Discussed below are the federal issues not discussed in the state EAW.

Social Impacts

Emergency Services

The service area for City of Hastings emergency services includes five townships (Denmark, Marshan, Nininger, Ravenna, and Vermillion) and the City of Vermillion, in addition to the City of Hastings. A portion of Hastings and all of Denmark Township are separated from the emergency service provider locations (i.e. Regina Hospital and the Hastings Fire Station) in Hastings by the Mississippi River, requiring use of the T.H. 61 Hastings Bridge by emergency vehicles to access those areas.

Repair work on the T.H. 61 Hastings Bridge in the summer of 2008 required the City of Hastings Fire Chief to work with Mn/DOT to develop a strategy for emergency service provision during partial and complete closures of the bridge. Radio communications from each side of the bridge along with the use of traffic control flaggers enabled the prioritization of emergency vehicle traffic. In the case of recent repair work, the bridge was available for use by emergency vehicles, even during complete closure of the bridge to traffic.

No notable change in emergency response time was observed during the repair project. One change in practice during the project was a shift in policy such that all emergency responders crossing the bridge needed to be in a marked emergency vehicle. This was achieved without a change in response time by having the on-staff emergency responder go directly to the scene upon notification. Other responders, who often go directly to the scene by private vehicle, would instead gather at the fire station in Hastings so that they could all be in a marked emergency vehicle when they cross the T.H. 61 Hastings Bridge. While the initial responder experienced no change in response time, the remainder of the response team usually arrived approximately two minutes later. The Hastings Fire Chief did not report this as causing problems in the team's ability to respond to emergencies.

In the case of a scenario where use of the bridge is impossible (e.g. construction activities involve the short-term removal of a passable bridge), coordination with emergency service providers would be necessary to allow for implementation of a back-up service plan. Such a plan will likely involve the use of a temporary location to store a fire engine and ambulance on the north side of the river. This plan may also require 24-hour coverage with staff to respond to emergency calls. For the provision of advanced life support, State Law requires that an alternate destination must be of equal or higher level of service. For Hastings, that means ambulance service from the north side of the river will most likely be directed to the Woodwinds campus in Woodbury because that is the closest provider of services at the same level as those at Regina Hospital in Hastings.

School Busses

School bus routes were similarly unaffected by the 2008 repair work. As with emergency vehicles, school buses were given a priority over other traffic. From the south, school buses were able to enter T.H. 61 at Third Street. From the north, buses were allowed to use the shoulder to bypass other traffic.

The Hastings Bus Company, the current provider of school bus services to the Hastings Independent School District 200 (ISD #200), has experience with cases where the T.H. 61 Hastings Bridge was not passable. These have been for short periods, often related to temporary closure due to a traffic crash or similar cause. The standard practice for providing service to areas north of the

T.H. 61 Hastings Bridge is to use a detour route that follows T.H. 52 to I-494 and the Wakota Bridge, then coming back south on T.H. 61.

From the Hastings Bus Company's experience, travel time for a student under this scenario has been approximately one hour. The director of the Hastings Bus Company noted that parents have expressed some concern about trips taking an hour or more. As an effort to be efficient under this scenario, the Hastings Bus Company could use an established mid-point location for switching drivers. This allows bus drivers with the most familiarity of the student pick-up or drop-off areas to focus on that area and switch buses with another driver. Students do not change buses in this exchange. Instead, the bus drivers switch seats. This practice has worked well for the Hastings Bus Company and will likely be used for short-term (e.g. less than two weeks at a time) closures of the river crossing. If a longer-term closure of the crossing were to be planned, additional coordination with the Hastings Bus Company and ISD #200 will be necessary.

Prairie Island Evacuation

The T.H. 61 Hastings River Bridge is part of an evacuation route for the Prairie Island Nuclear Generating Plant. This Plant is operated by the Nuclear Management Company (NMC) near Red Wing, Minnesota. In the case of an emergency at the nuclear plant, Minnesotans within a ten-mile radius of the plant are instructed to evacuate to the Cottage Grove National Guard Armory, which is designated as the emergency reception center. (Source: Xcel Energy, 2008 Emergency Planning Guide and Calendar for Neighbors of Prairie Island Nuclear Generating Plant).

In the event of an emergency, the T.H. 61 Hastings Bridge is one of two Mississippi River crossings that people within the nuclear plant's ten-mile radius are instructed to use to get to the Cottage Grove National Guard Armory. The other bridge is the Wakota Bridge on I-494 between South St. Paul and Newport, Minnesota. The Wakota Bridge is currently under construction and is expected to be completed in 2010. Construction on the Wakota Bridge will be completed before construction begins on the Hastings T.H. 61 Bridge Project. (All evacuation routes are shown on the State of Minnesota's Department of Public Safety's Homeland Security Emergency Prairie Island Emergency Plan Drawing - Evacuation Routes, which is available at: http://www.hsem.state.mn.us/ Documents/ PI/P-301-08%20Evacuation%20Routes.pdf).

Closure of the T.H. 61 Hastings Bridge will limit the available evacuation routes and require use of T.H. 52 as an alternate route to I-494 and the Wakota Bridge. As referenced above, Xcel Energy produces an annual emergency planning guide for resident and business owners surrounding the Prairie Island Nuclear Generating Plant. As plans for the Hastings T.H. 61 Bridge Project are developed, further coordination with Xcel Energy will be necessary in order to publicize any changes in evacuation plans that will be required in the event of closure of the T.H. 61 Hastings Bridge.

Vulnerable Adults: Statue Limiting Travel Time for Vulnerable Adults

Minnesota Statute 245B provides requirements for providers of services to individuals with developmental disabilities. Section 07, Subdivision 11 of this Statute specifically dictates travel time requirements to and from day training and habilitation facilities for vulnerable adults, as follows:

> *Except in unusual circumstances, the license holder must not transport a consumer receiving services for longer than 90 minutes per one-way trip. Nothing in this subdivision*

relieves the provider[25] of the obligation to provide the number of program hour[26]s as identified in the individualized service plan[27].

Vulnerable adults are defined in Minnesota Statute 626.5572. In summary, the definition of a vulnerable adult is any person 18 years of age or older who:

- 1) is a resident or inpatient of a facility;
- 2) receives services from a licensed facility or home care provider; or
- 3) possesses a physical or mental infirmity or dysfunction:
    a. that impairs the individual's own ability to provide adequately for the individual's own care without assistance; and
    b. because of the need for assistance, the individual has an impaired ability to protect the individual from maltreatment.

Coordination with Service Providers during the Summer of 2008 Hastings Bridge Maintenance Project

The issue of travel time for vulnerable adults was raised during the T.H. 61 Hastings Bridge maintenance project that was completed in the summer of 2008. Lifeworks Services, Inc. (Lifeworks), a provider of services to adults with developmental disabilities, transports clients to an adult day care facility in the City of Hastings using the T.H. 61 Hastings Bridge. Staff from Lifeworks expressed concern about meeting the travel time requirements of Minnesota Statue 245B.07 when traffic was limited to one lane during the maintenance project.

Upon learning about this concern, the Mn/DOT worked with Mn/DOT's Affirmative Action Office to understand better the requirements behind Statute 245B.07. In order to meet the travel time limitations, the Affirmative Action Office suggested offering Lifeworks' vehicles priority in the traffic queues during the maintenance project.

During major traffic restrictions, when traffic was limited to a single lane and controlled by signals and flaggers, Lifeworks (along with school buses and emergency service vehicles) was given authorized vehicle status. This allowed the drivers of the vehicles to bypass the traffic queue and get to the front using the outside shoulders, or in the northbound direction, the Second Street slip ramp. Under this arrangement, Lifeworks was able to remain compliant with the travel time restrictions noted in Statute 245B.07, subdivision 11.

If possible, Lifeworks was to transport their clients in buses during the maintenance project or otherwise differentiate their vehicles with signs or yellow lights. The intent of the vehicle marking suggestion was to avoid having other motorists draw the conclusion that the Lifeworks vehicles were unfairly bypassing the vehicle queue.

[25] Provider is a general term used to encompass entities that supply services relevant to the needs of the person with developmental disabilities.

[26] Program hours refer to the services documented in an individualized service plan that an individual is to receive.

[27] An individualized service plan for a person with developmental disabilities includes documentation of: 1) the person's need for service, 2) the person's preferences for service, 3) the person's long- and short-range goals, 4) services to be provided to the person, including the amount and frequency of services, and 5) identification of provider responsibilities. For more information, see Minnesota Statute 256B.092, Subdivision 1B. Individual Service Plan.

It is anticipated that a similar arrangement to the one described above will be used during construction of the new bridge to remain compliant with the travel time restrictions for Lifeworks' clients.

Considerations Relating to Pedestrians and Bicyclists

Bridge Trail

As noted in the need for the project on page 12, the existing pedestrian accommodations on the bridge are below Mn/DOT standards. One of the purposes of this project, shown on page 14, is to provide pedestrian and bicycle travel facilities that accommodate the existing Mississippi River Trail and proposed Point Douglas Trail across the Mississippi River. All of the Build Alternatives meet current Mn/DOT design recommendations and ADA standards

Mississippi River Navigational Traffic Impacts

Commercial Barge Traffic

The Mississippi River system stretches over 222 miles in Minnesota and supports 5 port areas; Winona port, Red Wing port, Savage port, St. Paul Port and the Minneapolis Port. In addition, there are many marina facilities located along the river. Minnesota's agricultural products make up the largest tonnage on the river, namely corn, soybeans and wheat. River ports also handle dry cargo products such as coal, fertilizer, minerals, salt, cement, steel products, scrap and liquid products including petroleum, caustic soda, vegetable oils, and molasses. The river plays an important role in the movement of commodities during the navigational season, from approximately April through October.

Future barge traffic levels through the project area are expected to remain constant as noted in Section 2, Purpose and Need for Project on page 14. No permanent impacts to commercial waterway operations will result from the proposed improvements. A larger navigational channel is proposed by all of the Build Alternatives. The existing channel opening is 300 feet. The project proposes a minimum 450 foot channel opening for all of the Build Alternatives. Therefore, the Build Alternatives are not expected to impact long-term growth of barge traffic.

There will be impacts to commercial and recreational vessels and marina facilities during construction of the proposed project. In addition, delivery of products to the five port areas or other marina facilities will be impacted. All of the Build Alternatives involve interruption, obstruction, or closure of the navigation channel at various stages of construction. This would be during pier construction, launching of materials, use of tug boats, work on the bridge structure, and demolition. Anticipated construction methods and potential impacts are detailed in EAW Item 6, starting on page 31.

The Tied Arch Single Bridge Alternative would be the worst case scenario for complete closure of the channel. The channel would be closed between the COE Lock #2, upstream of the bridge, and the CP Rail Road bridge, downstream of the bridge. Installation of the arch would require a maximum 48-hour closure. This operation would float the arch from the staging area on barges to the bridge site and erect the arch to the main span of the bridge. The 48-hour channel closure would prohibit all navigational travel during this time. It is also expected that the COE would close the lock during this time.

The remaining alternatives would largely keep the channel open, sequencing daily barge movement between construction activities. Expected delays would be in the range of one to eight hours. The COE Lock #2, one mile upstream of the project, would also be limiting barge traffic in coordination with construction activities.

Channel obstructions identified in EAW Item 6 would also occur with all of the Build Alternatives. This may also include a safety zone channel if conditions warrant. The Design-Build contractor would be required to coordinate such encroachments in the navigational channel with the Coast Guard and COE. Efforts to minimize these impacts with the barge community would include radio communication, a helper boat, and buoys. A safety zone could also be established.

A bridge demolition plan will be required by the design-build contractor and submitted to the COE, Coast Guard, and DNR for approval. Demolition during the winter months when the river is closed to navigational travel would have no impact on barge travel. However, timing of the bridge demolition may occur when the navigational season is open. Channel closures would be minimal, in the range of one to eight hours with daily sequencing of barges between construction activities. The COE Lock #2 would limit traffic in coordination with construction activities to minimize a backup of traffic between the project area and the lock.

The Upper Mississippi River may experience intermittent delay in the delivery of products. Mn/DOT's extensive experience constructing bridge structures involves coordinating construction activities with the barge community, Coast Guard, and COE when necessary. The Wakota Bridge project (2010 completion) and I-35W Bridge project (2008 completion), both over the Mississippi River located in the twin cities metropolitan area, have provided Mn/DOT the recent opportunity to work through navigational issues with these parties. Mn/DOT will continue coordination with the Coast Guard and COE through project development. It is expected that with continued coordination and experience of past practices, impacts to the barge community and their clients should be minimized to the extent possible.

Recreational Vessel Impacts

Two recreational boating marinas are located between the T.H. 61 Hastings Bridge and the COE Lock #2. During critical construction activities over the river, recreational boats would have the same impact as barge traffic described above. Recreational boats will be sequenced with barge traffic to pass through the channel when construction activities have short one to eight hour closures or obstructions to the channel. The COE is not expected to limit recreational boats through the lock: however, boaters would be sequenced with barge traffic and would experience delays.

The worst case scenario, Tied Arch Single Bridge Alternative, would require a maximum 48-hour channel closure between the COE Lock #2 and the CP Railroad bridge. Boats at the marinas between the T.H. 61 Hastings Bridge and the COE Lock #2 would need to be docked during this time. All navigational travel would be prohibited as noted above. It is also expected that the COE would close the lock during this time.

Environmental Justice

An Environmental Justice study was conducted and reported in a December 2008 *Socioeconomic Issues Tech Memo*, for this EA. A full copy of this analysis can be obtained by contacting the Mn/DOT project manager. The study investigated whether there was a readily identifiable low income population and/or minority population within the project area and, if so, whether the proposed project will disproportionately impact these populations.

The resources used to determine low income and minority populations were the 2000 Census data and discussions with staff at the City of Hastings and Dakota County. The census data shows that Dakota County has a low proportion of minority and low income populations, 9.9 percent and 3.6 percent respectively. The City also has a low proportion of minority and low income populations, 3.7 percent and 4.8 percent respectively.

The analysis examined the census data at the block level for the project area. The results showed census track 61102 block group 3, in the project area with 11 percent minority population (1.1 percent higher than the County average and 7.3 percent higher than the City average). The remaining block groups within the project area were below the county average. City and County staff did not indicate any location in this block group that contained an identified minority population. Based on this information, it was determined that no readily identifiable minority population exists in the project area.

An analysis was conducted for low income populations. The results showed census track 61102 block group 2 in the project area with 10.8 percent low income population (7.2 percent higher than the County average and 6 percent higher than the city average). As a note, this block group is not the same block group that was identified in the minority analysis. The remaining block groups within the project area were below the City average. County staff provided information on housing assistance recipients in this area. This data did not show a distinct clustering of recipients, nor is it known if these recipients would meet the criteria of low income. It was therefore determined that the project area did not contain a readily identifiable low income population.

Residential and business relocations for this project are minimal (refer to Section 5 Right-of-Way and Relocations). There is one vacant business that will be acquired. This was a motor parts store, which went out of business in November of 2008 and is currently vacant. The second story of the vacant business has one rental apartment. Right-of-way acquisitions and any relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources are available to all relocated residences and businesses without discrimination.

Environmental Justice Finding

There are no readily identifiable low income or minority populations or businesses within the project area. Therefore, the proposed action will not have disproportionately high or adverse human health or environmental effects on any minority or low income populations.

Right-of-Way and Relocation

Figure 30 in Appendix provides the existing right-of-way limits and preliminary construction limits for all proposed Build Alternatives. There are no differences in right-of-way needs among the Build Alternatives. Table 25 and Table 26 below, list the right-of-way impacts.

Table 25: Commercial Property Impacts for all Build Alternatives

Commercial				Land Area		Assessed Value of Impact
Property	**Partial Acquisition**	**Full**	**Relocation**	**Total Parcel Area (Acres)**	**Acquisition Area (Acres)**	**$**
Motor Parts Service Co.		X	X	0.06	0.06	$200,000
H D Hudson Manufacturing Company	X			4.43	1.04	$1,000,000
Gregory A. Jablonske (Sprint Store)	X			0.21	0.01	$20,000

Great River Resources, LLC (Kings Cove)	X			31.0	1.40	$50,000
Hubs Landing & Marina, LLC	X			4.25	0.15	$50,000
Xcel	X			0.85	0.15	$200,000
TOTALS				40.80	2.81	$1,520,000

Table 26: Residential Right-of-Way Impacts for all Build Alternatives

Residential				**Land Area (acres)**		**Assessed Value of Impact**
Property	**Partial**	**Full**	**Relocation**	**Total Parcel Area**	**Impacted Area**	**$**
Motor Parts Service Co. 2nd Story Apartments		X	X	See table above	See table above	See table above

Property Acquisition

The proposed project will require total acquisition of the Motor Parts Service Company site. The building on this site has vacant commercial space on the first floor and an occupied residential unit on the second floor.

The project will have partial impacts to four other parcels. The storage/shipping facility at H. D. Hudson Manufacturing will be removed and relocated, either on or off-site. Discussions with the company indicate that this impact will not preclude the continuing operation of this facility. Mitigation will be provided in the form of monetary compensation for the loss of use of the building. It is expected that there will be temporary impacts to shipping and receiving during construction. This impact may require some relocation; however it is not known at this time where/how H.D. Hudson would relocate the storage/shipping facility operations. Options could include re-building on another portion of this property or rebuilding on another property. If reconstruction is done on the existing parcel, there could be potential impacts to archaeological resources on the site and/or visual impacts to the adjacent Historic District (see Section 5). Since the relocation site is not known at this time, and since the construction of a new facility would be a private action, not part of the proposed project, no assessment of these potential impacts is included in the assessment of cultural resources impacts in Section 5.

Permanent acquisitions at Great River Resources and Hubs Landing & Marina will be required to construct the new bridge and a ring road on the north end of the project. Neither acquisition will require relocation.

A temporary easement will be required at the Gregory A. Jablonske (Sprint Store) site. This easement will not require relocation.

Mitigation

Right-of-way acquisitions and relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources are available to all relocated residences and businesses without discrimination.

Economic Impacts

The proposed project is not anticipated to result in any broad changes to existing land use patterns or diversion of large traffic volumes from commercial routes. However, the project will result in the conversion of commercial and residential property to public right of way. These impacts are discussed below.

Loss of Tax Capacity and Tax Base

The assessed value of the Motor Parts Service Company is $200,000. This is the only property totally acquired by the project.

An estimate in the change in assessed values due to partial acquisitions was also made by looking at the current assessed value of each property and estimating what the change in that value might be based on the amount of property that will be acquired for the project. Table 25 lists the total estimated change in assessed value of impacted properties at $1.5 million. County or local assessors will determine actual changes to the assessed values when they appraise the properties.

Noise

Please see EAW Item 24 - Odors, noise and dust on page 72.

Cultural Resources-Historic and Archaeological, and Section 106 Evaluation

Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended), requires federal agencies to:

- assess the effect of their actions by identifying properties listed on, or eligible for the NRHP;
- determine effects of the project on those properties; and
- consult with the SHPO and interested parties to determine ways to avoid, minimize, or mitigate effects caused by an undertaking.

FHWA and Mn/DOT are the lead agencies required to address Section 106 requirements under the NHPA for this project.

This section describes the historic resources identified in the T.H. 61 project area of potential effect (APE, which is the geographic limits used for the cultural resource studies, shown on Figure 31 in Appendix 1), and addresses the anticipated effects on the resources that may be caused by the No-Build Alternative and the Build Alternatives.

The Section 106 process generally includes three steps: 1) identification and evaluation of historic properties; 2) assessment of the effects of a proposed project on historic properties; and 3) consultation for methods to avoid, minimize, or mitigate any adverse effects. An historic property is defined as any prehistoric or historic building, structure, site, object, or district included on, or eligible for inclusion on the National Register of Historic Places (NRHP). Federal regulation 36 CFR 60, defines the criteria used to evaluate the significance of a site, building, district, structure, or object, and its eligibility for listing on the NRHP. To be listed on or eligible for the NRHP, properties must retain integrity of location, design, setting, materials, workmanship, feeling, association, and have significance in one of several areas of American history under one of the following criterion:

- Criterion A: association with events that have made a significant contribution to the broad patterns of history; or

- Criterion B: association with the lives of persons significant in our past; or
- Criterion C: embodiment of the distinctive characteristics of a type, period, or method of construction, or presentation of the work of a master, possession of high artistic values, or representation of a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: the ability to yield information important in prehistory or history.

Cultural Resource Studies and Inventory of NRHP Eligible and Listed Resources

This section summarizes the historic resources identified within the APE. The identification and evaluation of these resources are based on detailed field reviews by qualified professionals (who meet the standards of the Secretary of the Interior) and related consultations with the Minnesota SHPO. The cultural resource studies listed below were completed for this EA:

Stratigraphic and Geoarchaeological Investigations at the Proposed Trunk Highway 61 Hastings Bridge Replacement Project, December 2008;
TH 61 Bridge Replacement Project Phase I and II Architectural History Investigation, December 2008; and
Phase I and II Archaeological Investigations for the Trunk Highway 61 Hastings Bridge Project, December 2008.

These studies were reviewed by Mn/DOT and the SHPO for concurrence on the report results. Based on the SHPO correspondence dated February 5, 2009, found in Appendix 2, the project study area contains one archaeological site eligible for the NRHP, six areas which merit further archeological investigations, five historic properties currently listed on the NRHP, and eight properties eligible for the NRHP, see the following Table 27.

Table 27: Archaeological site/areas and Historical properties Listed or Eligible for the NRHP

Resource Name (SHPO Inventory Number)	Brief Resource Description	Historic Status	Potential Effect	Figure 32 Corresponding ID Number
St. John's Hotel and Saloon Site (21DK0081)	Stratified deposits from the third quarter of the 19th century associated with a former saloon.	Recommended Eligible	Adverse effect	Not Shown*
Mitchell Site (21WA0107)	Late nineteenth century domestic artifact scatter and associated landing.	Recommended Potentially Eligible/Additional Work	Not within planned construction limits**	Not Shown*
Not assigned	Scatter of mussel shell and charcoal encountered	Recommended Potentially Eligible/Additional Work	Not within planned construction limits**	Not Shown*

Resource Name (SHPO Inventory Number)	**Brief Resource Description**	**Historic Status**	**Potential Effect**	Figure 32 Corresponding ID Number
Xcel Property Number not assigned	Bailly Trading Post Pre-1884 Structures (Xcel Energy)	Moderate to high potential. Phase I/II required to determine eligibility.	Potentially within the construction limits of the pedestrian Bridge	Not Shown*
Hudson Sprayer property Number not assigned	Pre-contact Deposits Residences Pre-1867-1962 (Hudson Parking Lot)	Moderate to high potential. Phase I/II will be required to determine eligibility.	Not within planned construction limits**	Not Shown*
Not assigned	Residences 1875-1902	Moderate to high potential. Phase I/II recommended	Not within planned construction limits**	Not Shown*
Not assigned	Bell Brothers Mill	Moderate to high potential. Phase I/II recommended	Not within planned construction limits**	Not Shown*
Schaller Building (DK-HTC-008)	Example of limestone construction completed between c. 1857 and 1865.	Recommended Eligible	No adverse effect	1
Diedrich Becker Wagon Shop (DK-HTC-010)	One of the few remaining buildings from Hastings' early period of manufacturing.	Recommended Eligible	May result in an adverse effect	2
Dakota County Courthouse (DK-HTC-015)	Significant for its association with Dakota County political affairs and for its Italianate architecture.	Listed	May result in an adverse effect	3
East Second Street Commercial District (DK-HTC-016)	Significant for its associations with Hastings'19th century commerce and Italianate style architecture.	Listed	May result in an adverse effect	4
Van Dyke-Libby House (DK-HTC-023)	Significant as a representation of the Second Empire style.	Listed	No adverse effect	5
West Second Street Residential District (DK-HTC-024)	Significant for its representation of major residential architectural styles in the latter half of the19th century.	Listed	May result in an adverse effect	6

Resource Name (SHPO Inventory Number)	Brief Resource Description	Historic Status	Potential Effect	Figure 32 Corresponding ID Number
First Presbyterian Church (DK-HTC-029)	Significant for its role in the early cultural history of Hastings.	Listed	No adverse effect	7
Hastings Post Office (DK-HTC-119)	Significant for its associations with the federal relief programs under the New Deal.	Eligible	No adverse effect	8
Hastings Depot (DK-HTC-125)	Contributing property to the Chicago, Milwaukee & St. Paul Railroad Corridor Historic District.	Eligible, Contributing	No adverse effect	9
H. D. Hudson Manufacturing Company (DK-HTC-131)	Significant for its associations with the Hastings Commercial Club.	Recommended Eligible	May result in an adverse effect	10
House 312 East 4th St. (DK-HTC-166)	An excellent example of a mid-19th century vernacular dwelling.	Recommended Eligible	No adverse effect	11
Bridge No. 5895/Hastings Bridge (DK-HTC-318)	Significant for its engineering achievements.	Eligible	Adverse effect	12
Hastings National Bank (DK-HTC-323)	Significant as a representation of an early local example of a drive-in bank.	Recommended Eligible	May result in an adverse effect	13
Chicago, Milwaukee & St. Paul Railroad – River Division (DK-HTC-326; WA-DMK-016)	Significant as an early regional transportation network connecting the Twin Cities with Milwaukee and Chicago.	Eligible	No adverse effect	14

* Due to the sensitivity of these resources the location has not been disclosed.

**The Design-builder contractor will be notified of these sites. It is not anticipated that these areas will be disturbed by the project, however if the sites are proposed to be disturbed, the necessary Phase I and II investigations will be completed, and project impacts will be mitigated.

The list of eligible properties in the study area was reviewed for potential Section 106 effects resulting from the proposed project. These effects are noted on Table 27 and discussed below. When these properties were reviewed for potential effect, the Rehabilitation Alternative was still under consideration as a Build Alternative. Consequently, effects from this dismissed alternative are identified in the separate study reports, however; they have been taken out of this Section 106 evaluation.

All architecturally historic eligible properties are shown on the aerial photo in Figure 32 in Appendix 1. Properties with potential adverse effects are also identified on Figure 32.

There are two archaeological sites, the Bailly Trading Post (Xcel property) and Pre-contact Deposits Residences (Hudson Sprayer property), that did not have a Phase II archaeological investigation completed. The portion of the Hudson Sprayer parcel containing the potential archaeological site is outside of the project construction limits. The Xcel property may be within the construction limits of the project if the pedestrian bridge is constructed. The Phase II work for the Xcel property will be completed during the spring of 2009 and results included in the Findings of Fact and Conclusions. This site is not included in the discussion below because a determination of effect cannot be concluded without a completed Phase II investigation.

Description of Archeological and Historic Resources Adversely Affected

This section describes the one archeological site and seven historic properties that will have, or may have adverse effects caused by one or more of the project's alternatives. To keep the discussion concise, NRHP eligible resources that would not result in a Section 106 adverse effect are not further discussed.

St. John's Hotel and Saloon Site (21DK0081)
Location: Under all proposed Build Alternatives

Description: This site consists of foundations and stratified deposits from the third quarter of the nineteenth century associated with the former St. John Hotel and Saloon, as well as a distinct horizon associated with the Christmas Day fire of 1899. This site is recommended as eligible under Criterion A for its association with the early development of the City of Hastings, and under Criterion D for its information potential.

Diedrich Becker Wagon Shop (DK-HTC-010)
Location: 401-403 Vermillion Street

Description: Operated as a wagon shop by German-immigrant Diedrich Becker and his son from 1868 to 1880, the property is locally significant as one of the few remaining buildings from Hastings' early period of manufacturing and for its associations with the local German-American community, as represented by Diedrich Becker and later owner Wendel Graus. It is also a good example of a small group of well-crafted limestone buildings in Hastings.

This property is characterized by its setting on the historic industrial corridor of Vermillion Street, its massing, regular fenestration, buff-colored limestone laid in coursed, and random-sized ashlar. Stone details include the dentil course on the parapet wall, lintels, and sills. The property is recommended as eligible for the NRHP under Criteria A and C.

Dakota County Courthouse (DK-HTC-015)
Location: 101 East Fourth Street

Description: The Dakota County Courthouse, constructed between 1869 and 1871 and designed by architect A. M. Radcliff, is significant for its association with Dakota County political affairs and for its Italianate architecture.

The edifice is characterized by its two-story, brick and stone walls, symmetrically arranged bays and fenestration, corner piers with Mansard roofs, and the impressive central dome. The building features many fine architectural details, such as stone trim for arched window hoods, quoins, and oculus surrounds; Classical cornice; and the columns, windows, ribs and lantern of the dome. It is set within a full square block and includes historic and non-historic landscape features, including

cast iron fence posts along Vermillion Street. The property is recommended as eligible for the NRHP under Criteria A and C.

East Second Street Commercial District (DK-HTC-016)
Location: East Second Street

Description: This commercial district is significant for its associations with Hastings' nineteenth century commerce and architecture. Most of its buildings are executed in the Italianate style as applied to commercial buildings.

The district is comprised of 35 brick and stone buildings on East Second and Sibley Streets. Buildings have a common setback and adjoining party walls. Heights range from one to three stories. Architectural styles represent those popular in the late-nineteenth century. Although oriented to East Second Street, the district's relationship to the river and levee is an important aspect. Views within the district are important aspects, connecting the contributing buildings and defining the district streetscape. The property is recommended as eligible for the NRHP under Criteria A and C.

West Second Street Residential District (DK-HTC-024)
Location: Roughly West Second Street between Ashland and Spring Streets

Description: This district is significant for its representation of major residential architectural styles in the latter half of the nineteenth century, including the Greek Revival, Italianate, Italian Villa, and Second Empire, as well as vernacular examples.

The district is characterized by large and modestly sized, single houses setback from West Second Street by lawns and mature trees. The district is situated on a bluff just south of the Mississippi River and west of downtown. Individually, the houses represent various nineteenth century architectural styles and vernacular types. The property is recommended as eligible for the NRHP under Criterion C.

H. D. Hudson Manufacturing Company (DK-HTC-131)
Location: 200 West Second Street

Description: This property is significant for its associations with the Hastings Commercial Club, which supported the reintroduction of new industries to the city during the early part of the twentieth century. The H. D. Hudson Manufacturing Company was one of the most successful and the only one still operating at its original location.

This property is characterized by the U-shaped, two-story gabled structures clad with tan brick. Its series of regular fenestration has flat and segmental arch openings. The roofs have prominent ventilators. The two-story brick addition to the east is built in a similar style. Later additions, on the north side, constructed in 1966 and 1974, are not within the period of significance. The property is recommended as eligible for the NRHP under Criterion A.

Bridge No. 5895/Hastings Bridge (DK-HTC-318)
Location: T.H. 61 over the Mississippi River

Description: This bridge is significant for its engineering achievements. This property is characterized by its 3-span, steel, tied-arch continuous truss with five-deck, plate-girder approach spans and five continuous concrete deck-girder approach spans on the south. The property is recommended as eligible for the NRHP under Criterion C.

Hastings National Bank (DK-HTC-323)
Location: 111 East Third Street

Description: This property, constructed as a bank, is significant as a representation of an early local example of a drive-in bank. This setting is characterized by its proximity to the 1951 Hastings Bridge approach ramp and traffic circulation system which facilitated motor traffic to the drive-in bank, and by its location within the downtown commercial center. The building is characterized by its trapezoidal plan with sweeping curved entry bay, its use of various brick, Modur stone, granite materials, the canted plastered piers, row of fixed windows, and the drive-in window facility on the alley. The property is recommended as eligible for the NRHP under Criterion C.

Environmental Consequences—Potential Section 106 Adverse Effects

This section discusses the potential adverse effects to eligible cultural properties under Section 106 of the Historic Preservation Act. Table 28 includes a discussion of which resources will, or may be adversely affected. The numbering of the resources in Table 27 (1, 2, 3, etc.) corresponds to the historical resource numbering on Figure 32 in Appendix 1. It should be noted that the Build Alternatives are referred to as Alternatives 1 through 3 in Table 25; this is the language used in the Phase I and II Architectural History report. Alternative 1 refers to the Box Girder Twin Bridge, Alternative 2 refers to the Tied Arch Single Bridge, Alternative 3 refers to Rehabilitation Bridge (which is no longer under consideration), and Alternative 4 refers to Cable Single Bridge.

Table 28: Potential Section 106 Adverse Effects to NRHP Eligible and Listed Properties

Resource Name (SHPO Inventory #)	**Potential Section 106 Adverse Effects and Possible Adverse Effect/Avoidance/Mitigation Strategies**
1.St. John's Hotel and Saloon Artifact Deposits (21DK0081)	All Build Alternatives: This site will be adversely affected by proximity of all of the Build Alternatives. Specifically the widening of the existing bridge to four lanes would place the bridge on top of some buried artifacts, which are not considered important for preservation in place. Avoidance/Mitigation: Pending Programmatic Agreement with Mn/DOT, FHWA and SHPO.

Resource Name (SHPO Inventory #)	**Potential Section 106 Adverse Effects and Possible Adverse Effect/Avoidance/Mitigation Strategies**
2. Diedrich Becker Wagon Shop (DK-HTC-010)	Bridge Approach: Alternative 1 (Box Girder Twin Bridge) may not resolve the Vermillion Street approach until Fourth Street, which is at the northwest corner of this building. This would have the potential to have a visual adverse effect to this property. Storm Pond: Storm pond areas may be located as close as the northwest corner of Vermillion and Fourth streets, diagonally across the street from this property. Depending on the location of the ponds and their treatment, it may result in an adverse visual effect to the setting of this property. Construction Activity: This property is within the zone for vibration effects from construction, and could result in an adverse effect. It is out of the blasting effects zone. Build Alternatives: The increased visibility would result in no adverse effect to the setting. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.
3. Dakota County Courthouse (DK-HTC-015)	Build Alternatives: The proximity of the bridge and the increased visibility may result in an adverse effect to the setting. Bridge Approach: Alternatives variously plan to resolve the Vermillion Street approach between Third and Fourth streets, any of which would be adjacent to this building. This would have the potential to have visual and/or direct adverse effects to this property's setting and landscape. Redirected traffic from the existing approach to Sibley Street may also have an adverse effect to this property. Storm Pond: Storm pond areas may be located as close as the west side of Vermillion Street, opposite this property. Depending on the location of the ponds and their treatment, it may result in an adverse visual effect to the setting of this property. Construction Activity: This property is within the zone for vibration effects from construction and blasting, which could result in an adverse effect. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.

Resource Name (SHPO Inventory #)	**Potential Section 106 Adverse Effects and Possible Adverse Effect/Avoidance/Mitigation Strategies**
4. East Second Street Commercial District *(DK-HTC-016)*	Bridge Approach: Alternatives 2 (Tied Arch Single Bridge) and 4 (Cable Single Bridge) would place the new bridge and its approach farther away from the historic district, although it would be visible from, and adjacent to this property. Alternatives 1 (Box Girder Twin Bridge) would keep the approach in its approximate location. The approach has the potential to be an adverse visual effect to the setting of the district. Redirected traffic onto Sibley Street may increase traffic volume within the district and result in an adverse effect. Storm Pond: Storm ponds may be located adjacent to the historic district on the west side of Vermillion. Depending on the location of the ponds and their treatment, it may result in an adverse visual effect to the setting of this property. Bicycle/Pedestrian Ramp: The bicycle/pedestrian ramp would be north of the historic district, separated by the transformer yard. It would have a potential adverse visual effect on properties within the district. Construction Activity: Portions of the district are within the zone for vibration effects from construction and blasting, which could result in an adverse effect. Build Alternatives: The bridge would be visible from the rear elevations of buildings on the north side of the district, but would not impact character-defining views to, from and within the district, and would result in no adverse visual effect. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.

Resource Name (SHPO Inventory #)	**Potential Section 106 Adverse Effects and Possible Adverse Effect/Avoidance/Mitigation Strategies**
5. West Second Street Residential District (DK-HTC-024)	Storm Pond: Storm ponds may be placed adjacent to the district east of Spring Street. Depending on the location of the ponds and their treatment, it may result in an adverse visual effect to the setting of the district. Construction Activity: This property is outside the limits of vibrations resulting from construction activity, but within the limits that may be affected by blasting and may result in an adverse effect. Build Alternatives: The current bridge is visible from several locations in the district, but is not a dominant part of the landscape. All alternatives would place a bridge approximately 100 feet closer to the district but would reduce the visual effects of the existing truss system. They would not result in an adverse effect. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.

Resource Name (SHPO Inventory #)	**Potential Section 106 Adverse Effects and Possible Adverse Effect/Avoidance/Mitigation Strategies**
6. H. D. Hudson Manufacturing Company (DK-HTC-131)	Build Alternatives: All alternatives would have a direct effect to the property by the removal of portions of a 1974 addition and loading dock, but may be considered an improvement to the property's historic integrity. Its removal, and changes in access and circulation, could however, result in an adverse effect to the long-term use of the building. The Build Alternatives would also have an adverse effect to the setting. Bridge Approach: All alternatives would construct the bridge and approaches on a new, west alignment, immediately adjacent to this property. This would require the removal of portions of the building and possible changes in access to the facility, resulting in an adverse direct effect. Redirected traffic may also results in an adverse effect to this property. Storm Pond: Storm ponds may be located in or around this property and may result in an adverse direct and/or visual effect, depending on location and construction methods of the ponds. Bicycle/Pedestrian Ramp: The bicycle/pedestrian ramp would be located east of this property, beyond the new bridge. It may be visible and has potential to result in an adverse visual effect. Construction Activity: The property is within the zone for vibration effects from construction and immediately adjacent to a possible blasting zone. These activities could result in an adverse effect. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.
7. Bridge No. 5895/Hastings Bridge (DK-HTC-318)	Alternatives: Alternatives 1 (Box Girder Twin Bridge), 2 (Tied Arch Single Bridge), and 4 (Cable Single Bridge) propose to remove the bridge and would result in a direct adverse effect. Bridge Approach: Approaches are an aspect of the historic bridge's setting and function and their change and loss would result in an adverse effect. Storm Pond: Storm ponds are proposed to be placed within the immediate setting or on the site of the historic bridge and have potential to result in an adverse effect. Bicycle/Pedestrian Ramp: The bicycle/pedestrian ramp would be placed adjacent and connecting to the historic bridge in Alternative 4 and has the potential to result in an adverse effect. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.

Resource Name (SHPO Inventory #)	**Potential Section 106 Adverse Effects and Possible Adverse Effect/Avoidance/Mitigation Strategies**
8. Hastings National Bank (DK-HTC-323)	Bridge Approach: All alternatives call for moving the approach away from this property. The removal of the existing approach and traffic circulation system has the potential to result in an adverse effect to the historic setting of this property. New approaches and redirected traffic have potential to have adverse visual effects or effects to historic circulation patterns that provided access to the drive-through bank. Storm Pond: Storm ponds may be placed adjacent to this property, within the existing Vermillion Street parkway. Depending on the location of the ponds and their treatment, it may result in an adverse visual effect to the setting of the property. Construction Activity: The property is within the zone for vibration effects from construction and blasting, and could result in an adverse effect. Build Alternatives: Alternative 1 (Box Girder Twin Bridge) would not be visible from this property. It would have no effect to the setting and no other effects to this property. Portions of the existing bridge are visible from this property and would continue to be visible in Alternatives 2 (Tied Arch Single Bridge) and 4 (Cable Single Bridge). Visibility of the bridge would not result in an adverse effect to the setting. Avoidance/Mitigation: A condition survey will be performed prior to construction and vibration monitoring will be conducted during construction to assess vibration effects. A Programmatic Agreement with Mn/DOT, FHWA and SHPO is pending.

As a note to reviewers, when these properties were reviewed for potential effect the Rehabilitation Alternative was still under consideration as a Build Alternative. Consequently effects from this dismissed alternative are identified in the separate study reports, however; they have been taken out of the Section 106 evaluation.

Mitigation Measures

Proposed Build Alternatives will be modified to the extent practicable in order to avoid cultural resources. Additional coordination among involved agencies will be required to finalize the preliminary findings noted above and to develop mitigations for any adverse effects under a Preferred Alternative. A Programmatic Agreement (PA) between Mn/DOT, FHWA, and the SHPO will be developed to address adverse effects to the NRHP-listed or eligible resources affected by the Preferred Alternative.

6. PUBLIC and AGENCY INVOLVEMENT

Public Involvement Plan

As part of the public involvement process for the Scoping Study, Visual Quality and EA, a public involvement plan was developed. Because of the expedited time frame of this project, the Scoping Study, Visual Quality and EA activities overlap. The following discussion provides a summary of

the public involvement activities completed in the Scoping Study and planned for the Visual Quality and EA.

Scoping Study Public Involvement

Project Teams and Committees

Study Advisory Committee

Mn/DOT formed a Study Advisory Committee (SAC) comprised of several local, state, and federal agency representatives to serve as a key project working group for the project. The SAC, acting as representatives for the larger community, met approximately every six weeks between May and November of 2008. This group met with the Mn/DOT Scoping Study project team to review Scoping Study progress and provide input on project planning. The following list identifies representative members.

- Dakota County
- Metropolitan Council
- Nininger Township
- City of Hastings
- Federal Highway Administration
- City of Hastings – Heritage Preservation Commission
- Minnesota State Historic Preservation Office
- U.S. Army Corps of Engineers
- Le Duc Historic Estate
- Minnesota Department of Natural Resources
- Washington County
- Hastings Chamber of Commerce & Bridge Coalition
- Prairie Island Indian Community
- Denmark Township
- National Park Service
- Dakota County Historical Society
- U.S. Coast Guard

Project Management Team

The project management team (PMT), which includes representatives from Mn/DOT technical areas of expertise, Mn/DOT's consultants, and FHWA staff, meets as needed to review the work that has been completed and to provide guidance on project development.

In addition to the SAC, several other important stakeholders were closely involved in understanding project issues. For example, Mn/DOT held meetings with Xcel Energy regarding potential conflicts with the overhead electric transmission lines that cross over the existing bridge. Other stakeholders contacted during the Scoping Study included the Hastings Parks and Recreation Department, the NPS, the Coast Guard, the COE, and the T.H. 61 Bridge Coalition, an advocacy group for replacement of the T.H. 61 Hastings Bridge.

Scoping Public Involvement Activities

Public Information Meeting 1 (May 22, 2008)
This meeting served as an introduction to the Scoping Study. A primary focus of this meeting was on the separate Mn/DOT maintenance project which was underway during this time. The issue of minimizing bridge closures to vehicle traffic was of notable concern to the public at this time.

Public Information Meeting 2 (June 18, 2008)
The June public meeting was attended by nearly 70 people. Project team representatives were on hand to discuss the bridge rehabilitation study, roadway alignment options, and bridge families for potential replacement bridges (girder, arch, and cable types). Project representatives stressed the importance of providing input to help evaluate the different project concepts. Many of the meeting attendees provided verbal comments and written comments were submitted that evening.

Community input provided through those comments was focused on three topics in particular:

- ***Traffic –*** Minimize the period of river crossing closure, both during construction and in the future during maintenance work on the bridge. Additionally, access to the downtown area should be maintained and traffic calming measures are needed to maintain safety;
- ***Pedestrian and Bicycle Safety –*** Provide a safe pedestrian/bicycle accommodation separated from vehicle traffic and create connections to local and regional trails; and
- ***Community Identity*** – Downtown Hastings has a strong historic character, marked by its historic districts. The existing and previous Mississippi River bridges have been elements of that identity; new bridge alternatives should consider the visual impact of a new crossing.

Public Information Meeting 3 (October 21, 2008)
At the third public meeting, the project team presented background on the Scoping Study, including the four alternatives recommended for further detailed design study (as described in Section 3). The criteria used and the rationale for selecting the alternatives were provided to attendees. Plans for ongoing public involvement and the next phases of the project, including the environmental review, preliminary design, and visual quality assessments were also described at this meeting.

Approximately 200 people attended this meeting. General public input (both written and verbal) suggested a broad level of support for the project and a balanced view of the alternatives. Many meeting participants were concerned about total project cost. Those concerned about project cost typically viewed a girder bridge as the low-cost and low-maintenance leader (see Section 3 for more information about the bridges considered).

Another issue that meeting participants brought up was an interest in having an appealing or "distinctive" appearance with a new bridge. Each of the new bridge options were described as having beneficial aspects in this regard.

Other issues that repeatedly came up at the meeting and in written comments included:

- Reducing traffic speeds on a new four-lane bridge, especially for southbound traffic coming into downtown Hastings;
- Property impacts and needed right-of-way for a new bridge is an economic impact concern of the community;
- The historic aspects of Hastings and its bridges should be reflected in the new crossing; and

- Maintenance of the bridge and limiting its potential impacts on traffic is important to the community.

Environmental Assessment and Bridge Preliminary Design/Visual Quality Public Involvement

Cooperating Agencies, Project Teams and Committees

Cooperating Agencies
The following agencies agreed to be cooperating agencies:

- U.S. Coast Guard
- U.S. Corps of Engineers
- National Park Service

These agencies were provided the opportunity to comment on the draft EA/EAW document prior to distribution. Response letters from the U.S. Corps of Engineers and the National Park Service are found in Appendix 2. Coordination with these agencies will continue throughout the remainder of the EA process.

Project Management Team
The project PMT, similar to the Scoping PMT, consisted of Mn/DOT, FHWA and the consultant team selected for Preliminary Design/Visual Quality. This team continued to guide the project through the EA, Preliminary Design, and Visual Quality phases of project delivery.

Project Advisory Committee
Due to the short duration between the completion of the Scoping Study and start of the EA and Visual Quality public involvement process, the SCA members were maintained as the project advisory committee (PAC). The PAC continued to provide information, review technical work, and provide comments on the preliminary design work to Mn/DOT and FHWA. The PAC continued to meet approximately every six weeks during preliminary design.

Visual Quality Team
The Visual Quality Team (VQT) included select members of the PAC and other representatives interested in the visual quality of the bridge. The role of the VQT was to provide input, review, and comment throughout the process on design issues that would potentially impact the visual aspect of the bridge (for example, structure type, landscaping, creating gateway, lighting, etc.). Potential mitigation opportunities that could offset impacts were also discussed. The VQT was led by the consultant team, CH2M Hill, and Mn/DOT staff. The participating VQT members included representatives from:

- CH2M HILL, Consultant Team
- Mn/DOT Hastings Bridge Design-Build Highway Design Manager
- Mn/DOT Bridge Office
- Mn/DOT Cultural Resources Liaison
- Federal Highway Administration
- Minnesota Department of Natural Resources
- Washington County

- Dakota County
- City of Hastings - City Council Member
- City of Hastings - Parks and Trails Representative
- City of Hastings -Downtown Liaison/Heritage Preservation Commission
- Hastings Bridge Coalition
- Historic Downtown Business Owner
- National Park Service
- Community Residents

Primary Stakeholders/Groups

Primary stakeholder groups include federal, state, regional and local agencies, as well as environmental interest groups. These individuals participated in the project through the various committees identified in the previous section, as well additional agency coordination meetings, informational open houses, Visual Quality Advisory Committee meetings and through other various updates to the area townships, the Hastings City Council, the Washington and Dakota County Boards, and the T.H. 61 Bridge Coalition.

EA – Visual Quality Public Involvement Activities

Information was provided throughout project development to other agencies, news media, citizen groups and other special interest groups as an important means of keeping interested parties up-to-date on study progress and promoting interest and input from the parties.

Visual Quality Public Open Houses

Three public open houses (not including the EA Public Hearing held during the official EA comment period) were held and planned for the future as part of the VQM development. With regard to visual quality, the open houses have been or will be oriented around the following topics:

- *Open House #1 (March 3, 2009)* – Described the visual context of the project area and provided key views to be considered in comparison of bridge alternatives. Approximately 200 attended this open house. Comments received are currently being processed by the project development team.
- *Open House #2 (August 2009)* – Present the Preferred Alternative and opportunities for further refinement of the project's visual components; and
- *Open House #3 (November 2009)* – Present final findings of the VQM, providing an overview of the design-build process and how visual quality aspects of the project are related.

Website

A project website was developed during the Scoping Study at http://www.dot.state.mn.us/metro/projects/hastingsbridge/index, and maintained throughout project development. This provides the public with information about the project and the website continues to be updated as the project progresses. The website provides links to the maps, layouts, newsletters, and project updates. It also includes a link to sign up for the Constant Contact list. To date, the list includes almost 900 individuals. They receive periodic project updates about completed activities and upcoming project events.

Project Office Hours

An office at Hastings City Hall was staffed with project personnel to answer questions that residents and business owners had about the project. The office hours started in February 2009 and were held twice a month on evenings when the Hastings City Council was convening.

Public Comment Periond and Public Hearing for the EA

Comments from the public and agencies affected by this project will be requested during the public comment period described in the transmittal letter distributing this EA/EAW. A combined public information open house/public hearing will be held after this EA/EAW has been distributed to the public and to the required federal, state, and local agencies for their review.

At the information open house/public hearing, preliminary design layouts and the EA/EAW will be available for public review. Information on impacts and mitigation will be displayed. The public will be given the opportunity to express their comments, ideas, and concerns about the proposed project. These comments (oral and written) will be received at the hearing and during the remainder of the comment period (written comments only), and, will become part of the official record.

Copies of the EA/EAW have been sent to agencies, local government units, libraries, and others as per Minn. R. 4410.1500 (Public Distribution of the EAW).

Process beyond the Public Meeting

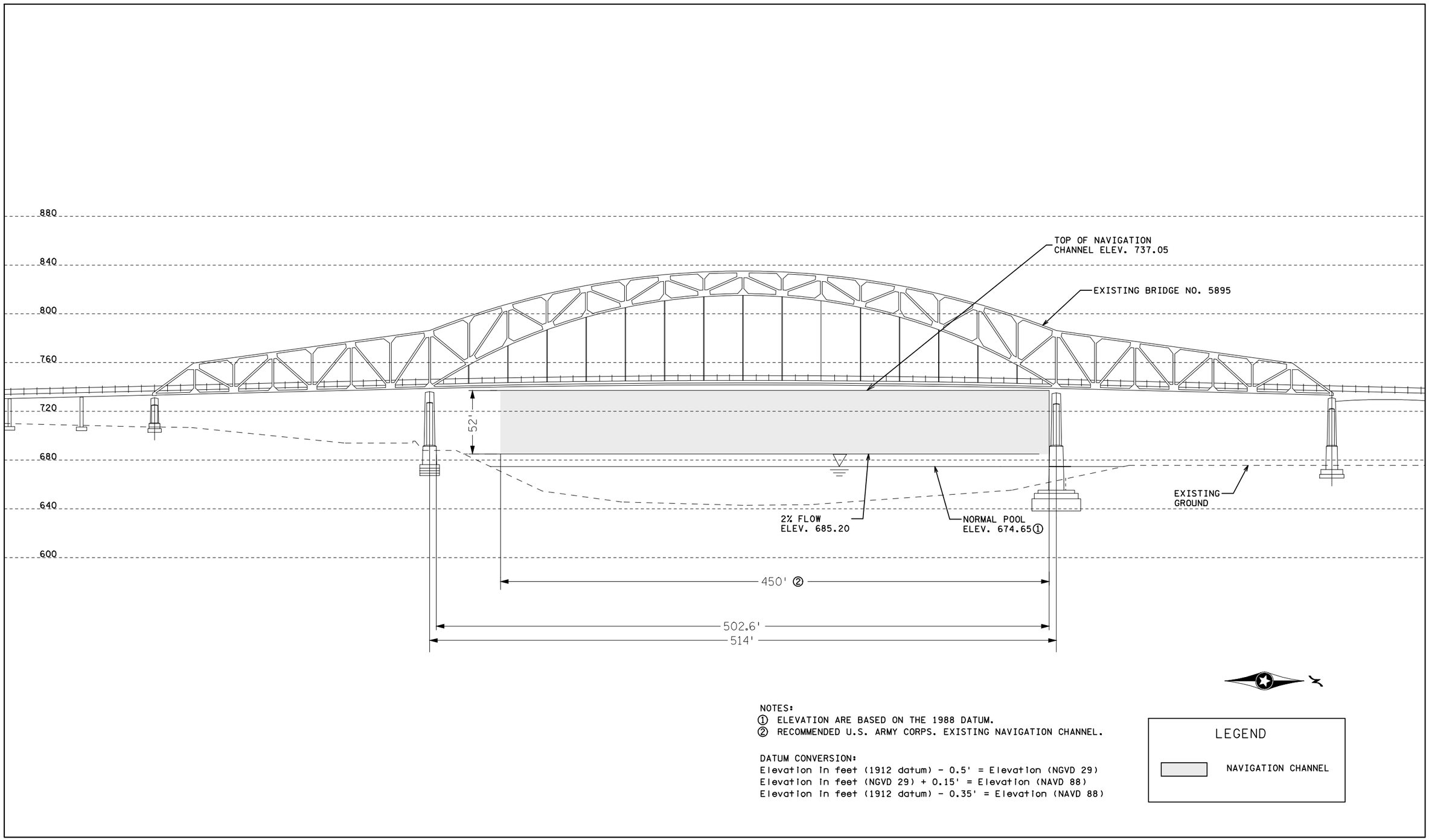
Following the comment period, Mn/DOT and the FHWA will make a determination as to the adequacy of the environmental documentation. If further documentation is necessary it could be accomplished by preparing an Environmental Impact Statement (EIS), or clarification in the Findings of Fact and Conclusion,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

When the environmental documentation is determined adequate, Mn/DOT will choose a preferred project alternative, either the No-Build or one of the three Build Alternatives.

If an EIS is not necessary, as currently anticipated, Mn/DOT will prepare a "Negative Declaration" for the state environmental requirements. Mn/DOT 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 state decision and availability of the above documents will be placed in the Minnesota Environmental Quality Board (MEQB) *Monitor*. Mn/DOT will also distribute future environmental review process documents for this project (e.g. Negative Declaration) to the EA distribution list and parties who submitted written comments on the EA.

Appendix 1 - Figures 3-32



NOTES:
① ELEVATION ARE BASED ON THE 1988 DATUM.
② RECOMMENDED U.S. ARMY CORPS. EXISTING NAVIGATION CHANNEL.

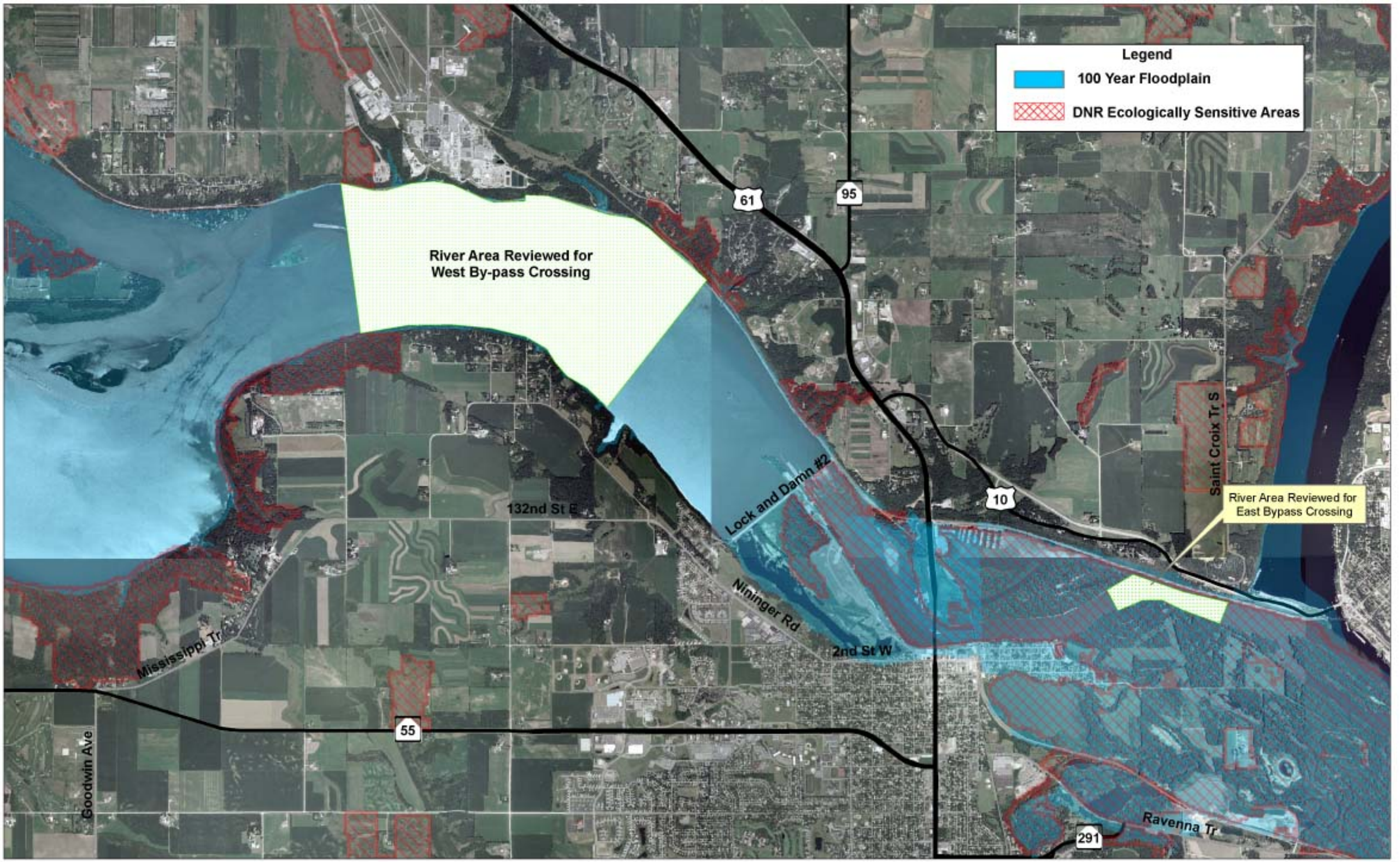
DATUM CONVERSION:
Elevation in feet (1912 datum) - 0.5' = Elevation (NGVD 29)
Elevation in feet (NGVD 29) + 0.15' = Elevation (NAVD 88)
Elevation in feet (1912 datum) - 0.35' = Elevation (NAVD 88)

LEGEND

NAVIGATION CHANNEL

Navigation Channel
Hastings TH 61 Bridge Project
SP: 1913–64

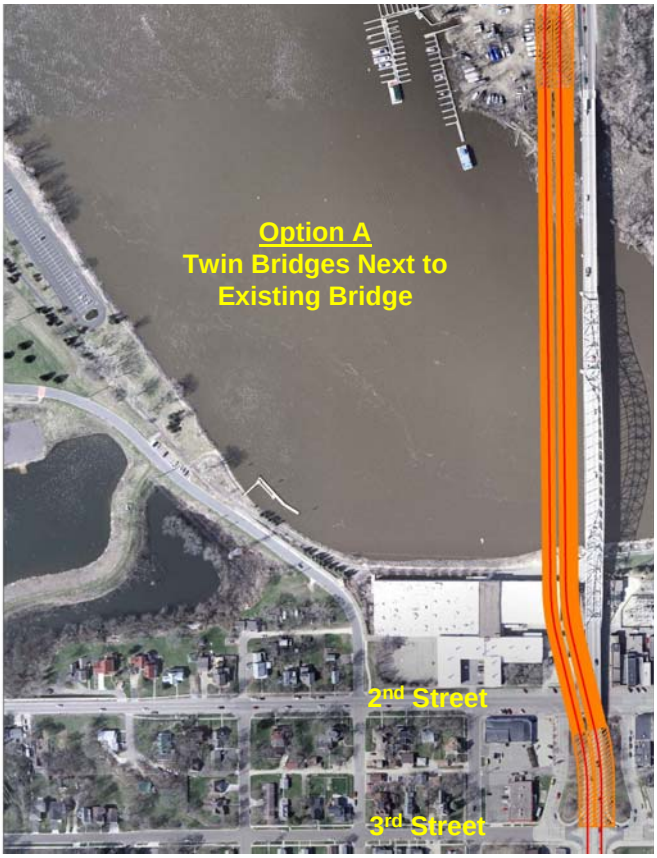
Figure 3

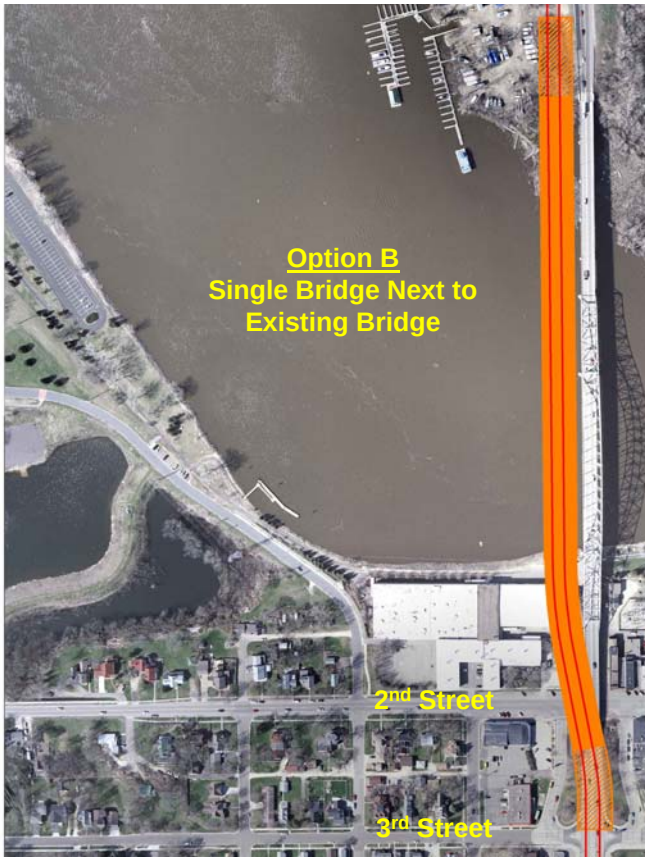


Flood Plains and DNR Sensitive Areas

Hastings TH 61 Bridge Project
S.P. 1913-64

Figure 4

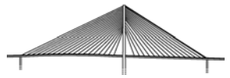
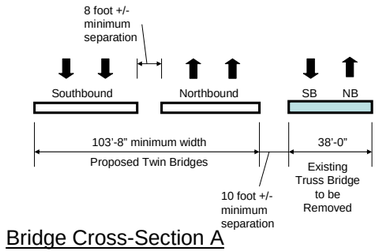
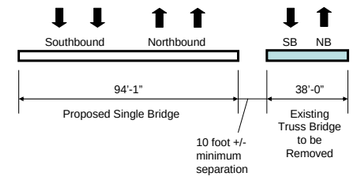
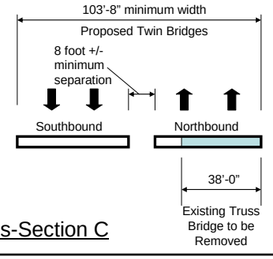
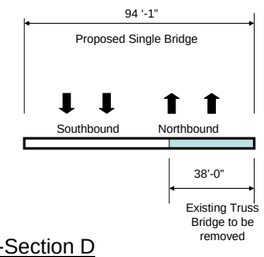




Proposed Bridge Alignments

Figure 5

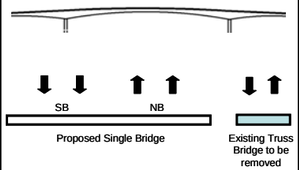
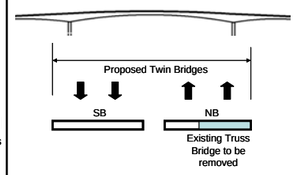
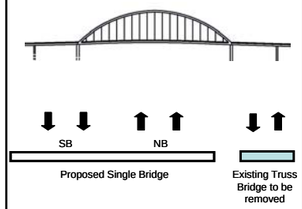
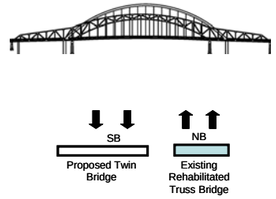
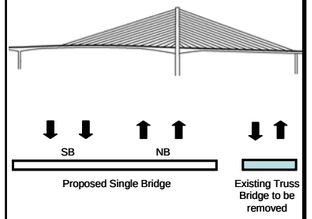
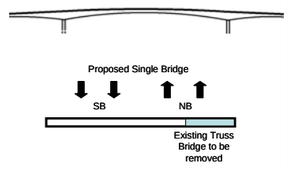
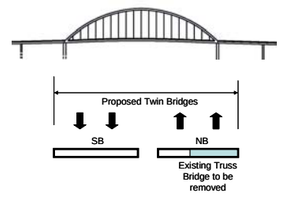
Hastings TH 61 Bridge Project
SP: 1913-64

Bridge Family:	**Girder Bridges**		**Cable Bridges**			**Arch Bridges**	
Example Concepts / Roadway Alignment Options (Not to Scale)	1. Plate Girder Bridge 	2. Box Girder Bridge 	3. Two-Span Bridge 	4. Three-Span Bridge 	5. Suspension Bridge 	6. Tied Arch Bridge 	7. Partial Through-Arch Bridge 
 Bridge Cross-Section A	Design Criteria—Satisfactory; bridge types can perform well, but steeper grades could be a challenge. Constructability and Traffic—Good. Community/Planning Issues—Satisfactory-poor; bridge architecture is not prominent above the deck. Footprint is largest and shifts/curves to the west, providing space for other uses east of the new bridge. Roadway has more impact and little advantage vs. options B or C. Construction Cost—Low-moderate with twin bridges.		Design Criteria—Satisfactory-poor; structural redundancy is a problem for concept 5 and horizontal curvature is a challenge for concepts 4 and 5. Constructability and Traffic—Satisfactory; phasing for new twin cable bridges is better than options C or D, with fewer traffic conflicts. The Xcel transmission line is a conflict for bridge concepts 4 and 5. Community/Planning Issues—Satisfactory-poor; bridge architecture is typically modern and compelling. Footprint is largest and shifts/curves to the west, providing space for other uses to the east. Concept 3 is very tall compared to the existing bridge. Roadway has more impact and little advantage vs. options B or C. Construction Cost—High; twin cable bridges present inefficiencies for this deck width, with much higher costs than single bridge cable concepts.			Design Criteria—Satisfactory-good; redundant features can be incorporated. Roadway horizontal curvature can work with concept 6. Problematic with concept 7. Constructability and Traffic—Good. Community/Planning Issues—Satisfactory; bridge architecture similar to existing. Footprint is largest and shifts/curves to the west. Roadway has more impact and little advantage vs. options B or C. Construction Cost—Moderate-high with twin bridges.	
 Bridge Cross-Section B	Design Criteria—Satisfactory; bridge types can perform well, but steeper grades could be a challenge. Constructability and Traffic—Good; shortest duration. Community/Planning Issues—Satisfactory; bridge architecture is not prominent above the deck. Footprint shifts to the west, providing space for other uses east of the new bridge. Construction Cost—Low. CCF = 1.0 to 1.3 YC = 3.0 years		Design Criteria—Satisfactory-poor; structural redundancy is a problem for concept 5 and horizontal curvature is a challenge for concepts 4 and 5. Constructability and Traffic—Satisfactory; a single cable bridge is the most feasible cable bridge form. The Xcel transmission line is a conflict for concepts 4 and 5. Community/Planning Issues—Satisfactory-good; bridge architecture is typically modern and compelling. Footprint shifts to the west, providing space for other uses east of the new bridge. Concept 3 is very tall compared to the existing bridge. Construction Cost—High; cable types are the most costly, but a single bridge is most cost efficient cable form. CCF = 1.4 to 2.0 YC = 3.1 years			Design Criteria—Satisfactory-good; redundant features can be incorporated. Roadway horizontal curvature can work with concept 6. Problematic with concept 7. Constructability and Traffic—Good; short duration. Community/Planning Issues—Good; bridge architecture similar to existing. Footprint shifts to the west, providing space to east. Construction Cost—Moderate with single bridge. CCF = 1.2 to 1.4 YC = 3.0 years	
 Bridge Cross-Section C	Design Criteria—Satisfactory; bridge types can perform well, but steeper grades could be a challenge. Constructability and Traffic—Satisfactory; longer construction period, but minimal conflicts. Community/Planning Issues—Satisfactory; bridge architecture is not prominent above the deck. Footprint is relatively tight, overlapping the existing bridge area (leaving no extra space to the east). Construction Cost—Moderate; phased constr. & demolition. CCF = 1.3 to 1.5 YC = 4.0 years		Design Criteria—Satisfactory-poor; structural redundancy is a problem for concept 5 and horizontal curvature is a challenge for concepts 4 and 5. However, there is less curvature with this roadway option. Constructability and Traffic—Satisfactory; the Xcel line is a conflict for concepts 4 and 5. Community/Planning Issues—Satisfactory; bridge architecture is typically modern and compelling. Footprint is relatively tight, overlapping the existing bridge area (leaving no extra space to the east). Concept 3 is very tall compared to the existing bridge. Construction Cost—High; twin cable bridges present inefficiencies for this deck width and a poor fit to project needs.			Design Criteria—Satisfactory-good; redundancy can be provided for and there is less roadway curvature. Constructability and Traffic—Satisfactory-poor; would require two staging areas. Community/Planning Issues—Good; bridge architecture similar to existing. Footprint is relatively tight, overlapping the existing bridge area (leaving no extra space to the east). Construction Cost—High with staged twin bridges. CCF = 1.3 to 1.7 YC = 4.0 years	
 Bridge Cross-Section D	Design Criteria—Satisfactory; bridge families can perform well, but steeper grades could be a challenge. Constructability and Traffic—Satisfactory; these bridges are the most compatible with roadway option D. Community/Planning Issues—Satisfactory; bridge architecture is not prominent above the deck. Footprint is tight, overlapping the existing bridge (leaving no extra space to east). Construction Cost—Moderate; phased construction and demolition. CCF = 1.3 to 1.7 YC = 3.5 years		Design Criteria—Satisfactory-poor; structural redundancy is a problem for concept 5 and horizontal curvature is a challenge for concepts 4 and 5. However, this roadway option has the least curvature. Constructability and Traffic—Poor; not feasible to construct a cable-type bridge on this alignment without extended periods of traffic closure. The Xcel line is a conflict for concepts 4 and 5. Community/Planning Issues—Satisfactory; bridge architecture is typically modern and compelling. Footprint is tight, overlapping the existing bridge area (leaving no extra space to east). Concept 3 is very tall compared to the existing bridge. Construction Cost—High; costs would also be driven up more by special phasing assumed to limit periods of closure.			Design Criteria—Satisfactory-good; redundancy can be provided for and this roadway option has the least curvature. Constructability and Traffic—Satisfactory-poor. A limited closure might be phased with concept 6; however, the project would require critical phasing steps while still causing substantially more closure than options A, B, or C. Community/Planning Issues—Good; bridge architecture similar to existing. Footprint is tight, overlapping the existing bridge area (leaving no extra space to the east). Construction Cost—Moderate-High due to staging.	

Legend: 100% Text = Most promising alternatives
50% Text = Other alternatives
CCF = Cost Construction Factor
YC = Years of Construction

Proposed Bridge Alignments and Bridge Families
Hastings TH 61 Bridge Project
SP: 1913-64

Figure 6

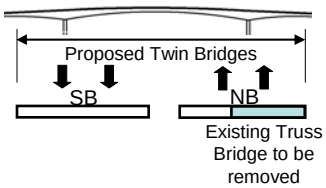
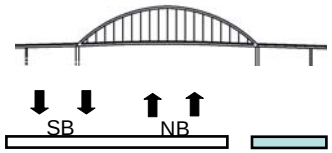
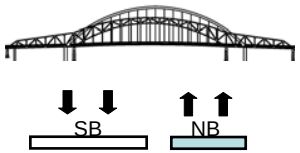
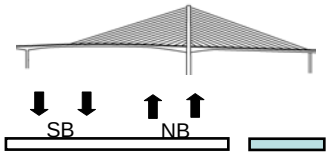
	Most Promising Alternatives / Evaluation Criteria	Alternative 1 Box Girder Bridge (Single Bridge) 	Alternative 2 Box Girder Bridges (Twin Bridges) 	Alternative 3 Arch Bridge (Single Bridge) 	Alternative 4 Rehab Existing Bridge next to New Arch Bridge 	Alternative 5 Cable Bridge (Single Bridge) 	Alternative 6 Box Girder Bridge (Single Bridge) 	Alternative 7 Arch Bridges (Twins) 
Design Criteria	1. Vertical & Horizontal Alignment	Maximum grade ~ 4.8%. Deep superstructure. More horizontal curvature.	Maximum grade ~ 5.0%. Deep superstructure. Straighter horizontal alignment.	Maximum grade ~ 3.3%. Shallow superstructure. More horizontal curvature.	Maximum grade ~ 2.5%. Shallow superstructure. Straighter horizontal alignment.	Maximum grade ~ 3.8%. Medium depth superstructure. More horizontal curvature.	Maximum grade ~ 4.8%. Deep superstructure. Straighter horizontal alignment.	Maximum grade ~ 3.3%. Shallow superstructure. Straighter horizontal alignment.
	2. Structural Redundancy	Superstructure is redundant.	Superstructure is redundant.	Redundancy of tie girder design requires coordination with FHWA.	Redundancy of tie girder design requires coordination with FHWA. Existing bridge will be rehabilitated to be redundant.	Superstructure is redundant.	Superstructure is redundant.	Redundancy of tie girder design requires coordination with FHWA.
Construction	3. Construction Duration and Conflicts	2.8 years. Minimal river and highway conflicts.	3.6 years. Minimal river and highway conflicts.	3.0 years. More river conflict than girders but minimal highway conflict.	6.3 years. Many phasing challenges with several conflicts. Longest construction period.	3.1 years. Minimal river and highway conflicts, but more than girders.	4.0 years. Significant phasing challenges to limit highway conflicts.	4.0 years. Long construction period with more conflicts than Alts 2 or 3.
	4. Construction complexity/risk	Large overhead gantry system required for erection. Staging required at bridge ends.	Overhead gantry system required for erection, but not as large as Alternative 1. Minimal staging required.	Wide arch main span will likely be built at a staging area, floated to the bridge site, and lifted into place. Staging required at bridge ends.	Moderately wide arch main span will likely be built at a staging area, floated to the bridge site, and lifted into place. Very complex rehabilitation of existing bridge to satisfy redundancy requirements.	Combination of cable-stayed and cantilevered girder construction. This type of bridge is rare, and has not been constructed before in Minnesota.	Similar to Alternative 1, except more complex staging.	Similar to Alternative 3, except more complex staging.
Cost & Maintenance	5. Construction Cost (factor)	1.0 to 1.3	1.3 to 1.5	1.2 to 1.4	1.7 to 2.0	1.4 to 2.0	1.3 to 1.7	1.3 to 1.7
	6. Long Term Maintenance Costs and Critical Items	Lowest maintenance costs. Deterioration of top structural deck is critical, as repair is very difficult. Confined space entry inside box required to inspect.	Low–moderate maintenance costs (two bridges). Deterioration of top structural deck is critical, as repair is very difficult. Confined space entry inside box required to inspect.	Moderate maintenance costs (more than girders). Many above deck structural elements exposed to road spray, and requiring inspection with special access equipment. Confined space entry in arch tie and rib to inspect. Possible under deck inspection platform.	Highest maintenance costs. Many above deck structural elements exposed to road spray, and requiring inspection with special access equipment. Confined space entry inside arch tie and rib to inspect. Possible under deck inspection platform.	Moderate maintenance costs, but more than Alt 3. Deterioration of top structural deck is critical, as repair is difficult. Many above deck structural elements exposed to road spray, and requiring inspection with special equipment. Possible under deck inspection platform.	Lowest maintenance costs. Deterioration of top structural deck is critical, as repair is very difficult. Confined space entry inside box required to inspect.	Moderate–high maintenance costs (two bridges). Many above deck structural elements exposed to road spray, and requiring inspection with special access equipment. Confined space entry inside arch tie and rib to inspect. Possible under deck inspection platform.
Community and Planning Issues	7. Community Identity	Common bridge type in river corridor. Bridge form does not match closely with community expectations for scale and profile.	Common bridge type in river corridor. Bridge form does not match closely with community expectations for scale and profile.	Scale and profile of this bridge is similar to the existing bridge.	Combination of two different bridge types. The arch offers similar profile and scale, with no notable difference in roadway grades.	Modern design departs from previous bridges at Hastings and other nearby river crossings. Tall tower, but scale similar to existing. A distinct bridge.	Common bridge type in river corridor. Bridge form does not match closely with community expectations for scale and profile.	Scale and profile of this bridge is similar to the existing bridge.
	8. Trail accommodation and connectivity	Trail on east side of Highway 61 corridor. Steeper grade for trail users.	Trail on east side of Highway 61 corridor. Steeper grade for trail users.	Trail on east side of Highway 61 corridor.	Trail on west side of Highway 61 corridor.	Trail on east side of Highway 61 corridor.	Trail on east side of Highway 61 corridor. Steeper grade for trail users.	Trail on east side of Highway 61 corridor.
	9. Accommodation of future transit lanes	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lane on new bridge. SB only.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.
	10. Cultural/Historic/ Environmental Impacts	Shifted alignment has slightly larger project footprint, but also creates community development / river connection opportunities. Fewer piers in floodplain, north of the main span.	Use of existing bridge location reduces project footprint. Fewer piers in floodplain, north of the main span.	Shifted alignment has slightly larger project footprint, but also creates community development / river connection opportunities.	The existing Hastings Bridge is eligible for the National Register of Historic Places. This alternative would preserve the historic bridge and limit the project footprint.	Use of cables is a potential migratory bird collision issue. Fewer piers in floodplain, north of the main span.	Use of existing bridge location reduces project footprint. Fewer piers in floodplain, north of the main span.	Construction staging of second bridge may require river navigation impacts.

Most Promising Alternatives Matrix

Hastings TH 61 Bridge Project
SP: 1913-64

NOTE: Alternatives 1-5 selected for detailed Scoping Study comparison.

Figure 7

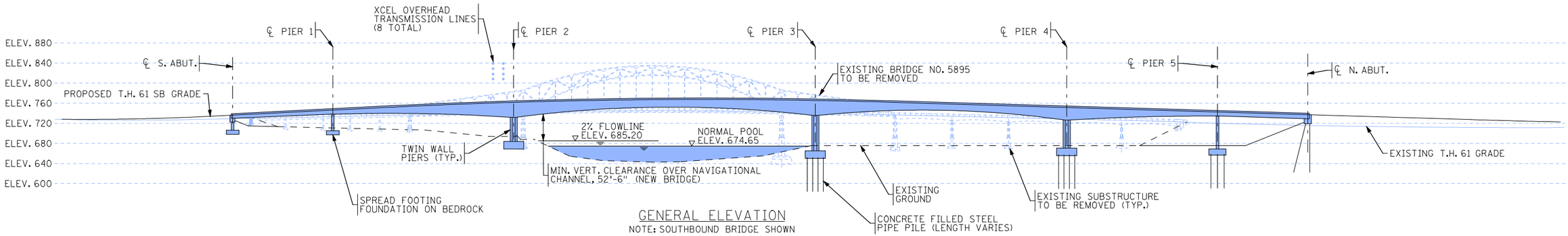
Evaluation Criteria \ Final Scoping Study Alternatives		Box Girder Bridges (Twins Bridges)	Arch Bridge (Single Bridge)	Rehab Existing Bridge Next to New Arch Bridge Alternative	Cable Bridge (Single Bridge)
					
Design Criteria	1. Vertical & Horizontal Alignment	Maximum grade ~ 5.0%. Deep superstructure. Straighter horizontal alignment.	Maximum grade ~ 3.3%. Shallow superstructure. More horizontal curvature.	Maximum grade ~ 2.5%. Shallow superstructure. Straighter horizontal alignment.	Maximum grade ~ 3.8%. Medium depth superstructure. More horizontal curvature.
	2. Structural Redundancy	Superstructure is redundant.	Redundancy of tie girder design requires coordination with FHWA.	Redundancy of tie girder design requires coordination with FHWA. Existing bridge will be rehabilitated to be redundant if feasible.	Superstructure is redundant.
Construction	3. Construction Duration and Conflicts	3.6 years. Long construction period but similar to arch and cable bridges.	3.0 years. More river conflict than girders but minimal highway conflict.	6.3 years. Many phasing challenges with several conflicts. Longest construction period.	3.1 years. Minimal river and highway conflicts, but more than girders.
	4. Construction complexity/risk	Overhead gantry system required for erection. Minimal staging of traffic is required.	Wide arch main span will likely be built at a staging area, floated to the bridge site, and lifted into place. Staging required at bridge ends.	Moderately wide arch main span will likely be built at a staging area, floated to the bridge site, and lifted into place. Very complex rehabilitation of existing bridge to satisfy redundancy requirements.	Combination of cable-stayed and cantilevered girder construction. This type of bridge is rare, and has not been constructed before in Minnesota.
Cost & Maintenance	5. Construction Cost	One of the lower-cost alternatives (similar to the Single Arch Bridge).	One of the lower-cost alternatives (similar to the Twin Girder Bridge).	Higher-cost, with substantial cost management risks.	Higher-cost, with moderate cost risks based on the bridge type.
	6. Long Term Maintenance Costs and Critical Items	Low–moderate maintenance costs (two bridges). Deterioration of top structural deck is critical, as repair is difficult. Confined space entry inside box required to inspect.	Moderate maintenance costs (more than girders). Many above deck structural elements exposed to road spray, and requiring inspection with special access equipment. Confined space entry in arch tie and rib to inspect. Possible inspection platform.	Highest maintenance costs. Many above deck structural elements exposed to road spray, and requiring inspection with special access equipment. Confined space entry inside arch tie and rib to inspect. Possible inspection platform.	Moderate maintenance costs, but more than the single arch. Deterioration of deck is critical, as repair is difficult. Many above deck elements exposed to road spray, and requiring specialized inspection. Possible inspection platform.
Community and Planning Issues	7. Community Identity	Common bridge type in river corridor. Bridge form might not match closely with community expectations for scale and profile.	Scale and profile of this bridge is similar to the existing bridge.	Combination of two different bridge types. The arch offers similar profile and scale, with no notable difference in roadway grades expected.	Modern design departs from previous bridges at Hastings and other nearby river crossings. Tall tower, but scale similar to existing. A distinct bridge.
	8. Trail accommodation & connectivity	Trail on east side of Highway 61 corridor. Steeper grade for trail users.	Trail on east side of Highway 61 corridor.	Trail on west side of Highway 61 corridor.	Trail on east side of Highway 61 corridor.
	9. Accommodation of future transit lanes	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.	Cross-sectional width available for future 12-foot outside shoulder transit lane on new bridge. SB only.	Cross-sectional width available for future 12-foot outside shoulder transit lanes. SB and NB.
	10. Cultural/Historic/ Environmental Impacts	Use of existing bridge location reduces project footprint and property impacts. Fewer piers in floodplain, north of the main span.	Shifted alignment has slightly larger project footprint, but also creates community development / river connection opportunities.	The existing Hastings Bridge is eligible for the National Register of Historic Places. This alternative would preserve the historic bridge and limit the project footprint.	Use of cables is a potential migratory bird collision issue. Fewer piers in floodplain, north of the main span.

Final Scoping Study Alternatives

Figure 8

Hastings TH 61 Bridge Project

SP: 1913-64



GENERAL ELEVATION
NOTE: SOUTHBOUND BRIDGE SHOWN

COLOR IS USED FOR ILLISTRATIVE PURPOSES ONLY

NOTES:

1. ALL ELEVATIONS ARE ON THE 1988 DATUM.
2. THE MINIMUM VERTICAL CLEARANCE REQUIREMENT OVER THE NAVIGATION CHANNEL IS CONTROLLED BY PROVIDING 52'-0" ABOVE THE 2% FLOWLINE (ELEV. 685.20).
3. THE MINIMUM VERTICAL CLEARANCE REQUIREMENT OVER 2ND STREET IS 14'-6", HOWEVER 16'-4" IS PREFERRED.

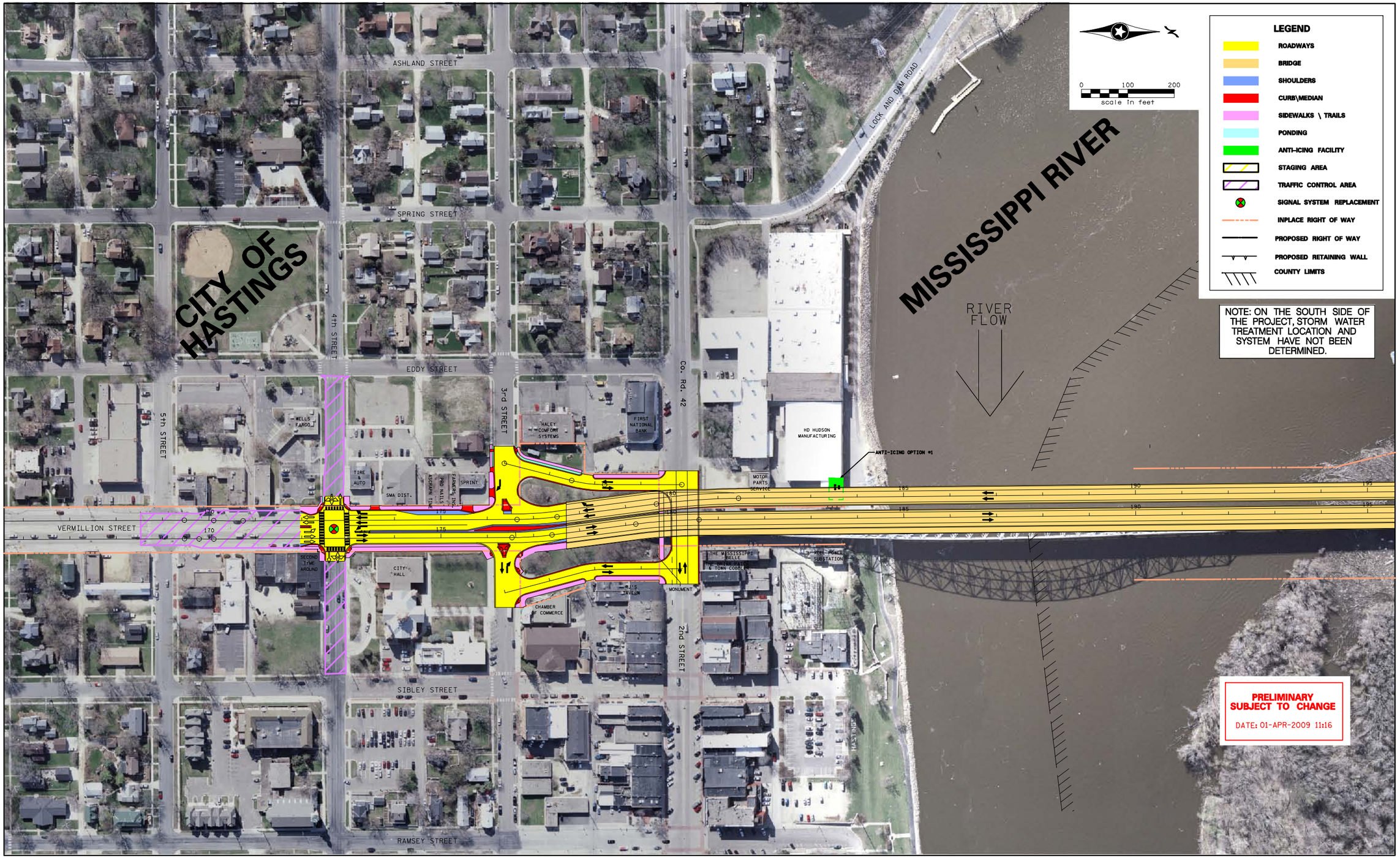
DATUM CONVERSION:
Elevation in feet (1912 datum) - 0.5' = Elevation (NGVD 29)
Elevation in feet (NGVD 29) + 0.15' = Elevation (NAVD 88)
Elevation in feet (1912 datum) - 0.35' = Elevation (NAVD 88)

PRELIMINARY SUBJECT TO CHANGE

DATE: 18-MAR-2009 10:33

Profile: Box Girder Twin Bridge Alternative
Hastings TH 61 Bridge Project
SP: 1913–64

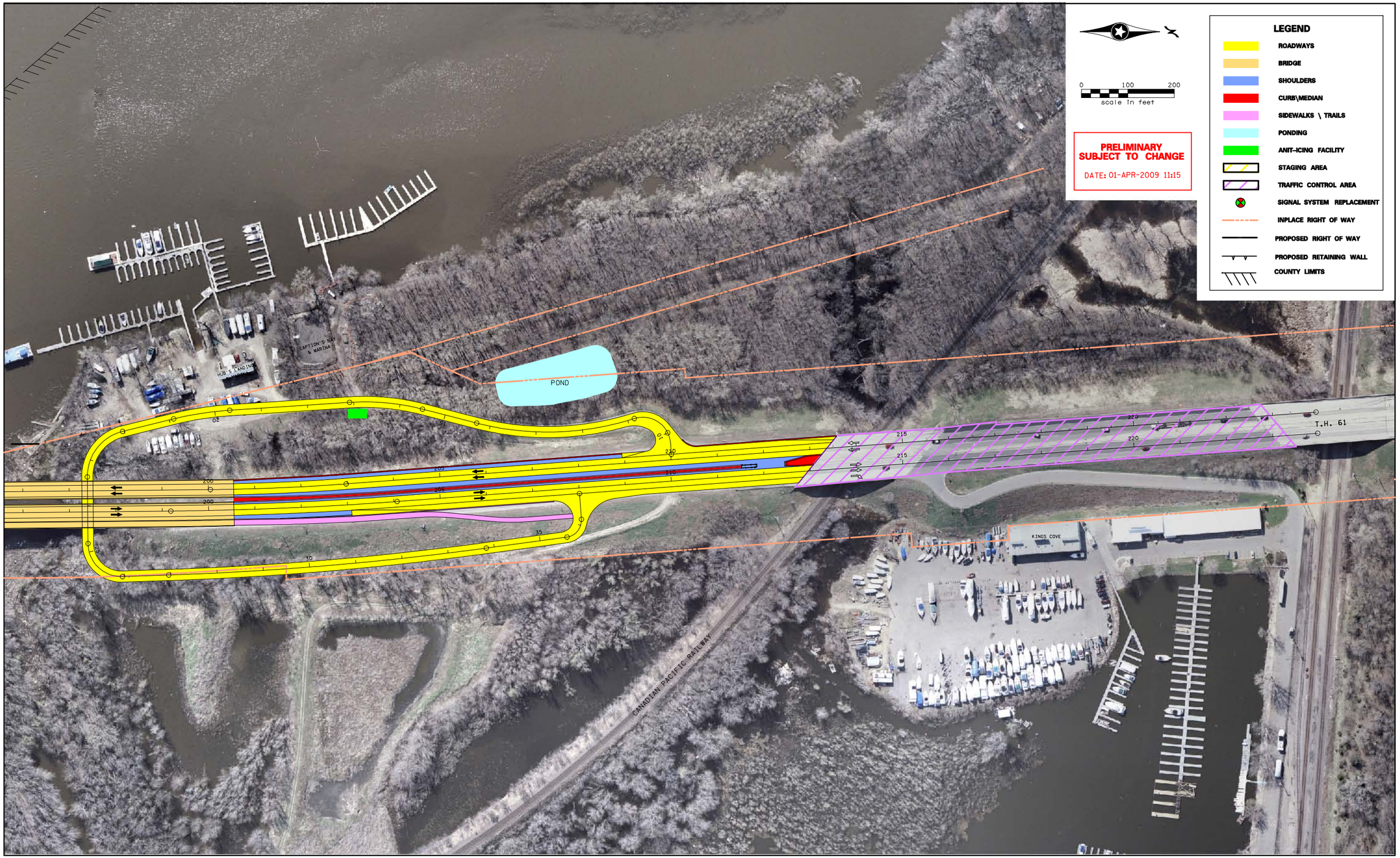
Figure 9



Layout: Box Girder Twin Bridge Alternative

Hastings TH 61 Bridge Project
SP: 1913–64

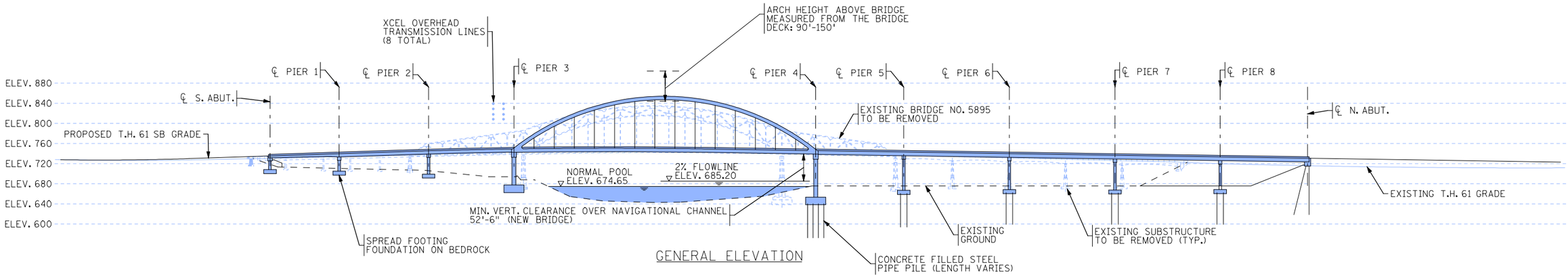
Figure 10A



Layout: Box Girder Twin Bridge Alternative

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 10B



GENERAL ELEVATION

COLOR IS USED FOR ILLISTRATIVE PURPOSES ONLY

NOTES:

1. ALL ELEVATIONS ARE ON THE 1988 DATUM.
2. THE MINIMUM VERTICAL CLEARANCE REQUIREMENT OVER THE NAVIGATION CHANNEL IS CONTROLLED BY PROVIDING 52'-0" ABOVE THE 2% FLOWLINE (ELEV. 685.20).
3. THE MINIMUM VERTICAL CLEARANCE REQUIREMENT OVER 2ND STREET IS 14'-6", HOWEVER 16'-4" IS PREFERRED.

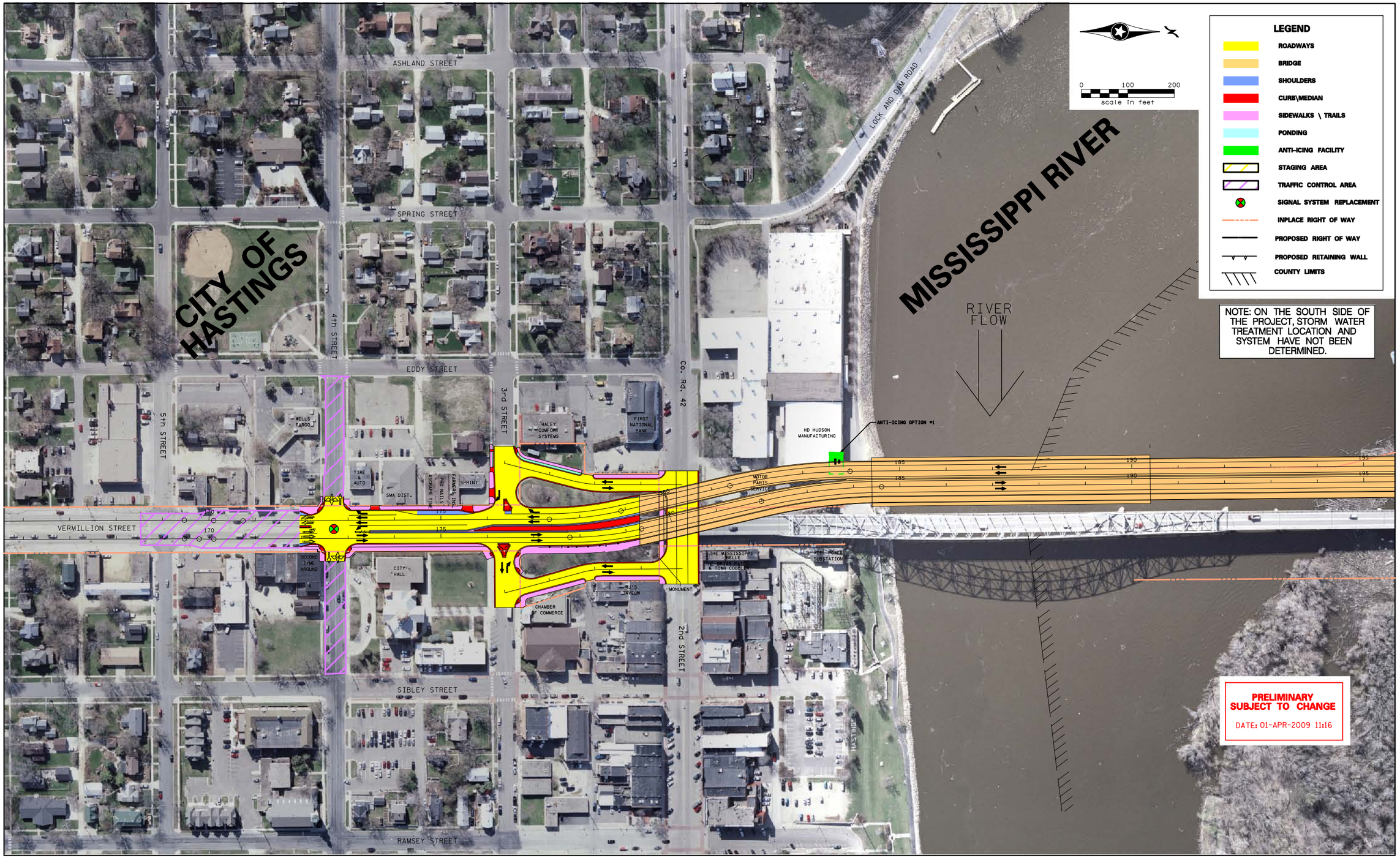
DATUM CONVERSION:
Elevation in feet (1912 datum) - 0.5' = Elevation (NGVD 29)
Elevation in feet (NGVD 29) + 0.15' = Elevation (NAVD 88)
Elevation in feet (1912 datum) - 0.35' = Elevation (NAVD 88)

PRELIMINARY SUBJECT TO CHANGE

DATE: 21-APR-2009 10:04

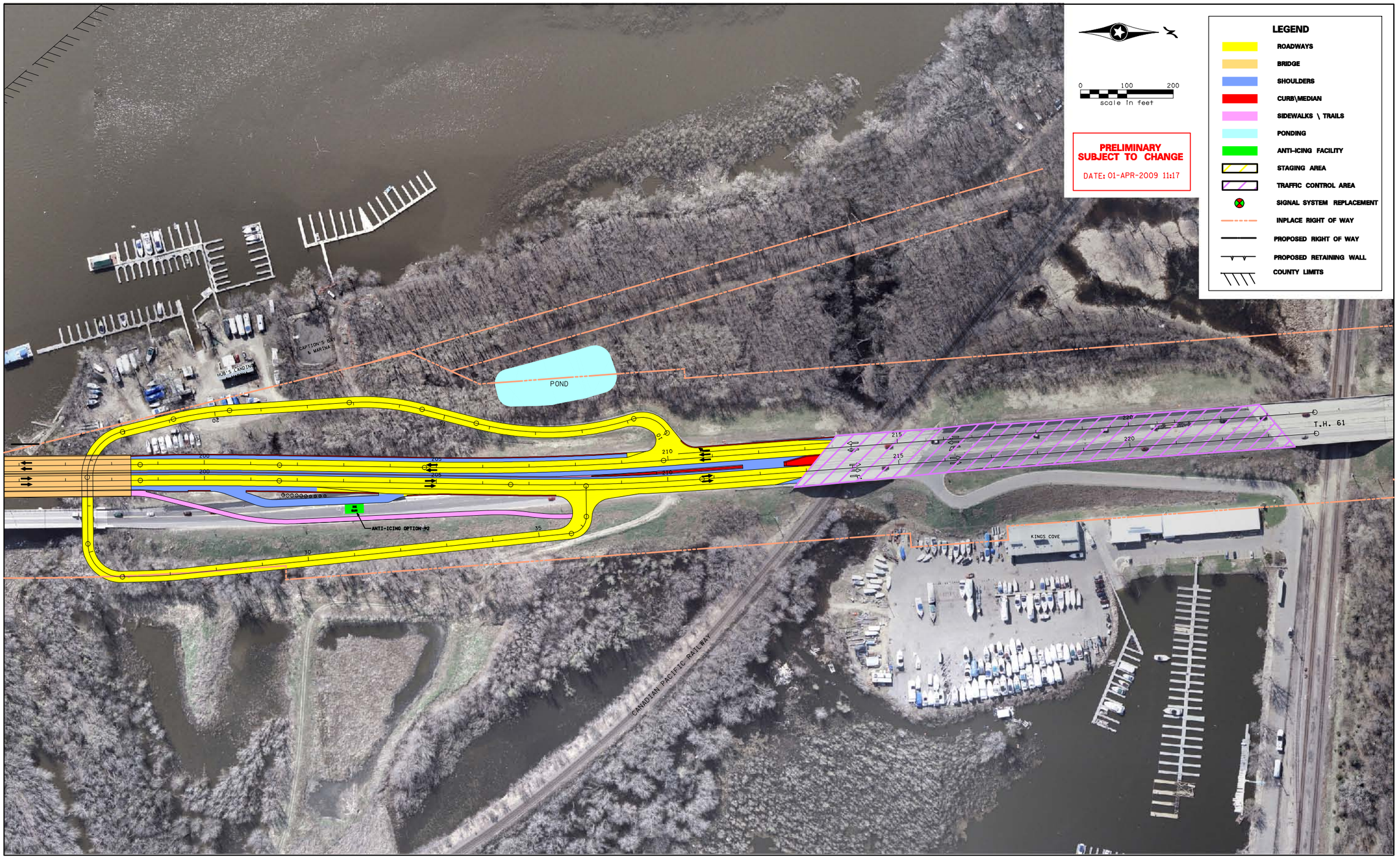
Profile: Arch Single Bridge Alternative
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 11



Layout: Tied Arch Single Bridge Alternative
Hastings TH 61 Bridge Project
SP: 1913–64

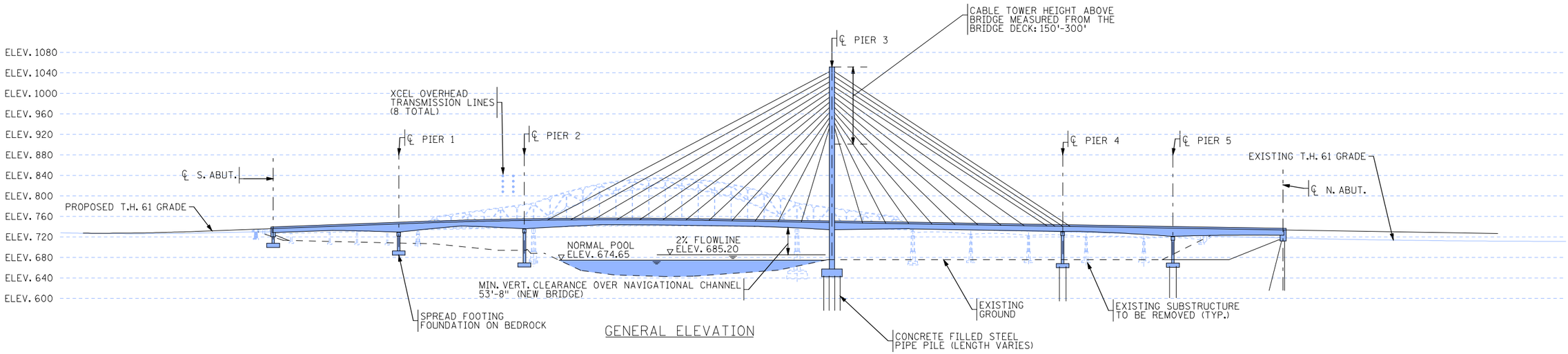
Figure 12A



Layout: Tied Arch Single Bridge Alternative

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 12B



GENERAL ELEVATION

COLOR IS USED FOR ILLISTRATIVE PURPOSES ONLY

NOTES:

1. ALL ELEVATIONS ARE ON THE 1988 DATUM.
2. THE MINIMUM VERTICAL CLEARANCE REQUIREMENT OVER THE NAVIGATION CHANNEL IS CONTROLLED BY PROVIDING 52'-0" ABOVE THE 2% FLOWLINE (ELEV. 685.20).
3. THE MINIMUM VERTICAL CLEARANCE REQUIREMENT OVER 2ND STREET IS 14'-6", HOWEVER 16'-4" IS PREFERRED.

DATUM CONVERSION:
Elevation in feet (1912 datum) - 0.5' = Elevation (NGVD 29)
Elevation in feet (NGVD 29) + 0.15' = Elevation (NAVD 88)
Elevation in feet (1912 datum) - 0.35' = Elevation (NAVD 88)

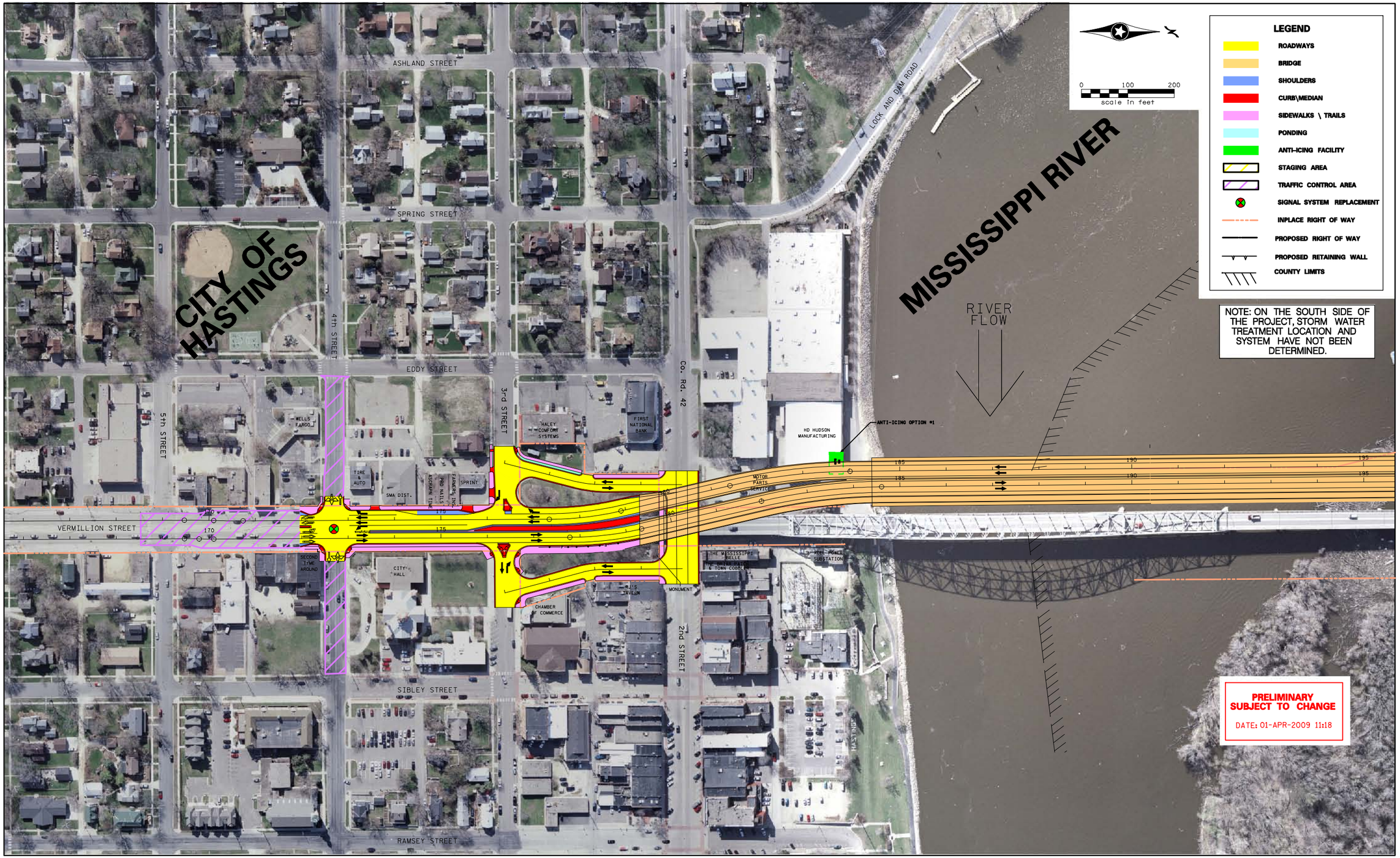
PRELIMINARY SUBJECT TO CHANGE

DATE: 21-APR-2009 10:04

Profile: Cable Single Bridge Alternative

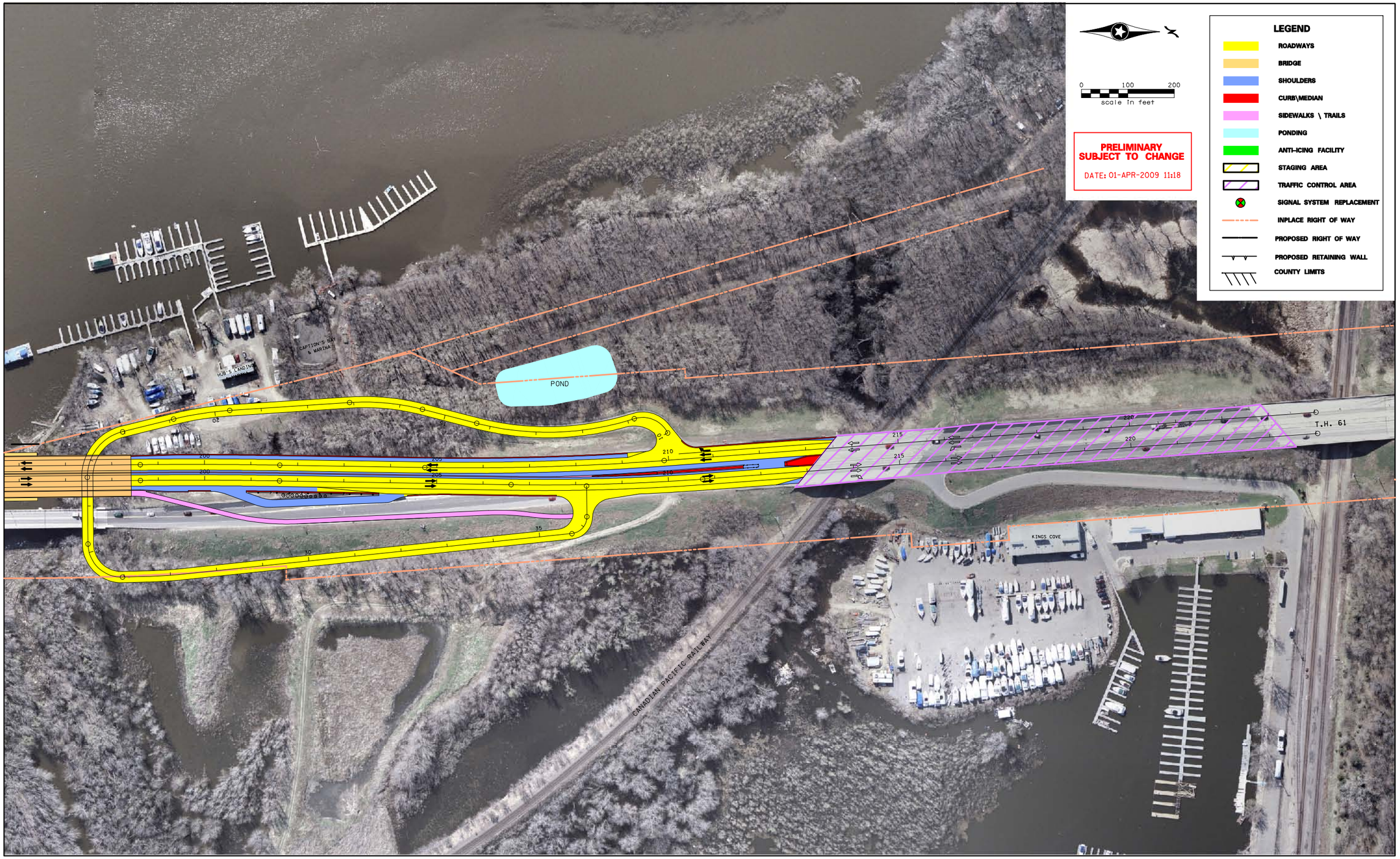
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 13



Layout: Cable Single Bridge Alternative
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 14A



Layout: Cable Single Bridge Alternative

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 14B

Proposed Anti-Icing Building Locations

Hastings TH 61 Bridge Project
SP: 1913–64

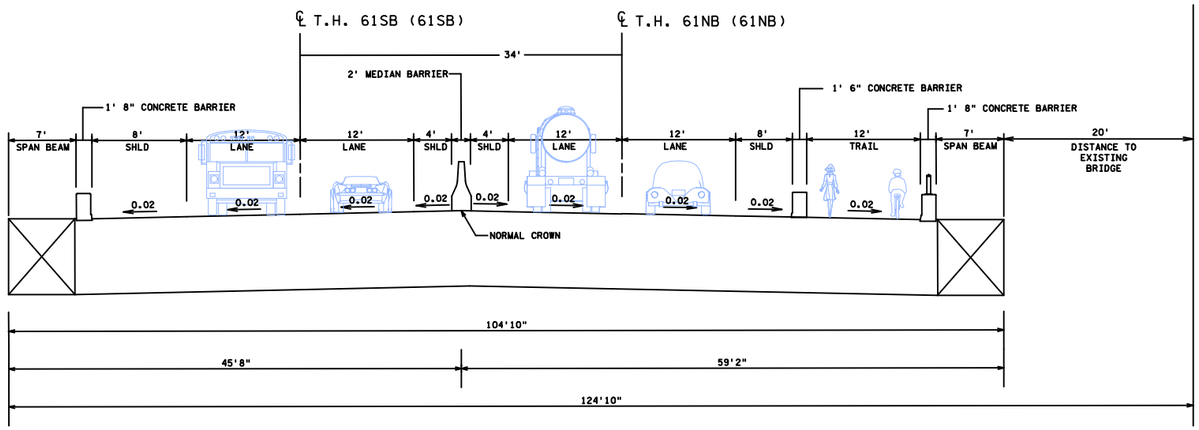
Figure 15

Flint Hills Nature Preserve Staging Area

Hastings TH 61 Bridge Project
SP: 1913–64

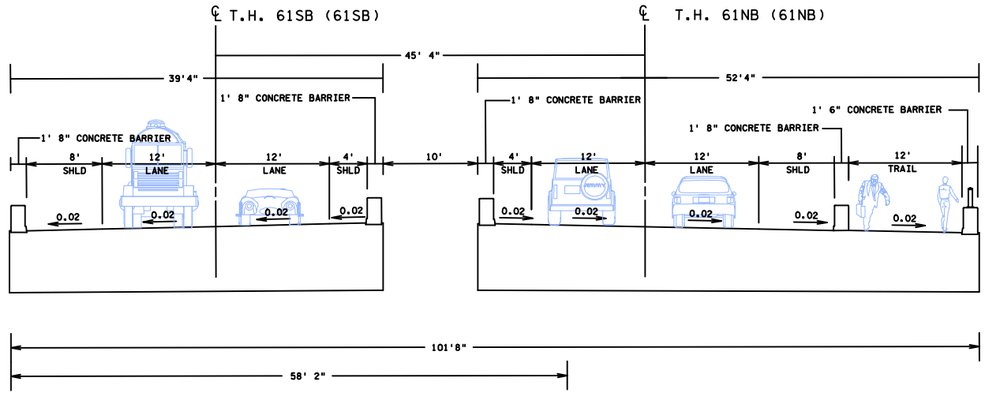
Figure 16

ARCH SINGLE BRIDGE ALTERNATIVE
CABLE SINGLE BRIDGE ALTERNATIVE

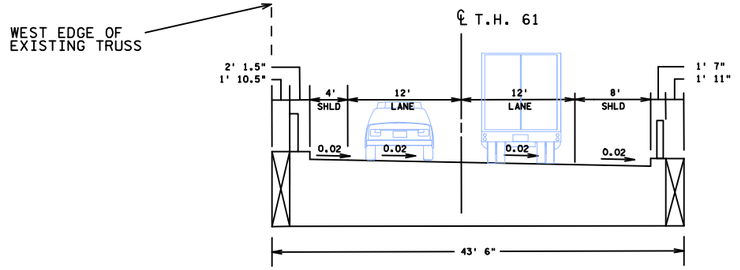


PRELIMINARY
SUBJECT TO CHANGE
DATE: 11-MAR-2009 13:55

BOX GIRDER TWIN BRIDGE ALTERNATIVE



EXISTING BRIDGE

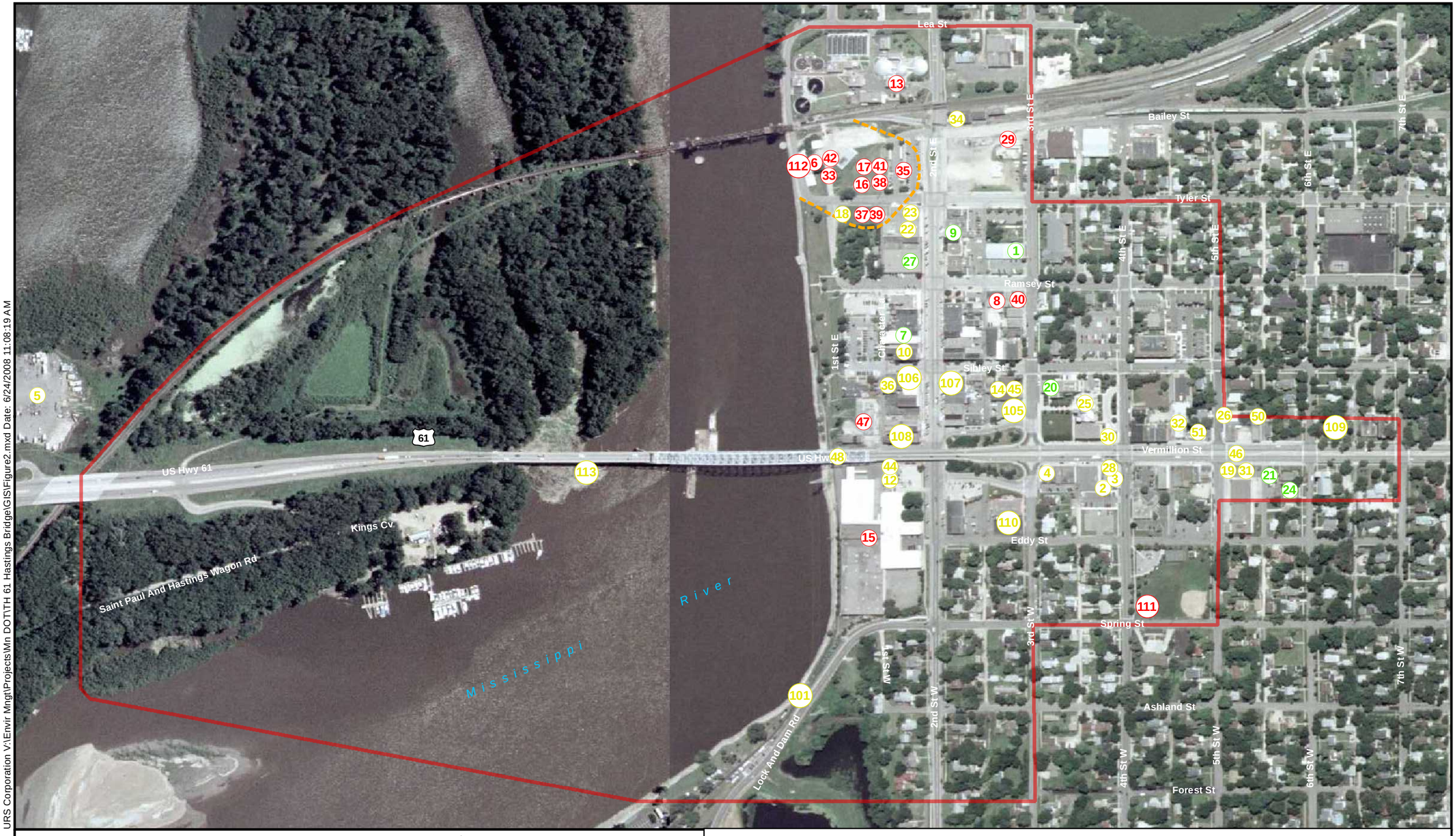


PRELIMINARY
SUBJECT TO CHANGE
DATE: 11-MAR-2009 13:55

Proposed Typical Sections
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 17

URS Corporation V:\Envir Mngt\Projects\Mn DOT\TH 61 Hastings Bridge\GIS\Figure2.mxd Date: 6/24/2008 11:08:19 AM



Project Area Extents

Hastings TH 61 Bridge Project

Figure 18

URS Corporation V:\Envir Mngt\Projects\Mn DOT\TH 61 Hastings Bridge\GIS\Figure3.mxd Date: 6/10/2008 4:41:21 PM

200
Scale in Feet

Legend

Possible Staging Areas Reviewed

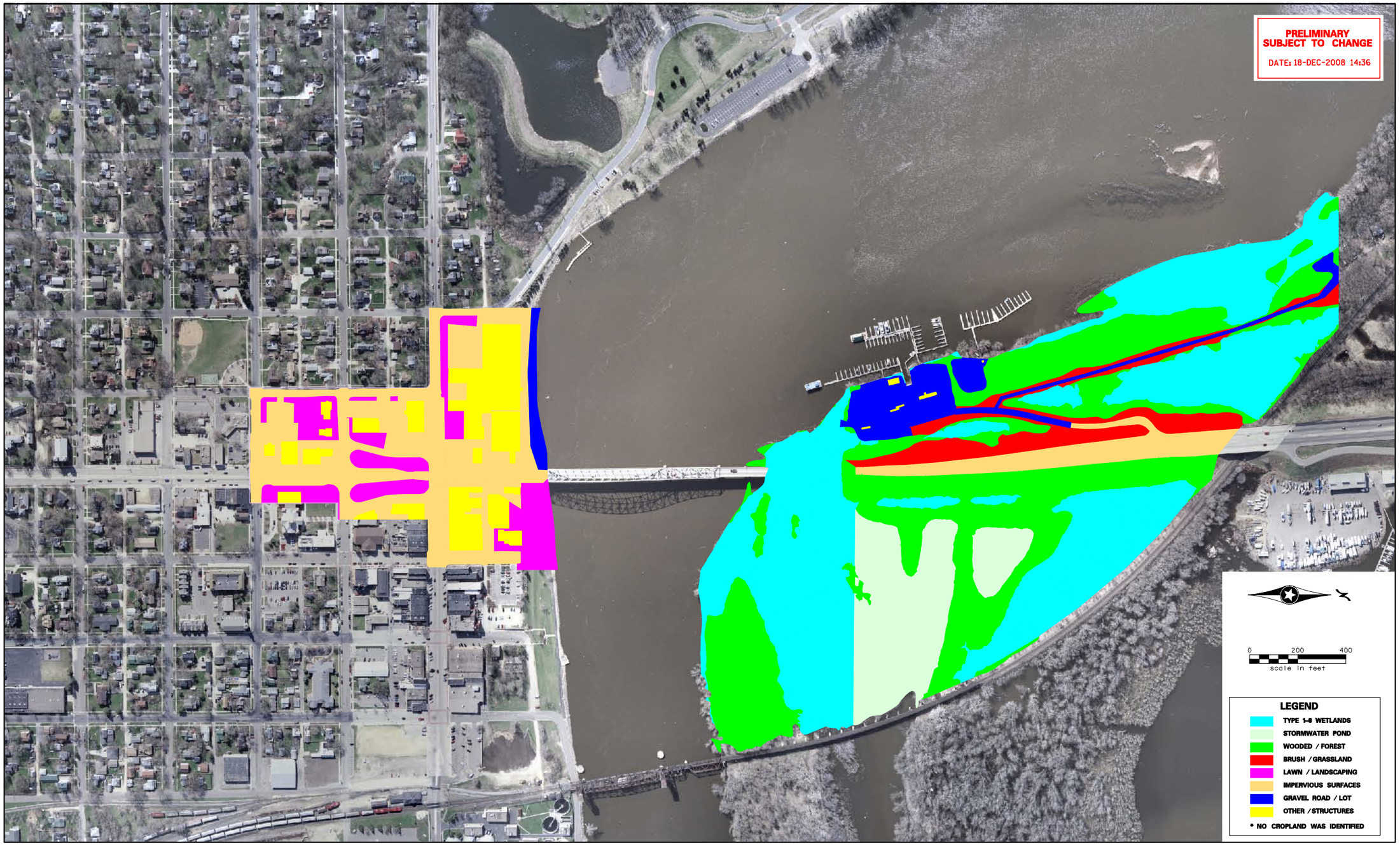
Temporary Dredge Material Storage Area

Proposed Staging Area Extents

Hastings TH 61 Bridge Project

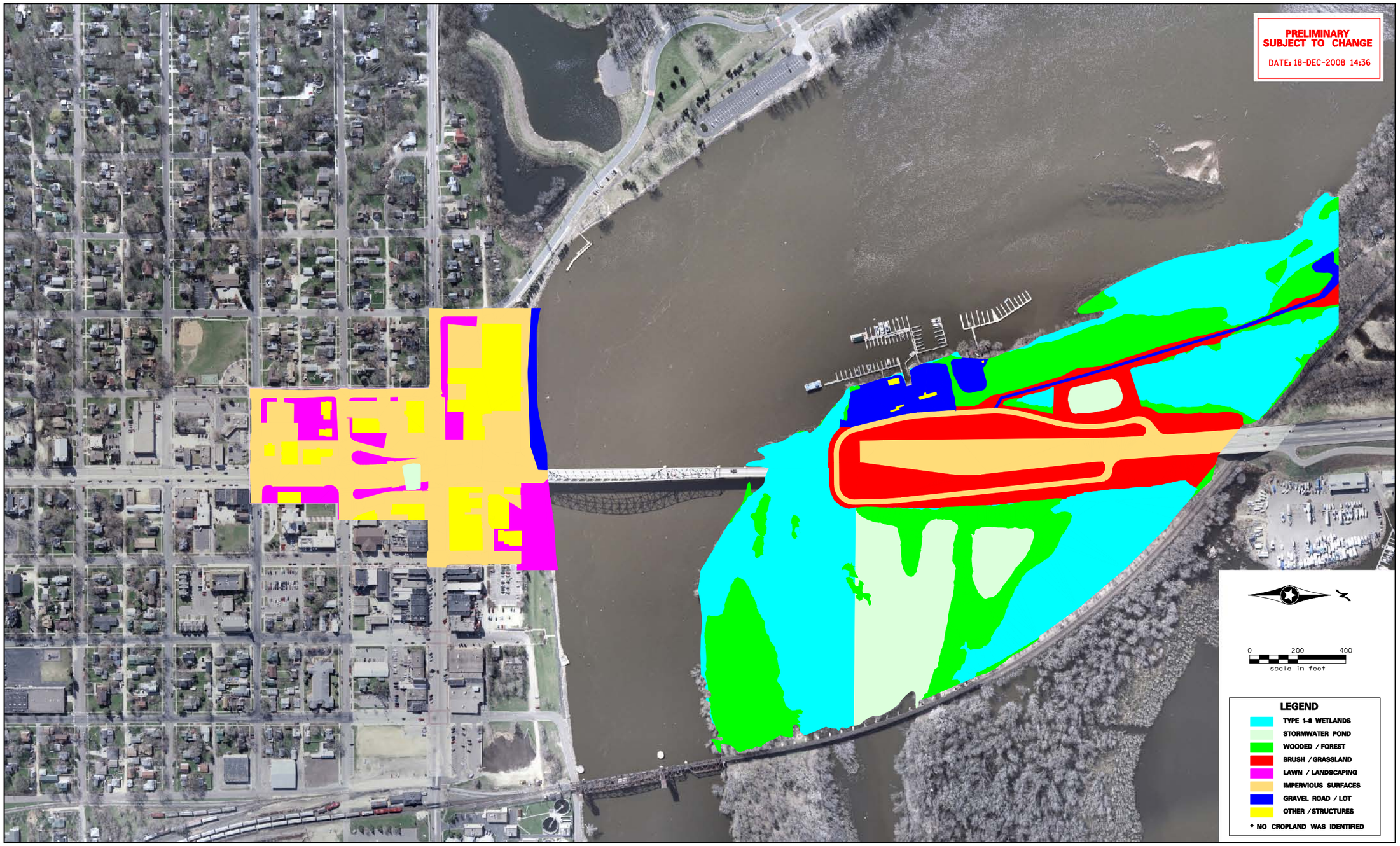
SP: 1913-64

Figure 19



Existing Cover Types
Hastings TH 61 Bridge Project
SP: 1913-64

Figure 20A



Proposed Cover Types
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 20B

Woody Vegetation Review

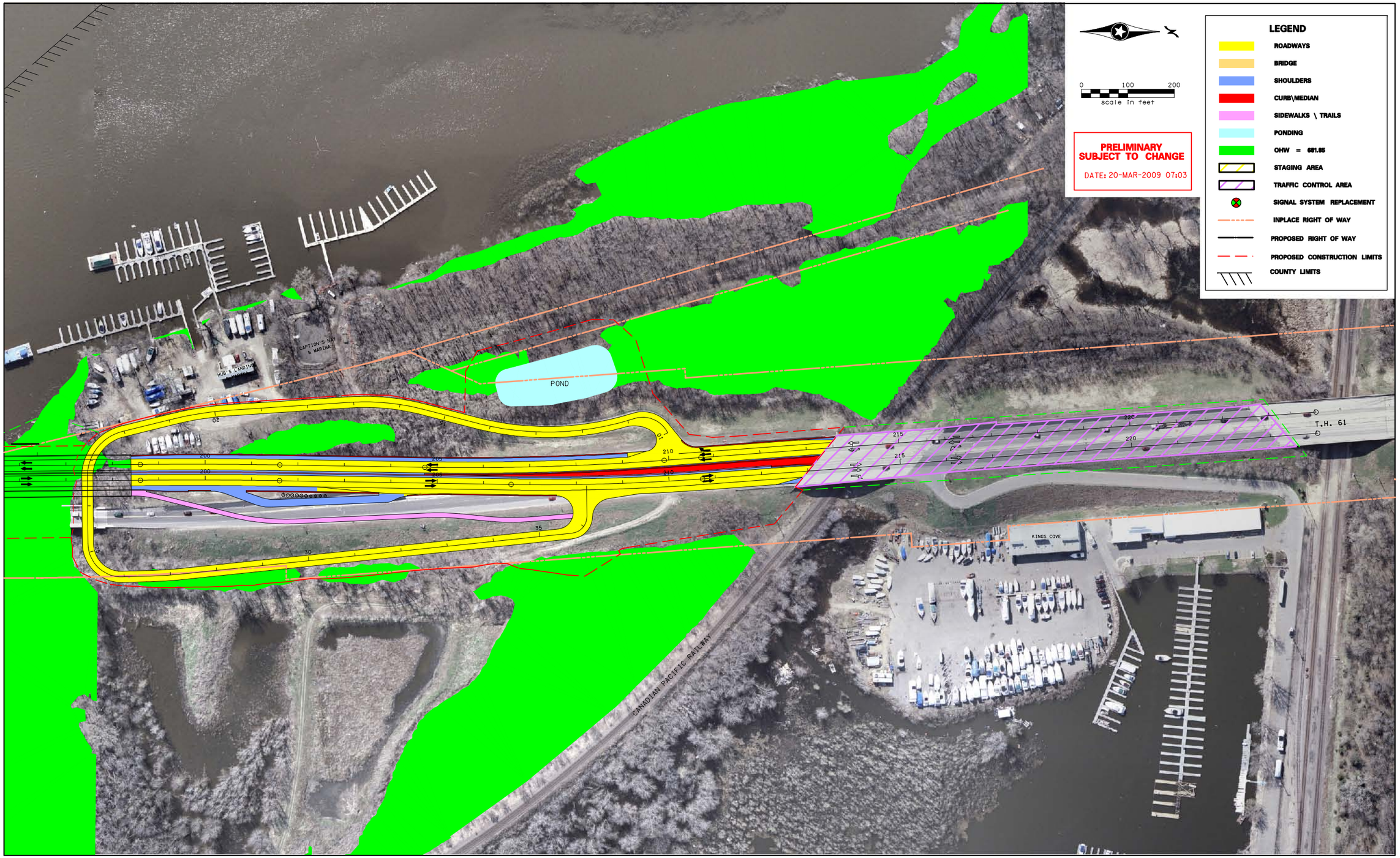
Figure ***21***

Hasting T.H. 61 Bridge Project
S.P. 1913-64

Wetland Basin Areas And Impacts

Hastings TH 61 Bridge Project
SP: 1913–64

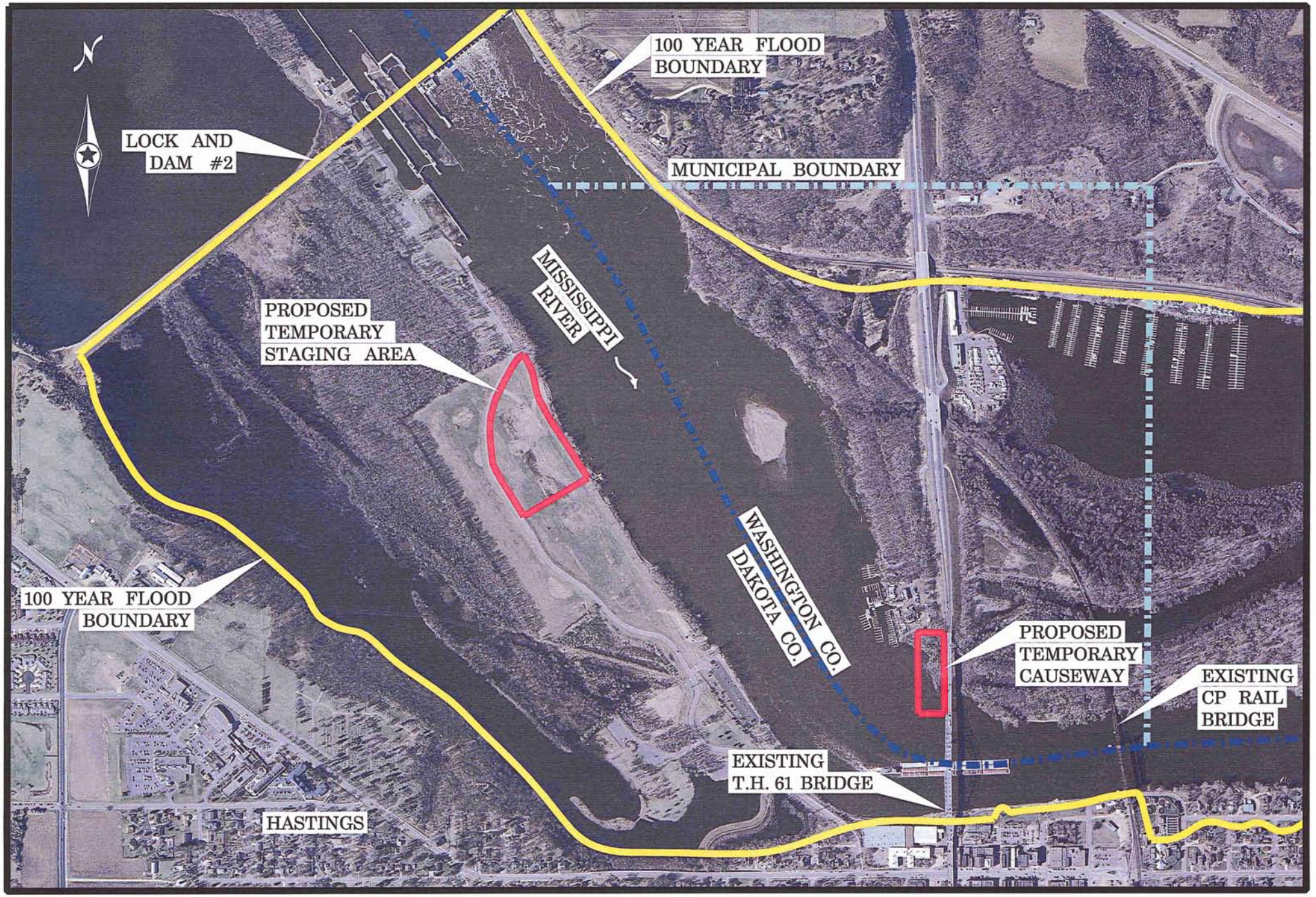
Figure 22



Ordinary High Water Level

Hastings TH 61 Bridge Project
SP: 1913–64

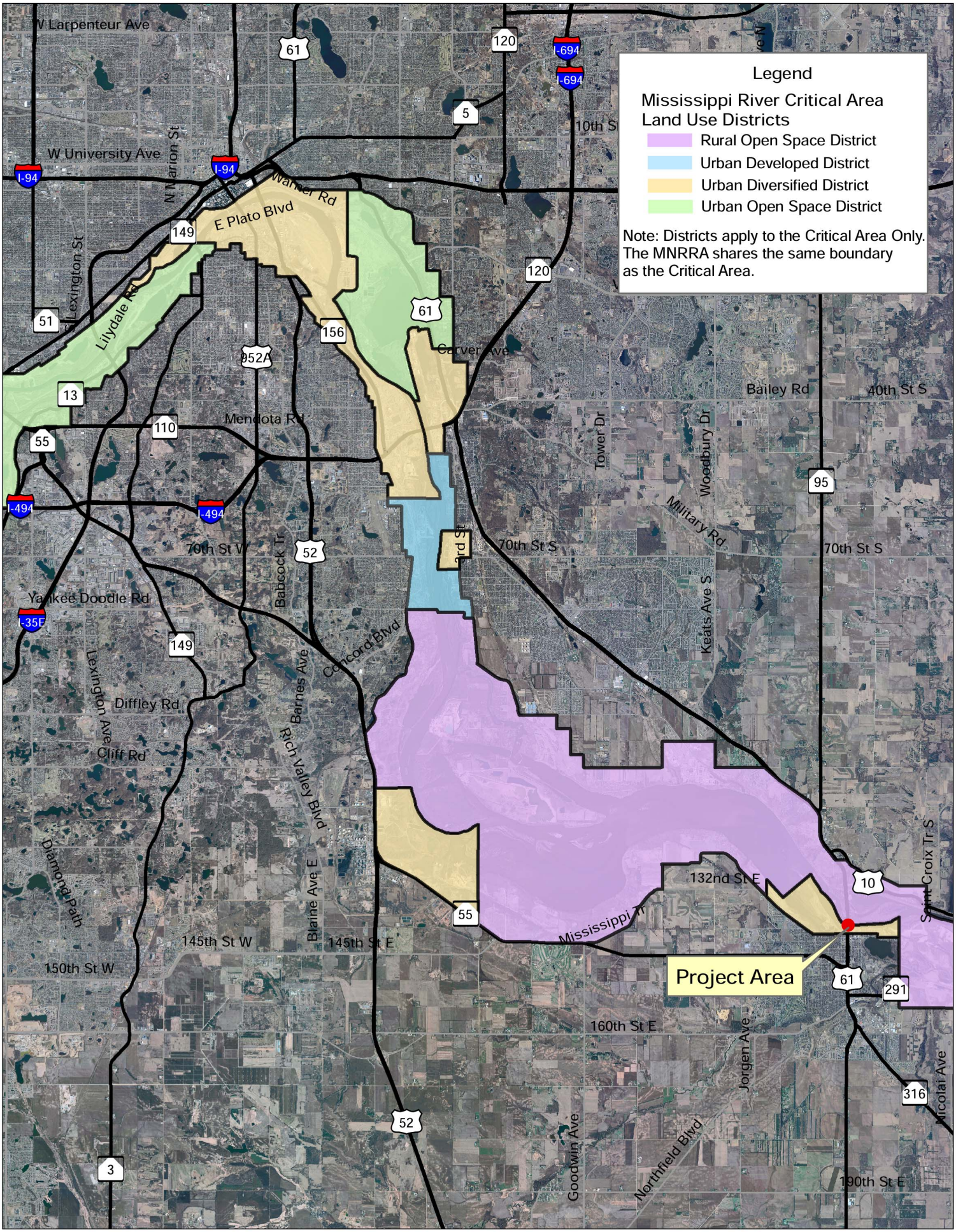
Figure 23



Floodplain Boundaries

Figure 24

Hastings TH 61 Bridge Project
SP: 1913-64



Mississippi National River Recreation Area and Critical Area

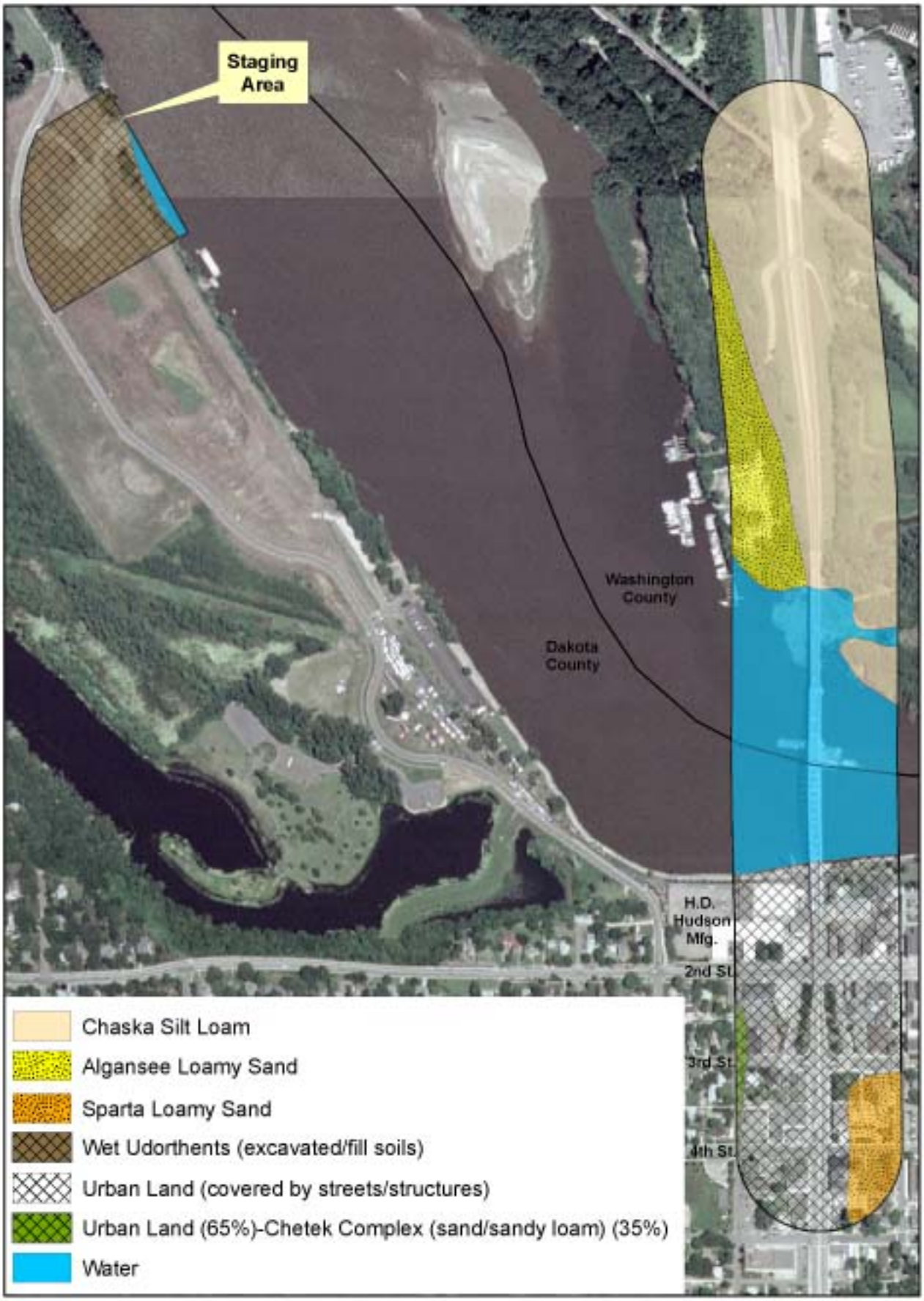
Hastings T.H. 61 Bridge Project
S.P. 1913-64

Figure **25**

Location of Potentially Steep Slopes

Hastings TH 61 Bridge Project
SP: 1913-64

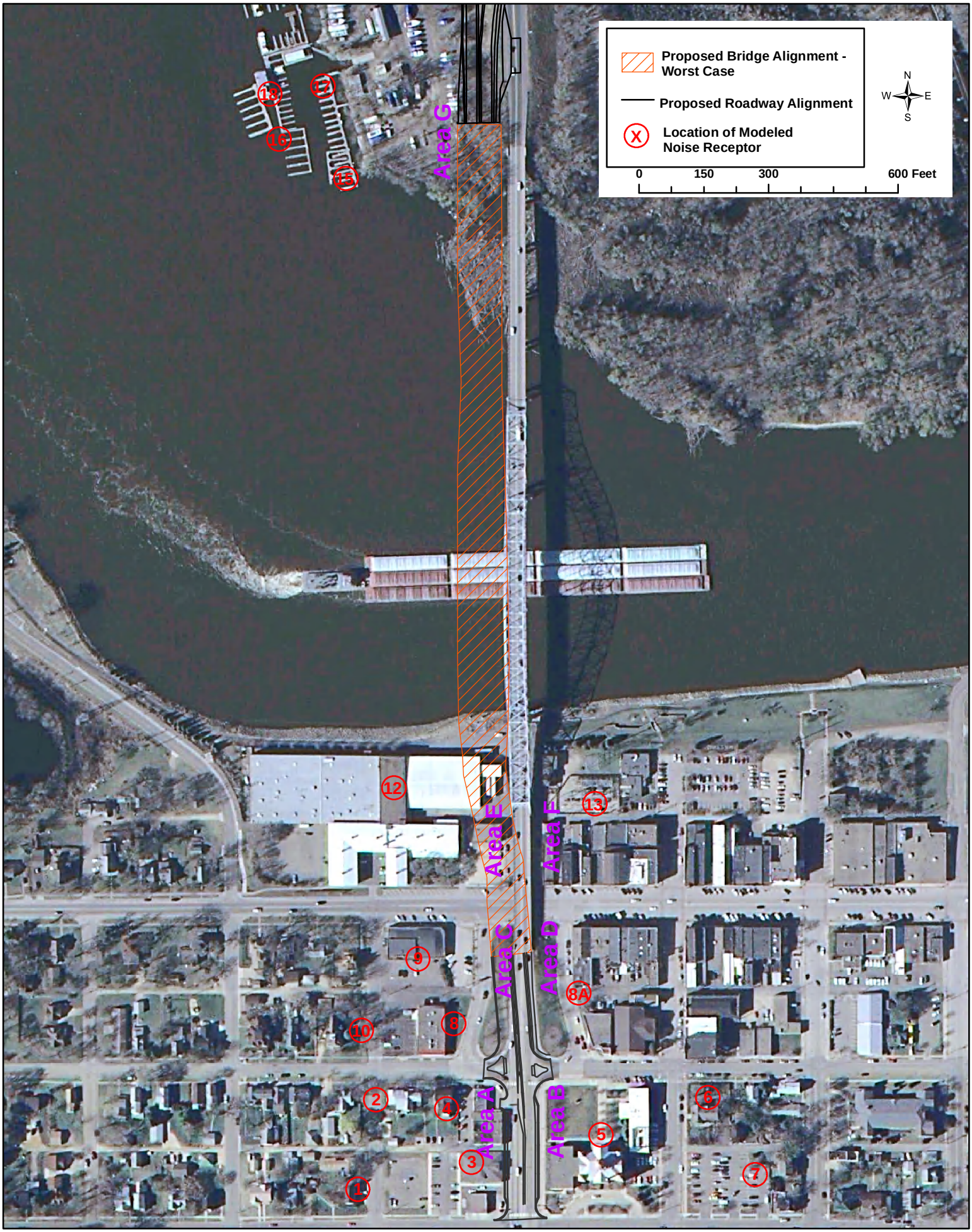
Figure: 26



Soils Map

Hastings TH 61 Bridge Project
SP: 1913-64

Figure: 27



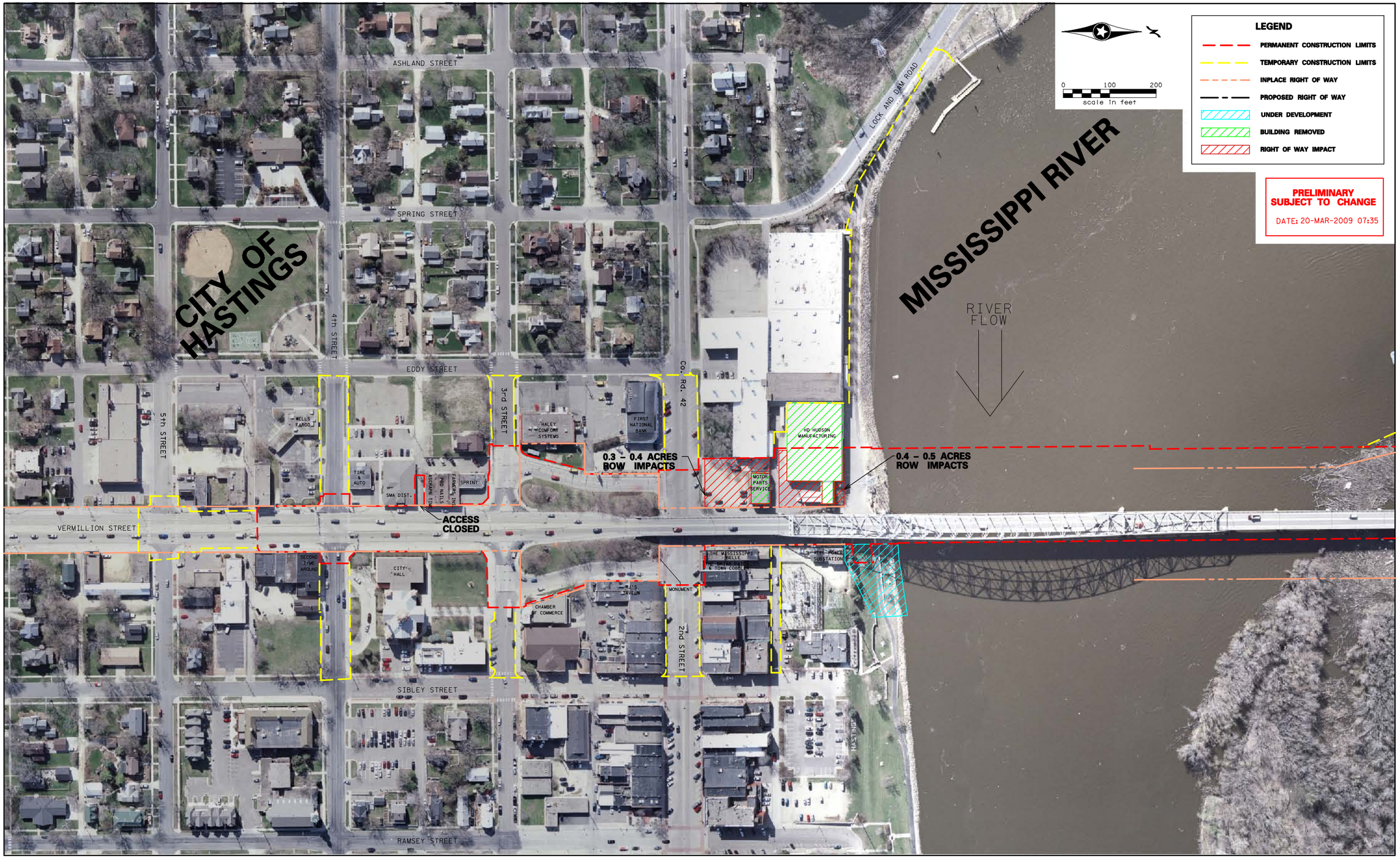
Noise Receptor Locations

Hastings TH 61 Bridge Project
SP: 1913-64

Figure *28*

Permanent & Temporary 4F Impacts
Hastings TH 61 Bridge Project
SP: 1913–64

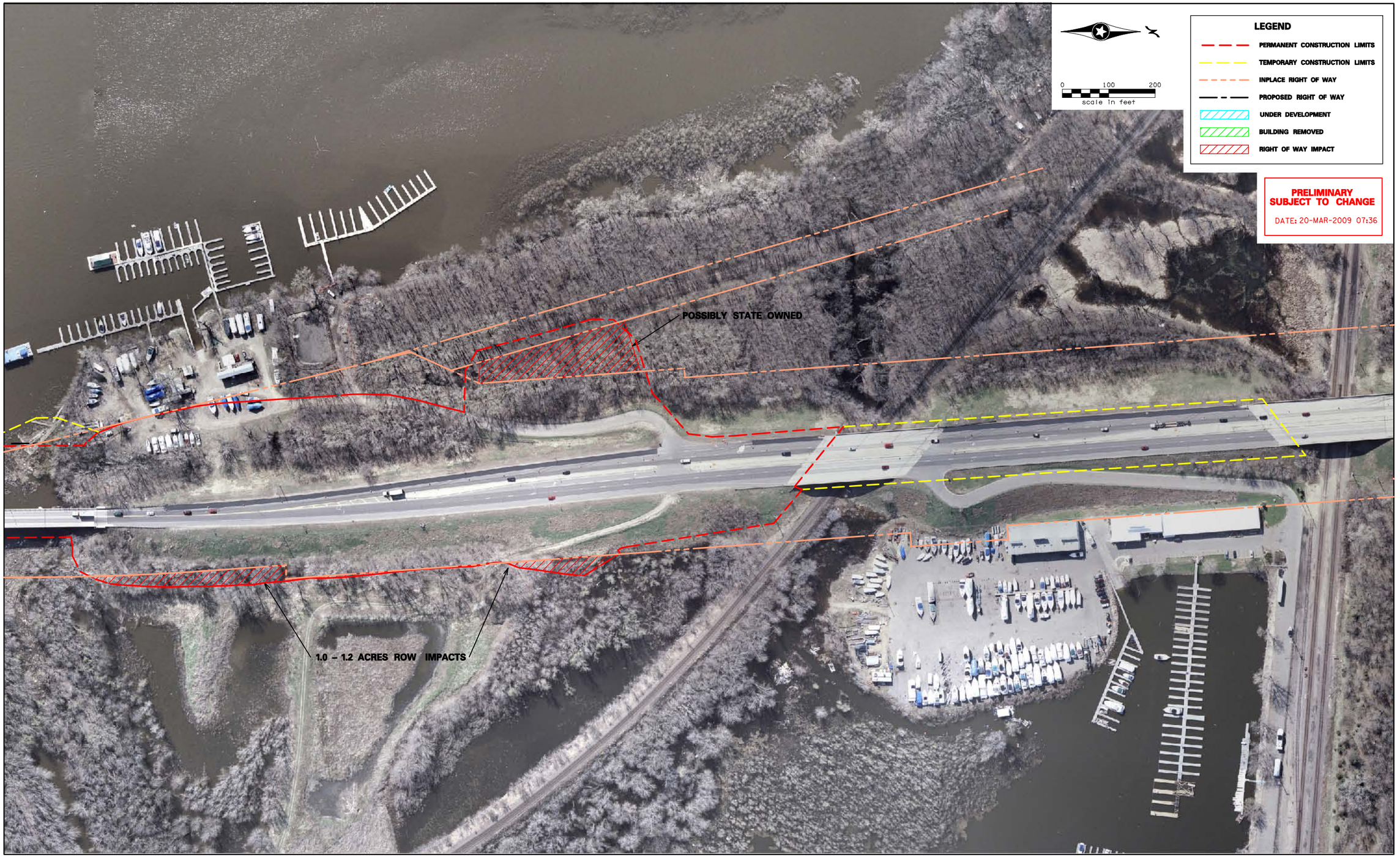
Figure 29



Proposed Construction Limits And Right-of-Way Impacts

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 30A



Proposed Construction Limits And Right-of-Way Impacts
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 30B

Proposed Construction Limits And Right-of-Way Impacts

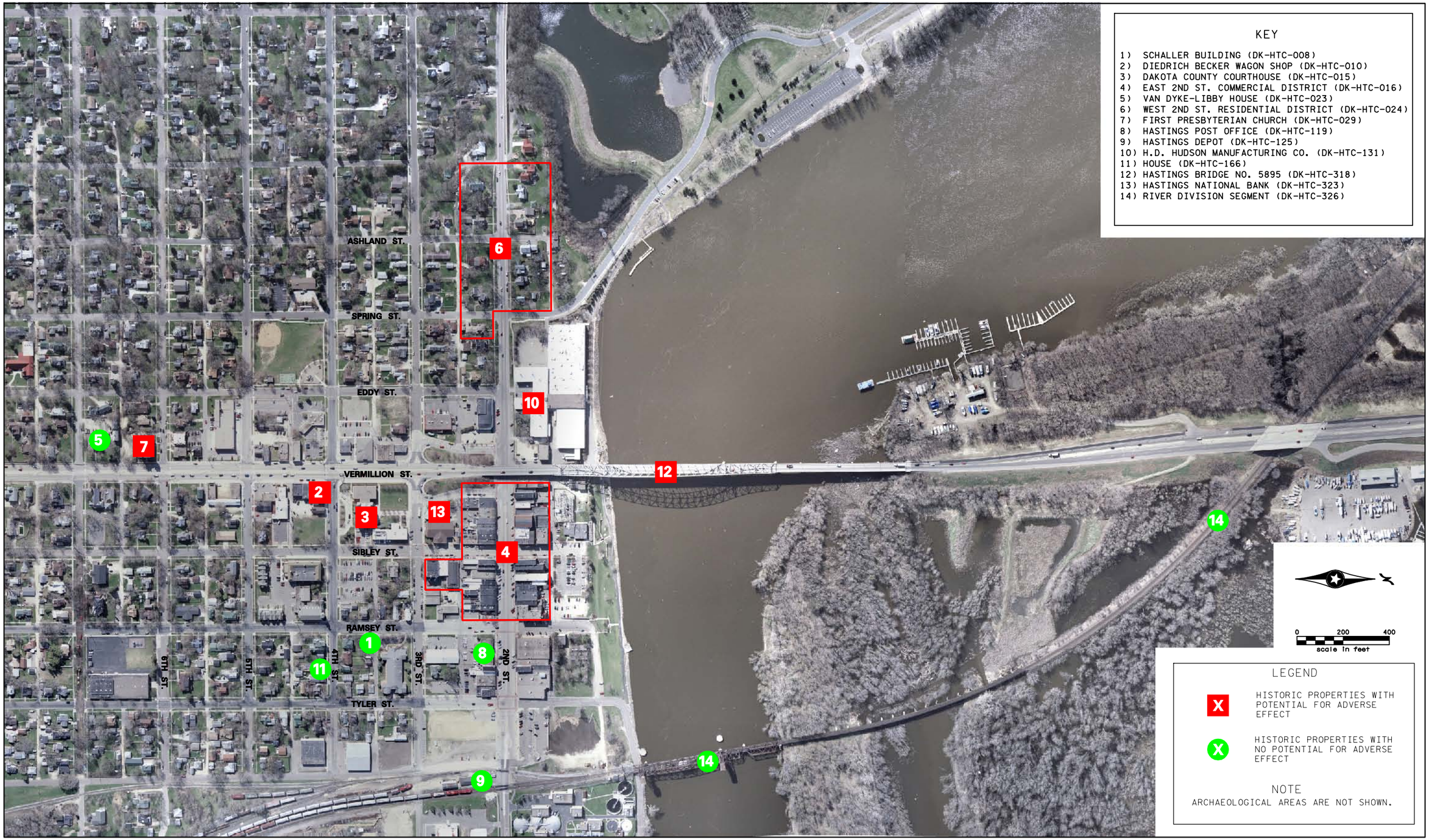
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 30C

Area of Potential Effect

Hastings TH 61 Bridge Project
SP: 1913-64

Figure 31



Historic Properties
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 32

Appendix 2 - Response Letters

Letter 1: Mn/DOT Cultural Resource Unit, 12/19/08

Letter 2: State Historic Preservation Office, 2/5/09

Letter 3: Mn/DOT Cultural Resource Unit, 1/14/09

Letter 4: Mn/DOT and City of Hastings Temporary Occupancy, 1/14/09

Letter 5: Department of Natural Resources, 8/6/08

Letter 6: United States Coast Guard, 2/9/09

Letter 7:National Park Service, 2/10/09

Letter 8: United States Coast Guard, 5/8/08

Letter 9: National Park Service, 5/22/08

Letter 1:
Mn/DOT Cultural Resource Unit,
12/19/08

Minnesota Department of Transportation

Office of Environmental Services
395 John Ireland Boulevard, MS 620
St. Paul, MN 55155-1899

Fax: 651/ 284-3754
Phone: 651/ 284-3750

December 19, 2008

Mr. Dennis Gimmestad
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101-1906

Regarding: S.P. 1913-64 (TH 61, Washington and Dakota counties)
Bridge No. 5895 over the Mississippi River
T. 26 & 115 N., R. 20 & 17 W., Denmark Township & City of Hastings

Dear Mr. Gimmestad:

We are providing your office with this information pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800). The proposed project consists of either the replacement of the existing two lane bridge with a single or pair of bridges with a four lane capacity, or the rehabilitation of the existing bridge with the addition of a second new two lane bridge next to it.

Three cultural resource investigations were undertaken to identify and evaluate archaeological and architectural properties within the area of potential effect (APE). Please find enclosed these three final reports: *TH 61 Hastings Bridge Replacement Project Phase I and II Architectural History Investigation, Dakota and Washington Counties, Minnesota* by Stark Preservation Planning LLC and Landscape Research, LLC (2008), *Phase I and II Archaeological Investigations for the Trunk Highway 61 Hastings Bridge Project, Dakota and Washington Counties, Minnesota* by Two Pines Resource Group, LLC (2008), and *Stratigraphic and Geoarchaeological Investigations at the Proposed Trunk Highway 61 Hastings Bridge Replacement Project, Dakota and Washington Counties, Minnesota* by Strata Morph Geoexploration, Inc (2008).

The archaeological and geomorphological survey and evaluation identified one site, St. John's Hotel and Saloon (21DK0081) as being eligible for listing in the National Register of Historic Places under criteria A and D. Since this site will be adversely affected by construction activities, mitigation of this effect will be addressed in a Memorandum of Agreement. Two sites (21WA0107, one unnumbered) on the north side of the Mississippi River are recommended as potentially eligible but could not be fully evaluated due to landowner concerns over expanded trenching. This area is currently not being considered for any storm water pond or construction staging activities. Four parcels in the City of Hastings (Block 4, Lots 2-4; Block 6, Lots 6-8; Block 12, Lots 3-4; Block 12, Lot 5) could not be fully tested or evaluated due to the presence of asphalt parking lots and logistical problems with their complete removal. These parcels were initially being considered for storm water ponds but are not at this time. However, if any of these

sites or areas north or south of the river are designated for construction or staging activities, additional Phase I and II investigations will be conducted.

The architectural history survey identified 97 properties built in or before 1960. Two historic districts within the APE are listed in the NRHP, containing 38 and 13 properties. Three properties are individually listed in the NRHP, and four have been previously determined eligible. Of the properties surveyed during the Phase I survey, nine are recommended as eligible for listing and one as potentially eligible, in addition to the nine already listed or previously determined eligible (see Table 4, pp. 336-337). An assessment of effects study was conducted on all architectural properties within the APE listed in, determined eligible for listing in, or recommended as eligible for listing in the NRHP. The assessment of effects took into account the four alternatives for bridge designs and various other elements related to the project being considered at the time of this investigation. The assessment concluded that various aspects and alternatives of the proposed project would have an adverse effect or potentially adverse effect to nine of the historic properties within the APE (see Table 3, pp. 332-333).

Our office continues to consult with you about the possible rehabilitation of National Register eligible bridge no. 5895. Although you are aware no preferred alternative has been selected, we request that you concur with the evaluation results in the interest of moving the project forward.

If you have additional questions regarding this project, please contact me at (651) 366-3614.

Sincerely,

Craig Johnson
Archaeologist
Cultural Resource Unit

cc: Joseph Hudak, Mn/DOT CRU
Steve Kordosky, Mn/DOT Metro (1 report)
Lynn Clarkowski, Mn/DOT Metro
Brigid Gombold, Mn/DOT Metro (1 report)
Steve Johnson, NPS-MNRRA (1 report)
Brad Johnson, USACE (1 report)
Phil Forst, FHWA
Justin Fortney, Hastings HPC (1 report)
John Grossman, City of Hastings (3 reports)
Chad Roberts, Dakota Co. Historical Society (1 report)
Heidi Langenfeld, Le Duc Estate (1 report)
Legislative Library (1 report)
Mn/DOT Library (1 report)
Scott Anfinson, OSA (1 report)
Mn/DOT CRU/CO Files

TABLE 3. ASSESSMENT OF EFFECTS SUMMARY TABLE

Historic Property	Bridge Alt 1	Bridge Alt 2	Bridge Alt 3	Bridge Alt 4	Approach	Storm Pond	Bicycle/ Pedestrian Ramp	Construction Activity
Schaller Building, DK-HTC-008	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect	No Effect	No Effect	No Effect
Hayes House; DK-HTC-009	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	Potential Adverse Effect	No Effect	No Effect	No Effect
Diedrich Becker Wagon Shop; DK-HTC-010	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	No Effect	Potential Adverse Effect
Dakota County Courthouse; DK-HTC-015	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	No Effect	Potential Adverse Effect
East Second Street Commercial Historic District; DK-HTC-016	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect
Van Dyke-Libby House; DK-HTC-023	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
West 2nd Street Residential District; DK-HTC-024	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	Potential Adverse Effect	No Effect	Potential Adverse Effect
First Presbyterian Church; DK-HTC-029	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect	No Effect	No Effect	No Effect
St. Luke's Episcopal Church; DK-HTC-042	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
Hastings Post Office; DK-HTC-119	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
Hastings Depot; DK-HTC-125	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect	No Effect	No Effect

Historic Property	Bridge Alt 1	Bridge Alt 2	Bridge Alt 3	Bridge Alt 4	Approach	Storm Pond	Bicycle/ Pedestrian Ramp	Construction Activity
Hudson Manufacturing Company; DK-HTC-131	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect
Becker House; DK-HTC-164	No Effect	No Effect	No Effect	No Effect	Potential Adverse Effect	No Adverse Effect	No Effect	Potential Adverse Effect
House; DK-HTC-166	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
Smith House; DK-HTC-261	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect	No Effect	No Effect	No Effect
Bridge No. 5895; DK-HTC-318	Adverse Effect	Adverse Effect	Potential Adverse Effect	Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	Potential Adverse Effect
Hastings National Bank; DK-HTC-323	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	Potential Adverse Effect	Potential Adverse Effect	No Effect	Potential Adverse Effect
CM&StP Railroad; DK-HTC-326 and WA-DMK-016	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect	No Adverse Effect	No Adverse Effect	No Effect
Nine-Foot Mississippi River Navigation Channel Project Segment; DK-HTC-373 and WA-DMK-017	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect	No Effect	No Adverse Effect	No Adverse Effect

TABLE 4. SUMMARY ARCHITECTURAL HISTORY INVESTIGATION AND ASSESSMENT OF EFFECTS FINDINGS

SHPO No.	Property Name	Address	NRHP Recommendation	Criteria	Area(s)	Potential for Adverse Effect
DK-HTC-008	Schaller Building	313 Ramsey St.	Eligible	C	Architecture	No
DK-HTC-009	Archibald M. and Louisa Hayes House	307 Sibley St.	Eligible	C	Architecture	Yes
DK-HTC-010	Diedrich Becker Wagon Shop	401-403 Vermillion St.	Eligible	A and C	Ethnic History and Architecture	Yes
DK-HTC-015	Dakota County Courthouse	101 E. 4th St.	Listed	A and C	Government and Architecture	Yes
DK-HTC-016	East Second Street Commercial District	E. 2nd St.	Listed	A and C	Commerce and Architecture	Yes
DK-HTC-023	Van Dyke-Libby House	612 Vermillion St.	Listed	C	Architecture	No
DK-HTC-024	West Second Street Residential District	Roughly W. 2nd St. between Ashland and Spring streets	Listed	C	Architecture	Yes
DK-HTC-029	First Presbyterian Church	602 Vermillion St.	Listed	A and C	Social History and Architecture	No
DK-HTC-042	St. Luke's Episcopal Church	615 Vermillion St.	Eligible	A and C	Social History and Architecture	No
DK-HTC-119	Hastings Post Office	300 E. 2nd St.	Eligible	A, C and D	Social History, Architecture and Art	No
DK-HTC-125	Hastings Depot	201 Tyler St.	Eligible; Contributing	A	Transportation	No
DK-HTC-131	H. D. Hudson Manufacturing Company	200 W. 2nd St.	Eligible	A	Industry	Yes
DK-HTC-164	Diedrich Becker House	110 E. 4th St.	Eligible	C	Architecture	Yes
DK-HTC-166	house	312 E. 4th St.	Eligible	C	Architecture	No
DK-HTC-261	Peter and Barbara Smith House	323-5 Ramsey St.	Eligible	A	Ethnic History	No
DK-HTC-318	Bridge No. 005895/Hastings Bridge	TH 61 over Mississippi River	Eligible	C	Engineering	Yes
DK-HTC-323	Hastings National Bank	111 E. 3rd St.	Eligible	C	Architecture	Yes

SHPO No.	Property Name	Address	NRHP Recommendation	Criteria	Area(s)	Potential for Adverse Effect
DK-HTC-326; WA-DMK-016	Chicago, Milwaukee & St. Paul River Division Railroad Corridor Historic District Segment	T114N, R15W,Sec. 27,Dakota Co.; T26, R20, SW 1/2 Sec. 7 Washington Co.	Eligible; Contributing	A	Transportation	No
DK-HTC-373; WA-DMK-017	9-Foot Mississippi River Navigation Channel Segment	Mississippi River	Potentially Eligible	A and C	Commerce, Economics, Transportation, Government, Conservation, and Engineering	No

Letter 2:
State Historic Preservation Office:
2/5/09

Minnesota
Historical Society

State Historic Preservation Office

February 5, 2009

Mr. Craig Johnson
Cultural Resource Unit
MN Dept. of Transportation
Transportation Building, MS 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

Re: S.P. 1913-64, T.H. 61
Replace Bridge No. 5895 on T.H. 61 over the Mississippi River
Denmark Twp. and the City of Hastings, Washington and Dakota Counties
SHPO Number: 2008-2228

Dear Mr. Johnson:

Thank you for the opportunity to review and comment on the above 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 and the Minnesota Field Archaeology Act.

We have reviewed the results of the surveys of the project area, and have the following comments:

1. We concur with the determination that site 21DK0081 meets National Register criteria.

2. There are six areas which merit further archaeological investigation if they lie within the area of potential effect for the selected project design. These areas are: site 21WA0107, the identified mussel shell and charcoal scatter, and four lots recommended for Phase I/II investigations on page ii of the December 2008 archaeological survey report prepared by Two Pines Resource Group.

3. The following National Register-listed properties are in the project area: Dakota County Courthouse, East Second Street Commercial District, Van Dyke-Libby House, West Second Street Residential District, and First Presbyterian Church.

4. We concur with the determinations that the following properties meet National Register criteria: Schaller Building, Diedrich Becker Wagon Shop, Hastings Post Office, Hastings Depot, H.D. Hudson Manufacturing Company, House at 312 East 4th Street, Bridge No. 5895, Hastings National Bank, and the Chicago Milwaukee & St. Paul River Division Railroad Corridor Historic District Segment.

5. We do not concur with the determinations that the following properties meet National Register criteria: Archibald and Louisa Hayes House, St. Luke's Episcopal Church, Diedrich Becker House, and Peter and Barbara Smith House.

You have indicated that the project is currently defined as the replacement of the National Register-eligible Hastings Bridge (Bridge No. 5895) with one of three structure types. We concur with your determination that any of these project alternatives would result in an **adverse effect**.

The preliminary analysis of project effects in the survey report will be helpful in completing the effects assessment as the planning process proceeds. We look forward to entering into the consultation process with your office and other interested parties. We would recommend that an effort be made to identify Section 106 consulting parties at an early stage in this process.

Contact us at 651-259-3455 with questions or concerns.

Sincerely,

Britta L. Bloomberg
Deputy State Historic Preservation Officer

cc: Justin Fortney, Hastings Heritage Preservation Commission
John Anfinson, National Park Service
Will Stark, Stark Preservation Planning
Carole Zellie, Landscape Research
Michelle Terrell, Two Pines Research

Letter 3:
Mn/DOT Cultural Resource Unit,
1/14/09

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
St. Paul, Minnesota 55155-1899

January 14, 2009

Mr. Dennis Gimmestad
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101-1906

Regarding: S.P. 1913-64 (TH 61, Washington and Dakota counties)
Bridge No. 5895 over the Mississippi River
T. 26 & 115 N., R. 20 & 17 W., Denmark Township & City of Hastings

Dear Mr. Gimmestad:

We are providing your office with this information 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 Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) (June 2005). We previously wrote to your office on 12/19/2008 with the determinations of eligibility and assessment of effects to one archaeological property and 19 architectural properties. The purpose of the present letter is to demonstrate the Department's effort to identify and evaluate avoidance alternatives in relation to the Hastings Bridge, which is eligible for listing in the National Register of Historic Places.

We have held numerous meetings with you and the Stakeholder Advisory Committee throughout 2008 to discuss cultural resources issues for the project, including the Hastings Bridge. In addition, there were three meetings held with you to specifically discuss the rehabilitation option for the structure. These meetings were held on 9/9/2008, 12/30/2008, and 1/9/2009.

The Mn/DOT Bridge Office completed a report detailing the rehabilitation options that would preserve the bridge but address the fracture critical and redundancy issues. Enclosed please find two copies of that report entitled *Bridge Rehabilitation Alternative Report for SP 1913-64 T.H. 61 Mississippi River Crossing in Hastings* by Keith Farquar, Senior Bridge Engineer from Mn/DOT. The rehabilitated bridge would be immediately adjacent to and downstream from a new arch bridge carrying two south-bound lanes of traffic. This report presents three rehabilitation alternatives – two external load path redundant and one internal load path redundant options. The two external path load redundant options basically involve a second bridge supporting the existing one either with a cable supported structure or duplicate truss members. The internal load path redundancy alternative involves replacing the entire deck and steel supporting members and substantial numbers and portions of the remaining members,

depending on height above the driving surface. In addition, vertical I-beams would have to be reinforced by converting them to box-beams, lateral bracing would be converted from lattice to solid I-beams, sway frames would be changed from open to solid configuration, sway frames at or near the bridge portals would be narrowed, and the railings would be replaced. Additional steel truss members would have to be added to the upper side trusses, changing them from a zig-zag pattern to a crossing or X pattern. Finally, crossing steel cables would run between the existing vertical members joining the deck to the upper trusses.

The Hastings Bridge is eligible under criterion C because it exhibits exceptional engineering to meet the unusual site conditions of fitting in with existing businesses and because it was the first steel tied-arch highway bridge built in Minnesota. The character-defining element of the bridge is the steel tied-arch truss, both in its visual appearance and the way the truss functions. The external path load redundant option that includes construction of a cable-stay structure dramatically affects the visual appearance of the bridge, as well as changes the way the structure works. The other external path load redundant option consists of building a bridge around the bridge. While the truss still works in the same way, the substantial addition of material dramatically affects the original appearance of the truss, including its design and workmanship. Finally, the internal load path redundancy alternative requires the addition of many additional members, creating a dramatically different appearance from the original truss design. Also, please note that all of the alternatives require substantial replacement of historic materials. Because of the dramatic changes to the appearance of the original truss design, the change in the way the truss works on one of the options, and the substantial amount of new materials, it is the determination of our office that the three rehabilitation alternatives would have an adverse effect on the Hastings Bridge, and would make the structure not eligible after rehabilitation.

At our meeting on 1/9/2009, you stated that you felt there is potential that the internal redundancy approach could result in the bridge still being eligible, depending on the design details. Due to lack of community support for preservation of the structure, the problems with maintenance under the three alternatives, and constructability issues, however, you stated that it is understandable why the rehabilitation option should not be carried forward. We all agreed that the Department demonstrated a good faith effort in trying to identify rehabilitation options that would result in preservation of the structure and compliance with redundancy issues in relation to Chapter 152. You stated your appreciation of the level of study, and encouraged the Department to keep the approaches developed for this project for application on other non-redundant historic bridges. Our office agrees that theses approaches could be of great use on future rehabilitation projects.

Mn/DOT Metro District has defined the project as the replacement of the Hasting Bridge with either a twin box girder, a single arch, or single cable bridge. Since the Hasting Bridge will be replaced, it is the determination of this office that the project as currently proposed will result in an adverse effect to the Hastings Bridge and those properties discussed in our determination letter to you on 12/19/2008. These include St. John's Hotel and Saloon (21DK0081) and

possibly nine architectural properties. We look forward to determining appropriate mitigation for the loss of the Hastings Bridge, and developing a Programmatic Agreement since not all project effects are known. We would appreciate your response in 30 days, but that due to the project schedule if it could be submitted to us prior to that, it would be greatly appreciated.

If you have additional questions regarding this project, please contact me at (651) 366-3614.

Sincerely,

Craig Johnson
Archaeologist
Cultural Resource Unit

encl

cc: Steve Kordosky, Mn/DOT Metro
Joseph Hudak, Mn/DOT CRU
Lynn Clarkowski, Mn/DOT Metro
Brigid Gombold, Mn/DOT Metro
Steve Johnson, NPS-MNRRA
Brad Johnson, USACE
Phil Forst, FHWA
Justin Fortney, Hastings HPC
John Grossman, City of Hastings
Chad Roberts, Dakota Co. Historical Society
Heidi Langenfeld, Le Duc Estate
Mn/DOT CRU/CO Files

Letter 4:
Mn/DOT and City of Hastings,
1/14/09

Minnesota Department of Transportation

Highway 61 Hastings Bridge Design-Build
Metropolitan District
1500 West County Road B2
Roseville, MN 55113

Date: Jan. 14, 2009

Mr. Barry Bernstein
Parks and Recreation Director
City of Hastings
920 10th St. W.
Hastings, MN 55033

Re: S.P. 1913-64 T.H. 61 Hastings Bridge Project
Temporary Occupancy Letter

Dear Mr. Bernstein:

As part of the construction of a new T.H. 61 Mississippi River crossing, there will be temporary construction impacts to the City Hall property, Levee Park, Jaycee Park, Lake Rebecca Park, City of Hastings Flint Hills Nature Preserve, and the Hastings Loop Trail. The following outlines the proposed temporary impacts.

City Hall property
As shown in the attached figure, the south west corner of the City Hall property, or the north east corner of Hwy. 61 and Fourth Street, will have temporary construction impacts. The triangular area shown, which is on the City Hall property, is currently a concrete sidewalk. As part of the project Mn/DOT's pedestrian ramp at the intersection will be reconstructed. As part of this work the triangular piece of sidewalk on the City Hall property will also need to be reconstructed because it functions as a piece of the entire sidewalk at this corner. This will ensure that the concrete joints are smooth. This area will be closed to pedestrians during the reconstruction. The proposed work will simply replace the existing concrete sidewalk with new concrete and there will be no changes to the triangular piece of sidewalk, such as changes in size or elevation. There will be no impacts to adjacent fences, walls, or monuments. At the end of construction this area will be restored to an equal or better condition that existed at the time of the Project's Contract Award.

Levee Park
As shown in the attached figure, the Hastings Bridge Project will connect to an existing water main stub located in Levee Park, and extend the water main up to 2nd Street. The water main is owned by the City of Hastings and the work will be paid for by the City of Hastings. The Mn/DOT Contractor will perform the work. This area of the park will have a temporary easement and park

users will not be allowed in this area. At the end of construction this area will be restored to an equal or better condition that existed at the time of the Project's Contract Award.

Jaycee Park
As shown in the attached figure, a small portion of the Hastings Loop Trail that travels through Jaycee Park will be used as a delivery truck access to H. D. Hudson Manufacturing Company. This area of the park will have a temporary construction easement and park users will not be allowed in this area. The trail will be repaved in order to support the weight of large trucks. At the end of construction the use of this trail as a truck access will cease and the park users will have the full use of the park and trail. The effected park and trail will be restored to an equal or better condition that existed at the time of the Project's Contract Award.

Lake Rebecca Park
As shown on the attached figure, the existing Lake Rebecca parking lot will be used during construction as a truck turn around for H. D. Hudson Manufacturing Company delivery trucks. In order to provide adequate turning radius for semi-trucks to turn into the park entrance the corner will be widened. This condition will become permanent, see exhibit. The park road leading to the parking lot, and the parking lot itself will be restored to equal or better condition that existed at the time of the Project's Contract Award. At the end of construction the use of this parking lot as a truck turn around will cease.

City of Hastings Flint Hills Nature Preserve
The northwestern portion of Flint Hills Nature Preserve, see attached figure, will be needed for construction staging. This area will be graded and lined with a non-permeable liner with gravel over the liner. The Hastings Loop Trail that travels along the riverbank and through this area would be relocated adjacent to the northern edge of Lock and Dam Road. As requested by the city, the trail will stay in its present location up to the observation deck and provide a connection to this trail amenity. Temporary lighting will be provided along the realigned trail section. The power lines along the riverbank will be relocated. Trees along the river bank will also be removed. The staging area will be restored to the usage and an equal or better condition that existed at the time of the Project's Contract Award. The portion of this staging area that has trees removed and had native prairie vegetation plantings by the city will be re-established when the staging area is no longer needed for the project. The trail along the river will be re-established to equal or better condition once the staging area is no longer in need for the project. The power lines may be left permanently in their relocated position, or may be relocated back to their original location once the staging area is no longer in need for the project, as directed by the City of Hastings.

Hastings Loop Trail
The portion of the Hastings Loop Trail shown on the attached figure will be closed and detoured during construction. Mn/DOT will work with city staff to determine an exact detour route when the project is further developed. When construction is complete the trail will be restored to the usage and an equal or better condition that existed at the time of the Project's Contract Award.

As per Federal Register Rules and Regulations 23 CFR 774, these temporary easements are considered a temporary occupancy of Section 4(f) lands. To proceed with the design and construction of the Hasting Mississippi River Bridge project, there must be documented agreement that the officials having jurisdiction over these resources concur with the work to be completed and agree that the following conditions are met.

The duration of the occupancy will be temporary in nature and there will be no change in ownership of the land. There are no anticipated permanent adverse physical impacts. There will be temporary impacts that will interfere with the activities or purposes of the park on a temporary basis. These temporary impacts have been mitigated to the satisfaction of the officials having jurisdiction over these resources as described previously in this document. The land being used will be restored to the usage and an equal or better condition that existed at the time of the Project's Contract Award.

Please review the attached figure and indicate your concurrence with the work proposed, and that the above conditions are met, by signing below. Please forward the signed original back to me for our records. I will forward this information to the Mn/DOT Project Liaison Unit for concurrence by the FHWA.

If you have questions regarding this matter, feel free to contact me at your earliest convenience at (651) 234-7880. Thank you.

Sincerely

Steve Kordosky
Hwy. 61 Hastings Bridge Project Manager
Mn/DOT
1500 Co. Rd. B2
Roseville, MN 55113

I concur that the proposed work constitutes a Temporary Occupancy of the City Hall property, Levee Park, Jacyee Park, Lake Rebecca Park, the City of Hastings Flint Hills Nature Preserve, and the City of Hastings Loop Trail.

1/27/2009

City of Hastings — Date

PAUL J HICKS
MAYOR

Attachments: Figure illustrating temporary construction impacts on parks

Letter 5:
Department of Natural Resources,
8/6/08 Letter

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-4010

August 6, 2008

Brigid Gombold
MnDOT Metro District
1500 West County Road B2
Roseville, MN 55113

RE: Response to MnDOT Early Notification Memo Requesting Information and Early Coordination Regarding TH 61 Mississippi River Crossing (Hastings Bridge), Washington and Dakota Counties

Dear Ms. Gombold:

The Minnesota Department of Natural Resources (DNR) has completed review of the information submitted in the MnDOT Early Notification Memo regarding information for a scoping study for upgrading the TH 61 Mississippi River crossing at the City of Hastings, Washington and Dakota Counties. The following comments were submitted to me during DNR field review of the project:

1. The Mississippi River is a Public Watercourse and as such a Public Waters Work Permit will be required for work within the Ordinary High Water Elevation (OHW) of the river. As the project moves forward, design of the crossing should meet the conditions listed in GP 2004-0001. 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. The Ordinary High Water Elevation (OHW) of the Mississippi River at the crossing location is 681.7' in 1929 datum or 682.2' in 1912 datum. It is unknown how much of the proposed project will require work within the OHW of the river. However acceptable criteria for permanent and/or temporary impacts (including demolition/construction methods) should be identified in project documents.

   b. The Mississippi River in listed as 'infested' with Zebra Mussels and suitable precautions against their spread will be required.

   c. Commercial and recreational navigation occurs in the area. The demolition and/or construction phases should recognize the possibility of boaters in the area and plan accordingly so their safety is not compromised. The DNR may defer to the US Coast Guard regarding this issue.

   d. Hydraulic/Hydrologic reporting is required. All temporary or permanent fill/structures will be required to be modeled for 100yr flood elevation impacts. Detailed Flood Studies exist for this reach of the Mississippi River and new approaches and bridge design must meet those requirements.

   e. A primary issue we see with bridge replacement projects is that the demolition/construction often conflicts with fish spawning dates. For construction purposes, Work Exclusion dates for the Mississippi River at this location is April 15 through June 15. These dates are to allow for fish migration and spawning. A waiver may be possible should methods of demolition/construction be determined not to adversely effect fish migration or spawning. However, work during these dates shall not occur adjacent to, or in the water during this time without prior written approval of the DNR.

   f. Note that to meet DNR Erosion and Sediment control requirements, NPDES construction site requirements shall be followed regardless if the NPDES permit is required or not. Adherence to the NPDES program, including but not limited to MnDOT Standard Specifications for Construction, 2005 edition, (eg. Specification 1717), will generally suffice for DNR concerns.

   g. Due to habitat, flood elevation, and sediment concerns, the DNR prefers that barges be utilized to the maximum extent possible for demolition and construction. Any temporary structures proposed in the water must also be approved by the DNR (EG causeways, workpads, staging areas, etc.). In addition to habitat concerns, these structures would be required to be modeled for flood elevation impacts, and/or provide a Removal Contingency Plan. This plan would detail how the contractor would plan on removing the temporary structures before flooding, how the contractor will ensure all construction equipment and materials are removed from these structures to prevent being swept away by the river, and restoration plans upon complete removal.

h. Nesting Birds. MnDOT adherence to existing federal migratory bird protection programs will suffice for DNR concerns (also see #1.a below). Contact Jason Alcott, MnDOT Office of Environmental Services (jason.alcott@dot.state.mn.us, ph; 651-366-3605), as he is the MnDOT contact person for issues relating to Federal Threatened and Endangered Species and U.S. Fish and Wildlife Service coordination.

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 61 Hastings Bridge (S.P. 1913-64) project area. Based on this query, several rare features have been documented within the search area (for details, please see the cover email for database reports). The following rare features may be impacted by the proposed project:

   a. Peregrine falcons (Falco peregrinus), a state-listed threatened species, have been documented in the vicinity of the TH 61 bridge during the breeding season, and in the last few years have nested on the Milwaukee Railroad lift bridge. Construction activities at the TH 61bridge site will not affect these birds as long as the birds do not choose the bridge as a nest site. If construction activities will take place during the breeding season (April through July), the bridge should be inspected prior to the onset of any construction work to determine whether the falcons are using the bridge as a nesting site. Please note that if the bridge is being actively used by peregrine falcons, seasonal work restrictions may be required. Also note #1.h above

   b. Several state and federally listed mussel species have been documented in the Mississippi River in the vicinity of the TH 61 bridge. 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, we are requesting that a mussel survey and relocation be conducted if the riverbed will be disturbed. 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) and Jason Alcott, MnDOT Office of Environmental Services (jason.alcott@dot.state.mn.us, ph; 651-366-3605), as he is the MnDOT contact person for issues relating to Federal Threatened and Endangered Species and U.S. Fish and Wildlife Service coordination.

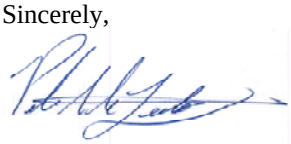
   The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and 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.

3. Regional Trails and proposed state trails will need access across the river at this point. Non-motorized transportation must be included in the design and included as part of the construction. Washington County has a trail plan that includes non-motorized trails to the bridge from the St. Croix River area. On the south side there is a hiking/biking trail that comes across the Lock and Dam 2 Embankment and through JayCee Park.

4. There is Floodplain forest on the Washington County side of the crossing. The project should avoid adversely impacting these areas.

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, 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 20080686

Letter 6:
United States Coast Guard,
2/9/09

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

16591.1/813.91 UMR
February 9, 2009

Mr. Keith Farquhar, P.E., Senior Engineer
MnDOT Bridge Office
Mail Stop 610
3485 Hadley Ave. North
Oakdale, MN 55128-3307

Subj: PROPOSED HASTINGS HIGHWAY BRIDGE REPLACEMENT, MILE 813.91, UPPER MISSISSIPPI RIVER

Dear Mr. Farquhar:

The Coast Guard determined the pier locations of the proposed bridge should be as follows:

1. The left descending main span pier should be placed approximately 125 feet upstream of the existing main span pier and 25 feet toward the left descending bank.

2. The right descending main span pier should be placed approximately 125 feet upstream of the existing main span pier and aligned with it.

If you have any questions about this requirement, please contact Dave Studt at the above number.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

Letter 7:
United States Department of the Interior, National Park Service
2/10/09

United States Department of the Interior

NATIONAL PARK SERVICE
Mississippi National River and Recreation Area
111 E. Kellogg Blvd., Ste. 105
St. Paul, Minnesota 55101-1256

IN REPLY REFER TO:

L7427 (MISS)

February 10, 2009

Brigid Gombold
MnDOT Metro District
1500 West County Road B2
Roseville, MN 55113

RE: Nationwide Rivers Inventory (NRI) Early Coordination; TH 61 Mississippi River Crossing (Hasting Bridge), Washington and Dakota Counties

Dear Ms. Gombold:

I thank you for your early coordination regarding the proposed bridge replacement project across the Mississippi River at the City of Hastings, Minnesota. According to the information you submitted as part of the scoping study, the proposed project will include the disassembly and removal of an existing high through truss bridge that is reaching the end of its service life. The replacement bridge will convey vehicular, bicycle, and pedestrian traffic in the general alignment of the existing bridge, but will have a substantially wider footprint in order to accommodate additional traffic lanes.

This particular segment of the Mississippi River lies within the Mississippi National River and Recreational Area, a unit of the National Park Service (NPS), and is listed on the Nationwide Rivers Inventory (NRI) prepared by the NPS. The NRI is a register of rivers that may be eligible for inclusion in the National Wild and Scenic River System. These rivers were included on the NRI based on the degree to which they are free-flowing, the degree to which the rivers and their corridors are undeveloped, and the outstanding natural and cultural characteristics of the rivers and their immediate environments. The Mississippi River is included in the NRI for its scenic, recreational, geological, wildlife, and historical outstanding remarkable values (ORV's). Section 5(d) of the National Wild and Scenic Rivers Act requires that, "In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas." In partial fulfillment of the section 5(d) requirements, NPS has compiled and maintains the NRI.

The intent of the NRI is to provide information to assist in making balanced decisions regarding use of the nation's river resources. A Presidential directive and subsequent

instructions issued by the Council on Environmental Quality required that each Federal agency as part of its normal planning and environmental review processes, take care to avoid or mitigate adverse effects on the values for which rivers have been placed on the NRI. Further, all agencies are required to consult with NPS prior to taking actions that could effectively foreclose wild, scenic, or recreational status for rivers on the inventory. We would expect the proposal to have little, if any impact on the free-flowing condition of the river, and on ORV's listed previously provided proper site management systems and mitigative measures are in place. We recommend the following measures to protect and enhance the values for which the Mississippi was designated:

1. The new bridge should remain on the same alignment as the current structure to the greatest extent possible in order to minimize the scope of stream bank disturbance, construction within the floodplain, slope instability, and loss of riparian vegetation-especially mature forest stands in the northern vicinity of the project;
2. The new bridge should span the entire river channel to the greatest extent possible; bridge design should minimize the number of piers that are constructed within the river and floodplain function should be maintained (no net loss of floodplain);
3. Trees and other woody vegetation existing along the riverbank and on steep slopes should not be removed unless absolutely necessary. Any vegetation removed should be replaced with the same or similar native species;
4. The use of a bank stabilization system that integrates native plantings rather than hardened systems such as riprap or steel bulkheads to the extent practicable. At a minimum, native fieldstone should be used, covered with topsoil above the ordinary high watermark, and planted with native vegetation;
5. Erosion control plans should be kept on site and designed to incorporate measures to minimize short-term and long-term sedimentation impacts. All erosion control devices that are installed should be monitored throughout the duration of the project and the project should comply with NPDES standards;
6. Construction techniques which will cause a minimum amount of damage to the river bottom should be used when removing and constructing new piers. The use of barges instead of stone-filled work pads or causeways is recommended and free-flow should be maintained at all times throughout the construction period;
7. NPS concurs with the Minnesota Department of Natural Resources (MnDNR) work exclusion dates from April 15 to June 15 to allow for fish migration and spawning.
8. Several state and federally listed mussel species including the Higgins Eye Pearlymussel (*Lampsilis higginsii*) have been documented in the Mississippi River in the vicinity of the bridge project. Mussels (Unionidae) are especially sensitive to sediment and substrate disturbances associated with construction within the river channel. A mussel survey by a qualified malocologist should be conducted in the vicinity of the project and mussels that are likely to be adversely impacted by the project should be relocated to suitable habitats unlikely to be adversely impacted by the project;
9. All fill placed below the ordinary high water level should be stabilized as soon as possible;

10. Removal of all traces of construction materials and equipment from the project site upon project completion; bridge components should be removed from the river channel immediately;
11. The use of earthtone colors on any paintwork that may need to be completed; and
12. Consideration should be given to the general character of the area, lay of the land, and local historical context. The State Historic Preservation Office (SHPO) should be consulted regarding historic structures that may be affected by the project.

These comments have been provided as early technical assistance and do not necessarily indicate the NPS' or DOI's responses to future environmental documents prepared in association with the project. Please contact Jim Von Haden of my staff at 651-290-3030 ext 235 if you have questions or require additional information.

Sincerely,

for Paul Labovitz
Superintendent

cc:
Nick Rowse
United States Fish and Wildlife Service
Ecological Services Field Office – MN
4101 East 80th Street
Bloomington, Minnesota 55425-1665

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

Hector Santiago, Regional Rivers Coordinator, MWRO

Letter 8:
United States Coast Guard,
5/8/08

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

16590.9/813.9 UMR
May 8, 2008

Mr. Philip Forst
Federal Highways Administration
Minnesota Division
380 Jackson Street
St. Paul, MN 55101-4802

Subj: PROPOSED HASTINGS HIGHWAY BRIDGE REPLACEMENT, MILE 813.9, UPPER MISSISSIPPI RIVER

Dear Mr. Forst:

This is in reply to your letter dated April 29, 2008 concerning the proposed bridge project at Mile 813.9 Upper Mississippi River.

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, Attention: 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 EIS. Our review and recommendations on the vertical and horizontal clearance requirements for river traffic will be coordinated with the Minnesota Department of Transportation Bridge and Structure Division office.

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 Environmental Impact Statement (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 acceptable for such projects.

Subj: PROPOSED HASTINGS HIGHWAY BRIDGE REPLACEMENT, MILE 813.9, UPPER MISSISSIPPI RIVER

16590.9/813.9 UMR
May 8, 2008

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,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

Letter 9:
United States Department of the Interior, National Park Service
5/22/08

PDR- DAKOTA CO.

United States Department of the Interior

NATIONAL PARK SERVICE
Mississippi National River and Recreation Area
111 E. Kellogg Blvd., Ste. 105
St. Paul, Minnesota 55101-1256

IN REPLY REFER TO:

May 22, 2008

A42 (MISS-HHB)

Philip Forst
Area Engineer
FHA 380 Jackson Street
Galtier Plaza, Suite 500
Saint Paul, Minnesota 55101

Dear Mr. Forst:

Your letter of April 28, 2008, addressed to Regional Director Quintana, has been referred to this office. The Hastings bridge project lies within the boundary of the Mississippi National River and Recreation Area, a unit of the National Park System, and is also a river segment listed on the National Rivers Inventory. As a result, we are very interested in becoming a Cooperating Agency for this project.

Our primary point of contact for this project will be Steve Johnson, Chief of Resource Management. He can be reached at 651-290-3030 x223, or by email at steven_p_johnson@nps.gov

Thank you for contacting is about this important project.

Sincerely,

Paul Labovitz
Superintendent

cc:
Ernie Quintana
Nick Chevance
Steve Johnson

Appendix 3 – Draft Section 4(f) Evaluation

Draft Section 4(f) Evaluation

Trunk Highway 61
State Project: 1913-64
Minnesota Project: not applicable – no federal funds at this time

Project Limits: Canadian Pacific Railroad to Fourth Street

Cities: Hastings
County: Dakota and Washington
Dakota -- Township 26N, Range 20W, Section 7
Washington -- Township 115N, Range 17W, Sections 21 and 22

Replacement of the Hastings Mississippi River Bridge on T.H. 61 with a four-lane facility, reconstruction of approaches and signal at Fourth Street.

This document is available in alternative formats to individuals with disabilities by calling the Minnesota Relay Service at 1-800-627-3529

Figure 1: Location Map

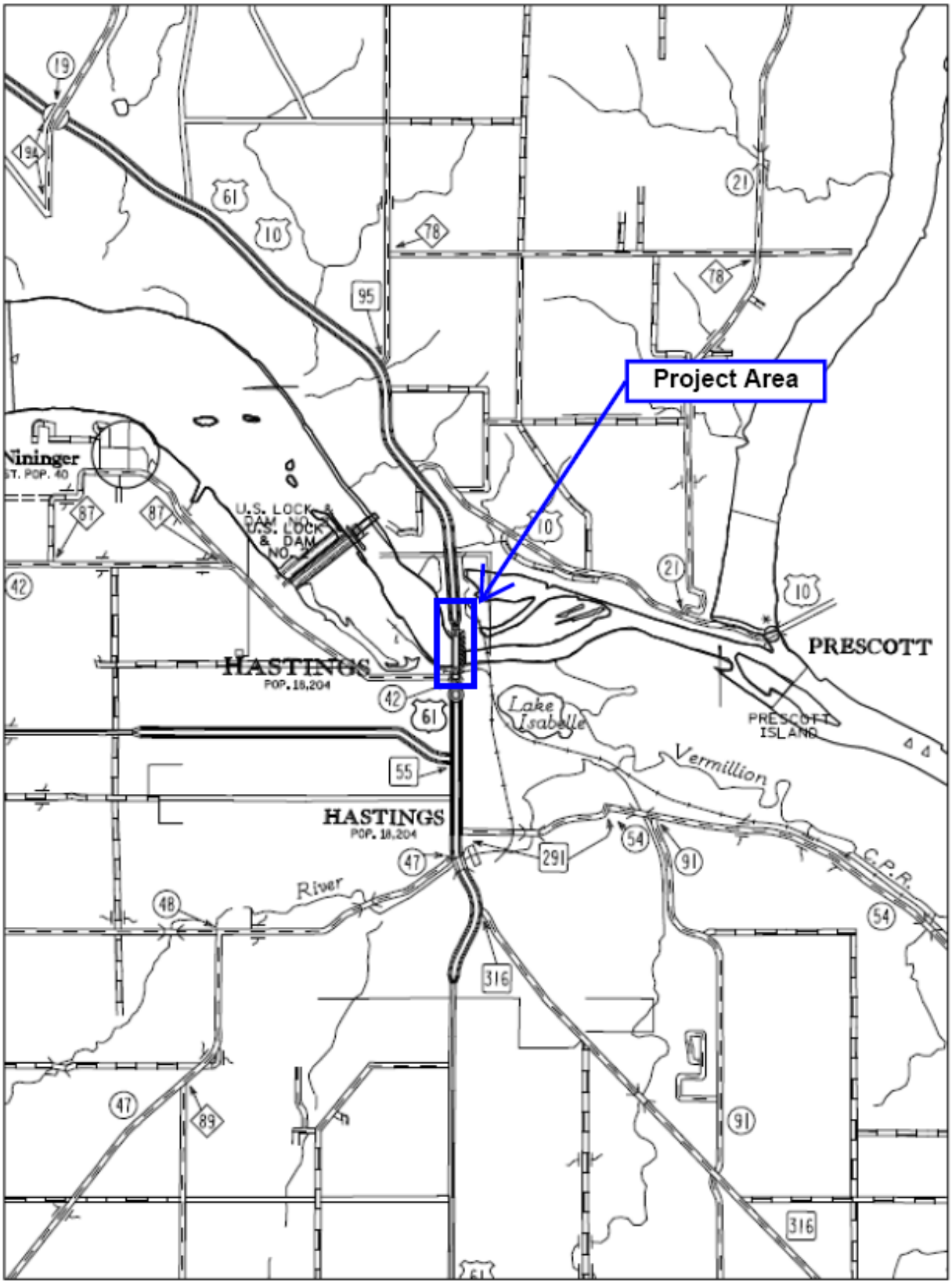


Figure 2: Site Map

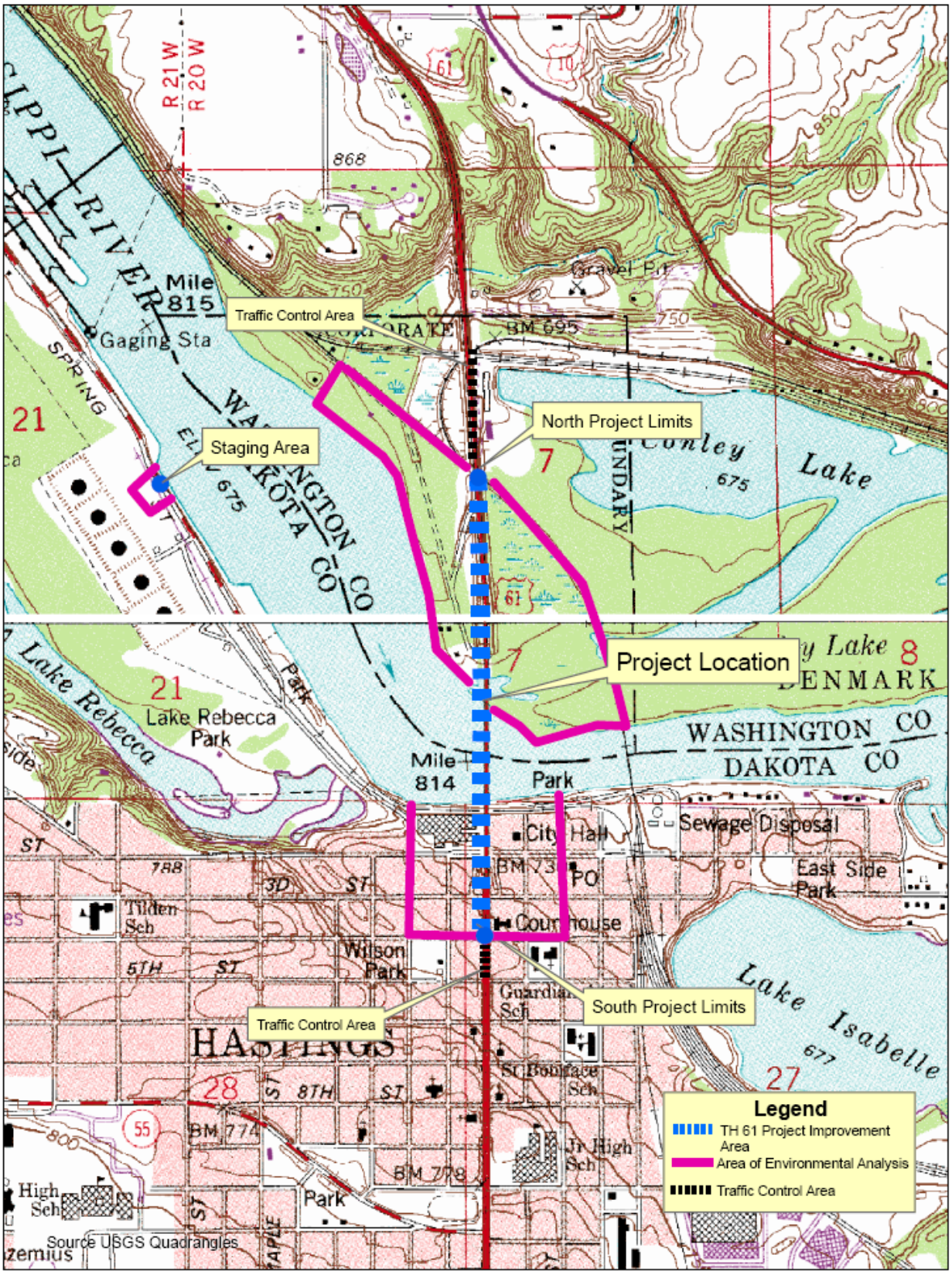


Table of Contents

1. INTRODUCTION

The Section 4(f) legislation as established under the Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) provides protection for publicly owned parks, recreation areas, historic sites, wildlife and/or waterfowl refuges from conversion to a transportation use. The FHWA may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:

- There is no feasible and prudent alternative to the use of land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 774.3).

Additional protection is provided for outdoor recreational lands under the Section 6(f) legislation (16 USC 4602-8(f) (3)) where Land and Water Conservation (LAWCON) funds were used for the planning, acquisition or development of the property. These properties may be converted to a non-outdoor recreational use only if replacement land of at least the same fair market value and reasonably equivalent usefulness and location is assured.

The purpose of this Section 4(f) Evaluation is to provide the information required by the Secretary of Transportation to make the decision regarding the use of properties protected by Section 4(f) and/or Section 6(f) legislation under the proposed alternatives in the Hastings T.H. 61 Bridge Project. There are no Section 6(f) property impacts resulting from the proposed project.

This Section 4(f) Evaluation describes all identified Section 4(f) properties which are proposed to be "used" under the proposed alternatives, potential impacts on those properties, and possible mitigation measures to minimize impacts. A "use" occurs (1) when land from a Section 4(f) site is acquired for a transportation project, (2) when there is an occupancy of land that is adverse in terms of the statute's preservationist purposes, or (3) when the proximity impacts of the transportation project on the Section 4(f) sites, without acquisition of land, are so great that the purposes for which the Section 4(f) site exists are substantially impaired (normally referred to as a constructive use).

The Section 4(f) process requires that any impacts from use of a park, recreation area, historic site, wildlife or waterfowl refuge for highway purposes be evaluated in context with the proposed highway construction/reconstruction activity. An inventory of potential Section 4(f) properties was completed based on a review of initial design concept drawings/scoping study, and the project's potential impacts on these properties were assessed. Based on the initial inventory and impact assessment, the following design modifications were implemented to avoid and minimize use of Section 4(f) properties.

Design modifications were implemented to avoid and minimize use of Section 4(f) properties during the T.H. 61 Scoping Study's refinement of the proposed bridge alternatives. This study narrowed down the potential bridge alternatives to the three most promising Build Alternatives carried forward in the Environmental Assessment (EA). One of the bridge alignments originally proposed during scoping was twin bridges located on the west side of the existing bridge. This alternative was eliminated due to the larger footprint it had and thus larger impacts to surrounding community trail and, potentially, historic property.

The following Section 4(f) properties would be permanently impacted by the proposed project alternatives under consideration in the EA:

- Levee Park
- H. D. Hudson Manufacturing Company
- Hastings Loop Trail
- T.H. 61 Hastings Bridge

Temporary Section 4(f) impacts would occur at:

- Jaycee Park
- Flint Hills Nature Preserve
- Lake Rebecca Park
- Hastings Loop Trail
- Levee Park
- Dakota County Court House

1.1. Proposed Actions

A description of the proposed project, and an explanation of the purpose and need for the project, are in the EA. Please refer to the Alternatives discussion (Section 3) of that document for a description of the proposed action, and the Purpose and Need (Section 2) of that document for the purpose and need of the project. The Alternatives section also describes the range of alternatives considered for the project, and reasons for eliminating alternatives. The potential Section 4(f) resources affected by the alternatives still under consideration are described below.

2. SECTION 4(F) PROPERTIES

Figure 3 in Appendix A of this Evaluation illustrates the location of the park areas, trail and historical properties within and surrounding the project area. Figure 4 in Appendix 1 illustrates the expected temporary and permanent Section 4(f) resource uses that would result from this project.

2.1. Levee Park

2.1.1. Levee Park Description and Usage

Size and location:
The size of Levee Park is 3.8 acres. The park is located at 300 First Street, Hastings Minnesota. As shown in Figure 3 in Appendix 4, the park is along the Mississippi River bank.

Ownership and type of Section 4(f) property:
Levee Park is owned by the City of Hastings. The property is titled as a platted city street, First Street. The City did not vacate the street when it converted the use to parkland.

Function of property and available activities:
The main function of Levee Park is to provide public open green space along the bank of the Mississippi River. The park has picnic tables to allow for picnicking. The Hastings Loop Trail, a 15-mile City trail, crosses through the park.

Description and location of all existing and planned facilities:
The park has three picnic tables and one bench. A small portion of the 15 mile Hastings Loop Trail crosses through the park. Levee Park is located at the site of a ferry boat landing dating back to 1853. The park has two monuments: one to inform patrons of its history (located at the west edge of the park), and one dedicated to veterans of war (located at the east end of the park).

The City identified a pedestrian connection from the Loop Trail to the T.H. 61 Bridge in Levee Park as a planned facility in their June 2003 *Improving on the Original – A Plan for the Heart of Hastings* planning document (refer to Figure 5A and 5B in Appendix A of this Evaluation).

Access:
The main access to the park is from Sibley Street where stairs lead down to the park. The Hastings Loop Trail provides access on the east and west ends of the park as well. There is no vehicle access to the park; however, a municipal parking lot is adjacent to the park between Ramsey and Sibley Streets.

Relationship to other similarly used lands in the vicinity:
Lake Rebeca Park and Jaycee Park are similar parks to Levee Park, located approximately one-third of a mile west of Levee park. These parks are located adjacent to the Mississippi River or the back waters of the river. The Hastings Loop Trail connects Levee Park and Jaycee Park.

Applicable clauses affecting the ownership:
This park is owned by the City of Hastings.

Unusual characteristics reducing or enhancing the value of the property:
This park is adjacent to the East Second Street Commercial Historic District. It provides a scenic location for the Hastings Loop Trail to travel through

2.1.2. Impacts to Levee Park

The proposed project may include a trail connection from the highway bridge to the Hastings Loop Trail in Levee Park. The area of potential impact within Levee Park includes an area of approximately 0.06 acres along the west boundary of the park and adjacent to the T.H. 61 bridge (see Figure 6 in Appendix A). The City has expressed the desire to have this connection constructed as part of the Hastings T.H. 61 Bridge Project. Current discussions with the City indicate that a helix type pedestrian bridge is a preferred option. The City finds this type of structure representative of the original spiral bridge on T.H. 61 across the Mississippi River. The pedestrian structure would partially be located in Levee Park. However, this proposal needs further evaluation. The visual quality process will determine whether this type of structure fits with the historic business district. The City or Mn/DOT would own the structure and property it is located within; however, it has not been determined between the two entities whom would have ownership.

This potential 4(f) use would only result in the event this pedestrian bridge is constructed using federal funding. The Section 4(f) impacts to this resource are being evaluated in this document in anticipation of the possibility of the pedestrian bridge being included in the Hastings T.H.61 Bridge Project.

2.1.3. Avoidance Alternatives to Levee Park

No-Build
This pedestrian bridge is an enhancement feature which is not a critical feature of any proposed Build Alternative. Deciding not to build the trail park amenity would avoid impacting Levee Park. However, the City and project stakeholders have requested that this connection be included in the Hastings T.H.61 Bridge Project, to facilitate the City's plan for providing a bridge-trail connection.

Slight Alignment Changes to Pedestrian Bridge
Moving the location of the proposed pedestrian bridge to the west side of the highway to connect to the Hastings Loop Trail does not avoid 4(f) impacts. The H.D. Manufacturing Company property, which has been determine an eligible property to the NRHP, would be impacted by moving the pedestrian bridge to the west side.

Build T.H. 61 on Alternative Alignment Location
The proposed project is located within an area with a number of constraints (i.e., located between local parks, nationally designated historic areas and positioned on the Mississippi river in an area where floodplain and floodway widths are narrow). Locating a new river crossing that will avoid impacting all 4(f) properties places a bridge crossing on the outer fringe of the City, or in the adjacent townships. In these areas, the floodplain and floodway are two to three times the width of the existing crossing (see Figure 4 in Appendix 1 of the EA). This scenario would require rerouting T.H. 61 on new highway alignment as well as a bridge span two to three times the proposed length. The construction costs would be substantially greater. In addition, the total social, economic and environmental impacts would be of extraordinary magnitude. Therefore, this alternative was not considered prudent.

Measures to Minimize Harm – Levee Park
Due to the City's expressed local need to connect the Hastings Loop Trail and Levee Park to the pedestrian sidewalk on the bridge, it is not possible to completely avoid affecting the park. However, measures to minimize impacts were considered and are part of the current spiral design under consideration.

A design originated by the City with a larger foot print was eliminated from consideration due to its larger impact to the park and adjacent historic property on the west side of the T.H. 61 Bridge. The City had a configuration that was developed in their June 2003 *Improving on the Original – A Plan for the Heart of Hastings* planning document, refer to Figure 5B in Appendix A of this document. This bridge was depicted with a larger footprint that crossed under the T.H. 61 bridge and would have extended beyond both sides of the highway. The touch down of this concept was envisioned further east of the spiral portion of the bridge, thus requiring additional right of way from Levee Park.

A design measure to reduce the size of spiral diameter could be to design a sub-standard pedestrian bridge that does not comply to American with Disabilities Act (ADA) grade requirement of five percent. However, at this time in planning, this does not appear to be a viable option.

2.1.4. Coordination

Coordination with the City of Hastings began with the Hastings Bridge Scoping Study in May of 2008. This study developed a Study Advisory Committee (SAC), which the City was a participating member. In addition, there were individual meetings with the City to discuss pedestrian connectivity issues as part of the proposed project. As part of this Study the City identified its desire for the Hastings T.H.61 Bridge Project to include the City's planned pedestrian connection from the bridge to the Hastings Loop Trail and Levee Park. The Environmental Assessment (EA) process began concurrently with the Scoping Study and continued the coordination with the City initiated during Scoping.

Mitigation

The City has not requested mitigation for park impacts resulting from the Bridge/Loop Trail connection structure, since 1) this impact would be very small, and would not affect the use or characteristics of the park, and 2) the trail connection (requested by the City) is viewed as being a recreational enhancement by the City, not an adverse recreational impact overall.

2.2. H. D. Hudson Manufacturing Company

2.2.1. H. D. Hudson Manufacturing Company Description and Usage

Size and location:

The H. D. Hudson Manufacturing Company is located at 200 W. Second Street. The company occupies a block bordered by the Mississippi River at the north, the Hastings Bridge at the east, Lock and Dam Road at the west, and W. Second Street at the south. The plant buildings occupy lots 7, 8, and 9 of Block 5 of the Original Town of Hastings. Refer to Figure 3, in Appendix A of this document.

Ownership and type of Section 4(f) property:

The property is owned by the H. D. Hudson Manufacturing Company. The H. D. Hudson Manufacturing Company property is recommended as eligible for listing in the NRHP under Criterion A for its associations with the twentieth-century redevelopment of Hastings industrial base. Despite alterations to the north side of the building, it possesses sufficient integrity (including the on-going use of the property for manufacturing) to convey the important aspects of its significance. It is locally significant in the area of industry from 1914 to 1927.

Function of property and available activities:

This property functions as a commercial business.

Description and location of all existing and planned facilities:

The company uses this facility to manufacture farm sprayers. The company has no new planned facilities at this location.

Access:

The main access to the building is from West Second Street. There is also an access for garbage trucks from Lock and Dam Road.

Relationship to other similarly used lands in the vicinity:
This area of the City has a mixed land use. On the west side of the business is a residential neighborhood. Across the street from this business is a bank, and on the opposite side of the bridge from this business is the downtown historic business district.

Applicable clauses affecting the ownership:
None; the property is privately owned.

Unusual characteristics reducing or enhancing the value of the property:
This property was determined to be historically significant due to its associations with the Hastings Commercial Club, which supported the reintroduction of new industries to the City during the early part of the twentieth century. The H. D. Hudson Manufacturing Company was one of the most successful businesses and the only one still operating at its original location. Thus, the continuing operation of the Hudson Company at this property is one of the features that makes this site significant.

This property is characterized by the U-shaped, two-story gabled structures clad with tan brick. Its series of regular fenestration has flat and segmental arch openings. The roofs have prominent ventilators. The two-story brick addition to the east is built in a similar style. Later additions, on the north side, constructed in 1966 and 1974 – including the warehouse building that would be impacted by the Hastings T.H.61 Bridge Project – are not within the period of significance.

2.2.2. Impacts to H. D. Hudson Manufacturing Company

All of the proposed build alternatives impact the 48,000 square-foot metal building on the northeast corner of the site (refer to Figure 7 in Appendix A). This building was added in 1974 and is used as a warehouse. Because of the operations conducted in the warehouse, it is not possible to remove a portion of this building. Therefore, all of the build alternatives equally impact this building by requiring an entire removal of the warehouse. The acquisition of this property was considered an adverse effect based on the Section 106 review process (refer to Section 5 of the EA).

2.2.3. Avoidance Alternatives to H. D. Hudson Manufacturing Company

No-Build
All of the proposed build alternatives impact the 48,000 square-foot metal building on the northeast corner of the site, refer to Figure 7 in Appendix A. This building was added in 1974 and is used as a warehouse. Because of the operations conducted in the warehouse, it is not possible to remove a portion of this building. Therefore, all of the build alternatives equally impact this Section 4(f) resource by requiring removal of the warehouse, which is a component that contributes to the manufacturing/distribution process at the site. The proposed acquisition of right-of-way and demolition of the warehouse building from this property was considered an adverse Section 106 effect to this NRHP-eligible property (see Section 5 of the EA).

Slight Alignment Changes to T.H. 61
Due to the location of Section 4(f) properties that abut the existing bridge (refer to Figure 3 in Appendix A) slight alignment changes do not avoid all Section 4(f) properties. Shifting the

alignment further east to avoid impacting this property creates greater Section 4(f) impacts to Levee Park and would also result in adverse impacts to the downtown Hastings Historic District located on the east side of the bridge.

Build T.H. 61 on Alternative Alignment Location
The proposed project is located within an area with a number of constraints (i.e., located between local parks, historic districts and positioned on the Mississippi river in an area where floodplain and floodway widths are narrow). Locating a new river crossing that will avoid impacting all 4(f) properties places a bridge crossing on the outer fringe of the City, or in the adjacent townships. In these areas the floodplain and floodway are two to three times the width of the existing crossing (see Figure 4 in Appendix 1). This scenario would require rerouting T.H. 61 on new highway alignment as well as a bridge span two to three times the proposed length. The construction costs would be substantially greater. In addition, the total social, economic and environmental impacts would be of extraordinary magnitude. Therefore, this alternative was not considered prudent.

Measures to Minimize Harm – H. D. Hudson Manufacturing Company
Measures to minimize harm were evaluated during the Scoping Study selection of alternatives. The proposed alternatives on the twin bridge alignment, illustrated in Figure 6 in Appendix 1, had a wider footprint than the proposed Build alternatives. The twin bridge alignment would have required additional right-of-way acquisition from H. D Hudson Manufacturing. This alternative alignment was eliminated because it would have had more impacts and offered no additional benefits when compared to the remaining three alignments.

In addition, as the proposed Build Alternatives were refined in preliminary design, the bridge width was reduced on the west side. The original bridge designs had 12-foot maintenance areas on the west side of the bridge. This was eliminated as the bridge designs were further developed. This reduced the total right-of-way acquisition impacts to H. D. Hudson Manufacturing property.

Mn/DOT met individually with the business to determine whether a smaller warehouse structure would allow for the continued operation of their storage and shipping operations. The Box Girder Twin Bridge Alternative, illustrated in Figures 10A-10B in Appendix 1, which has the least amount of right-of-way required, was designed such that it would acquire 0.32 acres. For comparison the Tied Arch Single Bridge and Cable Single Bridge, illustrated in Figures 12A-12B and 14A-14B in Appendix 1, both require 0.55 acres. However, the business stated that even the least right-of-way acquisition alternative (i.e., Box Girder Twin Bridge) would not provide enough room for all of their docks to remain, and thus their operations would be impacted too heavily to allow the warehouse to function. Therefore, all alternatives would result in the same Section 4(f) use of the Hudson Manufacturing Company property. It should be noted, that because the Box Girder Twin Bridge Alternative will require less right-of-way taking, this alternative will provide more opportunity for mitigation when construction is complete.

2.2.4. Coordination

Mn/DOT began meeting with H. D. Hudson Manufacturing early in project development to discuss the impacts this project would have on their warehouse. Mn/DOT continues to meet with the company to discuss mitigation. Mn/DOT also continues to coordinate with SHPO. A Programmatic Agreement between Mn/DOT, FHWA, and the State Historic Preservation

Officer will be developed to address adverse effects to the NRHP-listed or eligible resources affected by the preferred alternative.

2.3. Hastings Loop Trail

2.3.1. Hastings Loop Trail Description and Usage

Size and location:
The Hastings Loop Trail is a 15-mile walking and biking trail that circles through the City. The trail is a paved bituminous path approximately eight feet wide for most of the loop. There are some locations that the trail is along the shoulder of a local street or county road. Refer to Figure 3 in Appendix A for the trail location.

Ownership and type of Section 4(f) property:
The portion of the Hastings Loop Trail that will be impacted by this project is owned by the City of Hastings. The property is titled as a platted city street, First Street. The City has not vacated the street.

Function of property and available activities:
Hastings Loop Trail functions as a linear park space through the city. Activities that the trail provides for include walking, jogging, biking, and rollerblading.

Description and location of all existing and planned facilities:
There are no facilities beyond the trail itself. The City has plans that show a ramp connection from the Hastings Loop Trail in Levee Park to the T.H. 61 Hastings Bridge (see Figure 5B in Appendix A).

Access:
Access is open at any point along the trail. There is public parking at Vermillion Falls Park and Jaycee Park through which the trail travels and can be easily accessed.

Relationship to other similarly used lands in the vicinity:
The Hastings Loop Trail along the project area connects two parks (Jaycee Park and Levee Park) along the river bank.

Applicable clauses affecting the ownership:
None; the trail is owned by the City of Hastings.

Unusual characteristics reducing or enhancing the value of the property:
The location of the trail along the Mississippi River bank provides a visual enhancement for users.

2.3.2. Impacts to Hastings Loop Trail

The Hastings Loop Trail currently crosses under the existing two-lane T.H. 61 Bridge for a distance of approximately 46 feet. The proposed project will add two travel lanes, adding approximately 46 feet to 52 feet of width to the existing bridge footprint. The property ownership which the Hastings Loop Trail resides under will change as part of the proposed project – Mn/DOT will acquire 0.04 acres of City property that will be located under the new bridge structure and a small piece on the east side of the existing bridge. However, the City trail will be reconstructed and Mn/DOT will issue a Limited Use Permit to the City to allow

the trail use at this location after the new bridge construction. Figure 8 in Appendix A illustrates the portion of the trail affected, as a Section 4(f) use.

2.3.3. Avoidance Alternatives to the Hastings Loop Trail

No-Build
The No Build alternative would avoid impacting the Hastings Loop Trail. This alternative proposes routine maintenance with no major rehabilitation be undertaken. Therefore, without major rehabilitation, the structure would ultimately become unsafe for traffic and closure is anticipated to occur within the next 10 years under the No-Build scenario. The No-Build option does not meet the main purpose of this project described in the Environmental Assessment, which is to provide a structurally sound bridge crossing that addresses a variety of needs including capacity, safety, and maintenance.

Slight Alignment Changes to T.H.61
Because this 4(f) property has a perpendicular crossing of the proposed project it is not possible to make slight alignment changes that would avoid impacting the trail.

Build T.H.61 on Alternative Alignment Location
The proposed project is located within an area with a number of constraints (i.e., located between local parks, local historic districts and positioned on the Mississippi river in an area where floodplain and floodway widths are narrow). Locating a new river crossing that will avoid impacting all 4(f) properties places a bridge crossing on the outer fringe of the city, or in the adjacent townships. In these areas the floodplain and floodway are two to three times the width of the existing crossing (see Figure 4 in Appendix 1). This scenario would require rerouting T.H. 61 on new highway alignment as well as a bridge span two to three times the proposed length. The construction costs would be substantially greater. In addition, the total social, economic, and environmental impacts would be of extraordinary magnitude. Therefore, this alternative was not considered prudent.

Measures to Minimize Harm – Hastings Loop Trail
Measures to minimize harm were conducted during the Scoping Study selection of alternatives. The proposed alternatives on the twin bridge alignment, illustrated in Figure 6 in Appendix 1 of the EA, had a wider footprint than the three proposed Build Alternatives. This alignment would have resulted in greater trail impacts.

In addition, as the proposed Build Alternatives were refined in preliminary design, the bridge width was reduced on the west side. The original bridge designs had 12-foot maintenance areas on the west side of the bridge. This was eliminated as the bridge designs were further developed. This reduced the trail impacts that would result from the proposed project.

2.3.4. Coordination

Coordination with the City of Hastings began with the Hastings Bridge Scoping Study in May of 2008. This study developed a Study Advisory Committee (SAC), which the City was a participating member. In addition, there were individual meetings with the City to discuss pedestrian connectivity issues as part of the proposed project. The Environmental Assessment (EA) process began concurrently with the Scoping Study and continued the coordination with the City beyond that study and throughout the EA process.

2.3.5. Mitigation

Due to the location of the Hastings Loop Trail that travels under the T.H. 61 bridge, it is not possible to completely avoid affecting the trail. Mn/DOT will provide a Limited Use Permit to the City of Hastings for the trail crossing under the proposed bridge.

2.4. T.H. 61 Hastings Bridge

2.4.1. T.H. 61 Hastings Bridge Description and Usage

Size and location:
The T.H. 61 Bridge is located in Hastings, Minnesota and crosses the Mississippi River. Refer to Figure 3 in Appendix A for a location of the bridge. The T.H. 61 Bridge's main span is a steel truss. The entire bridge structure consists of thirteen spans with at total length of 1,857 feet.

Ownership and type of Section 4(f) property:
The State of Minnesota is the owner of the bridge. The bridge was constructed from 1947 to 1950 and opened to traffic in February of 1951. The Minnesota Highway Department considered the T.H. 61 Hastings Bridge to be one of its major engineering achievements. In the department's biennial report for 1950-1952 it stated "This new steel span on T.H. 61 presented a difficult engineering problem, combining as it did the needed height for river traffic clearance at high water, plus the proper handling of approaches without severe grades."

The bridge has been determined eligible for the NRHP by Mn/DOT with concurrence from SHPO based on a 1997 Bridge Management Plan study. It is significant under NRHP Criterion C in the area of engineering, within the historic context of "Iron and Steel Bridges of Minnesota". A bridge may be eligible under Criterion C if it "exhibits exceptional engineering skill to meet unusual site conditions". It is also eligible under Criterion C as Minnesota's first example of a steel tied-arch, highway bridge.

Function of property and available activities:
This bridge provides a state trunk highway crossing over the Mississippi River. Available activities include driving vehicles, walking or biking on the bridge.

Description and location of all existing and planned facilities:
The existing bridge facility is described above. Mn/DOT proposes to replace the bridge.

Access:
T.H. 61 provides access to the bridge.

Relationship to other similarly used lands in the vicinity:
The river crossings closest to the T.H. 61 Hastings Bridge are the Canadian Pacific Railroad bridge a quarter mile downstream on the Mississippi River, the TH 63 bridge at Red Wing (42 miles downstream), and the I-494 Wakota Bridge, approximately 18 miles upstream on T.H. 61.

Applicable clauses affecting the ownership:
None

Unusual characteristics reducing or enhancing the value of the property:
None

2.4.2. Impacts to T.H. 61 Hastings Bridge

Mn/DOT's Cultural Resource Unit (CRU) staff and FHWA cultural resource liaison have determined that all three proposed Build Alternatives would have an adverse effect on the existing T.H. 61 Hastings Bridge (refer to Letters 1 thru 3 in Appendix 2 of the EA).

2.4.3. Avoidance Alternatives to the T.H. 61 Hastings Bridge

No-Build
The No-Build Alternative would avoid impacting the T.H. 61 Hastings Bridge. This alternative proposes routine maintenance with no major rehabilitation undertaken. Therefore, without major rehabilitation, the structure would ultimately become unsafe for traffic and closure is anticipated to occur within the next 10 years under the No-Build scenario. The No-Build option does not meet the main purpose of this project described in the Environmental Assessment, which is to provide a structurally sound bridge crossing that addresses a variety of needs including capacity, safety, and maintenance.

Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the National Historic Preservation Act.
A rehabilitation alternative was developed in an effort to avoid impacts to the T.H. 61 Hastings Bridge. In order to meet the capacity need of the project, this alternative proposed constructing a two-lane tied arch bridge on the upstream side of the exiting truss bridge. Because the existing truss bridge has a non-redundant[1] design, rehabilitating the existing bridge required making the structure redundant[2]. As part of the Scoping Study, an engineering analysis evaluated the feasibility and constructability of various rehabilitation options.

Two reports were completed by the Scoping Team consultants CH2M-Hill and Jacobs: the *Bridge Feasibility Memorandum,* December 2008 and the *Bridge Rehabilitation Report,* December 2008. The Bridge Feasibility Memorandum reported that the combination of a steel tied arch bridge next to a steel truss bridge has been constructed, as with the Cass Street Bridge in La Crosse Wisconsin. Figure 9 in Appendix A is a photograph of the two bridges at Cass Street. The *Bridge Rehabilitation Report* examined whether it was feasible to rehabilitate the existing bridge with redundancy. This report concluded that detailed design level structural analysis, to specifically address the redundancy criteria, would be needed to determine the feasibility of this alternative.

[1]This means that the bridge's superstructure consists of numerous steel members, many of which are arranged in a manner whereby if one fails, the bridge could collapse because there is no backup or redundant structural support.
[2]Redundant means that multiple supporting elements exist such that if one of those supporting elements fails, the load previously carried by the failed supporting element will be redistributed to other supporting element. It was identified at the on start of the project that redundancy would be a project purpose, required by all proposed alternatives.

In January of 2009 Mn/DOT's Bridge Office completed a structural analysis of rehabilitating the existing truss bridge to meet redundancy criteria. The analysis is documented in the report titled *Bridge Rehabilitation Alternative Report for SP 1913-64 T.H 61 Mississippi River Crossing in Hastings.* This report analyzed two external redundant options and one internal redundant option for rehabilitating the bridge.

The two external redundant options essentially supported the bridge with another bridge, enabling the bridge to be redundant. This was done with either a cable-supported structure or duplicate truss members.

The internal redundancy option created redundancy by replacing, adding, re-enforcing and altering elements of the existing bridge structure. This included replacing the entire deck and a substantial number of the steel supporting members. Reinforcement of bridge elements altered many elements. Vertical I-beams required reinforcement by converting them to box-beams, lateral bracing would be converted from lattice to solid I-beams, sway frames would be changed from an open to a solid configuration, sway frames at or near the bridge portals would be narrowed, and the railings would be replaced. Additional steel truss members would have to be added to the upper side trusses, changing them from a zigzag pattern to a crossing or X pattern. Finally, crossing steel cables would run between the existing vertical members joining the deck to the upper trusses.

Mn/DOT's Cultural Resources Unit (CRU) reviewed this Report and they concluded, in the letter dated January 14, 2009 to the SHPO, "Because of the dramatic changes to the appearance of the original truss design, the change in the way the truss works on one of the options, and the substantial amount of new materials, it is the determination of our office that the three rehabilitation alternatives would have an adverse effect on the T.H. 61 Hastings Bridge, and would make the structure not eligible after rehabilitation." Refer to Appendix 2 for this letter.

The letter also notes, "We all agreed that the Department demonstrated a good faith effort in trying to identify rehabilitation options that would result in preservation of the structure and compliance with redundancy issues in relation to [Minnesota Legislative] Chapter 152. You stated your appreciation of the level of study, and encouraged the Department to keep the approaches developed for this project for application on other non-redundant historic bridges." A copy of this letter is included in Appendix 2 of the EA.

A response was not received from the SHPO regarding the determination of adverse effect in the CRU letter within the 30-day response period. Therefore, the CRU determination stands. Because the bridge rehabilitation alternative was found to have an adverse effect, it is no longer considered to be an avoidance alternative and, therefore, this alternative was removed from consideration as a proposed build alternative.

Build a new structure at a different location without affecting the historic integrity of the old bridge, as determine by the procedures implementing the National Historic Preservation Act. The proposed project is located within an area with a number of constraints (i.e., located between local parks, local historic district and positioned on the Mississippi river in an area where floodplain and floodway widths are narrow). Locating a new river crossing that will avoid impacting all 4(f) properties places a bridge crossing on the outer fringe of the city, or in the adjacent townships. In these areas, the floodplain and floodway are two to three times the width of the existing crossing (see Figure 4 in Appendix 1, of the EA). This scenario would require rerouting T.H. 61 on new highway alignment, as well as a bridge span two to three times the proposed length. The construction costs would be substantially greater. In addition, the total social, economic, and environmental impacts would be of extraordinary

magnitude. Therefore, the alternative of construction of a new TH 61 bridge at a different location was not considered prudent.

Measures to Minimize Harm
For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be moved or demolished, the Federal Highway Administration ensures that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records are made of the bridge. Mitigation for the loss of the T.H. 61 Hastings Bridge is being developed and will be outlined in the Programmatic Agreement between Mn/DOT, FHWA and the SHPO.

Marketing for Sale
The size and length of the T.H. 61 Hastings Bridge make it difficult for other entities to move and reassemble. Typically bridges are reused for pedestrian/biking type facilities; however, the large size of this bridge does not make it suitable for this type of reuse. In 2003 the Department of Natural Resources (DNR) was inquired about reusing the bridge, but they did not have a use for it. During the Scoping Study in 2008 there was a discussion with the Project Advisory Committee (PAC) about converting the existing bridge to a pedestrian only facility. Mn/DOT explained to the PAC that the department cannot own a bridge used for a non-transportation use and that someone else would need to take over ownership and maintenance of the bridge. There was no interest by any PAC members to take on that responsibility.

2.4.4. Coordination

Coordination between Mn/DOT, FHWA, SHPO, local and county agencies, in addition to historical interest groups, began during the Hastings Bridge Scoping Study in May of 2008. This study developed a Study Advisory Committee (SAC), which these agencies and groups were participating members. The SAC was consulted throughout the selection process of the three proposed Build Alternatives. As part of the Environmental Assessment (EA) process a Public Advisory Committee (PAC) and Visual Quality Committee (VQC) were developed. The participants in the SAC became participants in the PAC. The VQC was a smaller sub-set of the PAC. These groups will continue to meet throughout the remainder of the EA process and into the construction phase of the project.

2.4.5. Mitigation

Mn/DOT and the FHWA are coordinating with SHPO, as part of the federal Section 106 process, to develop appropriate mitigation for the bridge. This mitigation would also be applicable to the Section 4(f) process. The agreed-upon mitigation will be outlined in a Programmatic Agreement between Mn/DOT, FHWA and SHPO.

3. TEMPORARY CONSTRUCTION IMPACTS

The proposed project will have temporary construction impacts in five surrounding city parks and one historic property, refer to Figure 4 in Appendix A. A temporary impact is not considered to be a Section 4(f) use as defined in 23 CFR 774 if all of the following conditions have been met:

- Duration must be temporary (i.e., less than the time needed for construction of the project and there can be no change in ownership of the land);
- Scope of the work must be minor (i.e; both the nature and magnitude of the changes to the Section 4(f) property are minimal);
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features or attributes of the property, on either a temporary or permanent basis;
- The land being used must be fully restored (i.e. the property must be returned to a condition which is at least as good as the which existed prior to the project);
- There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

The following temporary construction impacts in Jaycee Park, Flint Hills Nature Preserve, Lake Rebecca Park, Hastings Loop Trail, Levee Park and the City Hall (former Dakota County Courthouse) meet the conditions listed above. In addition, the project construction limits have been minimized to the extent possible, to minimize the extent of these temporary impacts, as required to meet the conditions of the second bullet item above.

3.1.1. Jaycee Park Temporary Construction Impacts

Jaycee Park is a six-acre park located at 420 Lock and Dam Road, along the banks of the Mississippi River west of Hudson's Manufacturing (refer to Figure 3 in Appendix A). The park's amenities include a boat launch to the Mississippi River, vehicle and boat trailer parking, and picnic tables. The Hastings Loop Trail also travels through this park.

The proposed project will have temporary impacts on the use of Jaycee Park from rerouting Hudson's Manufacturing truck traffic. An existing road in Jaycee Park currently used for garbage removal at Hudson's Manufacturing will be repaved and used as the company's temporary truck access. This small area on the south end of the park will be fenced off from park users (refer to Figure 3 in Appendix A). The City agreed to the temporary use of this park during construction of the project, the letter signed by the City on January 14, 2009 (Appendix A, Figure 10). The park's amenities will not be impacted

3.1.2. Flint Hills Preserve Temporary Construction Impacts

The Flint Hills Nature Preserve is an open space area owned by the City of Hastings, located adjacent to the river, sandwiched between the U.S. Corps of Engineers Lock and Dam property and Jaycee Park (refer to Figure 3 in Appendix A). The Hastings Loop Trail travels through the preserve, and a portion of the preserve has been restored with prairie land plantings.

A staging area has been identified in the northwest corner of the preserve between the bank of the river and Lock and Dam Road (refer to Figure 4 in Appendix A). This area will be used for material storage for all the proposed Build Alternatives. The Arch Single Bridge Alternative may use this area for constructing the steel arch portion of the bridge, which would then be floated into place. The area will be graded and a liner placed on top of the existing soil due to the contaminated soils in this area. Sheeting may be placed along the bank to enable construction of the arch and/or to enable barge loading.

Temporary impacts to the preserve amenities include rerouting the Hastings Loop Trail and lighting for the trail to Lock and Dam Road. The prairie plantings and trees along the river bank will be removed. Overhead electrical lines that follow the river bank will be rerouted to Lock and Dam Road. These impacts will be restored to their original condition or to a condition better than what exists today. The City has agreed to the temporary use of this preserve, as shown in the signed letter from the City of Hastings. Refer to the letter signed by the City on January 14, 2009 in Appendix A, Figure 10.

3.1.3. Lake Rebecca Temporary Construction Impacts

Lake Rebecca Park is located at 415 Lock & Dam Road, in the City of Hastings (refer to Figure 3 in Appendix A). Lake Rebecca Park is used for picnicking, walking, biking, and boating. A rain garden provides capacity and treatment for stormwater runoff. Three paved off-street parking lots with space for approximately 60 vehicles serve the park. Water access is provided at the southeastern portion of the park.

The proposed project will temporarily use one of park's parking lots as a turnaround for truck traffic accessing the temporary Hudson's Manufacturing access in Jaycee Park (refer to Figure 4 in Appendix A). The park roadway and parking lot will be repaved to allow for heavy truck traffic. There will be no impacts to park amenities. The City has agreed to the temporary use of this park during construction of the project. Refer the letter signed by the City on January 14, 2009 in Appendix A, Figure 10.

3.1.4. Hastings Loop Trail

The Hastings Loop Trail is a 15-mile long walking and biking trail, which functions as a linear green space circling through the city. The trail crosses through the project area along the south Mississippi River bank (refer to Figure 3 in Appendix A). The trail is a paved bituminous path approximately eight-feet wide for most of its length. The trail is located along the shoulder of a local street or county road in spot locations.

The trail will be temporarily rerouted through the project area during construction (refer to Figure 2 in Appendix 3). Detour signs will be posted to direct users safely around the construction site. The exact detour will be determined during the final design stages of the project. The City has agreed to the temporary use of this park. Refer the letter signed by the City on January 14, 2009 in Appendix A, Figure 10.

3.1.5. Levee Park

Levee Park is a 3.8-acre park located along the east side of the existing bridge (refer to Figure 1 in Appendix 3). The main function of Levee Park is to provide public open green space along the bank of the Mississippi River. The park has picnic tables to allow for picnicking. The Hastings Loop Trail, a 15-mile city trail, crosses through the park.

Temporary construction will be conducted in Levee Park. This work will involve connecting to an existing water main stub located in Levee Park. Repair work on the city water main is needed and will be performed during the project's construction; however, the City will pay

for the work. This area of the park, illustrated in Figure 4 in Appendix A, will have a temporary easement and park users will not be allowed in this area. The City has agreed to the temporary use of this park. Refer the letter signed by the City on January 14, 2009 in Appendix A, Figure 10.

3.1.6. Dakota County Court House

The Hastings City Hall, formerly the Dakota County Court House(1869-71), located in the northwest quadrant of T.H. 61 and Fourth Street, was listed in the NRHP in 1978, refer to Figure 3 in Appendix 4. It is significant under NRHP Criteria A and C in the areas of government and architecture. It was designed by architect A. M. Radcliff and served as the county courthouse for over a century. A new wing, designed by Ellerbe Architects was added in 1955. The building now serves as the Hastings City Hall and retains a high degree of integrity. It is also locally designated by the Hastings Heritage Preservation Commission.

Temporary construction will be conducted at the property's southwest corner at the intersection of T.H. 61 and Fourth Street, refer to Figure 4 in Appendix 4. The sidewalk and curb ramps will be reconstructed at this corner of the intersection. The work will require a small piece of temporary easement from this historical property in order to perform and complete the sidewalk reconstruction. The City has agreed to the temporary use of this property, refer the letter signed by the City dated January 14, 2009 in Appendix A, Figure 10.

4. ARCHAEOLOGICAL SITE IMPACTS

Section 4(f) applies only to archaeological sites that are on or eligible for inclusion on the National Register and that warrant preservation in place. Section 4(f) does not apply if FHWA, after consultation with the SHPO and/or THPO, determines that the archaeological resource is important chiefly because of what can be learned by data recovery (even if it is agreed not to recover the resource) and has minimal value for preservation in place.

The Section 106 process for the Hastings T.H. 61 Bridge Project determined that the project will have an adverse effect on one archaeological site (St. John's Hotel and Saloon Site, described below) and has the potential for adverse effect on one additional site (the Bailly Trading Post site; only if the pedestrian ramp is built between the bridge and the Loop Trail). FHWA and the SHPO have agreed that mitigation for the site that will be impacted will be data recovery. Therefore, Section 4(f) does not apply to the impacts to this archaeological resource.

Section 4.1.1 below describes the St. John's Hotel and Saloon Site. Information on Section 4(f) considerations related to the Bailly site is provided in Section 4.1.2 below.

4.1.1. St. John's Hotel and Saloon Site (21DK0081)

The location of this site is under the existing T.H. 61 Bridge. The site consists of foundations and stratified deposits from the third quarter of the nineteenth century associated with the former St. John Hotel and Saloon, as well as a distinct horizon associated with the Christmas Day fire of 1899. This site is recommended as eligible for the NRHP under Criterion A for its association with the early development of the City of Hastings, and under Criterion D for its information potential.

All of the proposed Build Alternatives would have a Section 106 'adverse effect' on this site. However, the *Phase I and II Archaeological Investigations for the Trunk Highway 61 Hastings Bridge Project, December 2008,* concluded that the buried artifacts are not

considered important for preservation in place. Therefore, Section 4(f) does not apply to the impacts to this archaeological resource.

4.1.2. Potential Additional Archaeological Site Impacts

The Bailly Trading Post (pre-1884 structures, located on Xcel Energy property) would be impacted by the Hastings T.H. 61 Bridge Project if the decision is made to include the pedestrian ramp connecting the new bridge with the Loop Trail in Levee Park in the proposed project. As described in Section 2.1 above, the decision has not yet been made whether this ramp will be part of the proposed project.

The Trading Post site was included in the list of archaeological sites that would need a phase I/II investigation conducted. Archaeological investigation(s) will be conducted at this site in summer, 2009. The results of this investigation will determine if preservation in place or data recovery would be the appropriate mitigation, if this site is impacted by the project.

Depending on whether the pedestrian ramp is included in the project and depending on the results of the archaeological determination, one of three scenarios will result:

1) If the decision is made not to include the pedestrian ramp in the Hastings T.H. 61 Bridge Project, then the Trading Post site would not be impacted, and there would be no Section 4(f) use.

2) If the decision is made to include the pedestrian ramp in the Hastings Bridge project and if the Trading Post site was determined to warrant preservation in place, then Section 4(f) would apply, and the Section 4(f) process (including additional documentation) would need to be followed.

3) If the decision is made to include the pedestrian ramp in the project and data recovery (not preservation in place) was identified as the appropriate mitigation for impacts to the Trading Post site, then Section 4(f) would not apply to the site and no further documentation would be required.

APPENDIX A – DRAFT SECTION 4(F) FIGURES

4F Areas
Hastings TH 61 Bridge Project
SP: 1913–64

Figure 3

Permanent & Temporary 4F Impacts

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 4

Hastings TH 61 Bridge Project Draft 4F

FIGURE 5A

oving on the Original

A Plan for the Heart of Hastings

June 2003

PINE ST.

Prepared for: Hastings Housing and Redevelopment Authority

Prepared by: Hoisington Koegler Group Inc. with Claybaugh Preservation Architecture Inc. Bonz/REA WSB and Associates, Inc. MMC Associates IBI Group

recommendation that if and when Bailly Parkway is developed, the one-way streets should be converted back to two-way. This will increase their functionality and convenience for the neighborhood.

Contingencies

If it becomes apparent that Bailly Street will not be reconstructed as a parkway, this plan recommends that the one-way streets remain in place and that consideration be given to extending the one-way configuration to 15th Street for greater city-wide traffic continuity.

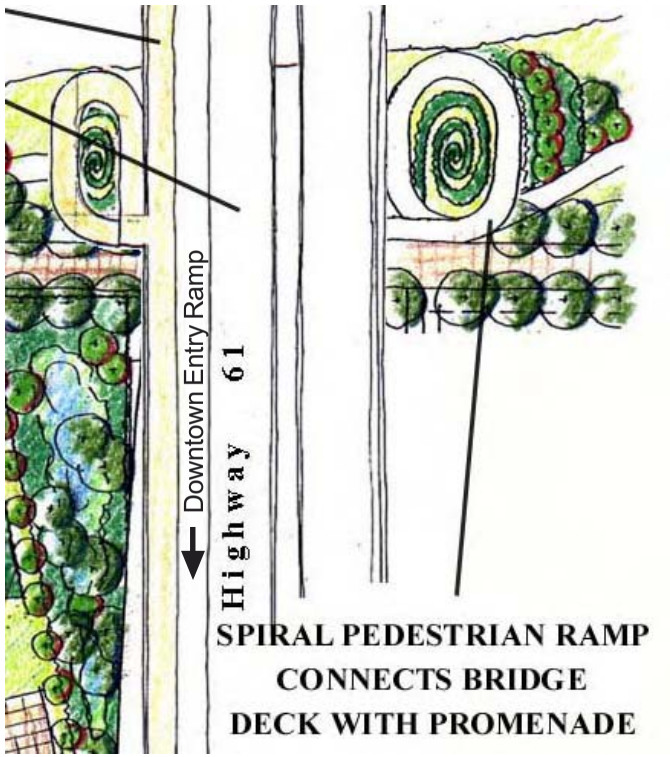
Explore the Use of Railroad Redevelopment TIF

State Law allows for the creation of a special form of tax increment financing district involving rail property. Unlike other parts of the complex TIF laws, these powers are broad and not clearly defined. The HRA should work with its legal counsel and financial advisor to explore the potential for using this tool to facilitate the public and private improvements discussed here.

RIVER BRIDGE RECONSTRUCTION

Replace the River Bridge with an "Architectural Landmark"

Perhaps the greatest single aesthetic challenge Original Hastings will face throughout the life of this plan is the design of a new Highway 61 Mississippi River bridge. Hastings enjoys a history of architecturally interesting bridges beginning with the spiral bridge and continuing with today's steel arch bridge. Advances in engineering allow for structural economies in contemporary bridge design but the result is often a bridge devoid of architectural character. This plan recommends that when the time comes for a new bridge, Hastings work with the Minnesota Department of Transportation to design a bridge that meets a high standard of form and function in the tradition of previous Hastings bridges. The bridge should continue as an "architectural landmark" for the community.



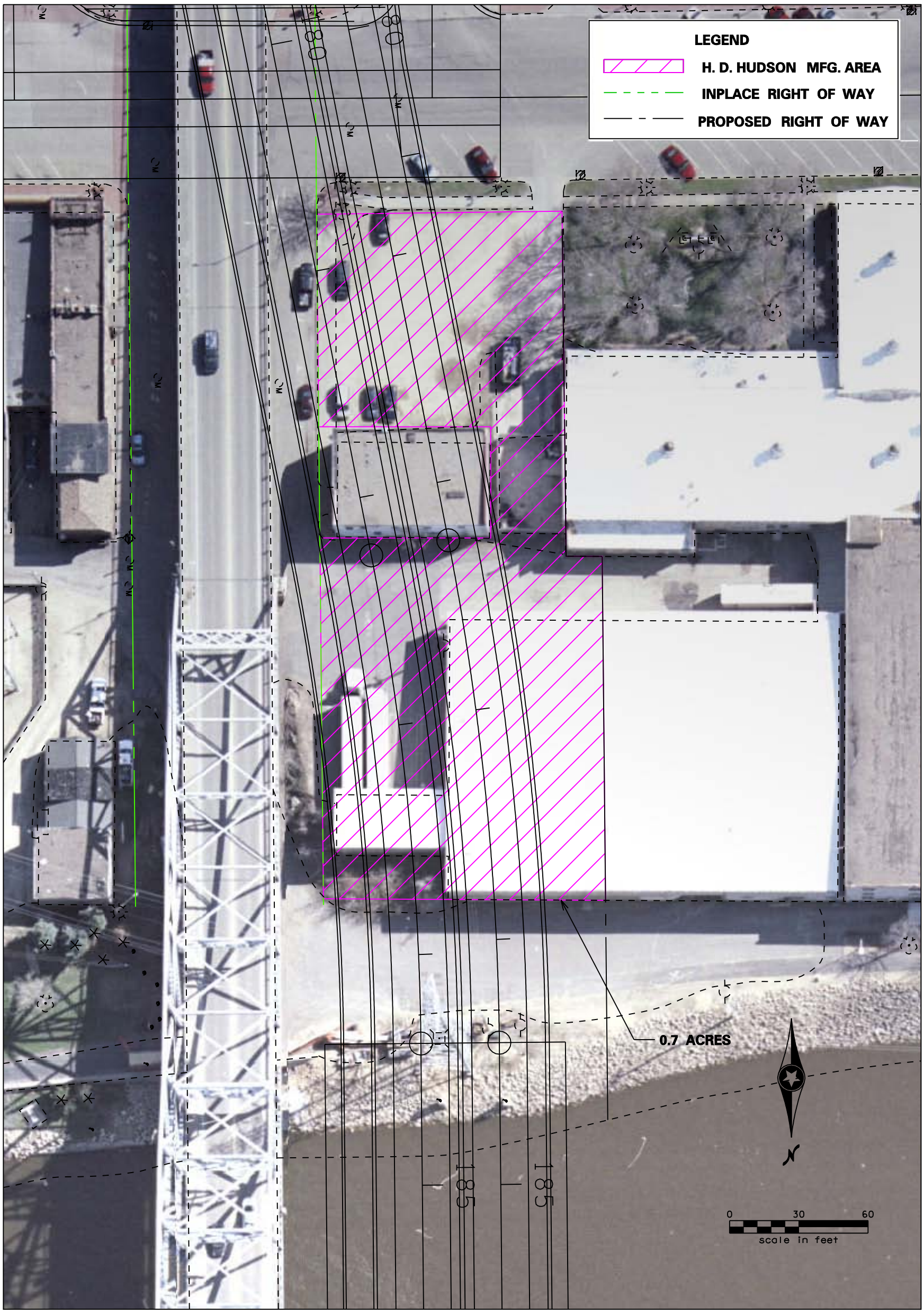
Spiral pedestrian ramps connect the deck of a new bridge with the Riverfront Promenade and recall the Spiral Bridge

Hastings enjoys a great bridge heritage with the Historic Spiral Bridge and the current Highway 61 Bridge. The example concept sketch below illustrates how future bridge reconstruction might continue that heritage.

Levee Park 4F Impact

Hastings TH 61 Bridge Project
SP: 1913–64

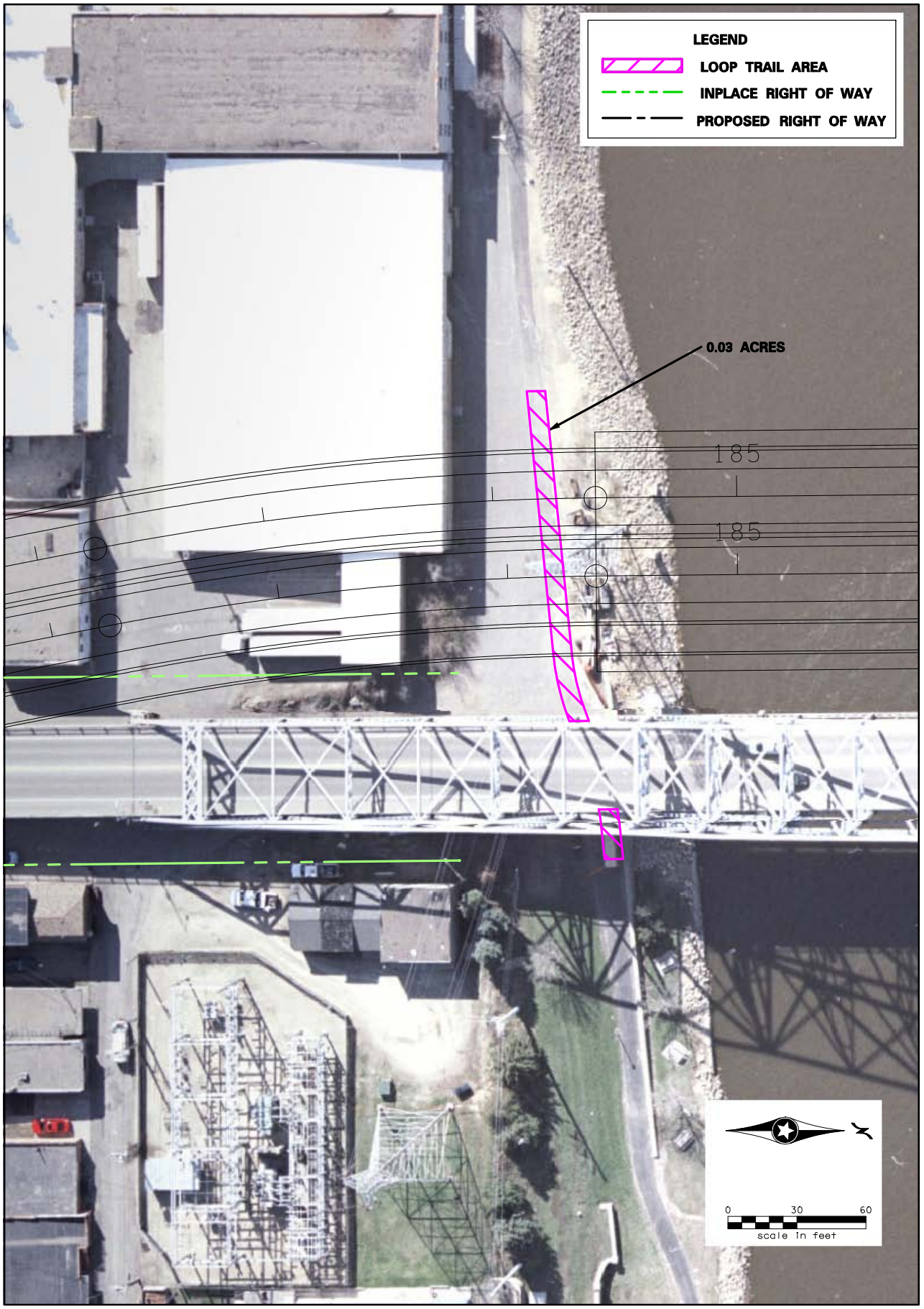
Figure 6



H. D. Hudson Mfg. 4F Impact

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 7



Hastings Loop Trail 4F Impact

Hastings TH 61 Bridge Project
SP: 1913–64

Figure 8

provide for visual consistency with the main span unit, prestressed concrete girders may also be appropriate to consider.

It is assumed that the north approach spans will be constructed in one phase. This would require a construction detour at the north abutment to offset the existing roadway east of the existing abutment.

The north abutment is located north of the existing abutment to reduce the embankment height or need for high retaining walls in the soft soils of the north river bank area.

Alternative 4: Rehabilitated Existing Bridge Next to New Arch Bridge

While the single bridge scheme utilized an offset alignment and constructed the majority of the new bridge in one phase, Alternative 4 constructs a new arch bridge to the west of the existing truss bridge, followed by rehabilitation of the existing truss bridge. As mentioned earlier in this section, a new steel tied arch bridge was selected for purposes of this study. An example of a recent major project that included a new arch bridge next to an existing steel truss bridge is shown in **Exhibit 9**.

Exhibit 9 – New tied-arch bridge next to a rehabilitated truss bridge (Cass Street Bridge, La Crosse, WI).

Figure 10:
Mn/DOT and City of Hastings Letter, 1/14/09

Minnesota Department of Transportation

Highway 61 Hastings Bridge Design-Build
Metropolitan District
1500 West County Road B2
Roseville, MN 55113

Date: Jan. 14, 2009

Mr. Barry Bernstein
Parks and Recreation Director
City of Hastings
920 10th St. W.
Hastings, MN 55033

Re: S.P. 1913-64 T.H. 61 Hastings Bridge Project
Temporary Occupancy Letter

Dear Mr. Bernstein:

As part of the construction of a new T.H. 61 Mississippi River crossing, there will be temporary construction impacts to the City Hall property, Levee Park, Jaycee Park, Lake Rebecca Park, City of Hastings Flint Hills Nature Preserve, and the Hastings Loop Trail. The following outlines the proposed temporary impacts.

City Hall property
As shown in the attached figure, the south west corner of the City Hall property, or the north east corner of Hwy. 61 and Fourth Street, will have temporary construction impacts. The triangular area shown, which is on the City Hall property, is currently a concrete sidewalk. As part of the project Mn/DOT's pedestrian ramp at the intersection will be reconstructed. As part of this work the triangular piece of sidewalk on the City Hall property will also need to be reconstructed because it functions as a piece of the entire sidewalk at this corner. This will ensure that the concrete joints are smooth. This area will be closed to pedestrians during the reconstruction. The proposed work will simply replace the existing concrete sidewalk with new concrete and there will be no changes to the triangular piece of sidewalk, such as changes in size or elevation. There will be no impacts to adjacent fences, walls, or monuments. At the end of construction this area will be restored to an equal or better condition that existed at the time of the Project's Contract Award.

Levee Park
As shown in the attached figure, the Hastings Bridge Project will connect to an existing water main stub located in Levee Park, and extend the water main up to 2nd Street. The water main is owned by the City of Hastings and the work will be paid for by the City of Hastings. The Mn/DOT Contractor will perform the work. This area of the park will have a temporary easement and park

users will not be allowed in this area. At the end of construction this area will be restored to an equal or better condition that existed at the time of the Project's Contract Award.

Jaycee Park
As shown in the attached figure, a small portion of the Hastings Loop Trail that travels through Jaycee Park will be used as a delivery truck access to H. D. Hudson Manufacturing Company. This area of the park will have a temporary construction easement and park users will not be allowed in this area. The trail will be repaved in order to support the weight of large trucks. At the end of construction the use of this trail as a truck access will cease and the park users will have the full use of the park and trail. The effected park and trail will be restored to an equal or better condition that existed at the time of the Project's Contract Award.

Lake Rebecca Park
As shown on the attached figure, the existing Lake Rebecca parking lot will be used during construction as a truck turn around for H. D. Hudson Manufacturing Company delivery trucks. In order to provide adequate turning radius for semi-trucks to turn into the park entrance the corner will be widened. This condition will become permanent, see exhibit. The park road leading to the parking lot, and the parking lot itself will be restored to equal or better condition that existed at the time of the Project's Contract Award. At the end of construction the use of this parking lot as a truck turn around will cease.

City of Hastings Flint Hills Nature Preserve
The northwestern portion of Flint Hills Nature Preserve, see attached figure, will be needed for construction staging. This area will be graded and lined with a non-permeable liner with gravel over the liner. The Hastings Loop Trail that travels along the riverbank and through this area would be relocated adjacent to the northern edge of Lock and Dam Road. As requested by the city, the trail will stay in its present location up to the observation deck and provide a connection to this trail amenity. Temporary lighting will be provided along the realigned trail section. The power lines along the riverbank will be relocated. Trees along the river bank will also be removed. The staging area will be restored to the usage and an equal or better condition that existed at the time of the Project's Contract Award. The portion of this staging area that has trees removed and had native prairie vegetation plantings by the city will be re-established when the staging area is no longer needed for the project. The trail along the river will be re-established to equal or better condition once the staging area is no longer in need for the project. The power lines may be left permanently in their relocated position, or may be relocated back to their original location once the staging area is no longer in need for the project, as directed by the City of Hastings.

Hastings Loop Trail
The portion of the Hastings Loop Trail shown on the attached figure will be closed and detoured during construction. Mn/DOT will work with city staff to determine an exact detour route when the project is further developed. When construction is complete the trail will be restored to the usage and an equal or better condition that existed at the time of the Project's Contract Award.

As per Federal Register Rules and Regulations 23 CFR 774, these temporary easements are considered a temporary occupancy of Section 4(f) lands. To proceed with the design and construction of the Hasting Mississippi River Bridge project, there must be documented agreement that the officials having jurisdiction over these resources concur with the work to be completed and agree that the following conditions are met.

The duration of the occupancy will be temporary in nature and there will be no change in ownership of the land. There are no anticipated permanent adverse physical impacts. There will be temporary impacts that will interfere with the activities or purposes of the park on a temporary basis. These temporary impacts have been mitigated to the satisfaction of the officials having jurisdiction over these resources as described previously in this document. The land being used will be restored to the usage and an equal or better condition that existed at the time of the Project's Contract Award.

Please review the attached figure and indicate your concurrence with the work proposed, and that the above conditions are met, by signing below. Please forward the signed original back to me for our records. I will forward this information to the Mn/DOT Project Liaison Unit for concurrence by the FHWA.

If you have questions regarding this matter, feel free to contact me at your earliest convenience at (651) 234-7880. Thank you.

Sincerely

Steve Kordosky
Hwy. 61 Hastings Bridge Project Manager
Mn/DOT
1500 Co. Rd. B2
Roseville, MN 55113

I concur that the proposed work constitutes a Temporary Occupancy of the City Hall property, Levee Park, Jacyee Park, Lake Rebecca Park, the City of Hastings Flint Hills Nature Preserve, and the City of Hastings Loop Trail.

1/27/2009

City of Hastings — Date

PAUL J HICKS
MAYOR

Attachments: Figure illustrating temporary construction impacts on parks