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FROM: Josephine (Joey) Lundquist, P.E.

DATE: April 15, 2009

SUBJECT: Minnesota Department of Transportation
LAFAYETTE BRIDGE REPLACEMENT PROJECT SP 6244-30
ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL ASSESSMENT WORKSHEET

The Minnesota Department of Transportation (Mn/DOT) is transmitting the enclosed Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) for the proposed Trunk Highway 52/Lafayette Bridge replacement project, which documents the purpose and need of the project along with the anticipated social, economic, and environmental impacts, including Federal Section 106 and Section 4(f) impacts. The EA/EAW is also available on the project website at http://www.dot.state.mn.us/metro/projects/hwy52-stpaul/index.html and will be available for review at the public hearing.

A public hearing and open house to review and comment on the EA/EAW has been scheduled for Thursday May 7, 2009 from 5:30 to 7:30 p.m. in the Great Hall of the New Main Building on the Metropolitan State University campus, 700 East 7th Street, St. Paul, MN 55106. Written comments on the EA/EAW should be submitted, prior to the close of the comment period on May 20, 2009, to Josephine Lundquist, Design Engineer, 1500 West County Road B2, Roseville, MN 55113 or Joey.Lundquist@dot.state.mn.us

If you have any questions please feel free to contact me at (651) 234-7648 or Joey.Lundquist@dot.state.mn.us

Thank you.

Enclosure Trunk Highway 52/Lafayette Bridge replacement project EA/EAW

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ENVIRONMENTAL ASSESSMENT/
ENVIRONMENTAL ASSESSMENT WORKSHEET

TRUNK HIGHWAY 52/LAFAYETTE BRIDGE REPLACEMENT AND ROADWAY MODIFICATION PROJECT FROM PLATO BOULEVARD TO EAST 8th STREET

State Project: SP 6244-30
Minnesota Project: [NOT YET ASSIGNED]

Trunk Highway 52/Lafayette Bridge Project over the Mississippi River
From Plato Boulevard to East 8th Street
City: St. Paul, County: Ramsey of Minnesota
Section, Township, Range:
Section 5, T28N, R22W and Section 32, T29N, R22W

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

Replacement of the existing Trunk Highway 52/Lafayette Bridge over the Mississippi River between Plato Boulevard and East 8th Street, redecking the bridge over Plato Boulevard (Bridge 62027), and modification of roadway connections to Interstate 94 and East 7th Street in the project's North Area (East 7th Street at Trunk Highway 52, including the northbound Trunk Highway 52 to westbound I-94 connection). Existing Bridge 9800 will be replaced with Bridges 62017 (southbound) and 62018 (northbound).

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Recommended for approval by:

for _____ 3/27/09

Mn/DOT – Metro District Engineer — Date

Approved by:

_____ 3/30/09

Mn/DOT – Chief Environment Officer — Date

Approved by:

Cheryl B. Martin _____ 4/2/09

Cheryl Martin — Date
FHWA – Environmental Engineer

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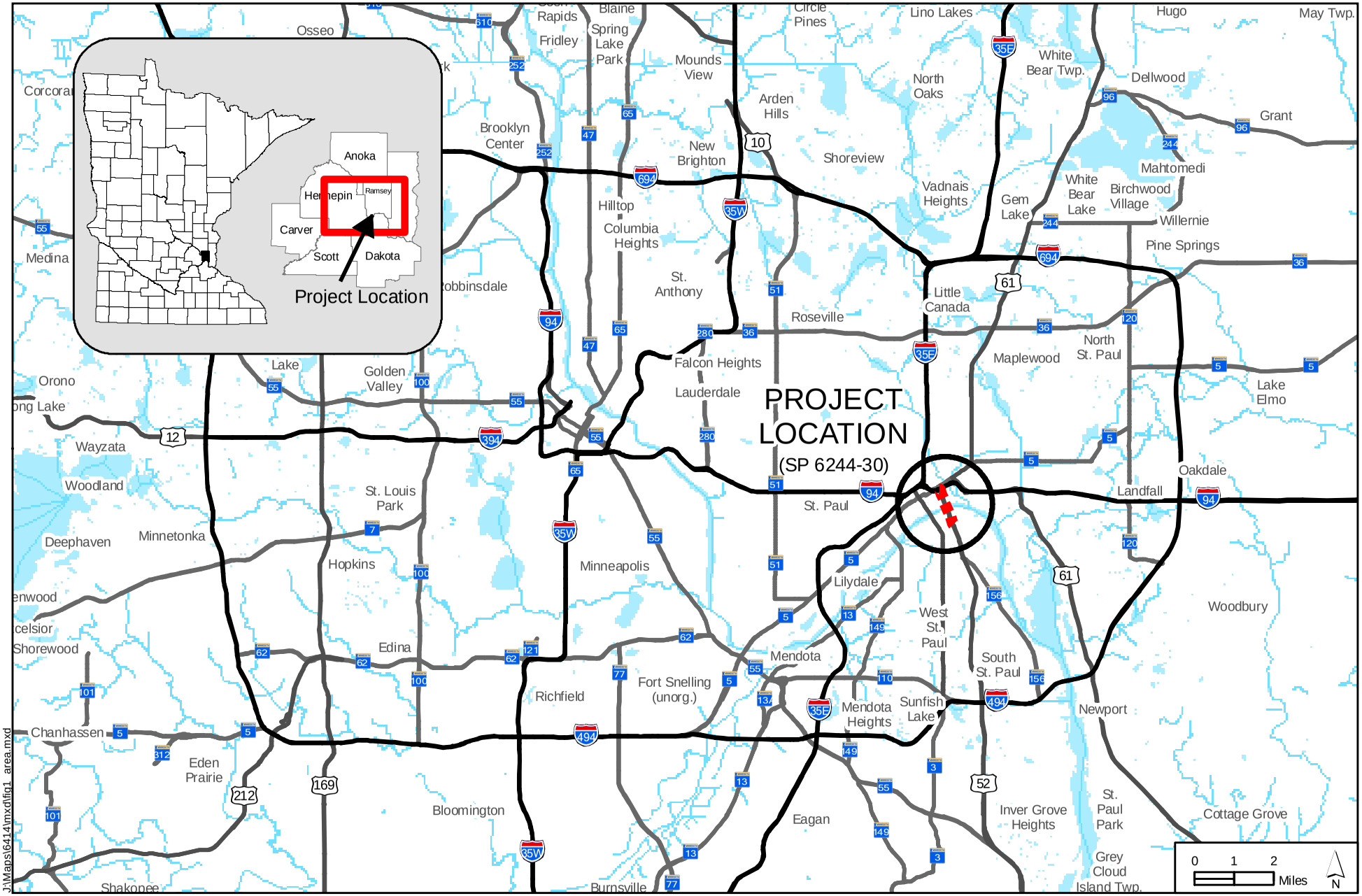
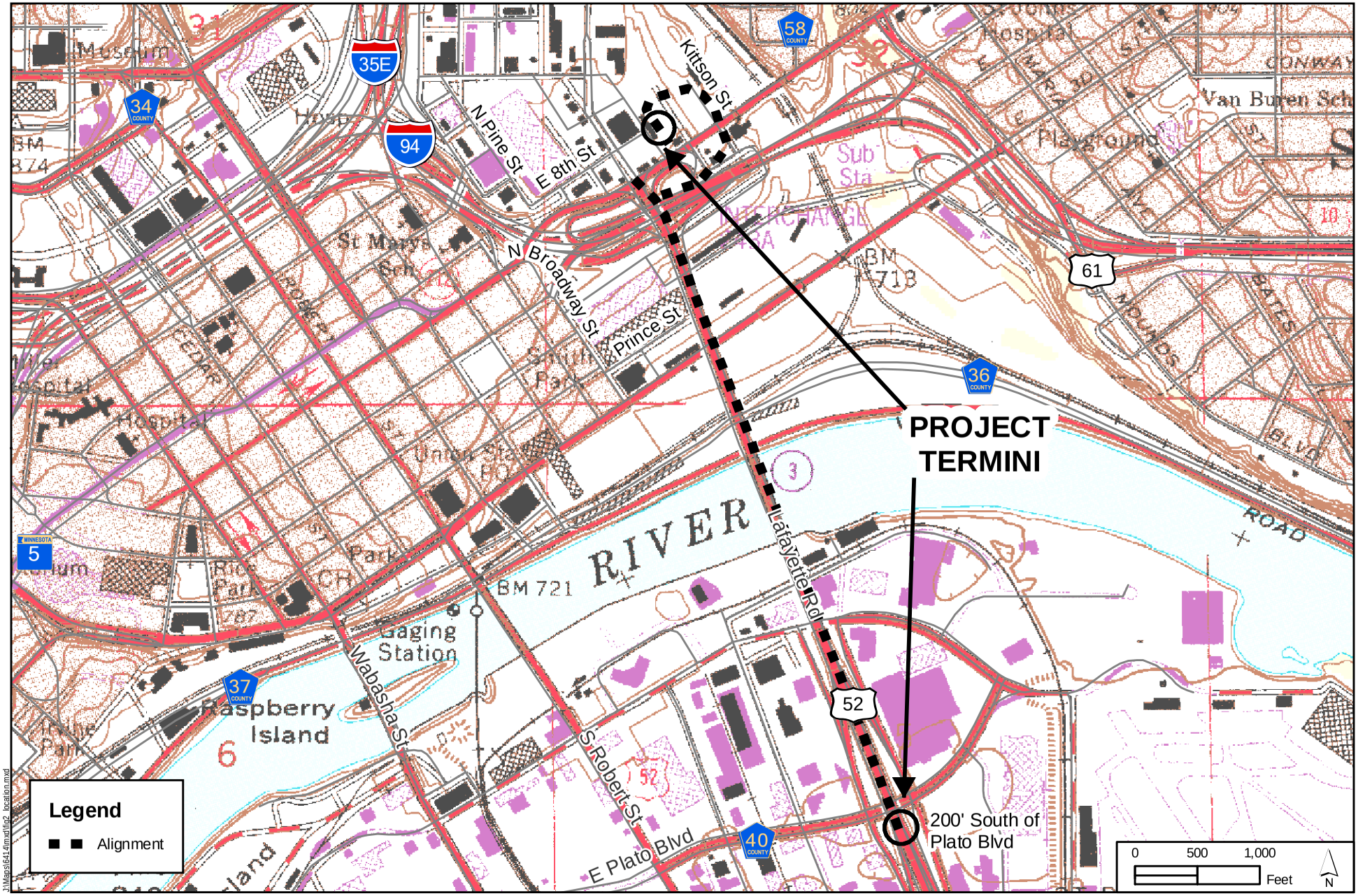


Area Location

Figure 1

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



Project Location USGS

Figure 2

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

I. REPORT PURPOSE

This Environmental Assessment/Environmental Assessment Worksheet (EA/EAW) provides background information including:

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

This EA/EAW was prepared as a part of the National Environmental Policy Act (NEPA) process and state environmental review process to fulfill requirements of 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, this document also serves as an 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 EA/EAW is used to provide sufficient environmental documentation to determine the need for a state EIS or that a Negative Declaration is appropriate.

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

Unless otherwise noted, all technical memoranda and studies referenced in this EA/EAW are available from the Minnesota Department of Transportation (Mn/DOT) upon request.

II. PURPOSE AND NEED FOR THE TRUNK HIGHWAY 52/LAFAYETTE BRIDGE REPLACEMENT PROJECT

See Figure 1 for area location.

Existing Bridge Description

The Trunk Highway (TH) 52/Lafayette Bridge (Lafayette Bridge) carries TH 52 traffic from the southeast portion of the state, the southeast metropolitan area, and the St. Paul Westside neighborhood into downtown St. Paul where it connects to local streets and to Interstate 94 (I-94). TH 52 is a freeway design from East 7th Street in St. Paul to approximately 11 miles to the south where the design is a four-lane expressway. The existing bridge, which carries four lanes of traffic, was constructed in 1968 using the standard design, detailing, and fabrication methods of the late 1960s. The average daily traffic (ADT) on the bridge is 81,000 vehicles per day. The bridge is 3,366 feet long and consists of two 29-foot wide roadway widths supported by concrete bridge decks and steel girder superstructures. It spans the Mississippi River, several city streets, the Canadian Pacific Railroad and Union Pacific Railroad (CP/UPRR) tracks, several contract parking lots, and a barge terminal. The north approach spans were widened in 1982 (southbound lane) and 1992 (northbound lane).

Existing North Area Description

The existing configuration of the Lafayette Bridge at its north end (hereinafter referred to as the North Area) includes connections to I-94; the TH 52 freeway terminates just north of I-94 at a signalized intersection with East 7th Street in downtown St. Paul. Existing conditions are generally visible on Figure 5b. The interchange with I-94 also includes connections to serve traffic from I-35E. Each of the system ramps has horizontal geometry that does not meet the current desired standards. A standard diamond interchange exists at Plato Boulevard on the south side of the Mississippi River. In the northbound direction, TH 52 exits are sequenced so that eastbound I-94 exits first, then westbound I-94 exits, followed immediately by the signalized intersection with East 7th Street. In the southbound direction, TH 52 begins at the signalized intersection with East 7th Street, immediately followed by an entrance from westbound I-94, an entrance from I-35E via eastbound I-94, and finally an entrance from eastbound I-94. This system-to-system interchange is confined to the space between East 5th Street and East 7th Street.

Proposed Project

The proposed project involves removing and replacing the Lafayette Bridge (Bridge 9800) and the bridge over I-94 (Bridge 62881), redecking the bridge over Plato Boulevard (Bridge 62027), and improving roadway connections in the North Area. A pedestrian/bicycle trail over the river is also proposed as part of the bridge replacement project.

The limits of the project area evaluated in the EA/EAW are from 200 feet south of Plato Boulevard on the south to East 8th Street on the north. The project limits also include the North Area, an area that stretches approximately one-quarter mile east of TH 52 along the west side of the Burlington Northern & Santa Fe Railway Company (BNSF) railroad tracks (See Figure 2).

Mn/DOT is carrying forward both a concrete and a steel option for the bridge through the bid process. Concrete and steel have similar costs and it is difficult to determine which will have the least cost at the time of bidding. Bringing forward both options fosters a competitive bidding environment for the project.

A. NEED FOR LAFAYETTE BRIDGE REPLACEMENT

1. Existing Bridge Condition

The existing bridge is safe for use but is nearing the end of its useful life. The bridge is scheduled for reconstruction in the next few years to replace the aging infrastructure. The concrete deck is deteriorating due to roadway salts and traffic. Due to fatigue cracking problems with the steel girders (superstructure) that support the deck, discussed below, it would not be prudent to replace the deck on the existing superstructure.

Like many bridges built in the 1960s, the Lafayette Bridge has developed a history of steel fatigue problems. In 1975, a fracture occurred in the southbound

bridge in one girder of the main span. This fracture originated at a connection detail. The girder was repaired with bolted splice plates. Similar details throughout the bridge were retrofitted at that time to prevent further fracture occurrences. No additional problems have been experienced with that detail. Maintenance crews have occasionally performed other needed steel repairs as determined by inspections. Additionally, the main spans over the river consist of a two-girder system and therefore, are classified as a "fracture critical" bridge. The term "fracture critical" indicates that if one main component of a bridge were to fail, the entire structure could fail.

Several of the large joints in the bridge deck are open "finger joints." These joints allow water and salt from the deck to migrate to the steel below, causing corrosion at these locations. While the corrosion is apparent, review by inspectors has determined that it is surficial and the base steel is sound. Nonetheless, inspectors need to pay particular attention to the above issues during inspections.

The Mn/DOT Structure Inventory Report itemizes all pertinent information about the bridge, including dimensions and physical conditions. The various bridge components are assigned a rating from "0" to "9" in the Structure Inventory Report to indicate the particular components physical condition, "0" being failed condition and "9" being excellent condition. According to the most recent Mn/DOT Structure Inventory Report, dated October 29, 2008, the Lafayette Bridge superstructure (girders and deck) rating is "4" (Poor Condition – advanced section loss or primary structural elements). The substructure rating is "7" (Good Condition – some minor problems).

All of the information that is contained in the Mn/DOT Bridge Inspection Report and Structure Inventory Report, including physical conditions, load capacity, and geometry, is entered into a series of equations that results in the Sufficiency Rating for the bridge. This value is indicative of the bridge's sufficiency to remain in service. The result of this method is a percentage in which 100 percent represents an entirely sufficient bridge and 0 percent represents an entirely deficient bridge. The Lafayette Bridge has a sufficiency rating of 49.5 percent and is categorized as structurally deficient. According to Federal Highway Administration (FHWA) guidelines, a bridge is eligible for replacement if the rating is less than 50.

The decision to remove the existing steel superstructure of the river spans was made by the Mn/DOT Bridge Office on the basis of fatigue cracking problems associated with these spans along with the difficulty in widening the current configuration. The condition of the existing bridge requires substantially more improvement than maintenance can provide. Therefore, complete bridge replacement is necessary.

Plato Bridge

The deck of the existing Plato Bridge is deteriorating and needs to be replaced. The bridge deck was built in 1967 and has uncoated reinforcement in the deck. The deck was overlaid with low slump concrete in 1980 and a limited service overlay was added in 2004 to the southbound lanes, with mill and patch type repairs in the northbound lanes. There are extensive areas of delamination and cracking in the top of the deck and extensive areas of cracking, delamination, and water saturation in the bottom of the deck. A portion of the deck has been underpinned to prevent full depth deck failures. Ground penetrating radar survey information from 1997 showed 17 percent unsound concrete.

2. Role of TH 52/Lafayette Bridge in the Metropolitan Transportation System/Consistency with Plans

Trunk Highway 52, also known as the Lafayette Freeway, is an important corridor in the Twin Cities regional transportation system as well as a High Priority Interregional Corridor connecting southern Minnesota trade centers, including Rochester, to the Twin Cities. It supports local, regional and interregional economic development, serving commuters in southeastern parts of the metropolitan area as well as out state southeastern Minnesota, and provides a link in the system for movement of commodities between these areas. It also provides an important connection to the interstate system.

The Lafayette Bridge provides a crucial link between Dakota and Ramsey counties and serves as a connection between the east and west sides of St. Paul, as well as the connection to and from I-94. Failure to replace the bridge once it reaches the end of its useful life would create a gap in the metropolitan transportation system, requiring longer, more circuitous trips that divert a large volume of traffic to a local street network that is not equipped to handle it. Furthermore, given the importance of TH 52 in the metropolitan transportation system, failure to maintain traffic on TH 52 during construction of the new bridge to preserve existing connections would also unduly burden the local street network with additional traffic.

The Metropolitan Council's *2030 Transportation Policy Plan* (TPP), 2008, classifies TH 52 as a Principal Arterial in the trunk highway functional classification system. The TPP states that the highest priority must be given to adequately preserving, operating, and maintaining the entire highway system to serve existing and planned development. Strategies in the TPP state that highway system investments should be focused on the following three areas: 1) preservation, operations, and maintenance; 2) effectively managing the system; and 3) expansion that optimizes the performance of the system. Encouraging local governments to implement a system of fully interconnected arterial and local streets, pathways, and bikeways is another strategy in the TPP, noting that Mn/DOT shall consider pedestrians when planning, designing and constructing roadways and bridges. Finally, the TPP states that gaps and barriers exist in the

regional bikeway system, including crossings of freeways and major railroads, and especially of the Mississippi River. Every bridge that is newly constructed or reconstructed that removes or crosses a barrier for pedestrians and bicyclists must safely accommodate bicycle and pedestrian travel unless a reasonable alternative exists within one-half mile for bicyclists or one-quarter mile for pedestrians.

The Mn/DOT Metro District's *2008-2030 Transportation System Plan* (TSP) serves as the critical planning link between the Statewide Transportation Plan and the actual physical improvements to the trunk highway system in the metropolitan area. The project is consistent with the TSP and the Mn/DOT *Statewide Transportation Plan*, 2003. A main priority of the TSP is to safeguard what exists by preserving essential elements of existing transportation systems (Policy #1), in part by effectively managing the operation of existing transportation systems to provide maximum service to customers (Policy #3). Bridge projects fall within this priority and the Lafayette Bridge is considered to have a high deficiency rating on the existing mobility rank in the TSP and is consequently identified specifically for replacement between 2008 and 2014. The TSP also prioritizes management of the transportation system to provide cost-effective transportation options for people and freight (Policy #4) and ensure the safety and security of the transportation systems and their users (Policy #7). Failure to replace the bridge would be inconsistent with the TSP.

St. Paul's *Transportation Policy Plan,* 1994, a chapter of its comprehensive plan, does not specifically reference the Lafayette Bridge. The public hearing draft of the new comprehensive plan chapter on transportation, September 2008, calls for reconstruction of the Lafayette Bridge and a trail connection from the Lafayette Bridge to the Bruce Vento Regional Trail. Adoption of the new transportation plan is anticipated in spring 2009. The 1994 plan and the public hearing draft of the new plan are available from the City of St. Paul.

B. NEED FOR IMPROVEMENTS TO LAFAYETTE BRIDGE AND NORTH AREA

1. Congestion

Lafayette Bridge/TH 52

The existing four-lane bridge carries about 81,000 vehicles per day, of which eight percent are heavy commercial vehicles. According to the *Metropolitan Freeway System 2005 Congestion Report,* February 2006, TH 52 on the Lafayette Bridge experiences over five hours of congestion on a given weekday. The configuration of the TH 52/East 7th Street intersection and the TH 52/I-94 interchange in the North Area contribute to congestion on the Lafayette Bridge.

A level of service (LOS) analysis was conducted for the EA/EAW, *Lafayette Bridge Replacement Environmental Assessment and Design Submittal of Existing Calibrated CORSIM Model,* May 30, 2008. LOS A through D is generally

considered acceptable to drivers. LOS E indicates that an intersection is operating at or very near its capacity and that vehicles experience substantial delays. LOS F indicates severe congestion and substantial delays. Results of the analysis indicate a poor level of service (LOS E) in the AM peak hour for northbound TH 52 (between the Plato Boulevard on ramp and I-94) and in the PM peak hour for southbound TH 52 (between East 7th Street and the I-94 eastbound ramp).

The poor AM peak hour level of service is caused by the geometric design at the TH 52/I-94 interchange, lack of capacity along I-35E, and the magnitude of traffic volume in the weave segment between the TH 52 northbound ramp and the I-35E northbound off ramp. The poor PM peak hour level of service is caused by geometric design at the TH 52/I-94 interchange, lack of capacity along I-94, and lack of capacity for southbound I-35E traffic destined for eastbound I-94 and southbound TH 52. The geometric deficiencies at the TH 52/I-94 interchange that contribute to congestion are discussed in Section II.B of this EA/EAW. Capacity on I-35E and I-94 will be addressed through separate projects.

In addition, southbound slowdowns on the bridge occur at the northernmost section of the bridge as traffic merges from east- and westbound I-94, southbound I-35E and East 7th Street. Due to the close proximity of these merges, congestion occurs as traffic is trying to sort out in such a short distance.

Traffic levels on the Lafayette Bridge will be higher under 2030 conditions, forecast to be 90,000 ADT for four lanes and 94,000 ADT for six lanes (i.e. four lanes plus two auxiliary lanes) according to the *Preliminary Design Services for Replacement of Lafayette Bridge Travel Demand Forecast Technical Memorandum*, August 6, 2008 (Forecast Memo).

A freeway operations analysis was also completed for forecast year 2030 to determine traffic volumes and diversion under the No Build scenario. The No Build model assumes that the existing TH 52 bridge is closed or removed and is not replaced. Under the "no bridge" scenario, traffic volumes divert to other river crossings such as I-35E, I-494, and Smith Avenue Bridge. However, the majority of traffic shifts to Wabasha Street and Robert Street, moving through downtown St. Paul to other destinations. Under No Build conditions, daily volumes on the Wabasha Bridge are 52,000 compared to 19,000 under existing conditions; daily volumes on the Robert Street Bridge under No Build conditions are 41,000 compared to 13,800 under existing conditions.

Local Street Congestion

In addition to the congestion that occurs on TH 52 and the Lafayette Bridge from queues for east- and westbound I-94 traffic, congestion also occurs at the TH 52/East 7th Street intersection from northbound TH 52 traffic entering downtown St. Paul. The freeway abruptly ends at this intersection and all northbound TH 52 traffic that is not exiting to east- or westbound I-94 traffic is

absorbed into the local roadway network. The TH 52/East 7th Street intersection is controlled by a signal and congestion results as northbound TH 52 traffic queues at the intersection.

2. Safety Concerns

Crash Analysis on TH 52

Safety is a concern along TH 52 and on the Lafayette Bridge. To assess the level of safety along TH 52, a crash analysis was conducted. Crashes were analyzed at interchange locations along TH 52 in the project area and beyond. The crash analysis provides crash type and severity. Methodology is provided in the *Highway 52 Lafayette Bridge Traffic Report on Existing Conditions*, February 8, 2007 (Traffic Report).

From 2001 to 2004, there were 638 crashes on TH 52 from Butler Avenue in West St. Paul (about two miles south of Plato Boulevard) to East 7th Street in St. Paul (just north of the bridge). Rear-end collisions make up the majority of crashes with 63 percent of the total. Side-swipe collisions make up the next highest crash type, with 14 percent of total crashes. These types of crashes most commonly are related to congestion as high volumes of traffic lead to shockwaves, a phenomenon where the majority of vehicles brake in a traffic stream, and sudden slowdowns. Northbound TH 52 experiences major congestion during both peak periods and had the most crashes, with 75 percent of the total. Crashes on TH 52 were low in severity with 74 percent being property damage crashes only and 26 percent involving injuries. No fatal crashes were reported between 2001 and 2004.

The average segment crash rate for this stretch of TH 52, 4.47 per million vehicle-miles, and the segment severity rate, 5.87 per million vehicle-miles, are substantially higher than the Mn/DOT average crash rates for a similar type of roadway, 1.2 per million vehicle-miles and 1.6 per million vehicle-miles respectively. In addition, the TH 52 average crash rate as noted above is substantially higher than the critical crash rate of 1.52. A critical crash rate is used to determine whether or not the actual crash rate exceeds the average crash rate by a substantial amount. When the actual crash rate exceeds the critical crash rate, the segment or intersection could be a hazardous location. The critical crash rate is calculated by adjusting the average crash rate for an intersection of similar size based on the amount of vehicular exposure to the intersection; crash severity does not enter into this calculation**.**

As shown in Table 1, a majority of crashes on TH 52 occurred north of Eaton Street and continued to grow in frequency approaching the I-94 interchange. Crashes increased approaching I-94 on the Lafayette Bridge because of the poor geometrics of the ramps at I-94, the lack of shoulders on the bridge, and the severe congestion approaching I-94.

TABLE 1
CRASHES AT TH 52 INTERCHANGE LOCATIONS 2001-2004

Cross Street	Fatal	Injury	Property Damage Only	Total
Butler Avenue	0	15	33	48
Concord Avenue	0	17	64	81
Eaton Street/Plato Boulevard	0	60	143	203
River Bridge and I-94 Interchange	0	75	231	306
Total Crashes on TH 52	**0**	**167**	**471**	**638**

Source: *Highway 52 Lafayette Bridge Traffic Report on Existing Conditions*, February 8, 2007

Crash Data for Local Streets

Safety is also a concern on local City streets. Data provided by the City identify 25 crashes during the three-year time period 2005-2007: 12 crashes on Lafayette Road just north of East 7th Street; and 13 crashes on East 7th Street. In addition, 12 crashes occurred on northbound TH 52 just south of East 7th Street and 10 crashes on southbound TH 52 just south of East 7th Street. The crashes on TH 52, though not on local streets, impact the flow and safety of the local street network. This is also true for crashes occurring on ramps to and from I-94.

3. Operational Deficiencies

Traffic operation refers to the way in which traffic flows on a roadway given its geometric design and traffic control system. Traffic congestion is discussed in Section II.B.1 of this EA/EAW and safety is discussed in Section II.B.2. An important traffic operation condition that affects traffic congestion and crashes on freeways is the weaving of entering and exiting traffic. The existing bridge lacks auxiliary lanes to allow adequate sorting distance for northbound and southbound traffic on TH 52, contributing to congestion on the bridge. Northbound bridge traffic has three options at the north end of the bridge: eastbound I-94; westbound I-94; and East 7th Street. Congestion results because there is not adequate sorting distance in existing lanes to filter traffic into discrete lanes for the three northbound options. As a result, eastbound I-94 traffic gets stuck in the queue for westbound I-94. The lack of an auxiliary lane for traffic entering southbound TH 52 from east- and westbound I-94, southbound I-35E, and East 7th Street results in congestion, to a lesser degree than northbound TH 52, from the inadequate sorting distance at this merging point.

4. Geometric Design Deficiencies

Geometric design deficiencies refer to those aspects of the physical design of the existing roadway that do not conform to current design standards. The existing roadway was designed to meet the standards in place 40 years ago when operational experience with freeways was limited. The Federal Highway Administration (FHWA) and Mn/DOT have continuously upgraded freeway design standards to improve safety and operation of highways. Current design standards provide a much higher level of safety and performance than standards used in the original bridge design.

Ramp Deficiencies

The poor geometrics of the loop ramp from northbound TH 52 to westbound I-94 contribute to routine congestion on TH 52 in both the AM and PM peaks. The tight curve of the ramp requires traffic to slow down to 15 miles per hour (mph); this leads to congestion on northbound TH 52. In turn, this congestion contributes to rear end crashes (crash analysis is discussed in Section II.B.2 of this EA/EAW). In addition, the tight curve and angle of the ramp can lead to truck tipping and rolling. The existing radius of the loop limits the capacity of the ramp to only 1,500 vehicles per hour (VPH) causing queuing onto northbound TH 52.

Slip Ramp from East 7th Street to Westbound I-94

During the AM peak, the slip ramp from East 7th Street to westbound I-94 has a peak hour volume of 500 VPH. Since the geometrics of the loop limits the capacity to only 1,500 VPH entering onto westbound I-94, traffic from the East 7th Street slip ramp reduces the flow of traffic from northbound TH 52 to only 1,000 VPH. This causes congestion on northbound TH 52 as described in Section II.B.1. of the EA/EAW. In addition, with a short acceleration lane and a merge on the curve, the slip ramp contributes to crashes on the ramp. The short weaving distance from the westbound I-94 ramp to the northbound I-35E exit ramp contributes to congestion backups on northbound TH 52.

"Hill" over I-94

An additional geometric deficiency is the TH 52 northbound "hill" over I-94 that impacts the visibility of the intersection with East 7th Street for northbound TH 52 traffic. This is of particular concern because TH 52 freeway abruptly ends at this intersection and northbound traffic is absorbed into the local street network. The limited visibility of the freeway's end has resulted in collisions at East 7th Street when motorists fail to observe signage warning them to reduce speed because the freeway is coming to an end. See Section II.B.2 of this EA/EAW for a discussion of crash data for local streets.

Lack of Shoulders on the Bridge

According to the Traffic Report, the existing bridge does not have adequate shoulder widths in either direction. Existing shoulder widths are two to three feet whereas 12-foot shoulders are the standard for this section of TH 52 (Mn/DOT LRFD Bridge Design Manual, Figure 2.1.4.4). This deficiency contributes to congestion on the bridge. In the event of a crash or a disabled vehicle, there is no location to which to pull off, so the traffic lane is obstructed until incident response personnel can clear the scene and open up the lane of traffic. In addition, the minimal shoulders available do not allow for enough reaction distance between traffic lanes and the barrier wall, which leads to additional crashes. The Traffic Report states that, according to the FHWA, secondary crashes caused by the congestion of other incidents makes up 15 percent of the total number of crashes. Shoulders provide a place to clear incidents to reduce the chance of secondary crashes.

5. Design Constraints

Factors that constrained the location and height of the existing bridge when it was built in 1968 continue to play a role in design planning today. According to the *Structural Study of Existing Lafayette Bridge No. 9800,* TKDA, March 1, 2007 (TKDA Structural Study), the location, height, and design of the bridge is constrained as follows:

- The navigation channel constrains the available structure depth of the river spans and together with the pile configuration of existing river pier footings greatly limits the options available for new pier locations;
- The runway clear zone for Holman Field constrains the available structure depth and bridge height; and
- The clearance requirements for the Xcel overhead power line constrain the height of the bridge deck.

6. Missing Pedestrian/Bicycle Connection

The existing bridge does not provide a pedestrian/bicycle connection over the Mississippi River that connects communities on both sides of the river with recreation and employment opportunities. The Metropolitan Council's TPP notes that gaps and barriers exist in the regional bikeway system, including crossings of freeways and major railroads, and especially of the Mississippi River. The TPP states that every bridge that is newly constructed or reconstructed that removes or crosses a barrier for pedestrians and bicyclists must safely accommodate bicycle and pedestrian travel unless a reasonable alternative exists within one-half mile for bicyclists and one-quarter mile for pedestrians. The nearest pedestrian/bicycle crossing west of the existing Lafayette Bridge is approximately one-half mile away and the nearest crossing to the southeast is about six miles. The public hearing draft, September 2008, of the City of St. Paul's transportation chapter of its comprehensive plan calls for a pedestrian/bicycle connection over the river as does the *Comprehensive Management Plan for the Mississippi National River and Recreation Area* prepared by and available from the National Park Service (NPS).

7. Poor Stormwater Treatment

There is no detention or treatment of stormwater runoff from the existing bridge. The runoff water from the bridge deck flows through a series of downspouts and sloping troughs to locations where it is discharged on splash blocks or paved surfaces at the base of the columns. The discharged water from the bridge deck is then directed toward catch basins located under the bridge where it is combined with surface runoff from the parking lots and other areas below the bridge. Untreated discharge containing roadway pollutants such as silt, sand, and oil negatively impacts water quality.

8. Other Project Needs

Redevelopment at the east end of downtown St. Paul is anticipated to occur in the coming years. For many years, the various versions of City of St. Paul's *Transportation Policy Plan* have called for a new roadway between Warner Road at the river's edge and University Avenue to the north to improve local roadway connectivity. This new roadway would lie east of TH 52. This new connection, referred to as the Kittson Extension, would serve redevelopment sites by providing enhanced connections from TH 52 and access to downtown, the river, and St. Paul neighborhoods. The Lafayette Bridge replacement project needs to anticipate this future connection in its design for roadway improvements in the North Area.

C. TH 52/LAFAYETTE BRIDGE REPLACEMENT PROJECT PURPOSE

The primary purpose of the project is to replace the current bridge with a new bridge that has a 100-year design life and meets current geometric and structural standards in the same regional transportation system corridor, that: 1) alleviates congestion on TH 52 near the I-94 interchange area to an acceptable level of service in the 2030 design year (an acceptable level of service is LOS D or better); 2) improves traffic safety on TH 52 within the project limits; 3) corrects operational deficiencies; 4) corrects geometric design deficiencies; 5) fits within physical design constraints; 6) provides pedestrian/bicycle crossing; 7) improves stormwater treatment; and 8) addresses other project needs.

III. ALTERNATIVES

A. PROJECT ALTERNATIVES

1. No Build Alternative

No Build Alternative

The No Build alternative is a maintenance alternative. It proposes that no construction be undertaken, and that the in-place bridge simply be maintained as long as feasible. The in-place bridge is 3,366 feet long and consists of two 29-foot wide roadway widths supported by a concrete deck and steel girder superstructures. The bridge spans the Mississippi River, several City streets, CPRR/UP and BNSF tracks, parking lots, and a barge terminal. It has 29 spans; eight spans on the south approach, three river spans, and 18 spans on the north approach. Each roadway of the river span is supported by a non-redundant two-girder system. Each roadway of the approach spans is supported by a redundant multiple-beam system.

As described in Section II.A.1, in recent years, the deck and steel superstructure have required maintenance. Deck deterioration is due to roadway salts and traffic. Portions of the concrete overlay were replaced in 1998 and 2004 to extend the life of the deck. There is noticeable deterioration on the underside of the concrete deck. In 1975, a fracture occurred in the southbound bridge in one girder of the main span, originating at a connection. The girder was repaired with bolted splice plates. Similar details throughout the bridge were retrofitted at that time to prevent further occurrences.

Under the No Build alternative, necessary routine repairs such as this would continue to be made as long as possible; however, the bridge would continue to deteriorate and the bridge load posting would have to be reduced. This would probably start by diverting trucks and buses, but later, after further deterioration, it could be necessary to reduce the number of through lanes in each direction from two lanes to one lane. Ultimately, the bridge would become structurally insufficient to the point that it would be closed to all traffic, and all vehicles would be detoured to other routes indefinitely. Under the No Build scenario, closure is anticipated to occur within the next 10 years.

Under No Build conditions with bridge closure, traffic volumes divert to other river crossings including I-35E, I-494, and Smith Avenue. However, the majority of river crossing traffic shifts to Wabasha Street and Robert Street in downtown St. Paul where 2030 ADT volumes on the Wabasha Street Bridge and Robert Street bridge are forecast to be 41,000 and 52,000 respectively, an increase from 18,100 and 24,000, respectively, with the existing four-lane bridge.

Under No Build conditions downtown St. Paul would experience increased traffic on local streets as travelers use the Robert Street and Wabasha Street bridges to cross the river and make their way on the local street network to other destinations including I-94 and I-35E. The downtown street system is not equipped to handle this volume of traffic in the event of bridge closure and would result in severe congestion. In addition to the impact on downtown, bridge closure would negatively impact connectivity of the metropolitan transportation network. See Section II.A.2 of this EA/EAW for a discussion of the role that the Lafayette Bridge/TH 52 plays in the metropolitan transportation system.

The No Build alternative was rejected because, ultimately, it would result in the closure of the bridge and the loss of a vital trunk highway corridor. Therefore, this alternative does not meet the purpose and need for the project. However, the No Build alternative is used as the basis for comparing the Build alternative environmental impacts, and as the basis for the benefit/cost analysis.

2. Design Alternatives Considered But Rejected

In the description of alternatives below, bridge replacement alternatives are discussed first, followed by alternatives for roadway improvements in the North Area, and then by bridge type alternatives.

A. Bridge Replacement Options

Mn/DOT conducted a study of rehabilitation and replacement options for the Lafayette Bridge. These options were informed by the TKDA Structural Study and are summarized below and in the bridge replacement evaluation matrix, Table 2. The evaluation criteria included key elements to address project need and an environmental impact concern regarding foundation work in the river.

- **Replacing the Bridge As-Is On Same Alignment**

  This alternative includes replacing the bridge superstructure on the same alignment and retaining the existing number of lanes and substandard shoulder widths. Under this alternative, traffic could not be maintained during construction because the half width reconstruction of the existing bridge may overload the river foundations. All vehicle traffic would be detoured to other routes during construction. This option would retain the existing foundations and piers in the river and land spans.

  While this alternative replaces aging infrastructure and preserves a vital trunk highway corridor, it does not provide auxiliary lanes or adequate shoulders. It was eliminated from consideration because it does not address the congestion and safety issues or operational and geometric deficiencies identified in the project purpose and need.

- **Replacing the Bridge As-Is On Alignment East of the Existing Bridge**

  This alternative includes constructing a new bridge nine feet east of the existing bridge, retaining the existing number of lanes and providing the minimum 10-foot shoulders, followed by the demolition of the existing bridge. Traffic would be maintained on two lanes in each direction during construction.

  This alternative replaces aging infrastructure, preserves a vital trunk highway corridor and provides shoulders to address safety concerns. It does not provide auxiliary lanes to address operational deficiencies and congestion. This alternative was eliminated from consideration because it does not meet the project purpose and need.

- **Replacing the Bridge Deck**

  Deck replacement is a lesser-build alternative, consisting of removal and replacement of the existing deck structure, retaining the primary existing bridge structure, foundations, piers in the river, and land spans. However, this option would require the removal of the existing steel superstructure for river spans. This decision was made by the Mn/DOT Bridge Office on the basis of fatigue cracking problems associated with these spans. This alternative would result in continuation of the existing numbers of lanes and substandard geometrics of shoulders.

Traffic could not be maintained during deck replacement because the half width reconstruction of the existing bridge may overload the river foundations. All vehicle traffic would be detoured to other routes during construction.

While this alternative replaces aging infrastructure and preserves a vital trunk highway corridor, it does not provide auxiliary lanes or adequate shoulders. It was eliminated from consideration because it does not address the congestion and safety issues or operational and geometric deficiencies identified in the project purpose and need.

TABLE 2
BRIDGE REPLACEMENT ALTERNATIVE EVALUATION MATRIX

	No Build	Replace As-Is on Same Alignment	Replace As-Is East of Existing Alignment	Deck Replacement	Replace with Two New Bridges (Preferred Alternative)*
MEETS PROJECT NEED					
Safety/Geometrics					
Expanded Shoulders	No	No	Yes	No	Yes
Operations					
Auxiliary Lanes	No	No	No	No	Yes
Address Congestion	No	No	No	No	Yes
Construction Impacts					
Maintain Traffic Flow During Construction	NA	No	Yes	No	Yes
Infrastructure					
100-year Structural Life	No	Yes	Yes	No	Yes
Preserve Vital TH Corridor	No	Yes	Yes	No	Yes
PROJECT IMPACT					
Environmental Impact					
Minimizes Foundation Work in the River	Yes	Yes	No	Yes	No

NA – Not Applicable
* The Preferred Alternative is discussed in detail in Section III.A.3. of this EA/EAW.

B. North Area Options

An iterative concept development process to explore alternatives for modification of the roadway network in the North Area of the bridge was undertaken by Mn/DOT in consultation with Ramsey County and the City of St. Paul. Preliminary design concepts resulting from early concept development discussions were refined into alternatives for evaluation. These alternatives were presented to the Lafayette Bridge Citizens Advisory Committee (CAC) and are summarized below and in the North Area evaluation matrix, Table 3 (see Section V.A. of this EA/EAW for detailed information on the CAC). It should be noted that Options 1 and 2, not discussed in detail in this EA/EAW, involved moving the link between northbound TH 52 and East 7th Street east to a new location at Kittson Street instead of the existing link at Lafayette Road. This was rejected very early in the process due to substantial right of way impacts.

- **Option 3A**

  This alternative provides for replacement of northbound TH 52 over I-94 on the current alignment, the northbound TH 52 exit to eastbound I-94 on the current ramp alignment, and the northbound TH 52 exit to westbound I-94 realigned east with an "inverted loop" to pass beneath I-94 (see Figure 3a, Appendix A). The slip ramp from East 7th Street to westbound I-94 is also eliminated with this alternative.

  This alternative was eliminated because it does not address safety concerns at East 7th Street and does not address the need for improved local roadway connectivity identified in the City of St. Paul's *Transportation Policy Plan.*

- **Option 3AA**

  This alternative is similar to Option 3A but also includes realignment of East 7th Street one block to the north of its current location to accommodate a larger radius for the westbound I-94 exit to southbound TH 52. This alternative also provides for replacement of southbound TH 52 over I-94 on the current alignment, the northbound TH 52 exit to eastbound I-94 on the current ramp alignment, and the northbound TH 52 exit to westbound I-94 realigned east with an "inverted loop" to pass beneath I-94 (see Figure 3b, Appendix A). The slip ramp from East 7th Street to westbound I-94 is also eliminated with this alternative.

  This alternative was eliminated because it does not meet the purpose and need for improved local roadway connectivity as identified in the City of St. Paul's *Transportation Policy Plan* and because of its right of way impacts and right of way costs.

- **Option 3BB**

  This alternative includes realignment of East 7th Street one block to the north of its current location to accommodate a larger radius for the westbound I-94 exit to southbound TH 52. This alternative also provides for replacement

of southbound TH 52 over I-94 from East 7th Street on the current alignment, the northbound TH 52 exit to eastbound I-94 on the current ramp alignment, the northbound TH 52 exit to westbound I-94 realigned east with an "inverted loop" to pass beneath I-94, plus a new local access ramp to a proposed roadway referred to as the Kittson Extension also passing beneath I-94. Access from northbound TH 52 to East 7th Street is via the new ramp to the Kittson Extension roadway (see Figure 3c, Appendix A). The slip ramp from East 7th Street to westbound I-94 is also eliminated with this alternative.

This alternative was eliminated because of its right of way impacts and costs as well as its total project cost.

Option 3B, the Preferred Alternative, also presented in Table 3, is described in Section III.A.3.

TABLE 3
NORTH AREA ALTERNATIVE EVALUATION MATRIX

	No Build	Option 3A	Option 3AA	Option 3BB	Option 3B Preferred Alternative*
MEETS PROJECT NEED					
Improves Safety					
I-94 Ramps	No	Yes	Yes	Yes	Yes
East 7th Street	No	No	Neutral	Yes	Yes
Addresses Capacity					
I-94 Ramps	No	Yes	Yes	Yes	Yes
East 7th Street	No	Neutral	Neutral	Yes	Yes
Alignment/Profile					
I-94 Ramps	Neutral	Yes	Yes	Yes	Yes
East 7th Street	Neutral	Neutral	Neutral	Neutral	Neutral
Improves Connections to Local Roads and Highways					
I-94 Ramps	No	Yes	Yes	Yes	Yes
East 7th Street	No	Neutral	Neutral	Neutral	Neutral
Kittson Connection	No	No	No	Yes	Yes
PROJECT IMPACTS AND COSTS					
Right of Way Impacts					
Cost	Low	Low	High	High	High
# of Parcels Impacted	0	6	12	17+	12+
Total Project Cost					
Project development, construction, and right of way	Low	Low	Medium	High	High

* The Preferred Alternative is discussed in detail in Section III.A.3. of this EA/EAW.

C. Bridge Type Options

Mn/DOT, along with the advice of the CAC, considered a number of different bridge type options. Because Mn/DOT is carrying forward both a concrete and a steel girder option for the bridge through the bidding process, the CAC reviewed concrete and steel options for each of the bridge types considered. The development of bridge type alternatives was informed by a study of pier options and other aesthetic enhancements. The CAC developed visual quality considerations to guide the development of bridge pier options, aesthetic treatments and bridge types. See Section IV.B.12 for additional discussion of visual quality considerations. Categories included in the visual quality considerations were: the bridge and its surroundings; scenic views; design elements; pedestrian/bicycle accommodations; interpretive elements; and water quality.

Bridge types that interfere with the airport flight path and/or navigation channel in the river, such as arch, truss, and cable, were immediately eliminated from consideration. The bridge pier options considered in further detail but ultimately rejected by the CAC were rejected based on their inconsistency with the identified visual quality considerations as noted above. Pier options considered but rejected by the CAC included asymmetric "V" piers, single piers, twin wall piers, hammerhead piers, and hourglass piers.

3. Preferred Alternative

The Preferred Alternative (Build alternative) best satisfies the project need to replace aging infrastructure, preserve the role of TH 52 in the regional transportation system, alleviate congestion, address safety concerns and operational and geometric deficiencies, respond to design constraints, provide pedestrian/bicycle connections, improve stormwater treatment, and address other project needs. The bridge type options selected best satisfy the identified visual quality considerations that include the bridge and its surroundings, scenic views, design elements, pedestrian/bicycle accommodations, interpretive elements, and water quality.

The proposed project includes replacement of the bridge with one of the two bridge type options (i.e., concrete box girder or steel box girder bridge), redecking the bridge over Plato Boulevard, reconstruction of bridge approaches, and roadway improvements in the North Area.

A. Bridge Replacement

The Build alternative, described below, meets the project need to replace a bridge that is nearing the end of its useful life, alleviate congestion, correct operational and geometric deficiencies, improve safety, and preserve the role of TH 52 in the regional transportation system. The 2030 forecast volume under Build conditions is 94,000 ADT. Based on the results of the CORSIM analysis (detailed in the

Lafayette Bridge Replacement Environmental Assessment and Design – Submittal of Existing Calibrated CORSIM Model, May 30, 2008), acceptable levels of service are expected on TH 52 during year 2030 peak hour conditions under Build conditions. See Figures 4a and 4b, Appendix A, for a comparison of existing and proposed typical bridge sections.

The proposed improvements would replace the existing bridge with two separate bridges; one for northbound traffic and one for southbound traffic (see Figure 5a through 5c, Appendix A). The northbound bridge would be constructed approximately eight feet downstream (east) of the existing bridge and the southbound bridge would be constructed in the same location as the existing bridge. Each bridge would consist of two through lanes in each direction, one auxiliary lane in each direction, shoulders, and a trail on the east side of the northbound bridge. The northbound auxiliary lane would begin at the entrance from Plato Boulevard and extend to the exit to westbound I-94. The southbound auxiliary lane would begin with the entrance from eastbound I-94 and extend to the exit to Plato Boulevard. Current connections to Plato Boulevard would be perpetuated. Connections to I-94 and East 7th Street would change with the replacement of the bridge and construction of the North Area improvements, discussed below.

The addition of shoulders across the bridge would improve safety by providing a buffer space between traffic and the barriers walls of the bridge and also provide storage space for incidents such as stalls or crashes, thus improving travel time reliability and reducing the chance of secondary crashes. An auxiliary lane northbound across the bridge would improve the operations of the bridge by allowing traffic to be sorted more effectively and thus improving traffic access to East 7th Street and eastbound I-94 by providing a separate lane for westbound I-94 traffic. An auxiliary lane southbound would provide additional sorting distance for traffic entering from east- and westbound I-94, southbound I-35E, and East 7th Street.

Auxiliary lanes also facilitate construction staging by allowing TH 52 traffic to be maintained during construction of the north and southbound bridges. Traffic would be maintained on two lanes in each direction on the existing bridge during construction of the northbound bridge. Following removal of the existing bridge, construction of a second bridge (southbound) would take place in the location of the removed old bridge. The new northbound bridge would accommodate both north- and southbound traffic while the existing bridge is demolished and replaced by the new southbound bridge.

Construction of a new bridge with a 100-year lifespan is a substantial long term investment and with such a long term investment, it is prudent to ensure that the capacity can accommodate demand beyond the design need since the facility would remain in place many years beyond the 2030 forecast. It is more efficient to construct a facility with greater capacity than called for in the forecast year than it is to add capacity at a later date.

B. North Area Improvements

Option 3B (Figure 5b, Appendix A is the Build alternative for improvements in the North Area. The Build alternative addresses the need to reduce congestion on the bridge, improve safety, correct operational and geometric deficiencies, provide pedestrian/bicycle connections, improve stormwater treatment, and address other project needs identified in the City of St. Paul's *Transportation Policy Plan*, 1994.

The Build alternative for the North Area replaces southbound TH 52 over I-94 on the current alignment and the northbound TH 52 exit to eastbound I-94 on the current ramp alignment. The slip ramp from East 7th Street to westbound I-94 is eliminated. The northbound TH 52 exit to westbound I-94 is realigned east with an "inverted loop" to pass beneath I-94, plus a new local access ramp to the Kittson Extension, also passing beneath I-94. Access from northbound TH 52 to East 7th Street is via the new ramp to the Kittson Extension (see Figure 5b, Appendix A). The Kittson Extension, as planned by the City, is a four-lane road, running in a north-south direction between Warner Road and East 8th Street, roughly a quarter mile east of TH 52 along the west side of the Burlington Northern & Santa Fe Railway Company (BNSF) railroad tracks. Only the northerly extension of the Kittson Extension (ramp from northbound TH 52 to East 7th Street) is included in the proposed project. The southern portion of the extension to Warner Road has independent utility and is separate from the project described in this EA/EAW.

The Build alternative for the North Area provides a new, longer loop from northbound TH 52 to westbound I-94, which passes beneath existing I-94 bridges near the proposed Kittson Extension. The new westbound I-94 ramp corrects existing geometric deficiencies by eliminating the tight radius of the existing ramp. Tipping or rolling by trucks on the ramp would be reduced as would congestion and rear end crashes. The elimination of the slip ramp from East 7th Street to westbound I-94 increases the capacity of the ramp for northbound TH 52 traffic heading west on I-94. The length of the ramp itself, at over 2,000 feet, substantially increases ramp storage.

The Build alternative for the Lafayette Bridge includes a 12-foot trail on the east side of the northbound bridge with overlooks (bump-outs separated from trail traffic) located above the river piers to provide observation points and resting areas. The trail will cross the river stretching from the southern bridge approach just north of Plato Boulevard to the East 7th Street exit ramp from northbound TH 52. The exit ramp will have shoulders to accommodate bicyclists to the new signal at East 7th Street and a sidewalk will extend to the East 7th Street signal as well.

C. Bridge Type Decision

As discussed previously, because Mn/DOT is carrying forward both a concrete and a steel girder bridge option for the new bridge through the bidding process, the Build alternative includes both a concrete and steel option. The Build alternative concrete option is a segmental concrete box girder and the steel option is a steel box girder.

4. Cost, Funding, and Benefit/Cost

A. Project Costs

The anticipated cost of the project is $185 million for design and construction of the bridge and roadway connections and $17.5 million for right of way (2008 dollars).

B. Funding

The proposed project is programmed in the Mn/DOT 20-year plan and in the 2009-2012 TIP.

- Federal Funds: $148 million
- State Funds: $37 million

C. Benefit/Cost Analysis of the Build Alternative

A benefit/cost analysis (B/C Analysis) was completed for the proposed project in January 2009, detailed in *Trunk Highway 52 Lafayette Bridge Benefit-Cost Analysis – Results*, January 21, 2009. The purpose of a B/C Analysis is to bring all of the direct effects of a transportation investment into a common measure (dollars), and to allow for the fact that benefits accrue over a long period of time while costs are incurred primarily in the initial years. The primary elements that can be monetized for transportation projects are travel time, changes in vehicle operating costs, accidents, and remaining capital value. The B/C Analysis can provide an indication of the economic desirability of an alternative, but results must be weighed by decision-makers along with the assessment of other effects and impacts.

The B/C Analysis that was completed for this project evaluated the difference in transportation user costs between the No Build and Build alternative and indicated that the Build alternative would result in a benefit/cost ratio of 14.43.

5. Proposed Project Schedule

It is anticipated that the project would be let for construction in fall 2010, with construction continuing through fall 2014. See EAW Item #6 for additional details on the construction schedule.

IV. SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS (SEE)

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 at Minnesota Rule 4410.4300. Federal environmental regulations not addressed in the EAW are addressed in the separate sub-section.

A. ENVIRONMENTAL ASSESSMENT WORKSHEET

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 (RGU) or its agents to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. The complete question as well as the answer must be included if the EAW is prepared electronically.

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

1. Project Title. Trunk Highway 52/Lafayette Bridge Replacement Project

2. Proposer.

	Mn/DOT
Contact Person:	Chris Roy, P.E.
Title:	Area Manager
Address:	1500 West County Road B2
City, State, Zip:	Roseville, MN 55113
Phone:	651-234-7727
Fax:	651-234-7709
Email:	**Chris.Roy@dot.state.mn.us**

3. RGU.

	Mn/DOT
Contact Person:	Josephine (Joey) Lundquist, P.E.
Title:	Design Engineer
Address:	1500 West County Road B2
City, State, Zip:	Roseville, MN 55113
Phone:	651-234-7648
Fax:	651-234-7609
Email:	**Joey.Lundquist@dot.state.mn.us**

4. Reason for EAW Preparation. (check one)

___ **EIS scoping**	___ **Mandatory EAW**	___ **Citizen Petition**
_X_ **RGU discretion**	___ **Proposer volunteered**	

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

5. Project Location.

County: Ramsey
City/Township: St. Paul
Section, Township, Range: Sec 5, T28N, R22W and Sec 32, T29N, R22W

GPS Coordinates

Southern Termini: 44° 56'20.935" N and 93° 04'30.349"W
Northern Termini: 44° 57'16.868" N and 93° 04'57.445"W
Tax Parcel Number: Not Applicable

Attach each of the following to the EAW:

- **County map showing the general location of the project**
  (See Figure 1 – Project Area Map)
- **U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries**
  (See Figure 2 – Project Location Map)
- **Site plan showing all significant project and natural features.**
  (See Figures 5a through 5c, Appendix A – Proposed Improvements)

6. Description.

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

Response: The purpose of the project is to provide a TH 52 crossing over the Mississippi River that meets current geometric and structural standards at its current location with a structural life of 100 years, to improve traffic safety on TH 52 within the project limits, and to reduce congestion at the TH 52/I-94 interchange area.

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.**

Response:

Project Description

Refer to Section III of this EA/EAW for a description of the proposed project.

Construction Staging and Project Schedule

Construction is anticipated to begin in fall 2010 and continue through fall 2014 (refer to Section III.A.5 for an overview of the proposed project schedule). A new northbound bridge east of the existing bridge will be constructed first. By first constructing a new bridge east of the existing bridge, normal traffic will be able to be maintained on the existing bridge during construction of the new bridge. When construction of the eastern bridge is complete (anticipated fall 2012) traffic will be moved to the new bridge allowing the existing bridge to be demolished and the new southbound bridge to be constructed in its place. Maintaining all traffic movements at the north end of the corridor requires complex traffic phasing during construction. Construction staging details will be determined during final design.

Temporary Construction Impacts

Complete closure of the existing bridge will be avoided as discussed above. A Traffic Management Plan will be created to maintain traffic movements for vehicles, transit, bicyclists, and pedestrians during construction. A detour plan will be developed during final design to ensure that pedestrians and bicyclists are safely accommodated during construction. Construction activities including tree removal and grading are likely to result in noise and dust. Noise and earthborne vibrations are anticipated to occur during pile driving. Refer to EAW Item 24 for a detailed discussion of construction noise and Section IV.B.8, Construction Impacts, for a more detailed discussion of vibration impacts. Dust generated will be minimized through standard dust control measures such as watering. Permanent cover will be re-established as soon as practical.

All waste created by the project will be reused/recycled in the project corridor or removed and disposed of in accordance with state and federal requirements. Refer to EAW Item 20 for a detailed discussion.

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.**

Response: Refer to Section II of this EA/EAW, Purpose and Need for Project.

d. **Are future stages of this development including development on any other property planned or likely to happen?**

___ **Yes** _X_ **No**

Response: No future stages of the project are planned. Replacement of the bridge is anticipated to begin in the fall of 2010.

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: 27.8 acres
Length: 5,400 feet

Number of residential units: N/A unattached: N/A attached: N/A
maximum units per building: N/A

Commercial, industrial or institutional building area (gross floor space): total square feet: N/A

Indicate areas of specific uses (in square feet):

Office: N/A
Retail: N/A
Warehouse: N/A
Light industrial: N/A
Other commercial (specify): N/A
Manufacturing: N/A
Other industrial: N/A
Institutional: N/A
Agricultural: N/A
Building height: N/A If over 2 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 Minnesota Rules, Chapter 4410.3100.*

Response: Refer to Section V.B of this EA/EAW for a list of the permits and approvals required. Project funding is discussed in Section III.A.4.B.

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.

Response:

Land Use and Compatibility

According to the City of St. Paul's 2000 land use map, the property on the south end of the Lafayette Bridge is characterized by commercial and industrial uses and some undeveloped land. Uses include barge terminal and barge fleeting operations along the river bank and the downtown St. Paul Airport Holman Field (Holman Field) to the southeast. Property on the north end of the bridge in downtown St. Paul is characterized by park use immediately adjacent to the Mississippi River and commercial and industrial uses to the north, including a mixed-use residential area and some undeveloped land being used for surface parking. One multi-unit residential building exists along Kellogg Boulevard west of the existing bridge. Uses also include active railroad tracks. The Metropolitan Council's 2005 land use map reflects the commercial and industrial nature of land use in the project area. The City's future land use map recommends continuation of commercial and industrial uses in the project area. See Figures 6a and 6b, Appendix A for the Metropolitan Council's 2005 land use map and the City's future land use maps respectively.

The City of St. Paul's vision in the *Report of the Diamond Products Taskforce,* December 16, 2005, calls for the redevelopment area, also known as the Gillette Building, and its adjacent surface parking lots to be a mixed-use, medium-to-high density creative community with

connections to the Bruce Vento Nature Sanctuary and a reinstated street grid. The report does not include recommendations for reconstruction/replacement of the bridge, but only for future land uses beneath the bridge. The report acknowledges that the land use and height restrictions related to Holman Field present the most constraints on future development of the site.

The project is not expected to cause substantial changes in land use in the vicinity of the project. The project is not anticipated to lead to the development of any large scale commercial, industrial, residential or other development. Access at the north end of the bridge is anticipated to change substantially with the Phase II improvements for the North Area. The project is consistent with local and/or regional comprehensive plans.

Potential Environmental Hazards

The presence of potentially contaminated properties (defined as properties where soil and/or groundwater is impacted with pollutants, contaminants or hazardous wastes) is a concern in the development of highway projects because of potential liabilities associated with ownership of such properties, potential cleanup costs, and safety concerns associated with construction personnel encountering unexpected wastes or contaminated soil or groundwater. Contaminated materials encountered during highway construction projects must be properly handled and treated in accordance with state and federal regulations. Improper handling of contaminated materials can worsen their impact on the environment.

A Phase I Environmental Site Assessment (Phase I ESA) provides information on potentially contaminated properties. These properties are identified through review of historic land use records and air photos, federal and state regulatory agency databases and county/city records, as well as current property condition. Sites of potential concern identified by the Phase I ESA can be categorized into three risk areas: high, medium and low environmental risk for soil and/or ground water contamination to exist at the site. In general, high environmental risk sites are properties that have a documented release of petroleum or other chemicals or other strong evidence of contamination such as soil staining or a history of storage of large volumes of petroleum or other chemicals. High risk sites include dry cleaners, sites with non-petroleum contamination enrolled in the Minnesota Pollution Control Agency (MPCA) Voluntary Investigation and Cleanup (VIC) program and sites with petroleum contamination being actively investigated through the MPCA Petroleum Remediation program. Medium environmental risk sites are properties where smaller volumes of petroleum or other chemicals are stored with no documented spills or releases. Medium risk sites also include properties with documented

releases that have been "closed" or declared "inactive" (no further cleanup action deemed necessary) by the MPCA. "Closed" or "inactive" sites are considered medium risks because residual soil or groundwater contamination may exist at the site. Low environmental risk sites include properties where small volumes of chemicals or hazardous materials are/have been used or stored, such as residences, schools, churches and small manufacturing facilities with no reported chemical releases. A Phase I ESA in general conformance with the American Society for Testing and Materials standard was completed for the project area in January, 2008.

A. Bridge

The Phase I ESA identified a total of 31 known or potentially contaminated properties that are of concern to the project based on two criteria: a) they are either high or medium environmental risk sites, and b) they are within or in close proximity to the proposed project limits. These sites are identified in Table 4 and their locations are shown on Figure 7, Appendix A.

A contaminated property with the potential to incur excessive cleanup costs and/or expose the purchaser to a high risk of long term environmental liability may need to be avoided, or the impact of the project on the contaminated property minimized to the extent possible. For this project, the Phase I ESA revealed that much of the existing TH 52 right of way in the project area is probably already impacted with soil and groundwater contamination based on historic land use in the area and proximity to known contaminated sites. Therefore, it will not be possible for this project to avoid contaminated sites. However, the risk of incurring long-term liability from working in contaminated areas and/or acquiring new right of way in known or suspected contaminated areas may be reduced by working closely with the MPCA VIC program. The costs of working in contaminated areas may be reduced by using project design and all feasible construction techniques to disturb the least amount of soil possible so as to reduce the volume of contaminated soil that must be properly handled and disposed.

Based on the proposed bridge design, 14 of the properties listed in Table 4 have a potential for excessive cleanup costs and/or environmental liability. These are sites 43, 51, 52, 53, 54, 56, 57, 65, 66, 67, 69, 70, 73a, 86, 87, 89A, 89B, 91, and 95 (some sites are combined). The sites have either potential or known non-petroleum contamination or historic large scale chemical storage with potential contamination.

B. North Area

A Phase I ESA is being prepared to identify known or potentially contaminated properties of concern in the North Area, which was added to the project area after the Phase I ESA for the bridge was completed.

Mitigation

Prior to construction activities, all properties listed in Table 4 and sites identified in the North Area Phase I ESA as either high or medium environmental risk sites or sites that are within or in close proximity to the proposed project limits will be evaluated for their potential to be impacted by construction and/or acquired as right of way. Any property with a potential to be impacted by the project will be investigated (through detailed review of regulatory agency project files, and collection and laboratory analysis of soil and groundwater samples, if necessary) to determine the extent and magnitude of contaminated soil or groundwater in the areas of concern. The results of the investigation will be used to determine if the project can avoid or minimize impacts to the properties. If necessary, a plan will be developed for properly handling and treating contaminated soil and/or groundwater encountered during construction.

In addition, coordination and consultation with the MPCA's VIC program and the Petroleum programs will take place as appropriate to obtain written assurances that acquisition of contaminated properties and construction and cleanup activities in contaminated areas will not result in long-term environmental liability for the contamination.

TABLE 4
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT – BRIDGE AREA

Site ID[1]	Site Description	Site Address/Location	Environmental Risk	Reason for Contaminated Soil/ Ground Water Concern
33	Holiday Gas Station	500 7th Street East	Medium	The site is currently an active gas station. A petroleum underground storage tank release occurred at the site (MPCA site number LEAK#14200) (closed), under the name of Holiday Companies. Petroleum underground storage tanks are registered at the site. Gas stations were historically located at the site.
34	Parking Lot owned by Meritex Enterprises Inc.	483 7th St East	Medium	Railroad freight depots were formerly located at the site. The Melody Paper Co. was formerly located at the site.
41	Heppners Collision and Glass and Enterprise Car Rental	395 7th Street East	Medium	Vehicle repair shop and tire shop businesses formerly operated at the site.
43	Commercial building housing four businesses: Twin Tool Company, Bail Bonds Company, Fantasy Gifts, and Best Pawn	385 7th Street East	High	A gas station, machine shop, printing shop, auto body shop and paint shop were formerly located at the site. The site is entered in the MPCA VIC program as Twin Tool Co. (site number VP15690). Groundwater contamination has been identified at the site.
51	Intersection of TH 52 and I-94	Intersection of TH 52 and I-94	Medium	A railroad freight yard with fuel storage was formerly located in this area.
52, 53	Diamond Products Staff Parking Lot	333 5th Street East	High	The St. Paul Gas Light Company with a gas holder was formerly present on the site. The St. Paul Gas Company is listed on the NFRAP database (NFRAP--"No Further Remedial Action Planned" sites are sites that have been ranked for inclusion in the Federal Superfund by the U.S. Environmental Protection Agency but have been determined to not be of federal concern.) The Northern States Power Company gasometer was formerly located at the site. The site is in the MPCA VIC program as Diamond Products Co. (site numbers VP14220, VP14221, and VP14222). A petroleum storage tank release, hydraulic oil released in an elevator shaft, LEAK#2422 (closed) occurred at the site under the name of Gillette Company.
54	Commercial building housing three businesses: Energy Saving Devices, Inc., Pre Wire Specialty Contractors, and Silverback Performance	401 4th Street East	Medium	The St. Paul Gas Light Company and a freight depot were formerly present on the site.

TABLE 4 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT–BRIDGE AREA

Site ID[1]	Site Description	Site Address/Location	Environmental Risk	Reason for Contaminated Soil/ Ground Water Concern
56	Diamond Products Company	310 5th Street East and 340 Broadway	High	The St. Paul Gas Light Company with a gas holder was formerly present on the site. The site is in the MPCA VIC program as Diamond Products Co. (site numbers VP14220, VP14221, and VP14222). A petroleum storage tank release, hydraulic oil released in an elevator shaft, LEAK#2422 (closed) occurred at the site under the name of Gillette Company.
57	Diamond Products Company	340 4th Street	High	A railroad yard with coal storage, oil storage and a roundhouse were formerly located at the site. This site is also in the MPCA VIC program as Diamond Products Co. (site numbers VP14220, VP14221, and VP14222). The site is also listed by MPCA as a petroleum release site as LEAK#2422 (closed) in the name of the Gillette Company (hydraulic oil released in an elevator shaft). The site currently has two concrete holding structures and numerous diked areas likely formerly used for large above ground storage tanks.
60	Parking Lot	330 Prince Street	Medium	A railroad property with freight house buildings and tracks were formerly located at the site.
61	Commercial building housing several businesses and offices	343 Kellogg Blvd East	Medium	The building currently on the site was formerly a railroad freight house.
62	Parking Lot	Northeast quadrant of the intersection of TH 52 and Kellogg Blvd.	Medium	The building currently on the site was formerly a railroad freight house.
65	Parking Lot	Southwest and Southeast quadrants of the intersection of TH 52 and Kellogg Blvd. (MPCA files list address as 500 East Kellogg Blvd)	High	A railroad property with large buildings, a gas house, and an oil shed were formerly located at the site. A vacant gas station is currently located at the site. The site is in the MPCA VIC program as All Right Parking Lot (site number VP2331). Soil and groundwater at the site are contaminated with polycyclic aromatic hydrocarbons.
66	Parking Lot owned by St Paul Housing and Redevelopment Authority	East and West of TH 52, south of and contiguous with the two properties described above	High	This site is also included in the MPCA VIC program as All Right Parking Lot (site number VP2331). Soil and groundwater at the site are contaminated with polycyclic aromatic hydrocarbons.

TABLE 4 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT–BRIDGE AREA

Site ID[1]	Site Description	Site Address/Location	Environmental Risk	Reason for Contaminated Soil/ Ground Water Concern
67	Union Pacific Railroad Company property	Northwest and Northeast quadrants of the intersection of TH 52 and Warner Road	Medium	A railroad property with a roundhouse and a fertilizer warehouse were formerly located at the site.
68	Undeveloped land with bike path	Southwest and Southeast quadrants of the intersection of TH 52 and Warner Road	Medium	A railroad property with several buildings and tracks were formerly located at the site. Monitoring wells are currently located on the property--reason unknown.
69	Pier Foundry	51 State Street	High	The Buckeye Foundry was formerly located at the site. The Pier Foundry is currently located at the site. The Pier Foundry is listed on the NFRAP database (NFRAP--"No Further Remedial Action Planned" sites are sites that have been ranked for inclusion in the Federal Superfund by the U.S. Environmental Protection Agency but have been determined to not be of federal concern.) It is also in the MPCA VIC program as the Pier Foundry and Pattern Shop. A petroleum above-ground storage tank is currently located at the site.
70	Barge loading, unloading, repair and fueling property owned by the City of St Paul and the St. Paul Port Authority	40 State Street	High	Numerous spills of hydraulic fuel, diesel fuel, motor oil, and transmission oil from the tanks and fueling operations have been reported at the site.
71	Peoples Electric Warehouse	49 Chester Street	Medium	Vehicle repair activities may have formerly occurred at the site.
73a	Solange Auto Repair	291 Fillmore Avenue East	Medium	A vehicle repair shop and auto body shop were historically located at the site. A petroleum underground storage tank was located at the site. A vehicle repair facility is currently located at the site.
73b	Peoples Communication Systems	285 Fillmore Avenue East	Medium	A paper company formerly operated at the site. Vehicle repair activities may have formerly occurred at the site.
74	RTC Inc and Graphics Inc.	343 Fillmore Avenue East	Medium	A tool manufacturing business and a business associated with plastic products were formerly located at the site.
77	Vomela Imaging Makers	274 Fillmore Avenue East	Medium	A petroleum underground storage tank release (MPCA number LEAK#8918 (closed) occurred at the site under the name of Canada Limited Partnership.
82	Affinity Plus Federal Credit Union	175 Lafayette Road South	Medium	A gas station was formerly located at the site. A petroleum under-ground storage tank release (MPCA number LEAK#12409 (closed) occurred at the site under the name of State Capitol Credit Union.

TABLE 4 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[1]	Site Description	Site Address/Location	Environmental Risk	Reason for Contaminated Soil/ Ground Water Concern
86	Brown and Bigelow	345 Plato Blvd East	High	A portion of the former unpermitted State Street Dump was located on the south portion of this site. Investigation of the south portion of the site revealed brick, glass, wood, plastics, cinders and elevated levels of methane gas associated with the old dump. Soil at the site is contaminated with VOCs and metals. This site is also included in the MPCA VIC program as Brown and Bigelow (site numbers VP6820and VP4321). The State Street Dump is listed on the NFRAP database (NFRAP--"No Further Remedial Action Planned" sites are sites that have been ranked for inclusion in the Federal Superfund by the U.S. Environmental Protection Agency but have been determined to not be of federal concern.) A petroleum underground storage tank release (MPCA number LEAK#3631 (closed) occurred at the site under the name of St Paul Port Authority. Another petroleum underground storage tank release (MPCA number LEAK#10760 (closed) occurred at the site under the name of Gross Given Manufacturing Company. Petroleum underground tanks are registered at the site.
87, 89A, 89B, 91,95	Several businesses and a parking lot	Southwest and Southeast quadrants of TH 52 and Plato Blvd East	High	All of these properties are located on the former State Street Dump (see site 86 for details). Most of the properties have been entered into the MPCA VIC program--some with multiple site numbers. Most properties have deed restrictions noting soil contamination and methane gas accumulation concerns at the properties.

[1]Note: The site identification numbers correspond to the site numbers in the Phase I ESA document. Not all of the sites in the Phase I ESA search area are included in the table because not all sites are judged likely to be potentially impacted by the proposed construction.
VIC (Voluntary Investigation and Cleanup)
NFRAP (No Further Response Action Planned)
VOC (Volatile Organic Chemicals)
BOLD site ID numbers indicate the properties have potential for excessive cleanup costs and/or environmental liability.

10. Cover Types. Estimate the acreage of the site with each of the following cover types before and after development:

Response: See Table 5.

TABLE 5
COVER TYPES

	Before Acres	After Acres
Types 1-8 wetlands	0.0	0.0
Wooded/forest	0.7	0.0
Brush/Grassland	0.6	0.0
Cropland	0.0	0.0
Lawn/landscaping	1.7	2.0
Impervious surfaces	23.6	21.6
Stormwater Pond	0.0	4.2
Other (describe)		
TOTAL:	**26.6**	**27.8**

*Within construction limits.

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

Response: The Before and After acres are not equal because the amount of bridge surface is being expanded in the Build condition.

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.**

Response: The proposed improvements will occur in a developed 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. According to the Bird Nest Report, December 11, 2006, no bird nests were found on the existing bridge. The bridge will be inspected for the presence of nesting activity prior to the state of construction. If nesting activity is identified, appropriate measures will be taken in accordance with the Federal Migratory Bird Treaty Act. The proposed improvements will result in the removal of trees along the corridor. See Section IV.B.8, Construction Impacts, for a discussion of construction impacts to vegetation. Best management practices will minimize impacts to water quality during construction (see EAW Item #16). As described in EAW Item #17, the project includes provisions to treat stormwater from the roadway prior to discharge into the river.

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

_X_ Yes __No

If yes, describe the resource and how it would be affected by the project. Describe any measures that will be taken to minimize or avoid adverse impacts. Provide the license agreement number (LA-___) and/or Division of Ecological Resources contact number (ERDB #20060030) from which the data were obtained and attach the response letter from the DNR Division of Ecological Resources. Indicate if any additional survey work has been conducted within the site and describe the results.

Response:

State-Listed

The Minnesota Department of Natural Resources' (MNDNR) Natural Heritage database was reviewed by MNDNR staff to determine if any rare plant or animal species or other significant natural features are known to occur within one mile of the project area. The database listed four known occurrences of species within an approximate one mile radius of the project area. Species noted in the inventory by the MNDNR include blue sucker (*cycleptus elongatus*), wartyback mussel (*quadrula nodulata*), peregrine falcon (*falco peregrinus*), and a species of jumping spider (*marpissa grata*).

Due to the Build alternative selected, MNDNR stated that impacts to mussels are possible, and a mussel survey is needed (see correspondence dated July 19, 2005 in Appendix B). According to staff from the Mn/DOT Office of Environmental Services (OES), MNDNR divers dove near the existing bridge in the fall of 2007 and found 10 live specimens of the state-listed endangered mussel species. Because the project will likely disturb these species, Mn/DOT and MNDNR are coordinating the mussel survey and plan to conduct it as close to the time of construction as possible so that the mussel relocation can be combined with the survey work. The survey and mussel relocation will be completed by the MNDNR prior to the start of construction.

Federal-Listed

The Mn/DOT OES was contacted to review the project area for federally threatened and endangered (T&E) species. In correspondence dated September 8, 2008, (see Appendix B), Mn/DOT OES made a

determination that the proposed action is not likely to adversely affect federally-listed species or adversely modify designated critical habitat. The U.S. Fish and Wildlife Service concurred with this determination in correspondence dated January 21, 2009 (see Appendix B).

The Mn/DOT OES correspondence referenced above states that while there is no designated critical habitat in Ramsey County, the County is within the distribution range of the Higgins eye pearlymussel (Lampsilis higginsii) which is a federally-listed endangered species. No federally-listed species were observed during fall 2007 when Mn/DNR conducted a preliminary investigation of the project area. A survey will be conducted closer to construction because state-listed mussel species were observed. Appropriate measures will be developed and implemented to minimize impacts to mussel resources. In the unlikely event that federally-listed species are identified in the survey, the U.S. Fish and Wildlife Service will be contacted and the consultation process reinitiated.

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. Describe alternatives considered and proposed mitigation measures to minimize impacts.

Response: The project limits do not contain any wetlands, but do include the Mississippi River, a MNDNR Public Water. The project involves removal and replacement of two piers in the river bed, but is not expected to impact the hydrologic characteristics of the river. Further discussion can be found in the floodplain discussion under EAW Item #14.

To construct the new piers in the river a temporary cofferdam will be constructed at each pier location. Construction of the river pier cofferdams involves installation of sheet piling around the limits of the pier foundation, excavation of river bed material to the bottom of the foundation, driving piling or drill shafts, pouring tremie seal, and dewatering the cofferdam. Once the cofferdams are dewatered, construction of the piers can take place. The excavation activity may require a disposal permit from the MPCA for dredge material management.

13. Water Use. Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)?

_X_ Yes __No

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

Response: The project is not located over a drinking water management supply area (DWMSA) and does not involve installation or abandonment of any water wells. Figure 8, Appendix A identifies wells in the project area using the Minnesota Geologic Survey County Well Index Database. The Lafayette Bridge carriers a 20-inch water main over the Mississippi River. The water main is owned by the St. Paul Water Regional Water Services. A new water main will be constructed on the new bridge before shutting down and demolishing the existing bridge and water main.

The project will require temporary dewatering measures during construction of river piers. The appropriate MNDNR groundwater appropriation permits will be obtained for dewatering activities. Permanent construction is not expected to affect groundwater.

14. Water-Related Land Use Management District. Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district?

_X_ Yes __No

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

Response:

Floodplain Assessment

A portion of the project area is in the 100-year floodplain (see Figure 9, Appendix A Flood Insurance Rate Map). Federal Insurance Administration Flood Boundary and Floodway maps for the City of St. Paul (dated April 2, 2003, panel number 2752480029 F) have been examined for this project.

The project will construct a six-lane cross section (two through lanes and one auxiliary lane in each direction) divided roadway and bridge to replace the existing Lafayette Bridge over the Mississippi River. The river in this location is fairly incised upstream of the bridge, confined by a levee that extends along the south edge of the river through the project area and along Shepard Road to the north. The floodplain is also a designated floodway; the floodway at this point is about two-thirds the width of the floodplain. Impacts and encroachments in the floodway are generally discouraged. Both the existing and proposed bridges span the 100-year floodplain.

This project will encroach on the following floodplain:

FLOODPLAIN	TYPE OF ENCROACHMENT	LENGTH
Mississippi River	Transverse	1,200 feet

Impact Analysis

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

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

- All TH 52 grades will be designed above the 100-year flood elevation. The 100-year flood elevation at the Mississippi River is 707.2 ft. There is no recorded evidence of flooding or overtopping of the existing TH 52 bridge(s) or roadways at the river crossings.

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

- No fisheries impacts are anticipated. Construction operations in the river will not occur from April 15 to June 15 to protect fish spawning and migration.
- The new bridge structures will not increase the flow velocities in the river. Therefore, fish movements should not be affected.
- The bridges will be designed to accommodate canoe and recreational boat traffic during periods of normal river flows. The bridge is also being designed to maintain the dredged commercial channel and will accommodate commercial barge traffic during construction.

- There are no wetlands along the rivers in the vicinity of the proposed bridges and associated fill sections.
- No federally threatened or endangered plants or animals have been identified in the floodplain near the bridge. The section on Fish, Wildlife, and Ecologically Sensitive Resources describes that mussels on the state endangered species list were found and further defines the mitigation plan.
- Appropriate turf establishment and erosion control measures will be used during removal of the existing bridge and construction of the proposed bridge.

III. No significant increased risk of flooding will result.

- The Mississippi River floodplain in the downtown St. Paul area, as defined in current FEMA floodplain/floodway mapping, is mostly defined as floodway. This floodplain study has been recently updated to reflect the most current levee system along the south side of the river as well as various changes along the north shoreline. Because of the sensitivity of the area to flooding, and the floodway designation, the proposed crossing is being designed to have 0.00 foot stage increase from existing conditions.
- There will be a temporary flood stage increase during construction; see section IV.B.8, Construction Impacts, of this EA/EAW for further discussion.

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

- The City of St. Paul has a floodplain ordinance that regulates floodplain development. The City of St. Paul ordinance conforms to the MNDNR Floodplain Management guidelines. In addition, no new access to a floodplain area is being created by the project.

Summary

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

Canoe and Boating Routes

This stretch of the Mississippi River is a designated a Canoe and Boating Route. The project will not have an adverse effect on Canoe and Boating Routes according to MNDNR staff. However, during construction, per MNDNR recommendation, signage may be placed at public water boat accesses upstream and downstream alerting river users to the bridge construction.

Wild and Scenic Rivers - Nationwide Rivers Inventory

The segment of the Mississippi River in the project area is identified as eligible for inclusion on National Wild and Scenic Rivers System and is identified in the Nationwide Rivers Inventory (NRI); this stretch of the river is not on the state list of wild and scenic rivers. The National Park Service (NPS) has review authority for federally-funded projects. The NPS was consulted with regard to NRI and potential Wild and Scenic designation for the proposed project. The NPS did not comment specifically about potential impacts but advised on considerations during project development. 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 and height of the new bridge will be very similar to the existing structure due to design constraints of the airport flight path, navigational channel, and overhead power lines that limit bridge location, height and structure depth. Light poles on the bridge will be shorter than standard poles due to these design constraints as well.

The Mississippi River corridor is a flyway for migratory birds. The NPS voiced concern that ambient lighting in the flyway can cause confusion for migrating birds. To address the concern about ambient lighting and its impact on migratory birds along the Mississippi River corridor, as well as views of the river valley in the evening from land (Indian Mounds Regional Park and Kellogg Park) and water (river boats), bridge lighting will be designed to provide safe conditions on the bridge while limiting ambient light. Based on comments from the NPS, efforts will be made in the design of the bridge to feature open rails along the river spans to allow travelers to be able to see the river as they cross it. The visual quality manual (VQM) process currently underway and described in EAW Item #26 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 and project development proceeds.

Recreational Opportunities

Recreational opportunities will be enhanced with the new bridge. The new bridge would provide a pedestrian/bicycle connection across the river

where none currently exists. This would allow connections to be made to existing City and regional trails on both sides of the river and to trails beyond the project area. A pedestrian/bicycle trail is proposed for the eastern side of the northbound bridge and would provide views of the Mississippi River to the north towards downtown and to the south where the river widens. Overlooks (bump-outs separated from trail traffic) are proposed along the trail at the river piers to allow pedestrians and bicyclists an opportunity to stop and observe the views from the bridge.

Geology

Geologic features of the river corridor in the project area will not be impacted by the new bridge. Scenic views from the bridge of the bluff features downstream and east of the bridge will be preserved with the new bridge.

Wildlife

Given the downtown urban setting of the project area, wildlife populations and habitats are limited. Mussels have been reintroduced upstream and were found in the project area. See EAW Item #11 for a discussion of 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. St. Paul Parks and Recreation staff stated that since there are six 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 Section IV.B.8, Construction Impacts, of this EA/EAW). The NPS's concern regarding the impact of lighting on migratory birds is included in the discussion of scenery.

History

The Robert Street Bridge, upstream and west of the Lafayette Bridge, and the Lowertown Historic District are listed on the National Register of Historic Places (NRHP) and are visible from the lookout at Indian Mounds Regional Park. The proposed bridge will not substantially change existing views from Indian Mounds Regional Park as the new bridge will be constructed in the same general location and be very similar in height and depth as the existing bridge. See EAW Item #25 for discussion of Section 106 (historic and archeological resources) compliance.

Mississippi National River and Recreation Area

The Mississippi National River and Recreation Area (MNRRA), a 72-mile long corridor of the Mississippi River, is a unit of the NPS that 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 Comprehensive*

Management Plan, 1995 (MNRRA Plan), available from the NPS, incorporates by reference requirements of the state Mississippi River Critical Area, Shoreland, and Floodplain programs. While the NPS and MNDNR have review authority for projects occurring within the MNRRA corridor, the MNDNR is deferring its review authority for MNRRA compliance on federally-funded bridge replacements across the Mississippi River in the corridor to the NPS. Instead, the MNDNR is focusing its authority and input on Mn/DOT bridge design and concerns through interagency coordination and with the Public Waters Work Permit Program (see email dated June 25, 2008 in Appendix B).

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. The new bridge meets these criteria and is compatible with the riverfront environment.

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 a trail and overlooks. Additional details about the design of the bridge will consider the MNRRA site development policies and be developed in consultation with the City through its CAC.

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. Both the U.S. Coast Guard and Upper River Services, the area barge operator in the project area, were consulted during preliminary bridge design. See Section IV.B.5 of this EA/EAW for a discussion of barge traffic.

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 stormwater retention in new construction and redevelopment projects. The MNRRA Plan also encourages efforts to develop and implement spill prevention and response plans for the river. Protection of endangered species is a high priority of the MNRRA Plan. See EAW Item #11 for a discussion of endangered species. See EAW Item #17 for a discussion of treatment for stormwater runoff.

Per NPS request, Mn/DOT will provide NPS interpretive staff at the Science Museum of Minnesota (located upstream of the Lafayette Bridge) with the Lafayette Bridge project website address (**http://www.dot.state.mn.us/metro/projects/hwy52-stpaul/index.html**). The Lafayette Bridge project website will provide information on construction phases of the project so that NPS staff can answer visitors' questions about bridge construction.

According to the MNDNR, the project requires a Public Waters Work Permit. The MNDNR stated that Bridge and Culvert General Permit (GP) Number 2004-0001 has been issued and may be applied to this project provided the conditions of the permit are met; see Appendix B for the GP. The relevant design considerations and information on specific GP conditions are as follows:

1. Condition #18 – All equipment intended for use at a project site must be free of prohibited invasive species and aquatic plants ***prior*** to being transported into or within the state and placed into state waters;

2. Condition #22 – Construction shall not obstruct navigation on the Mississippi River and the structure's final design will not obstruct reasonable public navigation;

3. Condition #25 – It is assumed the design will be of similar construction and will have a similar cross-sectional area for flood stages. However, a hydrologic report will be required for review prior to authorization under the GP;

4. Condition #31 – Work exclusion dates for non-trout streams in MNDNR Region 3 is March 15 through June 15. Work between these dates will require a waiver from the MNDNR Area Fisheries Supervisor; and

5. Other concerns are that demolition debris not be allowed to fall into the Mississippi River and that the new stormwater collection system not be allowed to discharge directly into the Mississippi River.

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. The *Mississippi River Corridor Plan*, 2001, available from the City of St. Paul serves as the City of St. Paul's Critical Area Plan.

The Critical Area Plan states that "New and reconstructed bridges or other "gateways" should be designed to be attractive and inviting and maximize the sense of connection to the river. This can be accomplished with signage, landscaping, treatments, ornamental lighting and railings, comfortable sidewalks, and special architectural elements. The Wabasha Bridge and Marshall Avenue Bridge are good examples. New river crossings should be minimized and reconstructed bridges should be located in the same corridor as the structure they replace." As discussed in EAW Item #26, Mn/DOT is developing a VQM in consultation with the CAC 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.

The river corridor overlay zoning for property adjacent to the existing bridge includes RC-1 Floodway District, RC-2 Flood Fringe District, and RC-4 Urban Diversified District (the underlying zoning is commercial, B-5, and industrial, I-1 and I-2). Highways and bridges are conditional uses in the RC-1 Floodway District, as is placement of fill. Conditional use permits are issued by the St. Paul Planning Commission. Permitted uses in the RC-2 Flood Fringe District and RC-4 Urban Diversified District are those uses of land or structure listed as permitted uses in the underlying zoning district.

According to City of St. Paul staff, the City is in the process of amending its zoning overlay district regulations to make them consistent with the

2002 adopted plan. City Council approval of the amendments is anticipated in spring 2009; the regulations must then be approved by the MNDNR before they are in effect. Section 68.245(e) of the draft overlay zoning district amendments provides that bridges and bridge approach roadways are structures that are exceptions to the building height limits in the zoning overlay district.

Based on the assessment above and consultation with City staff, the proposed project is consistent with the City's Critical Area Plan.

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.

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

Acres to be graded: 22.9
Cubic yards of soil to be moved: Excavation – 4,928 Fill – 54,919

Response: The acreage and volumes of soil to be graded or excavated is based on the preliminary construction limits currently identified for the proposed project.

b. 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.

Response: The EAW Guidelines identify steep slopes as slopes of 12 percent or greater. There are areas of steep slopes or highly erodible soils in the project area. These areas occur at the bluff ends where the bridge ties into the land. According to the Soil Survey of Ramsey County (USDA Natural Resources Conservation Service, 2006), soils in the project area are Urban Land and Udorthents (wet substratum) and are nearly level to gently sloping.

Erosion and sedimentation of all exposed soils within the project area will be minimized by utilizing appropriate Best Management Practices (BMPs) during construction. Implementation of BMPs during and after construction greatly reduces the amount of

construction-related sedimentation and helps to control erosion and runoff. Ditches, dikes, siltation fences, bale checks, sedimentation basins and temporary seeding may 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 construction plans as required by the National Pollutant Discharge Elimination System permitting for construction sites in accordance to the City of St. Paul, Ramsey County, the Minnesota Pollution Control Agency (MPCA), and the Capitol Regions Watershed District (CRWD) erosion/sediment control standards. A Storm Water Pollution Prevention Plan (SWPPP) that includes erosion control and sediment management practices is required to be submitted in partial fulfillment of the NPDES permit. Erosion 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 stormwater pollution prevention plans.

Response: The drainage system for the existing bridge and approaches is divided into three systems. Beginning at the southern terminus, runoff from the southern approach drains via storm sewer and overland flow to a St. Paul trunk storm sewer, eventually discharging to the Mississippi River during low flows. When the river is at flood stage, river water is prevented from backing up in the trunk storm sewer as it goes through a levee system, preventing the river from backing up behind the levee. During these flood events, runoff is pumped to the river via the Chester Street Stormwater Pumping Station. In the center section, stormwater runoff from the bridge deck is conveyed directly to the river or onto the ground next to the river via scuppers and downspouts. Last, the north approach and I-94/TH 52 interchange drains through a series of storm sewers systems, eventually connecting either to the storm sewer in Kellogg Boulevard or to the Trout Brook Outfall and to the Mississippi River. There are no water quality measures included in the existing drainage system as storm sewer discharges directly to the river.

An increase in pollutant loading and the quantity of stormwater runoff volume generated from the proposed project would occur without the proposed mitigation due to the increase of impervious surfaces within the proposed project right of way. The most common waterborne pollutants associated with highway runoff are heavy metals, nutrients,

organic matter, chlorides, and particulates. Additionally, stormwater runoff from highways contains nitrogen and phosphorus as byproducts of combustion and from atmospheric deposition in precipitation and dust.

As indicated, the proposed project results in increased impervious areas due to the widening of the bridge and its approaches. To mitigate for the increase impervious surface, the proposed project will upgrade the existing urban stormwater conveyance system to reduce pollutant loading by discharging to stormwater quality treatment best management practices (BMPs), see Figure 5a. Stormwater quality treatment BMPs may be of several types including; wet ponds designed according to National Urban Runoff Program (NURP) standards, sedimentation wet basins for pretreatment designed to NPDES standards, bioretention basins that encourage infiltration and/or filtration basins, and/or other potential BMPs including proprietary stormwater quality treatment BMPs. As such, the stormwater quality BMPs are expected to mitigate the adverse effects of the increased impervious surfaces and pollutant generation and improve the quality of stormwater being discharged over existing conditions. In addition to providing water quality treatment, the stormwater quality BMPs will also provide discharge attenuation and runoff volume control such that existing discharges are maintained in accordance with CRWD and City of St. Paul standards to the extent possible with the existing site and soil conditions. Specifically, the BMPs on the south side of the river and levee system will be sized to maintain or reduce discharge rates to the pumping station and the system to the north will be designed with the Trout Brook Outfall in mind.

Metropolitan Airports Commission staff has expressed a concern that the BMPs chosen for the project avoid open water to minimize waterfowl. The BMP on the north side of the river is within the flight path, and as such will be designed without open water. The ponds under the bridge on the south side will likely include measures to minimize their use by waterfowl.

There are a number of agencies that regulate the discharges of stormwater into the Mississippi River, including the CRWD, the Lower Mississippi River Watershed Management Organization (LMRWMO) and the MPCA through the NPDES permitting process. Each has a variety of goals that will impact the design of the proposed project, including improving water quality, encouraging groundwater recharge, and reducing flooding. The CRWD has adopted rules and a permitting program for the implementation of stormwater quality and quantity which will govern the design of project that discharges north

of the river. The portion of the project area that discharges south of the river is within the boundaries of the LMRWMO. Lastly, the MPCA has jurisdiction over the entire project via the NPDES permit process. As part of the NPDES permitting process, a SWPPP will be created during final design of the proposed project.

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.

Response: Stormwater runoff generated from the proposed project will be directed via storm sewer to stormwater quality BMPs before being discharged to the Mississippi River. The storm sewer conveyance systems will be designed to meet various requirements as previously stated, accounting for limitations in the downstream systems. Specifically, the systems and accompanying BMPs will be designed to limit discharges to the Chester Pumping Station south of the river, to the storm sewer in Kellogg Boulevard, and to the Trout Brook Tunnel north of the river.

Stormwater runoff discharged from the proposed project is expected to improve over that of existing conditions due to the proposed mitigation strategies. As noted above, runoff from the existing roadway is largely untreated. With the proposed project, the roadway and bridge runoff, as well as a portion of offsite drainage, is directed via storm sewer to stormwater quality treatment measures in the north interchange area that will remove suspended solids and nutrients. In addition, the various BMPs will provide for spill containment to provide a level of protection from an accidental spill.

18. Water Quality. Wastewaters.

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

Not Applicable

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.

Not Applicable

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.

Not Applicable

19. Geologic Hazards and Soil Conditions.

a. Approximate depth (in feet):
– to ground water: See Below minimum See Below average;
– to bedrock: 100 feet minimum 130 feet average.

Source: Ramey County Geologic Atlas-Surficial Hydrogeology Map produced by the Minnesota Geologic Survey and soil borings (available upon request) for the existing bridge.

Response: The Ramsey County Atlas-Surficial Hydrogeology Map (produced by the Minnesota Geologic Survey) coupled with the original soil boring logs produced for the existing bridge give a water table elevation of between roughly 685 and 740 feet above mean sea level (MSL) for the project area. Between East 7th Street and near Pine Street groundwater table elevations drop from about 740 feet to 700 feet above MSL. Between Pine Street and Warner Road, water table elevations drop from approximately 700 feet to 690 feet above MSL. Between Warner Road and Plato Boulevard, water table elevations fluctuate between 685 and 690 feet above MSL. Groundwater flows toward the Mississippi River in a southerly direction on the north side of the river and northerly on the south side of the river.

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.

Response: According to the 1992 Geologic Atlas for Ramsey County, there are no known geologic site hazards to groundwater, such as sinkholes, shallow limestone formations, or karst conditions within the project area. Given the depth to bedrock in this area is 100 feet or more, the risk of a geologic site hazard to groundwater via near-surface sinkholes and karstic conditions appears to be negligible.

Groundwater flows toward the river in a southerly direction on the north side of the river and northerly on the south side of the river. A buried glacial aquifer does not appear to be present in the project area.

The project may require temporary dewatering during construction. However, permanent construction is not expected to affect groundwater. The project is not located over a drinking water management supply area (DWMSA).

Section IV.B.8, Construction Impacts, of this EA/EAW discusses impacts from vibrations resulting from pile driving and plans for monitoring during this activity.

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

Response: According to the Ramsey County Soil Survey 2006, the project area consists mainly of urban land (see Table 6), where more than 90 percent of the surface is covered with buildings, asphalt, concrete, or other impervious surfaces. Urban land soils include areas so altered or obstructed by urban works or structures that identification of soils is not feasible.

TABLE 6
SOIL TYPES

Soil Name	Soil Symbol	Percent Slope
Udorethents	1027	NA
Urban land	1039	NA

Source: Ramsey County Soil Survey 2006

The Ramsey County Geologic Atlas describes the bulk of the sediments in the project area as stream sediments consisting of sand and gravel with interspersed fine sediments (silt and clay) and organic material. Additionally, boring logs acquired from the existing bridge indicate that alluvial deposits (sand and gravel) overly bedrock. The gradation of these alluvial deposits varies depending on depth and location. Layers of fine grained soil, with up to 49 percent organic content, were also observed. Fine grained layers appear to increase in sand content and decrease in organic content toward the north end of the current bridge. It appears that the fine grained layers exist as isolated pockets of less than about 15 feet in thickness, however, layer thicknesses of up to 30 feet were observed.

Despite the presence of interspersed fine sediments, the predominance of highly permeable soils consisting of alluvial sand and gravel creates a high potential for contamination of the glacial and bedrock aquifers.

Consequently, the Ramsey County Geologic Atlas deems the whole project area to be very high to highly sensitive to surface-born contaminants.

The proposed project involves limited use of contaminants (primarily fuel for construction activities) and thus, there is limited potential for soil or groundwater contamination. The contractor will be required to obtain approval from the project engineer for a chemical storage area, provide a chemical spill kit on site, designate a fueling area for construction vehicles with means to capture any fuel spills, provide pretreatment of runoff prior to infiltration with a structural pollution control device (or filtration if the depth to groundwater or contamination of in place soils preclude infiltration), and employ erosion control measures following provisions of the stormwater pollution prevention plan. If a spill were to occur during construction, appropriate remediate action will be taken immediately in accordance with MPCA guidelines and regulations.

20. Solid Wastes, Hazardous Wastes, Storage Tanks.

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

Response: Regulated materials and wastes, including hazardous waste, may be encountered during bridge demolition. This may include asbestos, peeling lead paint, lead gaskets, florescent or HID (high intensity discharge) bulbs, ballasts, capacitors, transformers, and treated wood. These materials will be managed in accordance with 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.

All regulated materials and wastes, including hazardous waste will be removed under separate contract prior to demolition of 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.

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.

Response: Toxic or hazardous materials will not be present at the site except for fuel and lubrication necessary for construction equipment during construction. Any contaminated spills or leaks that occur during construction will be responded to in accordance with MPCA containment and remedial action procedures.

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.

Response: 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 the purpose of refueling construction equipment during bridge and 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 it will be responded to in accordance with MPCA containment and remedial action procedures.

21. Traffic.

Parking spaces added: Not Applicable

Existing spaces (if project involves expansion): Not Applicable

Estimated maximum peak hour traffic generated and time of occurrence: Response: Not Applicable

Indicate source of trip generation rates used in the estimates. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Using the format and procedures described in the Minnesota Department of Transportation's Traffic Impact Study Guidance *(available at: http://www.oim.dot.state.mn.us/access/pdfs/Chapter% 205.pdf)* or a similar local guidance, provide an estimate of the impact on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system.

Estimated total average daily traffic generated: See discussion below.

Response: The proposed project will not generate traffic. The six-lane bridge, four full lanes with an auxiliary lane in each direction between the northern Lafayette Road ramps and the I-94 ramps, will accommodate the forecasted increase in vehicles. See Table 7 for future traffic volumes under Build conditions (from the Forecast Memo).

TABLE 7
EXISTING YEAR 2030 BUILD AVERAGE DAILY TRAFFIC (ADT)

Location on TH 52	Existing ADT	Estimated2030 Build ADT
South of Butler Avenue East	59,000	66,000
South of Concord Street Ramp	65,000	74,000
North of Concord Street Ramp	76,000	85,000
Plato Boulevard	69,000	79,000
Mississippi River	81,000	94,000

To assess freeway operations following the proposed improvements, a freeway operations analysis was conducted for 2030 under Build conditions (four full lanes plus auxiliary lanes in each direction); detailed in *Lafayette Bridge Replacement Environmental Assessment and Design Freeway Operations Analysis*, January 15, 2009. Under Build conditions, acceptable levels of service (LOS C) are expected on TH 52 during 2030 peak hour conditions. In addition, the Build alternative avoids the poor levels of service at TH 10/61/Warner Road intersection (a.m.) and the TH 10/61/Burns Avenue intersection that would be experienced under No-Build conditions due to traffic diversion from the Lafayette Bridge. Finally, under Build conditions existing geometric and operational deficiencies causing safety concerns will be corrected.

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.

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

pollution). The criteria pollutants identified by the EPA are ozone, particulate matter, nitrogen dioxide, sulfur dioxide, lead, and carbon monoxide. Potential impacts resulting from these pollutants are assessed by comparing projected concentrations to National Ambient Air Quality Standards (NAAQS). In addition to the criteria air pollutants, the EPA also regulates air toxics.

Ozone

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

A recent study conducted for the Minnesota Pollution Control Agency (MPCA) titled Sonoma Technology Inc. Preliminary Assessment of Ozone Air Quality Issues in the Minneapolis/St. Paul Region, (10/10/02) states:

> *Thus, overall trends in ozone show that the numbers of occurrences of higher ozone concentrations are on the rise. While the 1-hr ozone NAAQS level of 0.12 ppm has only been reached twice in the last ten years, the 8-hr NAAQS level of 0.08 ppm is reached on average twice per year at one or more sites. Note that during some years 8-hr ozone levels do not reach 0.08 ppm while in other years 8-hr ozone reaches that level 4 or 5 times. Increasing population and congestion will likely lead to further increases in ozone levels in the future.*

As a result of this trend, the MPCA, in cooperation with various other agencies, industries and groups, has encouraged voluntary control measures to control ozone and has begun developing a regional ozone modeling effort. Ozone concentrations in the lower atmosphere are influenced by a complex relationship of precursor concentrations, meteorological conditions and regional influences on background concentrations. The MPCA staff has begun development of ozone modeling for the Twin Cities metropolitan area. Recent conversations with MPCA staff indicate that the ozone models currently use federal default traffic data and a relatively coarse modeling grid. As such, ozone modeling in Minnesota is in its developmental state, and therefore, there is

no available method of determining the contribution of a single roadway to regional ozone concentrations. Ozone levels in the Twin Cities metropolitan area currently meet state and federal standards and the State of Minnesota is currently classified by the EPA as an ozone attainment area. Because of these factors, a quantitative ozone analysis was not conducted for this project.

Particulate Matter

Particulate matter (PM) is categorized by the size of particles being measured. For example, the $PM_{2.5}$ value is the measurement of particles smaller than 2.5 microns (a micron is a millionth of a meter) in a particular volume of air. Fine particles with very small diameters can move like gases and can be transported hundreds of miles from their source. Larger particles do not remain suspended and tend to settle out of the air relatively near their source.

The following summary of potential health impacts is excerpted from the EPA brochure Particle Pollution and Your Health (EPA document 452/F-03-001, September 2003):

> *Particle exposure can lead to a variety of health effects. For example, numerous studies link particle levels to increased hospital admissions and emergency room visits—and even to death from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems.*
>
> ***Long-term exposures,*** *such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis—and even premature death.*
>
> ***Short-term exposures*** *to particles (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.*

The MPCA states on its web site:

> *Recent data suggests that particles 2.5 microns or smaller may pose the greatest threat to human health because, for the same mass, they absorb more toxic and carcinogenic compounds than larger particles and penetrate more easily deep into the lungs.*

Motor vehicles can influence particulate matter concentrations on a local scale by directly emitting fine particles and from wind turbulence that causes particles to be mixed into the air. On a regional scale, vehicular traffic can influence particle concentrations through emission of precursor compounds (nitrogen oxides, sulfur oxides and VOCs), as well as direct emissions. Vehicle related particulate matter tends to be smaller than 2.5 microns. The study Transportation-Related Air Toxics: Case Study Materials Related to US 95 in Nevada, March 7, 2003, completed by Sonoma Technology states:

> *With the exception of road dust, essentially all of the particulate matter attributed to vehicles (either as direct emissions or compounds which are emitted as gases and condense into particulate matter in the ambient air) is smaller than 2.5 mm in size (pm2.5).*

The concentration of fine particulates in the atmosphere is a complex function of direct local emissions, meteorological conditions and concentrations of various precursor compounds. Modeling of particulate concentrations is an emerging science and is being done on a regional and nationwide scale. A recent study, Transportation-Related Air Toxics: Case Study Materials Related to US 95 in Nevada, March 7, 2003, completed by Sonoma Technology reviewed the limited data relating road proximity and fine particle concentrations and discussed the extent to which roadways might contribute to exceedances of $PM_{2.5}$ NAAQS:

> *However, these limited findings indicate that, relative to the 24-hour NAAQS of 65 mg/m^3, on-road vehicle $PM_{2.5}$ emissions may be a concern near a road (e.g., within 100 m) if background concentrations are already near the NAAQS. More research is needed to further understand the relationship between $PM_{2.5}$ concentrations and road proximity.*
>
> *There is currently a lack of guidance available to analysts regarding methodological approaches for analyzing the PM impacts of transportation projects at the micro scale.*

Widespread $PM_{2.5}$ monitoring began in Minnesota in 1999. An article published in the MPCA's Minnesota's Environment magazine, Volume 3, Number 3, Summer 2003, indicates that particulate concentrations rise to concentrations considered unhealthy for sensitive people only a few times per year. Based on recent $PM_{2.5}$ monitoring, it appears that the State of Minnesota will be in attainment of recently enacted $PM_{2.5}$ standards.

Based on the relatively low ambient concentrations observed in Minnesota and the lack of analysis methodology, no project level modeling for particulate matter was conducted for this project.

Nitrogen dioxide (Nitrogen oxides)

Nitrogen oxides, or NOx, are the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels. The MPCA Air and Water Emissions Report, March 2000, indicates that on-road mobile sources account for 31 percent of NOx emissions in Minnesota. In addition to being a precursor of ozone, NOx can cause respiratory irritation in sensitive individuals and contribute to acid rain.

Nitrogen dioxide (NO_2) levels in the Twin Cities metropolitan area currently meet state and federal standards. Appendix C of the MPCA's 2001 Legislative Report Air Quality in Minnesota: Problems and Approaches states:

> *Monitored NO_2 levels are currently about one third of the annual NO_2 standard. Although NOx emissions have increased and may increase further due to increased vehicle travel and increased fuel combustion, it is unlikely that these increases will pose a threat to the annual NO_2 standard.*

The EPA's regulatory announcement EPA420-F-99-051 (December 1999) describes the Tier 2 standards for tailpipe emissions and states:

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

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

Sulfur Dioxide

Sulfur dioxide ($S0_2$) and other sulfur oxide gases (SOx) are formed when fuel containing sulfur, such as coal, oil, and diesel fuel is burned. Sulfur dioxide is a heavy, pungent, colorless gas. Elevated levels can impair breathing, lead to other respiratory symptoms, and at very high levels aggravate heart disease. People with asthma are most at risk. Once emitted into the atmosphere, SO_2 can be further oxidized to sulfuric acid, a component of acid rain.

Over 65 percent of SO_2 released to the air comes from electric utilities, especially those that burn coal. The MPCA Air and Water Emissions Report, March 2000, indicates that on-road mobile sources account for just 4.8 percent of SOx emissions in Minnesota. MPCA monitoring shows that ambient SO_2 concentrations are consistently below standards. The MPCA has concluded that long-term trends in both ambient air concentrations and total SO_2 emissions in Minnesota indicate steady improvement.

Emissions of sulfur oxides from transportation sources are a small component of overall emissions and continue to decline due to the desulphurization of fuels. The State of Minnesota is classified by the EPA as an attainment area for sulfur dioxide. Sulfur dioxide levels in the Twin Cities metropolitan area currently meet NAAQS. Because of these factors, a quantitative analysis for sulfur dioxide was not conducted for this project.

Lead

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

Carbon Monoxide

Carbon monoxide (CO) is the traffic-related pollutant that is of most concern on a project level scale. The MPCA has established state standards (or maximum permissible concentrations) for CO of 30 parts per million (ppm) for a one-hour period (average concentration), and 9 ppm for an eight-hour period (average concentration). The MPCA one-hour standard is more stringent than the federal standard of 35 ppm.

The project area is currently in a maintenance area for CO. The attainment status in the Twin Cities metropolitan area is contingent upon the implementation of measures to assure that CO concentrations remain below standards. The contingency stipulates that future CO concentrations be modeled for proposed transportation projects. In compliance with this stipulation, for this study, air quality analyses of worst-case conditions were performed to estimate the effect of the project alternatives on future CO concentrations at nearby key intersections (or "hot spots") in the project area (localized intersection CO analyses).

Environmental Consequences on Air Quality

The effects of the alternatives on air quality were examined through analysis of the predicted impacts on CO concentrations. As discussed previously in this section, a valid means of relating the effect of individual roadway projects to the atmospheric ozone or particulate concentrations does not exist. Impacts from sulfur dioxide, nitrogen dioxide and lead from vehicular traffic are limited in distribution and magnitude. Therefore, CO analysis provides the most relevant measure of traffic-related impacts to air quality on a local scale. The following section discusses the CO analysis modeling methods and results.

To assess CO concentration changes, background concentrations were measured and adjusted for future background traffic growth and changes in vehicle emissions. Potential CO impacts on air quality were analyzed with respect to intersection conditions for the Build alternative. Forecast year 2015 (one year after opening) and year 2030 (design year) traffic data was used to model future CO concentrations. The analysis methods and procedures and the scope of this analysis were chosen based on guidance from the MPCA.

Air quality modeling was performed using the most current versions of EPA CO emission (MOBILE 6.2) and dispersion modeling (CAL3QHC) software. All methods and procedures used in the air quality analyses are generally accepted by the EPA and MPCA as approved for industry standard analytical methods.

The modeling assumptions used in this analysis included the following:

- Cold Start Percentage: 20.6 percent for all traffic[1]
- Hot Start Percentage: 27.3 percent for all traffic
- Speed Class: Arterial, posted speed limits
- Traffic Mix: National default
- Traffic Age Distribution: MPCA data
- Wind Speed: 1 meter/second
- Temperature: -8.8 degrees Celsius
- Wind Direction: 36 directions at 10 degree increments
- Surface Roughness: 108 centimeters
- Atmospheric Stability Class: D
- 8-Hour Persistence Factor: 0.7
- Fuel Program: Conventional Gasoline East
- Fuel Reid Vapor Pressure: 9.0 lbs/square inch
- Oxygenated Fuels: Ethanol with 2.7 percent oxygen content

[1] Mobile 6 Default Parameter

Background Carbon Monoxide Concentrations

Background CO concentrations are needed for air quality analysis purposes to represent conditions without the influence of nearby vehicles. By definition, the background CO concentration in any particular area is that concentration which exists independently of direct contributions from nearby traffic. The background concentrations are added to intersection-scale modeled results to yield predicted CO levels.

Background CO concentrations for the analysis documented in this study were obtained from CO monitoring conducted by MPCA at the intersection of University Avenue and Lexington Avenue in Saint Paul. The data include measurements every hour from June 1, 2007 through May 31, 2008. The maximum one-hour concentration during this period, measured February 2, 2008, was 3.2 ppm. The maximum eight-hour concentration, measured April 25, 2008, was 2.3 ppm. Background concentrations were adjusted for years 2015 and 2030 to account for traffic growth. To represent worst-case conditions, no background reduction factor to account for future emissions control improvements was used; this will overestimate ambient background CO concentrations. Results of background CO monitoring and the adjustment calculations are presented in Table 8.

TABLE 8
BACKGROUND CARBON MONOXIDE CONCENTRATIONS

University Avenue and Lexington Avenue, Saint Paul, MN	**1-Hour**	**8-Hour**
2008 background CO concentration (ppm)*	3.2	2.3
Holzworth Correction Factor (1-hr = Winter, 8-hr = Spring)	1.00	1.53
Corrected Background CO concentrations	3.2	3.5
Background traffic growth - 2015	1.2	1.2
Adjusted background CO concentration (ppm) - 2015	3.8	4.2
Background traffic growth - 2030	1.9	1.9
Adjusted background CO concentration (ppm) - 2030	6.1	6.7

*Source: *MPCA data collection*

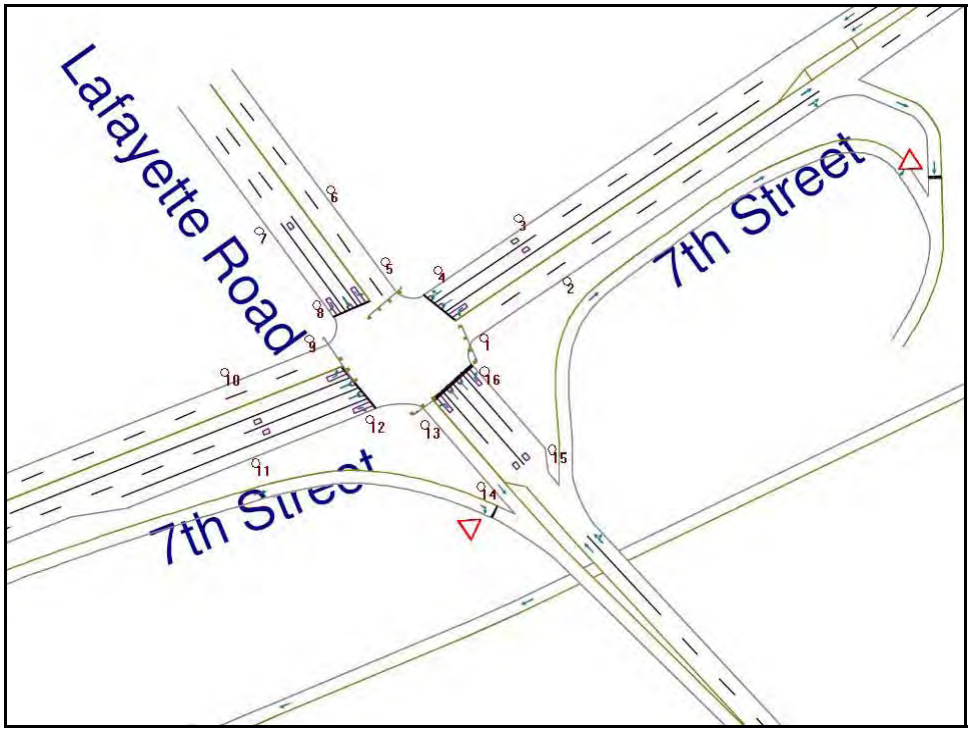
Intersection Carbon Monoxide Analysis

Carbon monoxide concentrations were calculated for years 2015 and 2030 for the worst-case scenario in the project area. This scenario assumes that the Lafayette Bridge is reconstructed to allow three lanes of traffic in each direction, but the northbound approach at the intersection of TH 52 and East 7th Street is not modified to route local traffic to a proposed Kittson-Warner connection. This scenario would be expected to result in the highest potential traffic volumes at a signalized intersection

and substantial queuing and delays would be present. Other scenarios, such as no build or construction of a modified north end of the Lafayette Bridge would result in lower CO concentrations. In addition to the approaches to the intersection, freeway ramps to and from westbound I-94 were also included in this analysis, due to their proximity to the intersection. This methodology was developed based on input from Mn/DOT and MPCA staff in a meeting held on September 25, 2008.

Carbon monoxide concentrations near the intersection were projected using forecasted traffic volumes, current intersection geometrics, optimized signal timing, emission levels from the EPA MOBILE 6.2 model, and dispersion modeling using the EPA model CAL3QHC.

EXHIBIT 1 CAL3QHC INTERSECTION MODEL NETWORK GEOMETRY AND RECEPTOR LOCATIONS



The intersection CO modeling results are shown on Table 9. These results are the worst-case results from the CAL3QHC dispersion model, showing where the highest concentration occurred, the value of the highest one-hour and eight-hour concentrations, and the wind angle that produced these concentrations. The CO concentrations provided represent background CO concentrations plus modeled intersection CO concentrations.

TABLE 9
CARBON MONOXIDE MODELING RESULTS (LISTED IN PARTS-PER-MILLION (PPM))

Year of Analysis	Worst Receptor Location	1-Hour Average Concentration	8-Hour Average Concentration	Wind Direction
2015	SE Quadrant	5.4	5.3	340º
2030	SE Quadrant	7.8	7.9	330º
State Standards		30	9	

Discussion and Conclusions

Intersection-level CO modeling was performed for the worst operating intersection under the worst-case scenario. Modeling results show predicted one-hour average CO concentrations in the project area of 5.4 ppm in 2015 and 7.8 ppm in 2030 and eight-hour CO concentrations in the project area of 5.3 ppm in 2015 and 7.9 ppm in 2030. Based on these results, concentrations of CO in the project areas will meet the state one-hour standard of 30 ppm and the state eight-hour standard of 9 ppm.

These CO modeling results show that this project is not expected to cause CO concentrations to exceed state standards. Based on the qualitative assessment presented at the beginning of this section, the project will not cause exceedances of the other criteria pollutants.

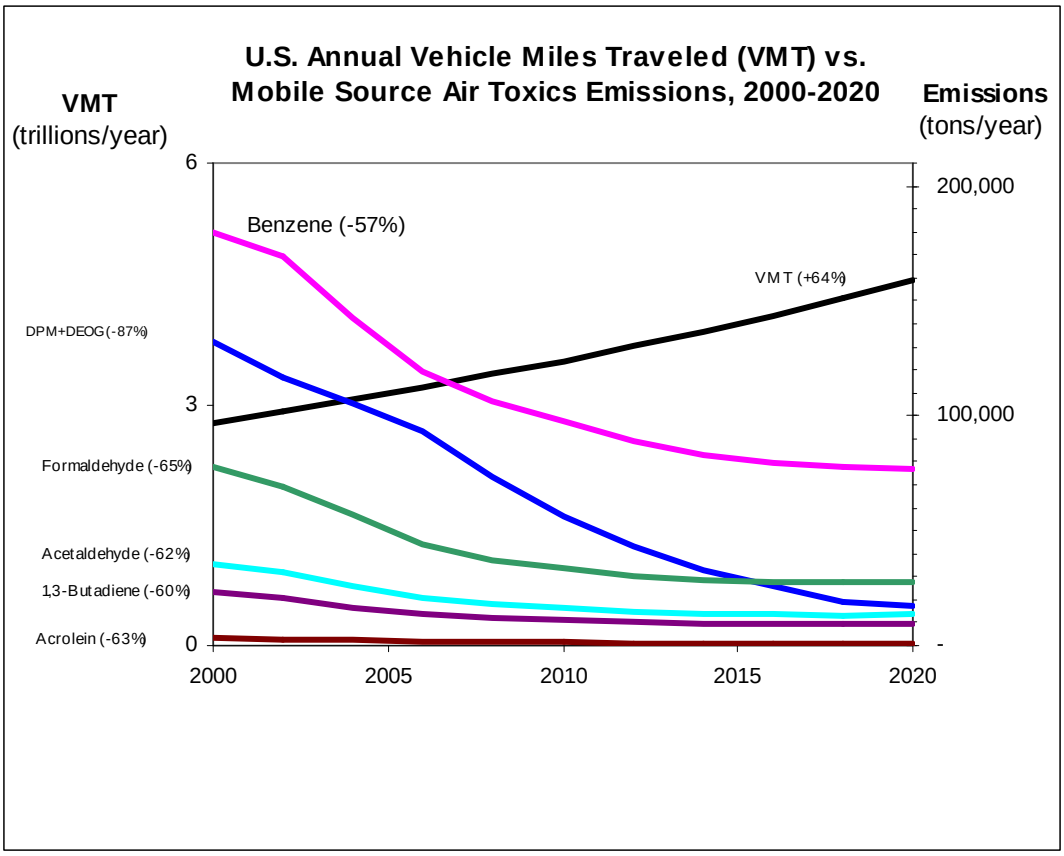
Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead federal agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229 (March 29, 2001). This rule

was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, the Federal Highway Administration (FHWA) projects that even with a 64 percent increase in vehicle miles traveled (VMT), these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in the following graph:



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE 6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE 6.2 generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns. Does not include additional benefits from the 2007 MSAT rule.

As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under the authority of Clean Air Act Section 202(1) that will address issues and could make adjustments to all 21 of the current MSATs, as well as the six primary MSATs.

Unavailable Information for Project Specific MSAT Impact Analysis

This document includes a basic analysis of the likely MSAT emission impacts of the proposed project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information. Note that the language and statistics quoted in this section are derived from "Interim Guidance on Air Toxics Analysis in NEPA Documents," Cynthia J. Burbank, published by FHWA on February 3, 2006.

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

1. Emissions: The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While the MOBILE 6.2.2 emissions model is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model with emission factors that are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

2. Dispersion. The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the National Environmental Policy Act (NEPA) process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

3. Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be

useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is on-going. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or state level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at **http://www.epa.gov/iris**. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. This information is taken verbatim from EPA's IRIS database and represents the agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.

- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.

- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases. Diesel exhaust also represents chronic respiratory effects, possibly the primary non-cancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years. Some recent studies have reported that proximity to roadways is related to adverse health outcomes, particularly respiratory problems[2]. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based Upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community.

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in

[2] South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

Qualitative MSAT Analysis

In this document, a qualitative analysis of MSAT emissions relative to the project alternatives has been provided. A qualitative assessment of this type is recommended by the FHWA for roadway widening projects where the average forecast AADT is less than 150,000 vehicles. The project alternative may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

For the Build alternative, the amount of MSATs emitted would be proportional to the average daily traffic, or ADT, assuming that other variables such as fleet mix are the same for each alternative. The ADT estimated for the Build alternative is slightly higher than that for the No Build alternative, because the additional capacity with shoulders increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in ADT would lead to higher MSAT emissions for the action alternative along the TH 52 corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE 6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset ADT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The reconstruction of the Lafayette Bridge contemplated as part of the project alternative will have the effect of moving some traffic closer to homes and businesses; therefore, under this alternative there may be

localized areas where ambient concentrations of MSATs could be higher under the Build alternative than the No Build alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built on TH 52 under the Build alternative. However, as discussed above, the magnitude and the duration of these potential increases compared to the No Build alternative cannot be accurately quantified due to the inherent deficiencies of current models. In sum, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build alternative could be higher relative to the No Build alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

23. Stationary Source Air Emissions. Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *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.

Response: Not Applicable

24. Odors, Noise and Dust.

Will the project generate odors, noise or dust during construction or during operation? X Yes __No

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

Odors, Noise and Dust During Construction

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

and fuel storage. Dust generated during construction 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 would be in permanent cover (i.e., paved or revegetated areas).

Construction Noise

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

The following table (Table 10) shows peak noise levels monitored at 50 feet from various types of construction equipment. This equipment is primarily associated with site grading/site preparation, generally the roadway construction phase associated with the greatest noise levels.

TABLE 10
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

Noise impacts/mitigation to the local communities during construction

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 that the contractor(s) comply with applicable local noise restrictions and ordinances to the extent that it is reasonable. Advance notice will be provided to affected communities for any abnormally loud construction

activities. It is anticipated that nighttime construction may sometimes be required to minimize traffic impacts and improve safety. However, construction will be limited to daytime hours as much as possible. This project is anticipated to be in under construction for four years (fall 2010 to fall 2014; see Section III.5).

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 bridge construction and any sheet piling necessary for retaining wall construction. While pile driving equipment results in the highest peak noise level as shown in Table 10, it is limited to the activities (e.g., bridge construction, retaining wall construction) noted above. The use of pile drivers, jack hammers, and pavement sawing equipment would be prohibited during nighttime hours.

Traffic Noise Analysis

Background Information on Acoustics and Traffic Noise

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

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

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 75 feet)
130----------	Jet Aircraft (at 300 feet)
120----------	Rock and Roll Concert
110----------	Pneumatic Chipper
100----------	Jointer/Planer
90 ----------	Chainsaw
80 ----------	Heavy Truck Traffic
70 ----------	Business Office
60 ----------	Conversational Speech
50 ----------	Library
40 ----------	Bedroom
30 ----------	Secluded Woods
20 ----------	Whisper

Source: "A Guide to Noise Control in Minnesota," Minnesota Pollution Control Agency, http://www.pca.state.mn.us/programs/pubs/noise.pdf and "Highway Traffic Noise," FHWA, http://www.fhwa.dot.gov/environment/htnoise.htm.

Along with the volume of traffic and other factors (e.g., topography of the area and vehicle speed) that affect the loudness of traffic noise, the distance of a receptor from a sound's source is also an important factor. Sound level decreases as distance from a source increases. A rule of thumb regarding sound level decrease due to increasing distance from a line source (roadway) that is commonly used is: beyond approximately 50 feet from the sound source, each doubling of distance from the line source over hard ground (such as pavement or water) will reduce the sound level by 3 dBA, whereas each doubling of distance over soft ground (such as vegetated, or grassy ground) results in a sound level decrease of 4.5 dBA.

Minnesota state noise standards have been established for daytime and nighttime periods. For residential land uses (identified as Noise Area Classification 1 or NAC-1), the Minnesota State standards for L_{10} are 65 dBA for daytime and 55 dBA for nighttime; the standards for L_{50} are 60 dBA for daytime and 50 dBA for nighttime. The Minnesota Pollution Control Agency (MPCA) defines daytime as 7:00 a.m. to 10:00 p.m. and nighttime from 10:00 p.m. to 7:00 a.m. State noise standards are depicted in Table 11.

TABLE 11
MINNESOTA STATE NOISE STANDARDS

MPCA State Noise Standards					
Land Use	**Code**	**Daytime (7 a.m. – 10 p.m.) dBA**		**Nighttime (10 p.m. – 7 a.m.) dBA**	
Residential	**NAC-1**	L_{10} of 65	L_{50} of 60	L_{10} of 55	L_{50} of 50
Commercial	**NAC-2**	L_{10} of 70	L_{50} of 65	L_{10} of 70	L_{50} of 65
Industrial	**NAC-3**	L_{10} of 80	L_{50} of 75	L_{10} of 80	L_{50} of 75

For residential and parkland uses (Federal Land Use Category B), the Federal L_{10} noise abatement criterion is 70 dBA for both daytime and nighttime. Locations where noise levels are "approaching" (defined as being within one decibel of the criterion threshold, i.e. 69 dBA) or exceeding the criterion level must be evaluated for noise abatement reasonableness. Federal Noise Abatement Criteria (NAC) are shown in Table 12.

TABLE 12
FEDERAL NOISE ABATEMENT CRITERIA

FHWA Noise Abatement Criteria		
Category	**L_{10} dBA**	**Land Use**
A	**60**	Special areas requiring serenity
B	**70**	Residential and recreational areas
C	**75**	Commercial and industrial areas
D	**NA**	Undeveloped areas
E	**55***	Residential, hospitals, libraries, etc.

* Applies to interior noise levels. All other land uses are exterior levels.

In addition to the identified noise criteria, the FHWA also defines a noise impact as a "substantial increase" in the future noise levels over the existing noise levels. Mn/DOT considers an increase of 5 dBA or greater a substantial noise level increase.

Methodology

Affected Environment

The purpose of this noise analysis is to determine the effect of the proposed project on traffic-generated noise levels. It is also important to note that the project setting includes other sources in the area that may have some affect on ambient sound levels.

A BNSF Railway line bisects the project area along the north shore of the Mississippi River. The Lafayette Bridge crosses over this rail line.

According to the Mn/DOT Metro Railroads Train Volumes and Speed map, this track carries 23 trains per day at an average speed of 10 miles per hour (mph).[3]

The St. Paul Downtown Airport (Holman Field) is located to the southeast of the Lafayette Bridge south of the Mississippi River. For the 12-month period ending on August 31, 2006, aircraft operations at the St. Paul Downtown Airport averaged 435 takeoffs and landings per day.[4] Aircraft operations at the St. Paul Downtown Airport contribute to the existing sound environment in the project area. It is possible that during certain times of the day, and depending upon the level of aircraft operations at the airport, aircraft noise could be the dominant noise source in the project area.

Land uses in the project area include industrial uses adjacent to the I-94/TH 52 interchange and between the Mississippi River and Plato Boulevard. Operations associated with these industrial land uses also contribute to the ambient sound levels within the project area.

Noise Monitoring

Background noise level monitoring is commonly performed during a noise study to document existing noise levels. Existing noise levels were monitored at three sites in the project area, chosen to represent areas of outdoor human activity, to the extent that is practicable. Monitoring locations were chosen at sites adjacent to proposed construction areas along the Lafayette Bridge corridor.

Noise monitoring receptor locations are illustrated in Figure 10, Appendix A.

Daytime noise levels were monitored on October 14, 2008. Noise levels were monitored at each location twice; once during the mid-morning period (9:00 a.m.-11:00 a.m.) and again during the afternoon (12:30 p.m.-2:30 p.m.). The morning and afternoon monitored levels were averaged and are reported as one monitored noise level for each monitoring site. A trained noise monitoring technician was present at each session for the entire monitoring session to ensure correct operation of the instrumentation.

Daytime noise monitoring results ranged from 65.8 dBA (L_{10}) to 72.8 dBA (L_{10}). Noise monitoring results are presented in Table 13 along with the results of computer modeling for existing noise conditions.

[3] Minnesota Department of Transportation Office of Freight and Commercial Vehicle Operations. 2009. The Minnesota Department of Transportation Web Site (online). Metro Railroads 2009 Train Volumes and Speeds Map accessed 01-28-09 at http://www.dot.state.mn.us/ofrw/freightData.html.

[4] AirNav, LLC. 2008. AirNav Website (online). FAA information for St. Paul Downtown Airport/Holman Field (KSTP) accessed 2008-10-08 at http://www.airnav.com/airport/stp.

Noise Modeling

Traffic noise impacts were assessed by modeling noise levels at receptor sites likely to be most affected by the construction of the proposed project. The locations of the model receptor sites are illustrated in Figure 9, Appendix A. Land uses at each receptor site, as identified in year 2000 general land uses for Ramsey County, are listed with each receptor location in Table 13 and 14.

Noise modeling was done using the noise prediction program "MINNOISE", a version of the FHWA "STAMINA" model adapted by Mn/DOT. This model uses traffic volumes, speed, class of vehicle, and the typical characteristics of the roadway being analyzed (e.g., roadway horizontal and vertical alignment). Noise model input files were developed based on the following assumptions:

- Traffic data input into the MINNOISE noise model included existing (year 2005) and future (year 2035) No-Build and Build forecast traffic volumes. Year 2035 was identified as the future year for analysis based on the anticipated project schedule. Construction of the Lafayette Bridge is anticipated to be complete in year 2014, with year 2015 being the first full year of opening following the bridge construction. Year 2035 is 20 years from the proposed first year of opening.
- The mid-morning hour (10:00 a.m. to 11:00 a.m.) was identified to be the loudest hour of the daytime period because of greater heavy truck volumes as compared to other times of day. The 10:00 a.m. to 11:00 a.m. period represents approximately five percent of average daily traffic in both the south- and northbound directions on TH 52 through the project area.
- The 6:00 a.m. to 7:00 a.m. period, just prior to the start of the morning rush hour, was identified as the loudest hour of the nighttime period. The 6:00 a.m. to 7:00 a.m. period represents approximately five percent and seven percent of average daily traffic in the south- and northbound directions, respectively, on TH 52 through the project area.
- An acoustically "soft" surface (alpha=0.5) between receptor locations and roadways was assumed in all noise model input files.

Peak noise levels also do not always correspond to peak traffic hours. This is the case when increased congestion during the morning and afternoon peak hours causes reduced speeds. An operational level of service (LOS) C is considered free-flow conditions for purposes of traffic noise modeling. To account for this phenomenon, default traffic volumes characteristic of LOS C conditions were used in the noise model input files. A default volume of 1,500 vehicles per lane per hour was assumed as operational LOS C conditions for TH 52 under the future No-Build scenario.

Noise Model Results

Results of the noise modeling analysis are tabulated in Tables 13 and 14. While both the L_{10} and L_{50} descriptors are shown in the tables, the discussions of modeling results presented below only reference the L_{10} values, because the L_{10} descriptor is used to define both the State and Federal noise level regulatory thresholds.

Existing modeled L_{10} daytime noise levels range from 66.9 dBA to 71.7 dBA, whereas nighttime noise levels range from 66.1 dBA to 71.6 dBA. In general, nighttime noise levels are less than 1 dBA lower than daytime levels at modeled receptor locations. Receptors 2 through 6 and receptor 12 do not exceed State daytime and nighttime standards with existing conditions. These receptors represent industrial land uses adjacent to TH 52. Modeled residential land uses west of TH 52 at Kellogg Boulevard exceed State daytime and nighttime standards with existing conditions. Modeled commercial receptor locations also exceed State daytime and nighttime standards with existing conditions (see Tables 13 and 14).

Modeled noise levels for the year 2035 No-Build conditions generally increase by less than 1 dBA over existing noise levels for both daytime and nighttime conditions. Future No-Build daytime noise levels are predicted to range from 67.3 dBA to 72.1 dBA, whereas nighttime noise levels are predicted to range from 66.4 dBA to 71.7 dBA. Receptors 2 through 6 and receptor 12 do not exceed State daytime and nighttime standards with future No-Build conditions. Modeled residential land uses west of TH 52 at Kellogg Boulevard are predicted to exceed State daytime and nighttime standards with future No-Build conditions. Modeled commercial receptor locations also exceed State daytime and nighttime standards with future No-Build conditions (see Tables 13 and 14).

Construction of the Build Alternative is predicted to increase noise levels by up to 1.5 dBA over existing noise levels for both daytime and nighttime conditions at some receptor locations, whereas modeled noise levels at other receptor locations are predicted to decrease by up to 1 dBA. Receptors 2 through 6 and receptor 12 do not exceed State daytime and nighttime standards with future Build conditions. Industrial land uses adjacent to the proposed Lafayette Bridge are predicted to be below State daytime and nighttime noise standards with future Build conditions. Modeled residential land uses west of TH 52 at Kellogg Boulevard exceed State daytime and nighttime standards with future Build conditions. Modeled commercial receptor locations also exceed State daytime and nighttime standards with future Build conditions, with the exception of receptor 14 (see Tables 13 and 14).

TABLE 13
LAFAYETTE BRIDGE NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored		Existing (2008)		No-Build (2035)		Difference Between Existing (2008) and No-Build (2035)		Build (2035)		Difference Between Existing (2008) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
1 (C) (1)	**72.8**	**69.5**	**70.7**	**67.3**	**71.2**	**67.9**	0.5	0.6	**71.2**	**68.0**	0.5	0.7
2 (I) (1)			67.0	64.2	67.4	64.8	0.4	0.6	67.7	65.0	0.7	0.8
3 (I) (2)			71.7	68.1	72.1	68.7	0.4	0.6	71.6	68.3	-0.1	0.2
4 (I) (1)			69.5	66.4	70.0	67.0	0.5	0.6	71.0	67.8	1.5	1.4
5 (I) (1)			69.5	65.3	70.0	66.0	0.5	0.7	67.4	64.4	-2.1	-0.9
6 (I) (1)			71.7	66.8	72.1	67.5	0.4	0.7	71.2	66.2	-0.5	-0.6
7 (P)			**68.0**	**63.7**	**68.6**	**64.4**	0.6	0.7	**66.0**	**62.3**	-2.0	-1.4
8 (P)	**65.8**	**62.5**	**66.9**	**63.7**	**67.3**	**64.3**	0.4	0.6	**66.1**	**62.9**	-0.8	-0.8
9 (M) (7)			**70.6**	**64.0**	**71.1**	**64.7**	0.5	0.7	**70.6**	**63.8**	0.0	-0.2
10 (M) (6)	**72.1**	**66.8**	**70.7**	**64.3**	**71.2**	**65.0**	0.5	0.7	**70.4**	**63.4**	-0.3	-0.9
11 (M) (7)			**70.3**	**63.3**	**70.9**	**64.0**	0.6	0.7	**70.3**	**63.0**	0.0	-0.3
12 (I) (1)			70.7	68.1	71.0	68.5	0.3	0.4	69.6	65.7	-1.1	-2.4
13 (C) (1)			**71.0**	**67.7**	**71.3**	**68.1**	0.3	0.4	**72.1**	**69.1**	1.1	1.4
14 (C) (2)			**70.3**	**67.5**	**70.7**	**67.9**	0.4	0.4	69.2	**66.3**	-1.1	-1.2
State Daytime Noise Standards [(1)]												
Residential (NAC-1)	**65**	**60**	**65**	**60**	**65**	**60**	-	-	**65**	**60**	-	-
Commercial (NAC-2)	**70**	**65**	**70**	**65**	**70**	**65**	-	-	**70**	**65**	-	-
Industrial (NAC-3)	**80**	**75**	**80**	**75**	**80**	**75**	-	-	**80**	**75**	-	-

Bold numbers are above State standards.
(M) – Mixed uses (residential+commercial); (C) – Commercial; (I) – Industrial; (P) – Park/Trail
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.
(1) Land uses and associated codes for State noise standards (see Table 11).

TABLE 13
LAFAYETTE BRIDGE NOISE MODEL RESULTS: DAYTIME

Receptor*	Monitored		Existing (2008)		No-Build (2035)		Difference Between Existing (2008) and No-Build (2035)		Build (2035)		Difference Between Existing (2008) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
1 (C) (1)	**72.8**	**69.5**	**70.7**	**67.3**	**71.2**	**67.9**	0.5	0.6	**71.2**	**68.0**	0.5	0.7
2 (I) (1)			67.0	64.2	67.4	64.8	0.4	0.6	67.7	65.0	0.7	0.8
3 (I) (2)			71.7	68.1	72.1	68.7	0.4	0.6	71.6	68.3	-0.1	0.2
4 (I) (1)			69.5	66.4	70.0	67.0	0.5	0.6	71.0	67.8	1.5	1.4
5 (I) (1)			69.5	65.3	70.0	66.0	0.5	0.7	67.4	64.4	-2.1	-0.9
6 (I) (1)			71.7	66.8	72.1	67.5	0.4	0.7	71.2	66.2	-0.5	-0.6
7 (P)			**68.0**	**63.7**	**68.6**	**64.4**	0.6	0.7	**66.0**	**62.3**	-2.0	-1.4
8 (P)	**65.8**	**62.5**	**66.9**	**63.7**	**67.3**	**64.3**	0.4	0.6	**66.1**	**62.9**	-0.8	-0.8
9 (M) (7)			**70.6**	**64.0**	**71.1**	**64.7**	0.5	0.7	**70.6**	**63.8**	0.0	-0.2
10 (M) (6)	**72.1**	**66.8**	**70.7**	**64.3**	**71.2**	**65.0**	0.5	0.7	**70.4**	**63.4**	-0.3	-0.9
11 (M) (7)			**70.3**	**63.3**	**70.9**	**64.0**	0.6	0.7	**70.3**	**63.0**	0.0	-0.3
12 (I) (1)			70.7	68.1	71.0	68.5	0.3	0.4	69.6	65.7	-1.1	-2.4
13 (C) (1)			**71.0**	**67.7**	**71.3**	**68.1**	0.3	0.4	**72.1**	**69.1**	1.1	1.4
14 (C) (2)			**70.3**	**67.5**	**70.7**	**67.9**	0.4	0.4	69.2	**66.3**	-1.1	-1.2
State Daytime Noise Standards [(1)]												
Residential (NAC-1)	**65**	**60**	**65**	**60**	**65**	**60**	-	-	**65**	**60**	-	-
Commercial (NAC-2)	**70**	**65**	**70**	**65**	**70**	**65**	-	-	**70**	**65**	-	-
Industrial (NAC-3)	**80**	**75**	**80**	**75**	**80**	**75**	-	-	**80**	**75**	-	-

Bold numbers are above State standards.
(M) – Mixed uses (residential+commercial); (C) – Commercial; (I) – Industrial; (P) – Park/Trail
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.
(1) Land uses and associated codes for State noise standards (see Table 11).

TABLE 14
LAFAYETTE BRIDGE NOISE MODEL RESULTS: NIGHTTIME

Receptor*	Existing (2008)		No-Build (2035)		Difference Between Existing (2008) and No-Build (2035)		Build (2035)		Difference Between Existing (2008) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
1 (C) (1)	**70.2**	**66.9**	**70.6**	**67.5**	0.4	0.6	**70.6**	**67.5**	0.4	0.6
2 (I) (1)	66.5	63.8	66.9	64.3	0.4	0.5	67.1	64.6	0.6	0.8
3 (I) (2)	71.2	67.7	71.6	68.2	0.4	0.5	71.0	67.8	-0.2	0.1
4 (I) (1)	69.0	65.9	69.4	66.5	0.4	0.6	70.5	67.4	1.5	1.5
5 (I) (1)	68.6	64.3	69.0	64.9	0.4	0.6	66.8	63.8	-1.8	-0.5
6 (I) (1)	71.0	66.0	71.2	66.4	0.2	0.4	70.8	66.0	-0.2	0.0
7 (P)	**67.1**	**62.5**	**67.6**	**63.3**	0.5	0.8	**65.5**	**61.6**	-1.6	-0.9
8 (P)	**66.1**	**62.8**	**66.4**	**63.3**	0.3	0.5	**65.4**	**62.1**	-0.7	-0.7
9 (M) (7)	**70.5**	**63.5**	**71.0**	**64.2**	0.5	0.7	**70.8**	**63.7**	0.3	0.2
10 (M) (6)	**70.5**	**63.6**	**71.0**	**64.3**	0.5	0.7	**70.5**	**63.3**	0.0	-0.3
11 (M) (7)	**70.3**	**62.9**	**70.8**	**63.6**	0.5	0.7	**70.5**	**62.9**	0.2	0.0
12 (I) (1)	70.3	68.0	70.6	68.3	0.3	0.3	68.9	65.1	-1.4	-2.9
13 (C) (1)	**71.6**	**68.5**	**71.7**	**68.7**	0.1	0.2	**72.1**	**69.2**	0.5	0.7
14 (C) (2)	**70.6**	**68.0**	**70.8**	**68.2**	0.2	0.2	69.5	**66.6**	-1.1	-1.4
State Nighttime Noise Standards [(1)]										
Residential (NAC-1)	**55**	**50**	**55**	**50**	**-**	**-**	**55**	**50**	**-**	**-**
Commercial (NAC-2)	**70**	**65**	**70**	**65**	**-**	**-**	**70**	**65**	**-**	**-**
Industrial (NAC-3)	**75**	**70**	**75**	**70**	**-**	**-**	**75**	**70**	**-**	**-**

Bold numbers are above State standards.
(M) – Mixed uses (residential+commercial); (C) – Commercial; (I) – Industrial; (P) – Park/Trail
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.
(1) Land uses and associated codes for State noise standards (see Table 11).

TABLE 14
LAFAYETTE BRIDGE NOISE MODEL RESULTS: NIGHTTIME

Receptor*	Existing (2008)		No-Build (2035)		Difference Between Existing (2008) and No-Build (2035)		Build (2035)		Difference Between Existing (2008) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
1 (C) (1)	**70.2**	**66.9**	**70.6**	**67.5**	0.4	0.6	**70.6**	**67.5**	0.4	0.6
2 (I) (1)	66.5	63.8	66.9	64.3	0.4	0.5	67.1	64.6	0.6	0.8
3 (I) (2)	71.2	67.7	71.6	68.2	0.4	0.5	71.0	67.8	-0.2	0.1
4 (I) (1)	69.0	65.9	69.4	66.5	0.4	0.6	70.5	67.4	1.5	1.5
5 (I) (1)	68.6	64.3	69.0	64.9	0.4	0.6	66.8	63.8	-1.8	-0.5
6 (I) (1)	71.0	66.0	71.2	66.4	0.2	0.4	70.8	66.0	-0.2	0.0
7 (P)	**67.1**	**62.5**	**67.6**	**63.3**	0.5	0.8	**65.5**	**61.6**	-1.6	-0.9
8 (P)	**66.1**	**62.8**	**66.4**	**63.3**	0.3	0.5	**65.4**	**62.1**	-0.7	-0.7
9 (M) (7)	**70.5**	**63.5**	**71.0**	**64.2**	0.5	0.7	**70.8**	**63.7**	0.3	0.2
10 (M) (6)	**70.5**	**63.6**	**71.0**	**64.3**	0.5	0.7	**70.5**	**63.3**	0.0	-0.3
11 (M) (7)	**70.3**	**62.9**	**70.8**	**63.6**	0.5	0.7	**70.5**	**62.9**	0.2	0.0
12 (I) (1)	70.3	68.0	70.6	68.3	0.3	0.3	68.9	65.1	-1.4	-2.9
13 (C) (1)	**71.6**	**68.5**	**71.7**	**68.7**	0.1	0.2	**72.1**	**69.2**	0.5	0.7
14 (C) (2)	**70.6**	**68.0**	**70.8**	**68.2**	0.2	0.2	69.5	**66.6**	-1.1	-1.4
State Nighttime Noise Standards [(1)]										
Residential (NAC-1)	**55**	**50**	**55**	**50**	**-**	**-**	**55**	**50**	**-**	**-**
Commercial (NAC-2)	**70**	**65**	**70**	**65**	**-**	**-**	**70**	**65**	**-**	**-**
Industrial (NAC-3)	**75**	**70**	**75**	**70**	**-**	**-**	**75**	**70**	**-**	**-**

Bold numbers are above State standards.
(M) – Mixed uses (residential+commercial); (C) – Commercial; (I) – Industrial; (P) – Park/Trail
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.
(1) Land uses and associated codes for State noise standards (see Table 11).

Traffic Noise Abatement Analysis

The Lafayette Bridge reconstruction project is considered a Type I project for purposes of traffic noise analysis. A Type I project is the construction of a new highway on a new alignment or the physical alteration of an existing highway (e.g., change in horizontal or vertical alignment; increase in number of through lanes). 23 CFR 772.13(c) describes noise abatement measures that are to be considered when a noise impact has been identified with a Type I highway project. These noise abatement measures include:

- Traffic management measures (e.g., traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive land designations);
- Alteration of horizontal and vertical alignments;
- Acquisition of property rights (either in fee or lesser interest) for construction of noise barriers;
- Construction of noise barriers (including landscaping for aesthetic purposes) whether within or outside the highway right-of-way;
- Acquisition of real property or interests therein (predominately unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise; and
- Noise insulation of noise-sensitive public use or nonprofit institutional structures.

Noise Barrier Evaluation

Noise barrier construction decisions are based on a study of feasibility and reasonableness. Feasibility is determined by physical and/or engineering constraints, i.e., whether a noise barrier could feasibly be constructed on the site. Reasonableness is a more subjective criterion and is based on a number of factors. Economic reasonableness as determined by Mn/DOT's cost-effectiveness index is the first consideration in determining the reasonableness of proposed noise barriers. If noise mitigation is found to be cost-effective, additional reasonableness factors such as aesthetics and the desires of affected property owners are considered. Affected communities are also consulted as to their desire for noise walls through a public involvement process. This public involvement process takes into consideration the views of impacted residents as to their desire for noise walls.

The feasibility of noise barrier construction is sometimes dependent on design details that are not known until the final design phase of the project. The following analysis assumes that noise walls could be feasibly constructed up to 10 feet high on the proposed Lafayette Bridge. This analysis also assumes that noise walls could be feasibly constructed up to 20 feet high at all other locations within the project area.

For a noise barrier to be considered acoustically effective, it must achieve a noise reduction of five dBA or more. To be considered cost-effective, the cost per dBA of reduction per residence should be equal to, or less than $3,250. The following formula can be used to determine the cost-effectiveness of the barrier:

The cost-effectiveness index is equal to the cost of the barrier[1] divided by the sum of all noise reductions at residences that received noise level reductions of 5 dBA or more.

[1]The cost of a noise wall is calculated using $15 per square foot of wall, except on bridges, where the cost is $18 per square foot.

Only receptors that experience a five or greater decibel decrease in noise following construction of a noise barrier are considered in this analysis. The result of the above formula is a cost per decibel per residence.

There are several steps to assessing the cost-effectiveness of noise barriers. First, the cost-effective noise wall height is determined for each segment of the project area. For this study, a 10-foot tall noise barrier was analyzed on the proposed Lafayette Bridge. For other locations not on a structure (i.e., at ground elevation), three heights of potential noise barriers were analyzed: 20, 15 and 10 feet. If a 20-foot noise barrier meets the reasonableness criteria and is feasible, it would be proposed for construction. If the 20-foot barrier does not meet the criteria, a 15-foot barrier is evaluated. Likewise if a 15-foot barrier does not meet the criteria, a 10-foot barrier is studied. If a 10-foot noise barrier meets the reasonableness criteria and is feasible, it would then be proposed for construction.

State noise standards (daytime and nighttime L_{10}) are predicted to be exceeded at commercial, mixed use, and park/open space locations with future Build conditions. Modeled noise levels at industrial land uses are predicted to be below State noise standards with future Build conditions. Noise barriers were evaluated at six locations within the study area (Areas A through F). The locations of modeled noise walls are shown in Figure 10, Appendix A. Noise barrier cost-effectiveness results for modeled noise walls on the proposed Lafayette Bridge are tabulated in Table 15. Noise barrier cost-effectiveness results for modeled noise walls south of the Lafayette Bridge and at the north interchange area are tabulated in Tables 16A through 16C.

<u>Area A (West of TH 52 between Plato Boulevard and Fillmore Avenue) Receptors 1 and 3</u>

Area A consists of commercial (receptor 1) and industrial (receptor 3) properties along the west side of TH 52 north of Plato Boulevard. The

commercial property is projected to exceed State daytime and nighttime standards with future Build conditions. The industrial properties are projected to be below State daytime and nighttime standards with future Build conditions.

A 1,480-foot long noise barrier was modeled in the northwest quadrant of the Plato Boulevard interchange between TH 52 and West Lafayette Road. A gap was included in the barrier to accommodate the exit ramp from southbound TH 52 to West Lafayette Road. This modeled barrier would shield industrial land uses along West Lafayette Road south of Fillmore Avenue. The 10-foot, 15-foot, and 20-foot high modeled barriers do not meet the minimum 5 dBA reduction threshold to be considered acoustically effective and are therefore not proposed (see Table 16A through 16C).

Area B (East of TH 52 between Plato Boulevard and Fillmore Avenue)
Receptor 2 and 4

Area B consists of industrial (receptors 2 and 4) properties along the east side of TH 52 north of Plato Boulevard. Modeled noise levels at the industrial properties represented by receptors 2 and 4 are projected to be below State daytime and nighttime standards with future Build conditions.

Area C (West of TH 52 between Fillmore Avenue and Mississippi River)
Receptor 5

Area C consists of industrial (receptor 5) property along the west side of TH 52 between Fillmore Avenue and the Mississippi River. Modeled noise levels at the industrial property represented by receptor 5 are projected to be below State daytime and nighttime standards with future Build conditions.

Area D (East of TH 52 between Fillmore Avenue and Mississippi River)
Receptor 6

Area D consists of industrial (receptor 6) property along the west side of TH 52 between Fillmore Avenue and the Mississippi River. Modeled noise levels at the industrial property represented by receptor 6 are projected to be below State daytime and nighttime standards with future Build conditions.

Area E (West of Lafayette Bridge from Mississippi River to Kellogg Boulevard)
Receptors 7, 9, 10, and 11

Area E represents park/open space/trail uses (receptor 7) and mixed residential and commercial uses (receptors 9, 10, and 11) along the west side of the Lafayette Bridge north of the Mississippi River. Modeled noise levels are predicted to exceed State daytime and nighttime standards with future Build conditions.

A 3,140-foot long, 10-foot high barrier was modeled on the west side of the proposed Lafayette Bridge from the north bridge abutment to the south bridge abutment. The 10-foot high modeled barrier does not meet the minimum 5 dBA reduction threshold to be considered acoustically effective and are therefore not proposed (see Table 15).

Parks (receptor 7) are considered special use areas. It is Mn/DOT policy to provide noise mitigation at special use areas such that modeled noise levels are below State daytime noise standards. A 10-foot high noise barrier was modeled along the proposed Lafayette Bridge. Because this modeled wall does not meet the minimum 5 dBA reduction threshold to be considered acoustically effective, there is no reasonable measure to bring the special use area in compliance with State standards.

Area F (East of Lafayette Bridge from Mississippi River to I-94)
Receptors 8 and 12

Area F represents park/open space/trail uses (receptor 8) and industrial land uses (receptor 12) along the east side of the proposed Lafayette Bridge. Modeled noise levels are predicted to exceed State daytime and nighttime standards at the receptor location within the park/open space area. Modeled noise levels at the industrial property are predicted to be below State daytime and nighttime standards with future Build conditions.

A 3,130-foot long, 10-foot high barrier was modeled on the east side of the proposed Lafayette Bridge from the north bridge abutment to the south bridge abutment. This modeled barrier would shield industrial land uses near the north end of the proposed Lafayette Bridge and Interstate 94. The 10-foot high modeled barrier does not meet the minimum 5 dBA reduction threshold to be considered acoustically effective and are therefore not proposed (see Table 15).

Parks (receptor 8) are considered special use areas. It is Mn/DOT policy to provide noise mitigation at special use areas such that modeled noise levels are below State daytime noise standards. A 10-foot high noise barrier was modeled along the proposed Lafayette Bridge. Because this modeled wall does not meet the minimum 5 dBA reduction threshold to be considered acoustically effective, there is no reasonable measure to bring the special use area in compliance with State standards.

Area G (north of I-94, east of TH 52)
Receptor 13

Area G represents commercial land uses in the north interchange area north of Interstate 94, east of TH 52. Modeled noise levels (L_{10}) at the commercial property represented by receptor 13 are predicted to be below State daytime and nighttime standards with future Build conditions.

An 885-foot long noise barrier was modeled in the north interchange area north of Interstate 94 along the loop from northbound TH 52 to westbound Interstate 94. The 10-foot, 15-foot, and 20-foot high modeled barriers do not meet the minimum 5 dBA reduction threshold to be considered acoustically effective and are therefore not proposed (see Table 16A through 16C.).

Area H (north of I- 94, west of TH 52)
Receptor 14

Area H represents commercial land uses north of the north interchange area along 7th Street. Modeled noise levels at the commercial properties represented by receptor 14 are predicted to exceed State daytime and nighttime standards with future Build conditions.

A 515-foot long noise barrier was modeled along Interstate 94 between southbound TH 52 and the loop from westbound Interstate 94 to southbound TH 52. The 10-foot, 15-foot, and 20-foot high modeled barriers do not meet the minimum 5 dBA reduction threshold to be considered acoustically effective and are therefore not proposed (see Table 16A through 16C).

Alternative Noise Abatement

Noise abatement measures other than noise barriers were considered for the proposed project. Measures such as signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, and modified speed limits would not be feasible or practicable for this project. To limit the vehicle types, time of use, and vehicle speeds on TH 52 would not be consistent with the function of this roadway as a principal arterial roadway and as a truck route through St. Paul. Changes in the horizontal or vertical alignment of the Lafayette Bridge are not feasible for this project because of elevations at the bridge abutments and clearance restrictions associated with Mississippi River channel navigation, electric transmission lines and downtown St. Paul airport glide paths. Exclusive land use designations or acquisition of property to serve as a buffer zone between the roadway and adjacent lands would not be feasible because land has already been developed along the project corridor.

Conclusions

Construction of the project will result in increases in traffic noise at some locations, while other locations are predicted to experience a small decrease (less than 1 dBA) in traffic noise. Cost-effectiveness of noise barriers was calculated; none of the modeled barriers met the minimum 5 dBA reduction threshold to be considered acoustically effective.

TABLE 15
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
10-Foot Modeled Wall On Lafayette Bridge

Receptors	Daytime L_{10} Noise (dBA)		Reduction (in dBA) with 10 ft noise wall	Number of receptors	Number of affected receptors	Length of wall (feet)	Wall Area (SF) [1]	Total cost of wall $18/sq ft [2]	Cost/dBA/ receptor
	Pref. Alt. year 2035 (no wall)	Pref. Alt. year 2035 (10 ft wall)							
Area E: west side of Lafayette Bridge along Mississippi River									
7	**66.0**	64.3	1.7	1	0	3,140	31,000	$558,000	N/A
9	**70.6**	**70.3**	0.3	7	0				
10	**70.4**	**69.6**	0.8	6	0				
11	**70.3**	**69.4**	0.9	7	0				
Area F: east side of Lafayette Bridge along Mississippi River									
8	**66.1**	63.1	3.0	1	0	3,130	31,100	$559,800	N/A
12	69.6	69.6	0	1	0				

Bold numbers are above State daytime standards.
N/A = not applicable because the barrier provides a substantial reduction to a public use area.
[1] Wall area includes tapers at wall ends.
[2] Cost of wall on Lafayette bridge for purposes of calculating cost effectiveness is $18/sq ft.

TABLE 16A
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
10-Foot Modeled Wall (North and South of Lafayette Bridge)

Receptors	Daytime L_{10} Noise (dBA)		Reduction (in dBA) with 10 ft noise wall	Number of receptors	Number of affected receptors	Length of wall (feet)	Wall Area (SF) [(1)]	Total cost of wall $15/sq ft	Cost/dBA/ receptor
	Pref. Alt. year 2035 (no wall)	Pref. Alt. year 2035 (10 ft wall)							
Area A: northwest quadrant of TH 52/Plato Boulevard interchange									
1	**71.2**	**70.9**	0.3	1	0	1,480	14,400	$216,000	N/A
3	71.6	71.2	0.4	2	0				
Area G: north of Interstate 94, east of TH 52									
13	**72.1**	**70.7**	1.4	1	0	885	8,650	$129,750	N/A
Area H: north of Interstate 94 interchange, west of TH 52									
14	69.2	68.0	1.2	2	0	515	4,950	$74,250	N/A

Bold numbers are above State daytime standards.
N/A = not applicable because all receptors adjacent to the modeled wall did not meet the minimum 5 dBA threshold to be considered acoustically effective.
(1) Wall area includes tapers at wall ends.

TABLE 16B
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
15-Foot Modeled Wall (North and South of Lafayette Bridge)

Receptors	Daytime L_{10} Noise (dBA)		Reduction (in dBA) with 15 ft noise wall	Number of receptors	Number of affected receptors	Length of wall (feet)	Wall Area (SF) [(1)]	Total cost of wall $15/sq ft	Cost/dBA/ receptor
	Pref. Alt. year 2035 (no wall)	Pref. Alt. year 2035 (15 ft wall)							
Area A: northwest quadrant of TH 52/Plato Boulevard interchange									
1	**71.2**	69.6	1.6	1	0	1,480	21,300	$319,500	N/A
3	71.6	69.9	1.7	2	0				
Area G: north of Interstate 94, east of TH 52									
13	**72.1**	69.2	2.9	1	0	885	12,825	$192,375	N/A
Area H: north of Interstate 94 interchange, west of TH 52									
14	69.2	67.8	1.4	2	0	515	7,275	$109,125	N/A

Bold numbers are above State daytime standards.
N/A = not applicable because all receptors adjacent to the modeled wall did not meet the minimum 5 dBA threshold to be considered acoustically effective.
(1) Wall area includes tapers at wall ends.

TABLE 16C
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
20-Foot Modeled Wall (North and South of Lafayette Bridge)

Receptors	Daytime L_{10} Noise (dBA)		Reduction (in dBA) with 20 ft noise wall	Number of receptors	Number of affected receptors	Length of wall (feet)	Wall Area (SF) [(1)]	Total cost of wall $15/sq ft	Cost/dBA/ receptor
	Pref. Alt. year 2035 (no wall)	Pref. Alt. year 2035 (20 ft wall)							
Area A: northwest quadrant of TH 52/Plato Boulevard interchange									
1	**71.2**	67.7	3.5	1	0	1,480	28,400	$426,000	N/A
3	71.6	67.8	3.8	2	0				
Area G: north of Interstate 94, east of TH 52									
13	**72.1**	67.8	4.3	1	0	885	17,100	$256,500	N/A
Area H: north of Interstate 94 interchange, west of TH 52									
14	69.2	67.5	1.7	2	0	515	9,700	$145,500	N/A

Bold numbers are above State daytime standards.
N/A = not applicable because all receptors adjacent to the modeled wall did not meet the minimum 5 dBA threshold to be considered acoustically effective.
(1) Wall area includes tapers at wall ends.

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 _N_No

If yes, describe the resource and identify any project-related impacts on the resource.

Response:

Archaeological, Historical or Architectural Resources

The proposed project has been reviewed pursuant to Section 106 of the National Preservation Act of 1966 as outlined in 36CFR800.6[a][3]. This review included findings developed as a result of a survey of historic, architecturally, and archaeologically significant properties and additional research, evaluation, and testing.

Archaeology

The area of potential effect (APE) for archaeological resources was determined by Mn/DOT Cultural Resources Unit (CRU) to be the construction limits (see Figure 11, Appendix A). There are no previously recorded archaeological resources within the APE. Foth Infrastructure and Environment, LLC conducted a geomorphological analysis to determine if there was any potential for deeply buried archaeological deposits. Based on this study and the previous impacts to the area, it is unlikely that the project area contains intact, significant archaeological deposits. The one exception to this is the oxidized levee deposits located between Warner Road and the river's edge. Geomorphological and archaeological testing in this area was completed in fall 2008 and no sites were found. A determination that the project as currently proposed will not impact intact, significant archeological sites, and that no further archeological work is required for the project was made by Mn/DOT CRU; see Appendix B for Mn/DOT CRU determination dated December 29, 2008 and correspondence from SHPO concurring with this determination dated February 2, 2009.

Historic Architecture

The area of potential effect (APE) for historic architecture and adjacent properties was determined by Mn/DOT CRU to be the construction limits

(see Figure 11, Appendix A. Several previously recorded structures were identified in the APE but were determined not eligible due to poor integrity or extensive alterations. There are four previously recorded historic properties within the project APE (see Figure 11, Appendix A). The George E. Hess Building at 447-449 7th Street Southeast was previously determined eligible for listing on the National Register as an excellent example of a late-nineteenth-century commercial structure. The project will not directly impact the Hess building or change its access or parking, and since the setting of the property has been extremely altered through previous roadway, interstate, and commercial development, the proposed roadway changes around the building will not adversely affect it.

The Lowertown Historic District is located approximately 150 meters to the east of the project area, and the new bridge will span the Milwaukee Road Railroad line on the north bank and the Mississippi River 9-foot Channel Historic District in the river. Mn/DOT CRU determined that the new bridge will not adversely affect the Lowertown Historic District, the Mississippi River 9-foot Channel Historic District, or the Milwaukee Road Railroad Line since the new bridge will be the same height as the existing structure, widened to the east away from the historic district, and there will be no piers located in the 9-foot channel or on the railroad line, the project will not dramatically change the existing conditions. This determination is based on the condition that Mn/DOT CRU and the State Historic Preservation Office (SHPO) review the bridge design plans as they are developed and provide comments on proposed design. Also, the determination is based on the condition that members from Mn/DOT CRU, the SHPO, and/or the St. Paul Heritage Preservation Commission (HPC) are invited to serve on or review design items from the Visual Quality Management (VQM) team for the new bridge design to ensure that viewshed issues from historic resources to the bridge are considered.

Mn/DOT CRU also determined that the Lafayette Bridge is eligible for listing on the National Register of Historic Places (NRHP). Numerous bridges built during the 1960s developed fracture critical status shortly after construction. New bridge design requirements grew out of the studies of problems with bridges, especially the Lafayette Bridge. These requirements transformed the bridge building industry and the design of modern bridges so that fatigue and fracture are rare in bridges built in the past 20 years. Also, the diagnostic tests on how to identify fractural critical members were primarily developed on the Lafayette Bridge, along with several other national examples. The Lafayette Bridge, therefore, meets the National Register Criterion C for engineering significance and Criterion Consideration G due to its extraordinary significance in the area of bridge engineering.

Mn/DOT CRU made its effects determination for eligible properties in a letter to the State Historic Preservation Office (SHPO) dated May 21, 2008; the SHPO subsequently concurred with this determination in a letter dated June 13, 2008 (see correspondence in Appendix B). The SHPO concurred with Mn/DOT CRU determination that the Lafayette Bridge, George E. Hess Building, Milwaukee Road Railroad Line, and the Mississippi River 9-foot Channel Historic District all meet the National Register criteria. The APE also includes the Lowertown Historic District which is listed in the National Register. The SHPO also concurred with the Mn/DOT CRU determination that the removal of the Lafayette Bridge constitutes an adverse effect on historic properties. The adverse effects determination for the Lafayette Bridge requires a Section 4(f) Evaluation; see Appendix C for the Section 4(f) Evaluation for the Lafayette Bridge. A Memorandum of Agreement (MOA) was executed by FWHA, Mn/DOT, SHPO, and MNRRA and transmitted in a letter dated September 5, 2008 (See Appendix B). The MOA contains measures to minimize effects to other historic properties within the project area:

- Mn/DOT Metro District will submit plans to the Mn/DOT CRU office throughout the design process in order for the CRU to determine if there are any substantial changes from the original review; and CRU will notify SHPO of any changes and any other potential effects on historic properties. In particular, further review will occur during the design process related to the area near the George Hess Building, the Mississippi River 9-foot Channel Historic District, the Lowertown Historic District, and the Milwaukee Road Railroad Line. Any additional adverse effects identified will be addressed by an agreement between Mn/DOT CRU and SHPO, after appropriate consultation with the public, MNRRA, and the Advisory Council on Historic Preservation.

- The SHPO, the St. Paul HPC, MNRRA and/or the Mn/DOT CRU historian will either serve on and/or be kept appraised of design approaches by the Visual Quality Advisory Team (VQAT) to ensure that aesthetic issues related to adjacent properties are considered. Aesthetic treatment plans need to be submitted to Mn/DOT CRU and will require CRU approval and SHPO concurrence to ensure the design is appropriate in relation to adjacent historic properties.

Subsequent to the execution of the MOA, an additional previously recorded eligible property that had been inadvertently omitted from review was considered. The Union Depot Elevated Rail Yards located below the bridge between Warner Road and Kellogg Boulevard will be directly impacted by bridge piers for the proposed project. In a letter dated March 24, 2009, Mn/DOT CRU stated that a determination of effects is difficult to make at this point since the design of the bridge is not finalized, see Appendix B.

Since removal of the existing piers and the placement of the new piers has the potential for adverse effects on the Union Depot Elevated Rail Yards, Mn/DOT CRU proposes the following steps, which will be formalized in an amendment to the existing MOA, to help avoid or minimize adverse affects to the property:

- Inclusion of Mn/DOT CRU and SHPO in the design of the new piers, and the removal and repair plans for the removal of existing piers to avoid or minimize aesthetic and structural issues to the Elevated Rail Yards; and

- Coordination among Mn/DOT, SHPO, and the St. Paul Regional Rail Authority to identify any potential issues the pier placement may have on the future use of the historic property.

Mn/DOT will prepare and circulate a Draft Programmatic Section 4(f) Evaluation if an adverse effect finding is made. If a no adverse effect finding is made a de minimis impact finding for the Section 4(f) resource will be appropriate.

Farmland

No farmland impacts will result from the project. This project will require acquisition of right of way in an area within the Twin Cities urban boundary (as defined by the Metropolitan Council and approved by the FHWA on August 29, 2003). The provisions of the Farmland Protection Policy Act do not apply to this project since the right of way to be acquired falls within the Twin Cities urban boundary.

Designated Parks, Recreation Areas or Trails

Figure 12 in Appendix A identifies parks, recreation areas, and trails in the project area.

Lower Landing Park, 200 Warner Road

Lower Landing Park lies beneath the Lafayette Bridge on the east bank of the Mississippi River. This 21.5-acre city-owned park stretches from Jackson Street on the west to approximately one-half mile to the east along the river bank. Amenities in the linear park include a separated bicycle and pedestrian paved path (Samuel H. Morgan Regional Trail) along the Mississippi River, benches, lighting, river overlook, and off-street parking.

Under existing conditions, there are two pier locations in Lower Landing Park; Piers 11 and 12 take up approximately 410 square feet of area. Mn/DOT has a highway easement on the parkland from the City for the existing piers. Under Build conditions, there will be one pier location;

Pier 7 will take up approximately 600 square feet of area, resulting in an approximate 190 square foot increase in the use of parkland. The highway easement for the existing bridge will be perpetuated and expanded to accommodate the new bridge. Mn/DOT will need a temporary easement during construction and will continue to coordinate with the City consistent with the City's guidelines for use of parkland.

Based on consultation with City of St. Paul staff, a de minimis impact finding to Lower Landing Park is proposed since the impact does not adversely affect the activities, features, and attributes of the park (see concurrence correspondence from the City dated March 27, 2009 in Appendix B). The FHWA will make a determination regarding the proposed de minimis finding following the public comment period for the EA/EAW. Use of parkland for bridge piers is unavoidable since the bridge is being replaced on its current alignment. The bridge design and location of river piers are constrained by the proximity of the project area to Holman Field Airport and the river navigational channel. There is no feasible and prudent alternative to the use of parkland. All possible planning has been done to minimize harm to Lower Landing Park. Mitigation for the impact to Lower Landing Park includes a 12-foot trail on the east side of the new northbound bridge and overlooks (bump-outs separated from trail traffic) at the river piers to provide bicyclists and pedestrians with an opportunity to observe views from the bridge as well as provide a resting place.

Samuel H. Morgan Regional Trail

The Samuel H. Morgan Regional Trail runs beneath the Lafayette Bridge and through Lower Landing Park (see Figure 12, Appendix A). This 6.3-mile trail is owned and maintained by the City of St. Paul. The trail features separated paved paths for pedestrians and bicyclists. The trail is lighted and features a lookout point east of the project area. The trail is part of the National Scenic Byways Trail System.

No direct impacts to the Samuel H. Morgan Regional Trail will result from the proposed project. Mn/DOT will obtain a temporary easement from the City for use of the trail during construction.

Bruce Vento Nature Sanctuary and Regional Trail

Bruce Vento Nature Sanctuary is bounded by Kellogg Boulevard on the north, BNSF/Warner Road on the west, and Indian Mounds Regional Park on the east (see Figure 12, Appendix A). It is a 27-acre park owned and maintained by the City of St. Paul (acquired in 2002 from BNSF Railroad). The Bruce Vento Regional Trail Connector is a two-mile bicycle and pedestrian trail connection to the Bruce Vento Regional Trail. The trail connects Bruce Vento Regional Trail to Indian Mounds Regional

Park via Commercial Street, Lowertown via Fourth Street, Bruce Vento Nature Sanctuary, and the Samuel Morgan Regional Trail along the Mississippi River. This permanent trail is constructed on property owned by the City and Ramsey County Regional Rail Authority. The Bruce Vento Trail Extension is a 1.5-mile paved bicycle and pedestrian trail that extends the existing Bruce Vento Trail providing access to Lowertown, Indian Mounds Regional Park, Bruce Vento Nature Sanctuary, and the Samuel Morgan Regional Trail. With the exception of the link to the Samuel Morgan Regional Trail, the Bruce Vento Trail Extension project was completed and open to the public in 2007. The City, in conjunction with the National Park Service, has been meeting monthly along with a citizen design advisory group to develop a design for the final portion of the trail extension, the pedestrian bridge over Warner Road.

The MNDNR, in a letter dated July 19, 2005 and found in Appendix B, commented that the Bruce Vento Regional Trail Connection to downtown St. Paul is an important connection that was selected partially so that it could be connected to a future trail on the TH 52 Bridge when it is replaced. This future trail connection is an important part of the city's Mississippi River development.

No direct impacts to the Bruce Vento Trail will result from the proposed project. Mn/DOT will obtain a temporary easement from the City for use of the trail during construction.

Future Parkland

It is anticipated that property on the south side of the river beneath the existing bridge, which is currently owned by the St. Paul Port Authority, will be donated to the City of St. Paul when the tenant on the property, Upper River Services, moves its barge operation. The move is expected to occur during winter 2010-2011. The property is not publicly owned nor identified as parkland. According to staff from the City of St. Paul Parks and Recreation Department there is no master plan for the property and no planning is underway; the property would likely be used as passive green space until a plan is developed. Therefore, for purposes of this EA/EAW, it is assumed that there is no parkland on the west bank of the river in the project area. Consequently there is no use that would constitute a Section 4(f) impact. It is further assumed that Mn/DOT will acquire a permanent easement from the St. Paul Port Authority for the bridge. When the land is transferred to the City it is assumed that the land upon which the bridge piers will be located, and any other needs for use of land for the proposed project, would be excluded from a parkland designation. It should also be noted that Mn/DOT intends to use the St. Paul Port Authority property as a project construction staging area.

Future Pedestrian/Bicycle Trail Crossing

The new bridge includes a 12-foot trail on the east side (northbound lanes) of the bridge. City of St. Paul Parks and Recreation staff and NPS staff were consulted during project planning to assess the need for a pedestrian/bicycle crossing and to determine the best place for a pedestrian/bike trail to touch down on either side of the river. Bikeways and pedestrians are also discussed in Section IV.B.7 of this EA/EAW.

Section 6(f) of the Land and Water Conservation Fund Act of 1965

None of the trails or parks in the project area is known to have used funds from the Land and Water Conservation Fund Grant Program and therefore, none are considered to be Section 6(f) property. Lower Landing Park, Samuel H. Morgan Regional Trail, and the Bruce Vento Regional Trail are not listed in the MNDNR/Local Units Minnesota Parks and Natural Areas Funded by the federal Land and Water Conservation Fund Grant Program (LAWCON), 1965-2005, dated February 2006.

Scenic Views and Vistas

Key daytime and nighttime views of the Mississippi River Corridor through downtown St. Paul include the river, river bluffs, and the family of bridges. The project will impact these views from many vantage points including, Warner Road, Bruce Vento Nature Sanctuary, Indian Mounds Park, Kellogg Park, as well as surface streets, upper floors of downtown buildings, and the bluff downstream from the bridge.

The proposed bridge replaces the existing bridge and therefore is not a new river crossing where none existed. The height and depth of the new structure will be similar to the existing facility, though the width of the new structure will be wider than the existing. No substantial adverse impact to scenic views or vistas is anticipated to occur as a result of the project. The process to ensure a high visual quality bridge that unifies with other bridges in the river corridor is further discussed in EAW Item #26 and Section IV.B.12, Visual Quality. The anticipated visual quality of the new bridge may be considered by some to be an improvement over existing conditions.

Other Unique Resources

The project may impact freshwater mussels. See EAW Item 11 for a detailed discussion.

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

__Yes _X_No

If yes, explain.

Response: The project includes two bridges, one northbound and one southbound, and roadway improvements in the North Area. The new bridge will replace an existing bridge and roadway improvements will be created where none currently exist. While these improvements will introduce new elements to the visual landscape, they will occur along an existing transportation corridor and do not represent a substantial change in land use or create adverse visual impacts.

A Visual Quality Manual (VQM) is under development for the project. The VQM process integrates the components of a Visual Impact Assessment (VIA) by identifying and summarizing potential visual impacts to existing visual resources, relationships to the impacts to potential viewers of and from the project as well as opportunities to avoid, minimize, or reduce adverse visual impacts and opportunities to enhance existing visual quality. See Section IV.B.12, Visual Quality, of this EA/EAW for additional information about the VQM and VIA.

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.

Response: While state highways are not subject to the local plans, the compatibility of the proposed project with local planning efforts is an important consideration.

Land in the project area is designated for commercial and industrial uses and zoned B-5, I-1, and I-2 according to City zoning maps. The proposed bridge is a conditional use in the RC-1 Floodway District, the River Corridor Overlay District. The bridge replacement and North Area improvements are consistent with the St. Paul Comprehensive Plan which calls for replacement of the bridge on the same alignment, creation of a trail crossing, and roadway changes at the north end of the bridge. See EAW Items #9 and #14 for additional discussion of compliance with plans.

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.)

Response: Reconstruction of the Lafayette Bridge involves relocation of a St. Paul Regional Water Service-owned 20-inch watermain. The new watermain on the proposed bridge needs to be in place before the old watermain on the existing bridge can be taken out of service. In addition, a large Xcel Energy transmission tower that crosses over the existing bridge on north side of the river adjacent to Warner Road needs to be relocated to accommodate proposed footing locations; Xcel Energy may need to follow City of St. Paul's Guidelines for Diversion or Disposal of Park Land to relocate the power lines. Storm sewer, sanitary sewer, and watermain located within the project limits may need to be adjusted or relocated as part of the bridge construction.

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

Response: In addition to cumulative potential effects, cumulative impacts are defined by the Council on Environmental Quality (CEQ) as "impacts on the environment that result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 158.7). The findings below pertain to both cumulative potential effects and cumulative impacts; the term "cumulative potential effects" is interchangeable with cumulative impacts.

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

Scope of Cumulative Potential Effects

The cumulative potential effects analysis is limited to those resources, ecosystems, and human communities affected by the proposed project - land development, wildlife and state-listed species, floodplains, stormwater quality and quantity, traffic noise, cultural resources, and parkland. While the proposed action may affect several resources either directly or indirectly, the purpose of the cumulative impacts analysis is to narrow the focus to the project-related impacts that could potentially have the largest cumulative effect.

The geographic scope of this analysis varies by the resource under examination, but in general is limited to an area within the project limits.

The temporal scope of the analysis attempts to consider previous impacts to the resources that occur over time. The year 2020 is considered the current limit of comprehensive planning activities for the area, as the extent of transportation and land use planning efforts are reasonably available up to this time, and thus can be used as the basis for future cumulative impact assessment.

Past and Recent Actions

Past actions in the project area include decades of commercial and industrial development along with some residential development, as well as highway and other infrastructure construction, which have created the existing built urban environment. Existing development along the TH 52 corridor in St. Paul has been in place for many years.

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

- Conversion of warehouse buildings to residential use in the Lowertown Historic District of downtown;
- Office space development on the west bank of the Mississippi River in late 1990s;

- Construction of a floodwall and related improvements around Holman Field Airport in 2007-2008;
- Improvements to the Bruce Vento Nature Sanctuary and completion of the segment of the Bruce Vento Regional Trail along 4th Street into downtown;
- Creation of Lower Landing Park in 1993;
- Reconstruction of Samuel H. Morgan Trail 1998; and
- Riprap installed at Harriet Island (2004 and 2009), Raspberry Island (2008), and Chestnut Plaza (2009).

Future Actions Anticipated

The projects, listed below, that were considered for this analysis are consistent with the recent Minnesota State Supreme Court Ruling regarding cumulative potential effects inquiry under state statute, i.e., the projects: 1) are either existing, actually planned for, or for which a basis of expectation has been laid; 2) are located in the surrounding area; and 3) might reasonably be expected to affect the same natural resource.

- Central Corridor Light Rail Transit (CCLRT) maintenance yard
- Relocation of Upper River Services from Barge Terminal #2
- St. Paul Union Depot conversion to multimodal hub
- Northeast Corridor Plan (Lafayette Park) calls for development of office space and structured parking along East 7th Street
- Bruce Vento Nature Sanctuary Interpretive Center
- Stairs from Indian Mounds Regional Park to Bruce Vento Nature Sanctuary
- Connection of Bruce Vento Regional Trail to Samuel H. Morgan Regional Trail
- Incorporation of airport zoning into the City of St. Paul Zoning Code
- Kittson Extension from approximately 5th Street to Warner Road
- Westside Flats housing development

Evaluation of Cumulative Potential Effects

Land Development

<u>Existing Conditions</u>

The land adjacent to the project corridor is fully developed or in public use. Future development will occur in the form of redevelopment.

Impacts from Proposed Action

The proposed project will result in direct impacts to adjacent land with the proposed acquisition of right of way or easements, including land that is currently used for commercial, industrial, or recreational, uses. This right of way will be converted to transportation uses. The project will not result in the induced development of any currently undeveloped area adjacent to the project.

Impacts from Other Actions

Substantial land use changes are not expected within the City along the TH 52 project corridor as the majority of adjacent land is already developed. Redevelopment activities may change land use mix slightly and increase intensity of development.

Cumulative Potential Effects

Land development is guided by the City's comprehensive planning efforts. As part of comprehensive planning efforts, communities consider the beneficial and negative impacts of land development and prescribe patterns of development that are conducive to the goals of their community. The purpose of comprehensive planning is to reduce the negative cumulative effects of land development through orderly growth. Through zoning regulations, these same entities can control the intensity of development and protect natural resource areas from further development. For example, the City's zoning code has specific provisions for the preservation, protection, and enhancement of natural resources by regulating land-disturbing activities related to land development. Transportation facilities are also a component of comprehensive planning and the need, design character, and location of these roadways are based on their consistency with the communities' overall plan. Cumulative potential effects of urbanization can be minimized by local governments through land use controls.

The proposed replacement of the Lafayette Bridge and roadway improvements in the North Area will increase the attractiveness of commercial and industrial land uses in the corridor because it will facilitate ease of movement and trip making between destinations. Existing development immediately adjacent to the corridor may experience impacts such as access changes and additional noise compared to current conditions. However, the transportation and travel benefits associated with the project will also accrue to motorists who will find it easier, safer, and more convenient to move through the TH 52 corridor, especially at the north end of the bridge.

As the area surrounding the project is fully developed and no substantial redevelopment activities in the area are planned by the adjacent communities, there is minimal potential for cumulative impacts to land and development.

Wildlife and State-Listed Species

Existing Conditions

***Mussels*:** Ten live specimens of a state-listed endangered mussel species, wartyback mussel, were found during a dive in the river in the fall of 2007.

***Migratory Birds*:** The roadway surface of the existing Lafayette Bridge is lighted. The Mississippi River corridor is a flyway for migratory birds.

Impacts from Proposed Action

***Mussels*:** The project will likely disturb the state-listed mussel species. Mn/DOT and MNDNR are coordinating a mussel survey and plan to conduct it as close to the time of bridge construction as possible so that mussel relocation can be combined with the survey work. A survey will be completed by the MNDNR prior to the start of construction. If any measures are needed to minimize harm, including relocation of state-listed species, they will be done at the time of the survey and prior to construction. In the unlikely event that federally-listed species are identified in the survey, the U.S. Fish and Wildlife Service will be contacted and the consultation process reinitiated.

***Migratory Birds*:** The roadway surface of the new bridge will be lighted as will the bridge piers below the roadway. The NPS has concern that ambient lighting in the flyway can cause confusion for migrating birds.

Impacts from Other Actions

***Mussels*:** Other actions will not involve construction in the river and therefore will not impact mussel species.

***Migratory Birds*:** There are no projects planned within the foreseeable future that will substantially increase ambient lighting in the surrounding area. The replacement of bridges along the length of Mississippi River flyway is anticipated to occur over time, however, as existing infrastructure ages. New bridges will be lighted for safety and aesthetic purposes.

Cumulative Potential Effects

***Mussels*:** Adverse cumulative effects are not anticipated to result from the project with the implementation of proposed mitigation measures. As no further impacts are anticipated from other activities in the area, there is little or no potential for cumulative effects.

***Migratory Birds*:** To address the concern about ambient lighting from the proposed project and its impact on migratory birds along the Mississippi River flyway, bridge lighting for the new Lafayette Bridge will be designed to provide safe conditions on the bridge while limiting ambient light. Agency input on lighting design for future bridge replacements along the Mississippi River flyway should identify potential impacts to migratory birds. Within the temporal and geographic scope of this analysis, adverse cumulative effects are not anticipated to result from the project with the implementation of proposed mitigation measures.

Floodplains

Existing Conditions

A portion of the project area is in the 100-year floodplain. The Mississippi River in this location is fairly incised upstream of the bridge, confined by a levee that extends along the south edge of the river through the project area and along Shepard Road to the north.

Impacts from Proposed Action

The new bridge will encroach on the delineated 100-year floodplain of the Mississippi River (1,200 foot transverse encroachment) and piers will be located in the river. The existing bridge creates a similar encroachment and has piers located in the river.

Impacts from Other Actions

According to City of St. Paul staff, riprap has been installed at several locations along the shoreline in the past five years.

Cumulative Potential Effects

Adverse cumulative effects are not anticipated to result from the project. As no further impacts are anticipated from other activities in the area, there is little or no potential for cumulative effects.

Stormwater Quality and Quantity

Existing Conditions

Runoff from the southern approach drains via storm sewer and overland flow to a St. Paul trunk storm sewer, eventually discharging to the Mississippi River during low flows. In the center section of the project area, stormwater runoff from the bridge deck is conveyed directly to the river or onto the ground next to the river via scuppers and downspouts. The north approach and I-94/TH 52 interchange drains through a series of storm sewers systems, eventually connecting to the Trout Brook Outfall to the Mississippi River. There are no water quality measures included in the existing drainage system as storm sewer discharges directly to the river.

Impacts from Proposed Action

The proposed project results in increased impervious areas due to the widening of the bridge and its approaches. To mitigate for the increase impervious surface, the proposed project will upgrade the existing urban stormwater conveyance system to reduce pollutant loading by discharging to stormwater quality treatment best management practices (BMPs). These BMPs are expected to mitigate the adverse effects of the increased impervious surfaces and pollutant generation and improve the quality of stormwater being discharged over existing conditions. In addition to providing water quality treatment, the stormwater quality BMPs will also provide discharge attenuation and runoff volume control such that existing discharges are maintained in accordance with CRWD and City of St. Paul standards to the extent possible with the existing site and soil conditions.

Impacts from Other Actions

The CCLRT maintenance yard and the redevelopment of the Diamond Products site will require stormwater treatment and storage near the project area.

Cumulative Potential Effects

There are federal, state, regional, and local surface and groundwater management regulations in place that require mitigation in conjunction with proposed development and roadway improvements. 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, and adverse cumulative effects on water quality and quantity are not anticipated.

Cultural Resources

Existing Conditions

There are a number of properties listed or eligible for the NRHP in the project area, including the existing Lafayette Bridge and the St. Paul Union Depot Elevated Track Bed, as discussed in Item #25 of the EAW.

Impacts from the Proposed Action

The proposed project will result in the demolition of the Lafayette Bridge. The proposed project was determined to have an adverse effect on the Lafayette Bridge. The Union Depot Elevated Rail Yards located below the bridge between Warner Road and Kellogg Boulevard will be directly impacted by bridge piers for the proposed project. A determination of effects has not yet been made since the design of the bridge has not been finalized, see EAW Item #25 for a detailed discussion. It has been determined that the project does not have an adverse effect on the remaining NHRP-eligible properties in the project area.

Impacts from Other Actions

The CCLRT maintenance yard will be located below the Lafayette Bridge in the project area, though based on information in the CCLRT Supplemental Draft Environmental Impact Statement (SDEIS) it is not anticipated to have an adverse effect on any of the properties identified in the project area.

The replacement of various bridges along the Mississippi River corridor from Minnesota to New Orleans is anticipated to occur over time as existing infrastructure ages. Like the Lafayette Bridge, which is eligible for the NRHP, other bridges along the river corridor that are slated for replacement may be listed or potentially eligible for the NRHP. The replacement of multiple historic bridges in the river corridor could result in an adverse effect on historic bridges and adjacent historic districts or properties.

Cumulative Potential Effects

A Memorandum of Agreement between Mn/DOT, FHWA, SHPO and MNRRA has been signed, and will be amended if necessary to incorporate information for the Union Depot Elevated Track Yards, to address any adverse effects to NRHP eligible resources affected by the project. In addition, a visual quality process is underway to inform the design of the bridge. It is anticipated that similar mitigation would be undertaken for bridge replacement projects along the river corridor, therefore adverse cumulative effects on cultural resources are not anticipated.

Parkland

Existing Conditions

Lower Landing Park lies beneath the Lafayette Bridge on the east bank of the Mississippi River. This 21.5-acre city-owned park stretches from Jackson Street on the west to approximately one-half mile to the east along the river bank. Amenities in the linear park include a separated bicycle and pedestrian paved path (Samuel H. Morgan Trail), along the Mississippi River, benches, lighting, and off-street parking.

Impacts from the Proposed Action

Under Build conditions, there will be one pier for each bridge; the piers will take up approximately 600 square feet of area, resulting in an approximate 190 square foot increase in the use of parkland. Mn/DOT has a highway easement for the existing bridge which will be perpetuated and expanded to accommodate the new bridge. Mn/DOT will need a temporary easement during construction and will coordinate with the City consistent with the City's guidelines for use of parkland.

Impacts from Other Actions

The City plans to construct a pedestrian/bicycle trail bridge/tunnel connection from the Bruce Vento Regional Trail Connector to the Samuel H. Morgan Regional Trail in the eastern part of Lower Landing Park.

Potential for Cumulative Effects

Since no non-recreational actions are planned to impact this park, no adverse cumulative effects to the park are anticipated.

Conclusion

Based on information reviewed to date, the proposed project has no potential for cumulative impacts to the resources directly or indirectly affected by the project.

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

31. Summary of Issues. ***Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW.*** **List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.**

Response: The following discussion outlines the impacts and issues that will require further action. Where applicable, mitigation measures have been identified.

Contaminated Sites

Based on the proposed bridge design, 14 properties in the bridge area have a potential for excessive cleanup costs and/or environmental liability. The sites have either potential or known non-petroleum contamination or historic large scale chemical storage with potential contamination. A Phase I ESA is being prepared to identify any additional properties of concern in the North Area. Any property with a potential to be impacted by the project will be investigated to determine the extent and magnitude of contaminated soil or groundwater in the areas of concern. If necessary, a plan will be developed for properly handling and treating contaminated soil and/or groundwater encountered during construction. In addition, coordination and consultation with the MPCA's VIC program and the Petroleum programs will take place as appropriate to obtain written

assurances that acquisition of contaminated properties and construction and cleanup activities in contaminated areas will not result in long-term environmental liability for the contamination.

State-Listed Species

The project will likely disturb the state-listed mussel species. Mn/DOT and MNDNR are coordinating a mussel survey and plan to conduct it as close to the time of bridge construction as possible so that mussel relocation can be combined with the survey work. A survey will be completed by the MNDNR prior to the start of construction. If any measures are needed to minimize harm, including relocation of state-listed species, they will be done at the time of the survey and prior to construction. In the unlikely event that federally-listed species are identified in the survey, the U.S. Fish and Wildlife Service will be contacted and the consultation process reinitiated.

Floodplains

The new bridge will encroach on the delineated 100-year floodplain of the Mississippi River (1,200 foot transverse encroachment) and piers will be located in the river. The existing bridge creates a similar encroachment and has piers located in the river.

Mn/DOT is coordinating with the MNDNR on permitting for the temporary flood stage increase and will work with regulatory agencies during permitting to minimize impacts. Affected cities upstream must be notified of the temporary flood stage increase and concur with it in writing as a requirement of the permitting process. The City of St. Paul will need to be notified and concur in writing. The hydraulic analysis for the temporary flood stage increase will determine whether the cities of Mendota Heights and Lilydale are impacted. Affected property owners must also be notified of the temporary flood stage increase.

Mississippi National River Recreation Area

Per NPS request, Mn/DOT will provide NPS interpretive staff at the Science Museum of Minnesota (located upstream of the Lafayette Bridge) with the Lafayette Bridge project website address (**http://www.dot.state.mn.us/metro/projects/hwy52-stpaul/index.html**). The Lafayette Bridge project website will provide information on construction phases of the project so that NPS staff can answer visitors' questions about bridge construction.

Water Quality and Quantity

The proposed project results in increased impervious areas due to the widening of the bridge and its approaches. To mitigate for the increase impervious surface, the proposed project will upgrade the existing urban

stormwater conveyance system to reduce pollutant loading by discharging to stormwater quality treatment best management practices (BMPs). These BMPs are expected to mitigate the adverse effects of the increased impervious surfaces and pollutant generation and improve the quality of stormwater being discharged over existing conditions.

There are a number of agencies that regulate the discharges of stormwater into the Mississippi River, including the CRWD, the LMRWMO and the MPCA through the NPDES permitting process. Each has a variety of goals that will impact the design of the proposed project, including improving water quality, encouraging groundwater recharge, and reducing flooding. The CRWD has adopted rules and a permitting program for the implementation of stormwater quality and quantity which will govern the design of project that discharges north of the river. The portion of the project area that discharges south of the river is within the boundaries of the LMRWMO. Lastly, the MPCA has jurisdiction over the entire project via the NPDES permit process. As part of the NPDES permitting process, a SWPPP will be created during final design of the proposed project.

Noise

Construction of the project will result in increases in traffic noise at some locations, while other locations are predicted to experience a small decrease (less than 1 dBA) in traffic noise. Cost-effectiveness of noise barriers was calculated; none of the modeled barriers met the minimum 5 dBA reduction threshold to be considered acoustically effective, and therefore, noise barriers will not be constructed with this project.

Parks

Under Build conditions, there will be one pier for each bridge; the piers will take up approximately 600 square feet of area, resulting in an approximate 190 square foot increase in the use of parkland. Mn/DOT has a highway easement for the existing bridge which will be perpetuated and expanded to accommodate the new bridge. Mn/DOT will also need a temporary easement during construction. A detour plan will be developed during final design to ensure that pedestrians and bicyclists are safely accommodated during construction.

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.

By affixing signature to the title/signature page at the front of this document, the Minnesota Department of Transportation, through its Chief Environmental Office, affirms that all of the stipulations above have been met.

Signature _____ **Date** _____

Title _____

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

B. ADDITIONAL FEDERAL ISSUES

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

1. Accessibility

The proposed project requires providing accessibility to a program, activity or service and by law the project must comply with provisions set by the Americans with Disabilities Act of 1990 or by state or local access codes if they contain more stringent requirements. The project will comply with the required accessibility provisions.

The proposed project includes a pedestrian/bicycle trail on the east side of the northbound bridge. The trail would run from the southern bridge approach located just north of Plato Boulevard to East 7th Street via the proposed ramp from northbound TH 52. The project also includes sidewalks, signals, intersections, and ramps that must be accessible to and usable to people with disabilities.

2. Right of Way Acquisition and Relocation

The proposed project requires the acquisition of land for right of way as well as temporary and permanent easements for use of land. The existing Mn/DOT right of way along TH 52 was purchased in permanent easement. The underlying fee is owned by the property owners of the surrounding parcels; some of the land beneath the bridge is being used for parking and storage purposes.

The construction limits are projected to be 50 feet from the drip line of the bridge, on either side of the new bridge, of which 25 feet will be permanent right of way (permanent easement) and 25 feet will be temporary right of way (temporary easement). There will be a nine-foot gap between the north- and southbound bridges to allow for bridge maintenance and inspection.

Based on the current design, the proposed project requires the partial or total acquisition of up to 13 privately owned parcels totaling approximately 3.8 acres of right of way (four of these parcels require total acquisition totaling 3.0 acres and nine parcels require partial acquisition totaling 0.8 acres). There are 26 parcels totaling approximately 2.6 acres that require temporary easements and 15 parcels totaling approximately 4.1 acres that require permanent easements. There is one publicly owned parcel of 0.7 acres that requires total acquisition (St. Paul Port Authority) and one publicly owned parcel requiring partial acquisition totaling 0.4 acres (City of St. Paul).

Up to six commercial buildings may be removed or partially removed and up to 10 businesses may be impacted. The project will result in the relocation of impacted businesses. In addition, five billboards on three different parcels will be impacted; these will need to be relocated, or if not able to be relocated due to City regulations, will need to be replaced elsewhere and the landowners and billboard companies compensated.

Efforts are being made to minimize business impacts where possible. Below is a description of the total acquisitions required based on the preliminary design plans for the proposed project. The seven businesses that responded to telephone inquiry employ approximately 371 individuals, including seasonal employees.

- Peoples Electric, an electrical repair company with a shop and warehouse, owns the property on which it is located. The building will be removed and the business relocated. There may be additional issues since much of the business's storage is on this land or on leased property near/under the bridge. The rest of their property is on the west side of the bridge. The project will sever access between these parcels and this could impact the business.

- Cha Sur Vang, owns the property on which Solange Auto Service is located. The building will be removed and the business relocated.

- RTC, a manufacturing facility owns the property on which it is located and also provides space to a tenant, Graphic Exhibits, Inc. The building will be removed and the two businesses relocated.

- M. Rasoir Ltd. owns this vacant piece of property.

- The St. Paul Port Authority owns the property on which salt sheds are located. The buildings will be removed and possibly relocated.

- J Mont Inc. owns the property on which the Downtowner Carwash is located. The building may need to be removed and the business relocated. This is a possible total acquisition.

- The 401 East 4th Building Partnership owns a long single story commercial building with four tenants. The tenants include Energy Saving Devices, Laden's Business Machines, Prewire Specialists, and Silverback Performance. The western portion of the building will be removed and the business(es) relocated. This is a partial acquisition but will result in the loss of one or more businesses. In addition, two billboards on the property will be removed.

In addition to the acquisitions discussed above, billboards on the following properties will be removed by the project:

- Holiday Station Stores Inc. owns property on which a billboard is located. The billboard on the property will be removed.
- Ramsey County Regional Railroad Authority owns property on which two billboards are located. The billboards on the property will be removed.

Other issues that should be noted include the following:

- Diamond Products Building. The western edge of the ramp from I-94 westbound to TH 52 southbound will be within 10 feet from the southeast corner of the Diamond Products building. A temporary easement exclusion is needed around the building.

Mitigation

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

The proposed project will result in the total acquisition of up to six commercial/industrial properties with 10 businesses. When acquisition of right of way occurs Mn/DOT may need to consider minimum compensation[5] for total acquisitions. Mn/DOT will work with the business owners to find suitable relocation sites. In addition, property owners may be reimbursed for actual reasonable moving costs, certain re-establishment expenses and costs incurred in identifying replacement sites.

To determine availability of properties and buildings similar to those proposed for acquisition, a local realtor database was searched for sites in the City in January, 2009. The research yielded more than 80 commercial or industrial properties available within similar price ranges of the properties that would be acquired.

A reasonable number of possible replacement sites exist for the types of business that are to be potentially displaced by this project. However, there is no guarantee that at the time of construction these sites will be available. The types of businesses that are being contemplated for total acquisition are often difficult to relocate. Examples of this are manufacturing (RTC, Inc.) and operations that might require outdoor storage (Peoples Electric and Barber Electric). Automotive uses such as Solange Auto Service and the Downtowner Carwash present unique siting problems due to their automotive nature. Often appropriately zoned properties are difficult to locate. The multiple billboards in the project area are also a challenge. Cities like St. Paul often have very strict limitations on the locations where billboards can be relocated. This can be a particular challenge in the project area where billboards may have visibility from I-94. As noted above, Mn/DOT will work with the owners to find suitable relocation sites.

[5] 2008 Minnesota Statutes 117.187 Minimum Compensation states that "When an owner must relocate, the amount of damages payable, at a minimum, must be sufficient for an owner to purchase a comparable property in the community and not less than the condemning authority's payment or deposit under section 117.042, to the extent that the damagers will not be duplicated in the compensation otherwise awarded to the owner of the property. For the purposes of this section, 'owner' is defined as the person or entity that holds fee title to the property.

3. Environmental Justice

Environmental justice in the context of highway project development began with Executive Order 12898 issued in February 1994, the purpose of which was to ensure that federal agencies "[i]dentify and address disproportionately high and adverse human health or environmental effects of federal policies, programs, and activities on minority and low-income populations." The proposed project will require federal permits and will receive federal funding. As such, it is considered a federal project for the purpose of compliance with this Executive Order.

Executive Order 12898 requires that the proposed actions be reviewed to determine if there are "disproportionately" high or adverse impacts on minority and/or low-income populations. "Disproportionate" is defined in two ways: the impact is "predominantly borne" by the minority or low-income population group, or the impact is "more severe" than that experienced by non-minority or non-low-income populations. The steps for defining environmental justice impacts include the following:

- Identification of the location of low-income population and/or minority population in the project area;
- Identification of the impacts of the project area upon the identified low-income population and/or minority population; and
- Determination of whether or not the impacts are disproportionately high or adverse.

Project Area Demographics

The first step in the environmental justice determination process is to determine whether any minority and/or low-income persons are present within the project area. Land uses along the Lafayette Bridge corridor are predominantly industrial and commercial, though there is a small amount of residential immediately west of the existing bridge on the north side of the river. To obtain a better understanding of the demographic composition of the area, the 2000 Census was reviewed for population, racial/ethnic, and economic data. Conversations with City of St. Paul officials in April, 2008 also assisted in identifying low-income and/or minority populations in the project area. Finally, representatives from the neighborhood district councils (District 3, 4, 5, and 17) were contacted to provide input.

Census data were reviewed at the Census Tract and Block Group level. The project area encompasses four Census Tracts with five Block Groups. Tables 17 and 18 show, respectively, the year 2000 population and racial/ethnic data and year 2000 economic data. Figure 13, Appendix A shows the location of the census tracts. It should be noted that the Union Gospel Mission, located at 435 University Avenue, which serves low-income and minority populations, is not located in the Census Tracts included in this assessment; it is located immediately north of Census Tract 330.

Minority Population

The 2000 Census minority population reported for these Block Groups varies considerably from about 16 percent to about 74 percent. This compares to 33 percent minority for the City of St. Paul as a whole. There are no residential uses in the project area, expect for condominiums on Kellogg Boulevard, immediately west of the existing bridge on the north side of the river. Representatives from Districts 4, 5, and 17 are not aware of minority populations within the project limits. Staff from District 3 (West Side Citizen's Organization) stated that minority populations are present about one-half mile south of Plato Boulevard, the southern boundary of the project area.

It is reasonable to assume that there are no minority populations present in the project area since the Lafayette Bridge corridor is surrounded primarily by industrial and commercial uses; residential uses in the Census Tracts within the project area are located beyond the project boundary, except the condominiums noted above. No minority-owned businesses or businesses employing minority persons were identified by representatives from the neighborhood district councils. During review of right of way needs for the project, one minority-owned business was identified in the project area: Solange Auto Service. Total acquisition of this business will be required. The project may also impact employees of businesses located within the project area. Seven potentially impacted businesses responded to telephone inquiries for employee data. The responding businesses reported an average of about 37 percent minority employees.

Low-income

Low-income populations for the purpose of this document are defined as persons with incomes below poverty level. The responses of households reporting income data are weighted to reflect the entire block group- population. The disadvantage of this approach is that estimates for small groups such as Block Groups are not as exact. The result for this analysis is that population numbers used in determining low-income numbers do not match those numbers used in determining minority populations, where the sample was an absolute rather than a weighted count.

The 2000 Census reported low-income population levels in the project area between 0 percent and 28 percent. This compares to about 16 percent for the City of St. Paul as a whole. Although the percentage of low-income households in two of the Block Groups (27.8 percent and 20.0 percent) is greater than the percentage for the City as a whole, no low-income populations were identified in the project area along the Lafayette Bridge corridor, which is surrounded predominantly by industrial and commercial uses. As discussed above, seven potentially impacted businesses responded to telephone inquiries for employee data. The responding businesses reported an average of about 27 percent low income employees.

TABLE 17
POPULATION, HOUSEHOLDS AND RACE
2000 CENSUS

Demographic Group	State of Minnesota		Ramsey County		City of St. Paul		Tract 330 Block Group 1		Tract 342 Block Group 1		Tract 342 Block Group 2		Tract 344 Block Group 2		Tract 361 Block Group 1	
	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.	#	% of Pop.
Households	1,895,127	N/A	201,236	N/A	112,109	N/A	393	N/A	1,026	N/A	1,054	N/A	240	N/A	537	N/A
Population	4,919,479	100%	511,035	100%	287,151	100%	1,290	100%	1,375	100%	1,767	100%	632	100%	1,807	100%
· White	4,400,282	89.4%	395,406	77.4%	192,444	67.0%	435	33.7%	1,130	82.2%	1,220	69.0%	532	84.2%	479	26.5%
· Minorities	519,197	10.6%	115,629	22.6%	94,707	33.0%	855	66.3%	245	17.8%	547	31.0%	100	15.8%	1,328	73.5%
- Black	171,731	3.5%	38,900	7.6%	33,637	11.7%	247	19.1%	117	8.5%	318	18.0%	20	3.2%	195	10.8%
- AIAN [1]	54,967	1.1%	4,221	0.8%	3,259	1.1%	32	2.5%	10	0.7%	20	1.1%	9	1.4%	17	0.9%
- Asian	141,968	2.9%	44,836	8.8%	35,488	12.4%	401	31.1%	78	5.7%	76	4.3%	49	7.8%	483	26.7%
- NHPI [2]	1,979	0.0%	323	0.1%	203	0.1%	0	0.0%	1	0.1%	1	0.1%	0	0.0%	6	0.3%
- Other Race	65,810	1.3%	12,536	2.5%	11,021	3.8%	81	6.3%	14	1.0%	101	5.7%	7	1.1%	448	24.8%
- Two or More Races	82,742	1.7%	14,813	2.9%	11,099	3.9%	94	7.3%	25	1.8%	31	1.8%	15	2.4%	179	9.9%
· Hispanic Origin [3]	143,382	2.9%	26,979	5.3%	22,715	7.9%	134	10.4%	42	3.1%	181	10.2%	28	4.4%	750	41.5%

Source: Year 2000 U.S. Census Data SF 1 (Tables P3, 8, 15)
[1] AIAN = American Indian or Alaska Native
[2] NHPI = Native Hawaiian & Other Pacific Islander
[3] Those of Hispanic Origin may consider themselves white or of another race; therefore, population totals and percentages will be greater than 100 percent

TABLE 18
INCOME AND POVERTY
2000 CENSUS

Demographic Group	State of Minnesota	Ramsey County	City of St. Paul	Tract 330 Block Group 1	Tract 342 Block Group 1	Tract 342 Block Group 2	Tract 344 Block Group 2	Tract 361 Block Group 1
Population	4,794,144	495,478	277,206	1,259	1,396	1,555	545	1,888
Number of Households	1,896,209	201,379	112,128	370	1,026	1,020	261	604
Number of Families	1,262,953	120,893	61,562	228	221	245	151	370
Median household income in 1999 (dollars)	$47,111	$45,722	$38,774	$23,553	$40,189	$31,250	$42,298	$21,667
Median family income in 1999 (dollars)	$56,874	$57,747	$48,925	$38,571	$65,982	$41,653	$50,417	$28,125
Per capita income in 1999 (dollars)	$23,198	$23,536	$20,216	$11,264	$43,565	$24,219	$25,513	$10,616
Percent of population for whom poverty status is determined - all ages (income in 1999 below poverty level) [(1)]	7.9%	10.6%	15.6%	28.0%	9.2%	16.1%	0.0%	27.8%
Percent of families for whom poverty status is determined (income in 1999 below poverty level)	5.1%	7.4%	11.7%	30.7%	3.2%	3.7%	0.0%	23.5%

Source: Year 2000 U.S. Census Data SF 3 (Tables P10, 53, 77, 82, 87, 90)
[(1)] Numbers are less / more than population numbers, as poverty status determined for smaller areas such as block groups use weighted samples

It is reasonable to assume that there are no low-income populations present in the project area because the Lafayette Bridge corridor is surrounded primarily by industrial and commercial uses; residential uses in the identified Census Tracts are located beyond the project boundary. Staff from District 3 (West Side Citizen's Organization) stated that low-income populations are present about one-half mile south of Plato Boulevard, the southern project boundary.

In addition to Census data, City of St. Paul staff was consulted in spring 2008 to determine if there were any known concentrations of minority or low-income persons within the project area. No low-income or minority populations were identified adjacent to the bridge or the North Area.

Environmental Justice Determination

The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations. Available Census data indicate that minority and low-income populations are present in the Census Tracts that cover the project area. However, residential populations within those tracts are located beyond the project area, which is characterized primarily by commercial and industrial uses. Low-income populations living beyond the project area may be impacted by the new bridge but these impacts are not adverse. Low-income populations will benefit from the pedestrian/bicycle trail planned for the new river crossing as this expands connections between residential areas and employment centers. The visual quality of the new bridge will be an improvement over appearance of the existing bridge. The roadway improvements in the project area, particularly in the North Area at East 7th Street where northbound TH 52 traffic will be eliminated, will result in a safer environment for pedestrian and bicyclists. One minority-owned business was identified in the project area, but the impact this business and businesses which employ minority and/or low-income persons is not disproportionate.

4. Airports

The project area is located just west of Holman Field, the downtown St. Paul Airport. The flight corridor for runway 14-32 at Holman Field is located above the existing bridge. About 117,000 aircraft use the airport each year. A number of meetings with staff from the Federal Aviation Administration (FAA), Mn/DOT Aeronautics, Metropolitan Airports Commission (MAC), and Holman Field were held to discuss the project, coordinate completion of the Form 7640, Notice of Proposed Construction or Alteration, and understand permit requirements for construction of the project.

The geometric constraints relating to clearance requirements for the flight corridor for runway 14-32 above the bridge impact the height and available structure depth for the new bridge. FAA Form 7460-1 was completed for the project. The FAA Determination of Findings for the allowable height of the light poles on the

proposed bridge is approximately 17 feet at the most critical location. Crane use during construction is considered a temporary structure that can penetrate air space and therefore requires FAA review and determination as well under FAA Form 7460-2; the contractor will need to obtain a Determination of Findings for FAA Form 7460-2 to allow use of cranes. Discussions with FAA and MAC regarding crane operations during construction are continuing; it is anticipated that crane operations will need to be coordinated with air traffic controllers at Holman Field during bridge construction.

The existing Xcel power line located in Lower Landing Park needs to be relocated to accommodate the new bridge. Xcel Energy is coordinating with Mn/DOT on potential relocation options; these discussions are ongoing. If the new tower locations encroach into airspace restrictions, Xcel will need to complete its own Form 7460 for FAA review and determination.

Air space zones exist around the airport and permits for construction in the zones must be submitted to Mn/DOT Aeronautics. The airport, however, is in the process of adopting new regulations to require permits to be obtained from a zoning board/administrator rather than Mn/DOT Aeronautics. The airport proposal to establish a Zone A and a Zone B (geographic areas around the airport that restrict heights of structures) could affect the relocation of the Xcel power line in Lower Landing Park as the power line appears to encroach on the proposed Zone A and Zone A, as proposed, would not allow any structures within it.

Lighting and ponding are additional items of concern, given the proximity of the project area to the airport. The need to limit "up lighting" of the bridge was noted during meetings with staff because such lighting could pose a problem for airplanes. Decisions about bridge lighting will be made during final design and will be coordinated with Mn/DOT Aeronautics, MAC, and FAA. Stormwater ponds can attract waterfowl and are therefore incompatible in close proximity to airports. Drainage options for the north side of the bridge, including both above and below-ground alternatives, are being evaluated in light of this concern. Decisions about ponding will be made during final design and will be coordinated with the appropriate state and federal agencies. If an above ground option is selected, pretreatment ponds would have riprap covered side slopes and lack typical 1:10 bench at the normal water level to discourage waterfowl use in proximity to the airport approach area. The above ground option would also include a deep linear pond, fencing, and bird balls or a wire grid system covering any open water.

5. Barge Traffic

Within the project area, the Mississippi River is a navigable river. Barge docks are located along the west bank of the Mississippi River under the Lafayette Bridge; a typical barge is 35 feet wide, weighs 2,000 tons, and travels at 10 miles per hour. The barge dock property, known as Barge Terminal #2, was established

in 1960 and is owned by the St. Paul Port Authority and operated by Upper River Services. Mn/DOT has air rights for the Lafayette Bridge over this property. Upper River Services plans to move its operation during winter 2010-2011 to a new site elsewhere in St. Paul. Plans call for the land currently occupied by Upper River Services to be donated to the City of St. Paul. Future plans for the site are discussed in EAW Item #25.

Under existing conditions the navigation channel is located between piers nine and ten. The channel is 350 feet wide with a vertical clearance 51.3 feet above the two percent navigational channel elevation or 59.1 feet above the normal pool elevation (whichever is greater governs). The U.S. Coast Guard requires, as a minimum, 52 feet above the navigational channel or 60 feet above normal pool, whichever governs. The Coast Guard standards also require that the vertical clearance point be located 25 feet from the face of the navigational piers, but at the Lafayette Bridge crossing location, they have allowed for 70 feet. Currently the existing bridge is slightly below U.S. Coast Guard standards. Due to issues with constructing new piers adjacent to existing, a request was made to the barge operators and the Coast Guard to shift the river piers 55 feet south. Approval from the U.S. Coast Guard was received to shift the location of river piers 55 feet south of the existing piers. The U.S. Coast Guard approved this pier placement for the new bridge in a letter dated September 9, 2008 (see Appendix B).

No permanent impacts to commercial waterway operations will result from the proposed improvements. During construction, a period of about two years, the 350-foot wide navigational clearance will be temporarily restricted to 222 feet through the main channel. Barge traffic during this time will be maintained and no disruption is anticipated. After completion of both bridges, the 350-foot wide navigational channel will be restored 55 feet south of the existing navigational channel.

There are three existing barge fleeting areas (areas where barges are docked along the river bank) near the Lafayette Bridge: 1) upstream of the bridge on the west bank; 2) downstream of the bridge on the west bank; and 3) downstream of the bridge on the east bank. The St. Paul Port Authority controls these barge fleeting leases. Barge fleeting on either side of the river may be restricted temporarily during construction. Normal barge fleeting operations would resume after construction.

The site currently occupied by Upper River Services is a potential construction staging area for the project. As noted, ownership of the site is anticipated to change from the St. Paul Port Authority to the City of St. Paul at some point in the next two to three years so it is difficult to determine who the owner of the property will be when project construction begins in fall 2010. Representatives from the St. Paul Port Authority and the City of St. Paul have stated that they would consider allowing Mn/DOT to use the site as a staging area during construction.

6. Transit

Metro Transit Bus Routes in the Project Area

Only one Metro Transit route uses the Lafayette Bridge. Route 452 runs from downtown Minneapolis to Mendota Plaza in Mendota Heights, operating non-stop from Minneapolis to West St. Paul via I-94 and TH 52. Consequently, there are no stops near or along the Lafayette Bridge. Buses run every 30 minutes during rush hour; there is no midday, evening, or weekend service on the route. Route 452 carries passengers on three to four busses in the morning rush hour to Minneapolis, and three to four busses in the evening rush hour back to Mendota Heights. In addition to Route 452, about 40 buses use the bridge daily; 20 buses in the a.m. and 20 buses in the p.m. dead head (operate empty at the beginning or end of a route) from/to the East Metro Garage located north of Lafayette Business Park.

Four Metro Transit routes use East 7th Street at the north end of the Lafayette Bridge. Routes 53B and 64 turn off East 7th Street at Lafayette Road while Routes 61 and 74 continue east along East 7th Street towards St. Paul's Eastside. Route 53B operates only during rush hours, with buses every 12 to 24 minutes. Route 64 operates throughout the day seven days a week with buses every nine to 15 minutes during rush hour and less frequently in the midday and evening hours. Route 61 operates buses every 30 minutes during rush hour and once per hour during midday and evening hours and on Saturday; there is no Sunday service. Route 74 operates every eight to 15 minutes during rush hour and every 20 to 30 minutes during midday and evening hours and Saturday; there is no Sunday service.

Four Metro Transit routes use Kellogg Boulevard, below the Lafayette Bridge. Routes 21, 53A, 63 and 70 all operate throughout the day seven days a week with buses every ten to 30 minutes during rush hour, midday, and evenings. Weekend service varies by route.

One Metro Transit route uses Fillmore Avenue, below the Lafayette Bridge, and Plato Boulevard at the southern end of the project area. Route 71 operates throughout the day seven days a week with buses every 15 to 20 minutes during rush hour, every 15 to 30 minutes during midday hours, and once an hour in the evening.

It is Mn/DOT's intent to minimize disruption to transit during construction. There will be occasional road closures; these will likely fall on weekends. Roads that could experience temporary closure include Plato Boulevard, Fillmore Avenue, Warner Road, Kellogg Boulevard, 4th Street, 5th Street, and 7th Street. Temporary closures will be coordinated with Metro Transit. Mn/DOT, Metro Transit, and the City will coordinate to develop a detour plan during final design to coordinate changes in bus service and to ensure that pedestrians are safely accommodated with access to transit during construction. Detours will be well publicized to notify transit users of changes in service.

Impacts to Metro Transit Layover Facilities in the Project Area

Two bus layover facilities in the project area, 5th Street/Kittson Street and Kellogg Boulevard beneath the Lafayette Bridge (See Figure 14, Appendix, A), provide space for buses to layover and restroom facilities for drivers. The 5th Street/Kittson Street facility has capacity for 12 buses but typically accommodates six at a time; it is underutilized presently. The site is used by Metro Transit and Minnesota Valley Transit and accommodates almost 120 layovers on a weekday with an average layover length of 10 minutes. The Kellogg Boulevard/Lafayette Bridge site accommodates two to three buses at a time and is used by Metro Transit; Metro Transit leases the property from Ramsey County. The site accommodates almost 90 layovers on a weekday with an average layover length of 13 minutes.

The layover facility at 5th Street/Kittson Street will be eliminated to accommodate roadway improvements (new ramps to westbound I-94 and East 7th Street) in the North Area. The layover facility at Kellogg Boulevard/Lafayette Bridge will not be directly impacted by the project.

Mitigation

Metro Transit would like to expand its layover facility at the Kellogg Boulevard/Lafayette Bridge site to accommodate the capacity lost at the 5th Street/Kittson Street site as a result of the proposed project. Metro Transit, on its behalf and that of Minnesota Valley Transit, is coordinating with Ramsey County (the owner of the Kellogg Boulevard/Lafayette Bridge site) and Mn/DOT on this matter.

Light Rail Transit and Robert Street Corridor

The Minnesota Legislature mandated that the TH 52 corridor be accessible for potential future light rail transit (LRT). Consideration for LRT is an important issue in the design of the new Lafayette Bridge since two potential future LRT lines are currently under study. Plans call for the Central Corridor and the Robert Street Corridor to meet at Union Depot. Preliminary design is occurring for the Central Corridor and includes a maintenance yard below the bridge north of the river. Plans for the Lafayette Bridge will not preclude future use of the corridor for LRT. This means that the footings and foundations designed for the Lafayette Bridge will not preclude construction of suitable footings and foundations for a future LRT bridge. If a bridge were constructed in the future to accommodate LRT, it would be on the west side (southbound lanes) of the new bridge.

7. Bikeways and Pedestrians

Trails in the project area are shown on Figure 12, Appendix A. A number of meetings were held in spring 2008 to gather information on trails in the project area. Meeting participants included the City, NPS, and MNDNR.

Existing Trails

Existing pedestrian and bicycle facilities in the project area include the Samuel H. Morgan Regional Trail, which runs along the east bank of the Mississippi River and through Lower Landing Park, and the Bruce Vento Regional Trail Connector, which is located north of the river between Warner Road and I-94. The Bruce Vento Regional Trail Connector links the Bruce Vento Nature Sanctuary, Swede Hollow Park, and Indian Mounds Regional Park to each other and to Saint Paul's Lowertown District. Bicyclists and pedestrians are also accommodated on existing streets and sidewalks in the project area.

Proposed/Planned Trails

The NPS plans to extend the existing trail on the west bank of the river that connects Lilydale and Harriet Island Parks with the South St. Paul Riverfront Trail at Kaposia Park in South St. Paul. Plans also exist to connect the Samuel H. Morgan Regional Trail with the Willard Munger State Trail on the east bank of the river. Alignments for these trail connections have not yet been selected.

A new trail extension is planned by the City to connect the Samuel H. Morgan Regional Trail with the Bruce Vento Regional Trail Connector at a location about 1,000 feet east of the new Lafayette Bridge. It is yet to be determined whether this new connection will be via a bridge over, or a tunnel under, existing railroad tracks.

Consistency with Plans

A number of plans call for a pedestrian/bicycle crossing over the Mississippi River at the Lafayette Bridge location including the St. Paul Comprehensive Plan, the Metropolitan Council's TPP and Regional Parks Policy Plan, and the Comprehensive Plan for the Mississippi National River Recreation Area. In addition, support for a pedestrian/ bicycle river crossing is included in correspondence from the NPS, City, and the Bicycle Advisory Board. Copies of this correspondence are in Appendix B.

Impacts

The Build alternative will temporarily impact existing trails in the project area during construction and provide a new trail where none exists currently. A detour plan will be developed during final design to ensure that pedestrians and bicyclists are safely accommodated on sidewalks, trails, and roadways during construction.

Local and regional plans call for a pedestrian/bicycle trail on the Lafayette Bridge. The Build alternative for the Lafayette Bridge includes a 12-foot trail on the east side of the northbound bridge with overlooks (bump-outs separated from trail traffic) located above the river piers to provide observation points and resting areas. The trail will cross the river stretching from the southern bridge approach just north of Plato Boulevard to the East 7th Street exit ramp from northbound

TH 52. The exit ramp will have shoulders to accommodate bicyclists to the new signal at East 7th Street and a sidewalk will extend to the East 7th Street signal as well. The roadway improvements in the project area, particularly in the North Area at East 7th Street where northbound TH 52 traffic will be eliminated, will result in a safer environment for pedestrian and bicyclists.

8. Construction Impacts

During project construction, this project has the potential to cause temporary vehicle delay on TH 52, air traffic operation effects, changes in barge traffic operations, railroad operations, local road closures and trail closures, and temporary utility re-routing.

Traffic and Transportation

The Lafayette Bridge carries 81,000 vehicles per day. By first constructing a new bridge east of the existing bridge, normal traffic can be maintained on the existing bridge during construction of the new bridge. When construction of the northbound bridge is complete traffic can move to the new structure and the existing bridge can be demolished and the southbound bridge built. Maintaining all traffic movements at the north end of the corridor will require complex traffic phasing during construction.

Since construction of the existing Lafayette Bridge, most of the railroad tracks beneath the bridge have been eliminated, with the exception of three tracks operated by the Canadian Pacific Railway, Union Pacific Railroad and BNSF located on the north side of the river. The absence of the numerous tracks will allow the new bridge to place piers more economically to optimize span lengths. The CCLRT maintenance yard will be located in the south portion of the old Diamond Products Building so coordination will be necessary. The LRT yard will be constructed at the same time as the bridge so disruption to LRT traffic is not anticipated.

Noise

Refer to EAW Item 24 for a discussion of noise impacts during construction.

Vibrations

Pile driving will be used for construction of this bridge. Vibrations from pile driving are typically not a concern when the installation is greater than 200 feet from structures that are in good condition and are founded on granular soils. Considering that the project soils are granular, and using a conservative threshold for damage for non-historical structures of 0.5 inches per second (ips), structures greater than 40 feet away are unlikely to be affected, although people will still perceive troublesome vibrations as far as 70 feet away (*NCHRP Synthesis of Highway Practice 253: Dynamic Effects of Pile Installations on Adjacent Structures*).

Several buildings in the project area fall within a radius of 200 feet from the Lafayette Bridge footprint and within a 200-foot radius of the pile installation sites. Other factors affecting potential damage from vibration levels must also be taken into account, including: age and condition of the buildings; the location along the alignment that pile installation will take place; and sensitivity of equipment in the nearby buildings. A condition survey will be performed along with vibration monitoring on all buildings within 200 feet of pile driving.

Temporary Flood Stage Increase

There will be a temporary flood stage increase during construction, over a period of about one year, when there will be two sets of piers in the river as well as coffer dams: 1) one set of piers for the existing bridge which will remain in place during construction to maintain traffic flow until traffic can be shifted to the new bridge; and 2) one set of piers for the new bridge. The amount of the temporary flood stage increase has not yet been determined; a complete hydraulic analysis will be conducted to make this determination. Mn/DOT is coordinating with the MNDNR on permitting for the temporary flood stage increase and will work with regulatory agencies during permitting to minimize impacts. Affected cities upstream must be notified of the temporary flood stage increase and concur with it in writing as a requirement of the permitting process. The City of St. Paul will need to be notified and concur in writing. The hydraulic analysis will determine whether the cities of Mendota Heights and Lilydale are impacted. Affected property owners must also be notified of the temporary flood stage increase.

Construction Scheduling

Crane operations must be coordinated with the air traffic controllers at Holman Field and a FAA 7460 permit will be required of the contractor for the placement of cranes. Work in the Mississippi River must be coordinated with river navigation and work over the railroad tracks requires flagging services and be limited to established work windows. Work in the vicinity of the of the high voltage power lines can be expected to require power outages, which often can be scheduled only at certain times of the year. Traffic on Kellogg Boulevard and Warner Road will have less impact on the construction schedule, but will still require special treatment.

Vegetation

Since the project area is largely developed with industrial and commercial businesses, there is limited woody vegetation that would potentially be impacted by the project during construction. The largest impact may come on the east and west sides of the existing bridge in the park along Warner Road. There are a fair amount of deciduous and coniferous trees (Green Ash, Poplar, Sumac, Spruce) that were planted along this stretch of the river several years ago. Some of these trees and shrubs are generally in fair to poor condition, with many of the trees showing signs of heavy salt spray damage, deadwood, and trunk damage including some severe rodent damage on many of the Green Ash. The Colorado

Green Spruce trees planted along both sides of Warner Road are in fair to good condition. Given the poor condition of the Green Ash, transplantation is not warranted, even though some of them will likely fall within the area of construction and need to be removed. Some of the Poplars that are within the construction limits will need to be removed, however they are too large to transplant. During construction a temporary tree protection fence will be installed along the construction limits to keep construction activities from creeping past the limits and causing damage to the trees that can remain in place. Protection areas will be clearly identified on the plans.

The other areas where there may be potential impacts from project construction to woody vegetation are small areas along the frontage roads (east and west sides of TH 52) near Fillmore Avenue. These areas were landscaped at one time with a mixture of shrubs (Sumac and American Plum) and trees (Bur Oak and Cottonwood). If this area is impacted, the loss is fairly minimal as the trees are in fair to poor condition and the shrubs, while in fair condition, would not be a huge loss in terms of value. There is also one stretch of boulevard along the west frontage road between Plato Boulevard and Fillmore Avenue that contains several deciduous trees (Green Ash, Maple, Hackberry). While this area will likely be outside the construction limits, use of temporary tree protection fence is recommended.

A Forestry Plan will be developed that identifies: 1) construction limits; 2) the precise loss of woody vegetation due to construction activities; 3) exact location for the temporary tree protection fence; 4) trees that could and should be transplanted; 5) a plan to re-landscape disturbed areas after construction is complete.

Visual Impacts

Visual impacts associated with construction of this project will include the introduction of construction equipment and disruption of the landscape in association with construction operations in the area. These impacts will be noticeable to drivers travelling through the area, residents living in the area and barge and boat operators in the river.

9. Social Impacts

Impacts due to right of way acquisition, environmental justice, noise, access, and visual quality are addressed elsewhere in this EA/EAW. Since the proposed project takes place within an existing corridor already dedicated to transportation use, the potential for adverse impacts to qualitative factors such as access to community facilities and/or jobs, separation of neighborhoods, and community cohesion is held to be relatively low.

The proposed project is not expected to cause any permanent adverse impact to any community or neighborhood. No categories of people uniquely sensitive to transportation (e.g., children, elderly, minorities, persons with mobility requirements) are anticipated to be adversely impacted by the project.

Parks and Recreational Facilities:

The proposed project will have potential temporary and permanent impacts to a park and trails including:

- Lower Landing Park
- Samuel H. Morgan Regional Trail
- Bruce Vento Regional Trail

Impacts to these facilities are discussed in EAW Item #25.

There are no other community facilities in the project area. Nearby community facilities include:

Schools:

Several schools are located near the Lafayette Bridge, but none would be directly impacted by the proposed project. The Paul Green School of Rock Music (417 Broadway Street) is nearby the project area.

Community Facilities:

There are no community facilities directly adjacent to or within the project area. Holman Field Airport (644 Bayfield Street) is located nearby. Airport impacts are discussed in Section IV.B. 4 of this EA/EAW.

Worship Facilities:

There are no worship facilities directly adjacent to or within the project area. Our Lady of Guadalupe Church (401 Concord Street) is located nearby.

No impacts to any of the aforementioned community facilities are anticipated as a result of the proposed project.

Temporary Impacts

Since the crossing will remain open during construction, no substantial temporary impacts are expected as a result of the project. Bridge users may experience traffic delays and lane shifts as various components of the existing bridge are retrofitted to support the construction of a replacement bridge.

Access to the facilities noted above could be temporarily affected by construction; however, no permanent access impacts are anticipated. Businesses access will be maintained, though there will be some changes to access.

10. Economic Impacts

The proposed bridge replacement and improvements in the North Area are not anticipated to result in any broad changes to existing land use patterns or diversion of significant traffic volumes from commercial routes. However, the

Build alternative will result in the conversion of some commercial/industrial property to public right of way as discussed in Section IV.B.2. These impacts are discussed below.

A. Fiscal Impacts

The proposed project will result in the total acquisition of up to six parcels. Therefore, these parcels would be permanently lost to tax base in the City of St. Paul. Taxes payable in 2008 on affected properties was approximately $163,000; the total taxes payable to the City was more than $351 million. (It should be noted that taxes payable for one of the properties to be acquired [RTC Inc.] is not included in the taxes payable amount because the property was transferred from the St. Paul Port Authority to RTC, Inc. and the transfer only recently filed with the Ramsey County and therefore not reflected in the taxes payable amount). Tax losses due to property acquisition for the project represent a minor amount of the total value of the City's tax base. There is one publicly owned parcel, with no tax income, that will require total acquisition.

B. Impacts to Commercial Businesses

The proposed project will require the acquisition of commercial land for right of way. A total of 13 commercial parcels will be impacted by partial or total acquisition, impacting up to 11 businesses. The seven affected businesses responding to telephone inquiry reported a total of 371 employees, which includes seasonal staff.

A goal of the project is to maintain business access both during construction and following completion of the project. Access concerns will be addressed in consultation with business and property owners and resolved during final design. Instances where business access cannot be maintained after construction would result in total acquisition of the property.

11. Indirect Effects

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.[6] The geographic area potentially affected by the proposed project includes the existing Lafayette Bridge corridor from 200 feet south of Plato Boulevard on the south to East 8th Street on the north. The project area is developed primarily with commercial and industrial uses, though some recreational uses exist along the east bank of the river.

The proposed project is not anticipated to result in land use changes in the area. The Lafayette Bridge corridor is fully developed so future land use changes will result from redevelopment that occurs over time. The proposed bridge replacement and roadway improvements will increase the attractiveness of some

[6] Council on Environmental Quality (CEQ), 40 CFR 1508.7

commercial and industrial uses in the corridor because they will facilitate ease of movement and trip-making between destinations. The existing bridge runs over parkland and trails in the project area and casts a shadow on these areas. The new bridge will be about twice as wide as the existing bridge and will cast a shadow that is twice as wide.

12. Visual Quality

The Lafayette Bridge is a dominant element of the downtown St. Paul landscape. Due to the bridge's length, and elevated position not only over the Mississippi River but also over the eastern portion of downtown, the structure is visible throughout the east portion of downtown St. Paul, as well as the neighborhoods both east and south of the project.

Development of Visual Quality Manual

Mn/DOT is conducting a Visual Quality Management Process (VQMP) that will result in a Visual Quality Manual (VQM) which will address visual impacts within and around the project site as well as making aesthetic design recommendations regarding the bridge and elements related to the bridge. All aspects of the visual impact analysis will be integrated into the VQM, which will be used during later stages of the project development to address visual quality issues. The VQMP involves the Lafayette Bridge Citizens Advisory Committee (CAC) in the definition of visual resources and aesthetic issues as well as evaluation of bridge design concepts.

Visual Impact Assessment

Mn/DOT's Visual Impact Assessment includes an assessment of the project context, identification of the potential viewers of the project, and assessment of the quality of the visual environment both before and after the project. Discussions of the CAC and project staff to date are summarized in the preliminary design report *Lafayette Bridge-St. Paul, Minnesota, Architectural Design Concept Development Report*, December 18, 2008.

A summary of the visual analysis to date as discussed in this report is provided below:

Step 1: Identify Affected Visual Resources

The physical context of the bridge is defined by the gentle curving forms of the Mississippi River and adjacent bluffs, the trail system and parkland on the north side of the river, the orthogonal grid of city streets, the rectilinear character of the brick warehouses in Historic Lowertown, and the vast floodplain of the West St. Paul neighborhood. The geometry of the bridge creates a long line which traverses the river, the valley, parkland and trails, and urban streetscape.

The Lafayette Bridge is one of several urban bridges crossing the Mississippi River in St. Paul. Each bridge is unique, responding to different physical needs and reflecting design technologies used when it was built. The Lafayette Bridge will contribute to this family of bridges and consideration will be given to how this bridge can contribute to the bridges of St. Paul in a meaningful way.

Step 2: Identify Affected Populations

The Lafayette Bridge is experienced by a broad range of users, as described below:

- **River and Trail Users** - Users of the river and trail systems are exposed to routes that meander underneath the bridge. This meandering experience provides an opportunity to examine closely the many details of the bridge. Colors, textures and the detail of forms are important in creating an experience that will be interesting to users during many visits to the project site.

- **Vehicular Use** - Vehicles on the bridge will be traveling at a fast pace. The experience will be fast and the users will be visually impacted by the overall geometry of elements above the deck. Small scale detail is less important than global forms, colors, and lighting schemes. It is important that the users of the bridge have a sense of what is happening below the bridge. Open rails provide views of the vista in which the bridge resides. Elements above the bridge should be used to delineate the beginning and end of the water crossing.

- **Surface Street Traffic** - The bridge crosses over a number of surface streets. The bridge also serves as an edge and gateway for the Lowertown and Dayton's Bluff neighborhoods. As such, it should frame the portals into the neighborhoods and highlight views and vistas presented to the traveler.

- **Cyclists and Pedestrians** - Cyclists and pedestrians fall into two categories: commuters and recreational users. The commuters will be interested in a safe and efficient throughway. The recreational users will be focused on the experience of river crossing and the connection to waterfront trails. Recreational users will likely linger on the deck of the bridge and will need places to stop and take in views of the downtown area and the river below. They will also want a way to exit the bridge without traveling to the end abutments. This would require the addition of stairs or ramps at the edge of the water. The bridge design will utilize a multi-use path from end to end and will allow for the future addition of stairs or ramps at the river's edge.

- **Distant Viewers of the Bridge** - The bridge is visible from many places within St. Paul including views from surface streets, upper floors of downtown buildings, and the bluff downstream from the bridge. The overall form of the bridge will define the bridge and establish its place in the family of bridges along the Mississippi River in St. Paul. Attention should be given

to the cleanliness of forms so that the bridge creates a unified architectural statement. In addition, aesthetic lighting will have a profound impact on the way the bridge is seen at night.

Step 3: Define Existing Visual Quality

The consensus resulting from the public involvement activities to date is that the existing bridge does not possess a high visual quality. The replacement of the Lafayette Bridge is seen by the CAC as an opportunity to improve the visual quality of eastern edge of downtown Saint Paul, as well as improve the overall visual quality of the Mississippi River valley in downtown Saint Paul.

Step 4: Identify Impacts on Visual Quality

A large number of design concepts were evaluated by project staff and the CAC as part of the VQM process. (Illustrations of these design concepts are provided in the *Architectural Design Concept Development Report*.) Both traditional and more contemporary design concepts were explored for their compatibility with the context of the Mississippi River and associated parks and trails, the family of bridges crossing the Mississippi River in downtown Saint Paul, compatibility with the Lowertown Historic District, and the character of downtown Saint Paul as a whole.

The CAC recommended a contemporary approach to the design concept. The design utilizes a "Transverse V" design, defined by the unique form of the river piers and land piers that create a visually dynamic solution for the bridge. The solution focuses on the relationship between the straight lines of the traffic pattern and urban geometry with the flowing lines of the river, trails and forces moving through the bridge.

The bridge design concept was developed in a visually similar manner for both the concrete box girder and steel box girder options to ensure that the aesthetic goals of the project are met regardless of the structural material chosen for the project, since both concrete and steel options will be carried forward through the bid process.

Removal of the existing bridge will eliminate a lesser quality visual element from downtown Saint Paul and the Mississippi River valley. The replacement bridge will add visual interest in a manner compatible with the character of the riverfront and Saint Paul as a whole.

13. Section 4(f)/6(f)

See EAW Item #25. The programmatic Section 4(f) is located in Appendix C.

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

A. PUBLIC INFORMATION PROCESS SUMMARY

- A Citizens' Advisory Committee (CAC) was established to provide input into project development, balancing inputs and community concerns. The CAC met and operated informally, advising Mn/DOT on project issues. The CAC also served as the Visual Quality Manual (VQM) committee to articulate community values to ensure sensitive visual quality and aesthetic design results while at the same time satisfying the transportation needs and preserving the area's historic, natural, and cultural resources.

- Project office hours were established to allow the public an opportunity to view project plans, ask questions, and provide input. Office hours, morning and afternoon, were held monthly from May to August, 2008. Office hours in the evening were resumed in February 2009 and will run through summer 2009. Office hours were publicized via a press release for each date as well as on the Mn/DOT project website. The office hours were also publicized locally through a neighborhood newspaper (La Voz) through information sent out in the West Side Citizen's Organization's newsletter.

- A project website was created to provide up-to-date information on the project. Meeting agendas, materials, summaries, and notices of upcoming meetings were regularly posted to the website: **http://www.dot.state.mn.us/metro/projects/hwy52-stpaul/index.html**

- A public open house was held on September 30, 2008, to provide project information and seek public input. Mn/DOT issued a press release for the meeting and posted the information on the project website. Press releases were sent by Mn/DOT for the September 30, 2008 Open House on September 22 and 28, 2008.

Project Management Team

A Project Management Team (PMT) was formed to review and provide input on the proposed project consistent with the policies of the agencies that the various members represent. The PMT usually met twice monthly to review the environmental process approach, traffic analysis, preliminary design, and public involvement opportunities. Below is a list of the agencies represented on the PMT.

- Mn/DOT
- Ramsey County
- City of St. Paul
- Metro Transit

Agency Meetings and Coordination

- **Tribal Coordination**

  FHWA consulted with tribal groups who have expressed an interest in reviewing projects in this area of the state. The groups contacted were the Flandreau Santee Sioux Tribe, the Lower Sioux Indian Community, the Prairie Island Indian

Community, the Santee Sioux Nation, the Sisseton-Wahpeton Oyate Tribe, the Spirit Lake Dakotah Sioux, the Upper Sioux Community, the Shakopee Mdewakanton Sioux Community, the Turtle Mountain Band of Chippewa, and the Fort Peck Tribes. The Lower Sioux Indian Community requested any ethnographic information on the Carver Cave site located approximately one-half mile to the east of the bridge. Mn/DOT CRU staff forwarded a previously completed study *Determination of Eligibility of Carver's Cave (21RA27) and Dayton's Bluff Cave (21RA 28)*, Bruce Vento Nature Sanctuary Project, St Paul, Ramsey County, Minnesota by The 106 Group (2003). None of the other tribes responded with an interest in the project.

- **U.S. Coast Guard**

  On April 16, 2008 project consultants and Mn/DOT staff met with the U.S. Coast Guard and operators of the Upper River Services barge terminal to discuss river pier locations.

- **National Park Service**

  On April 21, 2008 Mn/DOT staff and project consultants met with National Park Service (NPS) staff to discuss plans for the project and receive input on the EA/EAW and project design given the project's location in the Mississippi National River Recreation Area. A follow up workshop with the NPS and staff from St. Paul Parks and Recreation, Mn/DOT, and Metropolitan Council was held on May 30, 2008 to discuss the need for a trail on the bridge and possible touchdown locations.

- **Federal Aviation Administration, Metropolitan Airports Commission, and Mn/DOT Aeronautics**

  Project consultants and Mn/DOT staff met with representatives from the Federal Aviation Administration (May 29, 2008), Metropolitan Airports Commission (April 29, 2008), and Mn/DOT Aeronautics (January 9, 2009) to discuss plans for the project and guidance for completing Form 7460.

- **Minnesota Pollution Control Agency**

  On September 25, 2008 project consultants met with Minnesota Pollution Control Agency staff to discuss procedures for air quality analysis

Early coordination input was solicited from several state agencies in 2005. Agencies contacted include the Minnesota State Historic Preservation Office (SHPO), Mn/DOT Cultural Resources Unit (Mn/DOT CRU), Minnesota Department of Natural Resources (MNDNR), and Mn/DOT Office of Environmental Services (Mn/DOT OES). A summary of the comments and input from each agency follows:

- **Mn/DOT CRU and SHPO**

  Mn/DOT CRU made an adverse effect determination. The SHPO concurred with the determination in a letter dated June 13, 2008 (see Appendix B). A Memorandum of Agreement (MOA) was executed for the project in August 2008 (see Appendix B). The findings are described in EAW Item #25.

- **MNDNR**

  The Minnesota Natural Heritage database was reviewed and four known occurrences of rare or native plant communities were found in the area searched. The findings are discussed in detailed in EAW Item #11.

- **Mn/DOT OES**

  Mn/DOT OES made a determination that the proposed action is not likely to adversely affect federally-listed species or adversely modify designated critical habitat. The U.S. Fish and Wildlife Service concurred with this determination in correspondence dated, January 21, 2009 (see Appendix B). The findings are discussed in detailed in EAW Item #11.

B. PERMITS AND APPROVAL REQUIREMENTS

Table 19 lists the permits and approvals needed for the construction of the proposed project.

TABLE 19
PERMITS AND APPROVALS

Permit	Agency	Action Required
Federal		
Environmental Assessment	FHWA	Approval
Section 4(f) Determination	FHWA	Approval
EIS Need Decision/Finding of No Significant Impact (FONSI)	FHWA	Approval
Section 9 of the Rivers and Harbors Act – Permit (navigable waters)	U.S Coast Guard	Permit
Section 10 Permit River and Harbor Act (navigable waters)	COE	Permit
FAA Forms 7460-1 (Notice of Proposed Construction) and 7460-2 (Notice of Actual Construction)	Federal Aviation Administration	Determination of Findings
Section 106 (Historic and Archeological)	FHWA	Approval
Endangered Species Act Section 7	Mn/DOT (for FHWA)	Determination of Effect
Endangered Species Act	U.S. Fish and Wildlife Service	Concurrence
Project Review	National Park Service (MNRRA)	
Project Review	U.S. Fish and Wildlife Service	

TABLE 19 continued
PERMITS AND APPROVALS

Permit	Agency	Action Required
State		
EAW Certification	Mn/DOT	Approval
EIS Need Decision	Mn/DOT	Negative Declaration
Temporary Water Appropriation Permit	MNDNR	Permit
Section 401 Water Quality Certification	MPCA	Certification
Asbestos and Regular Waste Assessment for Bridge Removal	MPCA Minnesota Department of Health (DOH)	Approval
Dredge Disposal Permit	MPCA	Approval (if needed)
Public Waters Work Permit or General Permit 2004-0001	MNDNR	Permit
Railroad Agreement and Safety Evaluation	Mn/DOT	Approval
Mussel Relocation Permit	MNDNR	Permit
Bridge and/or Culvert Plan	MNDNR	Approval
National Pollutant Discharge Elimination System (NPDES)	MPCA	Permit
Section 106 (Historic/ Archeological) consultation	SHPO	Concurrence
Section 106	Mn/DOT Cultural Resources Unit (CRU)	Determination of Effect
Aesthetic Treatment Plans	Mn/DOT CRU and SHPO	Approval/ Concurrence
Local		
Municipal Consent	City of St. Paul	Approval
Stormwater Management	Capitol Region Watershed District	Approval
Erosion and Sediment Control	Capitol Region Watershed District	Approval

C. PUBLIC COMMENT PERIOD AND PUBLIC HEARING

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

D. REPORT DISTRIBUTION

Copies of this document have been sent to agencies, local governmental units, libraries, and others as per Minnesota Rule 4410.1500 (Publication and Distribution of EAW).

E. PROCESS BEYOND THE HEARING

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), by revising the EA, or by providing clarification in the Findings of Fact and Conclusions, whichever is appropriate.

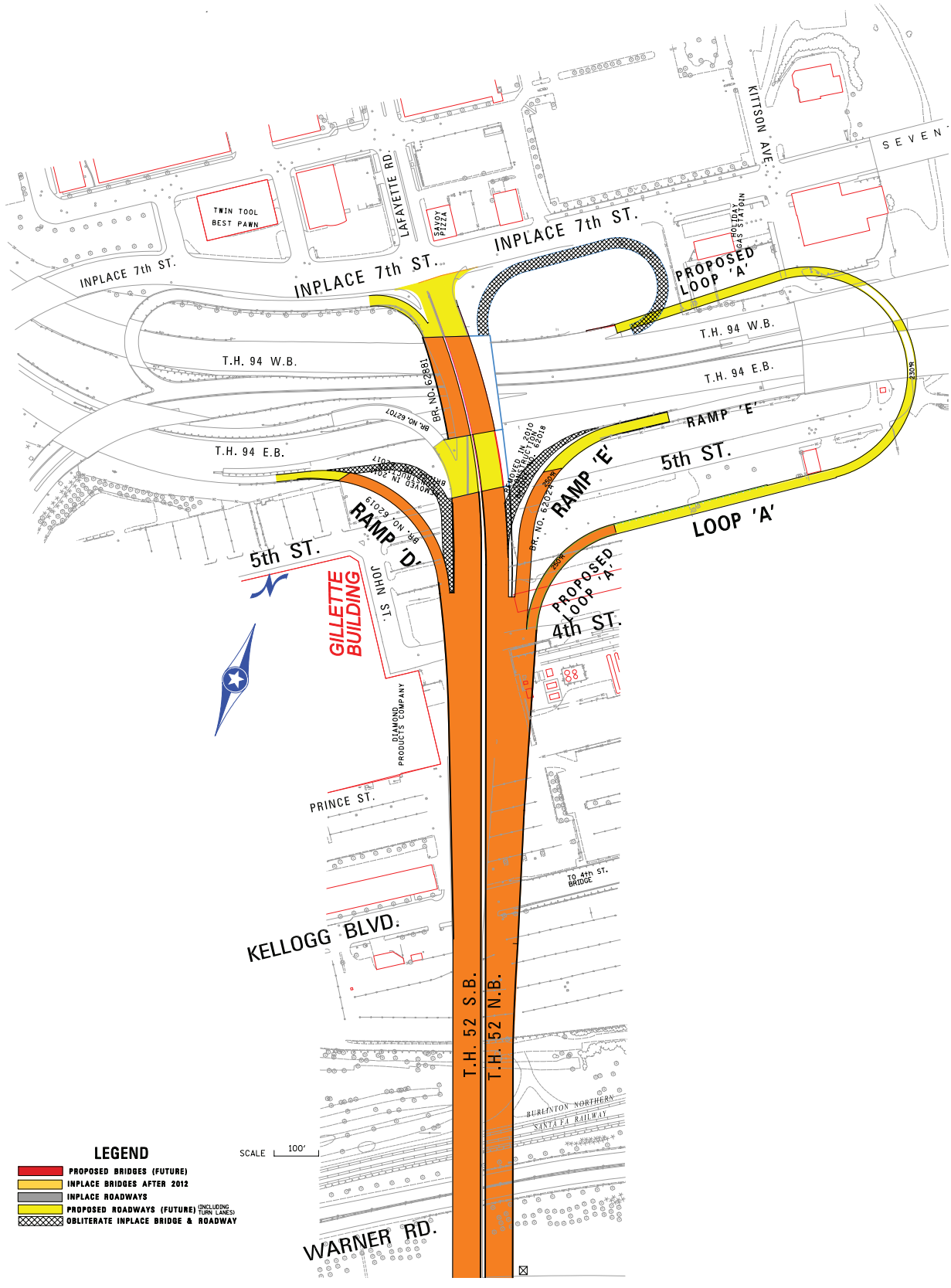
If an EIS is not necessary, Mn/DOT will prepare a "Negative Declaration" for the state environmental documentation. Mn/DOT will also prepare a request for a "Finding of No Significant Impact" (FONSI) that will be submitted to the FHWA. If the FHWA agrees that this finding is appropriate, it will issue a FONSI.

Notice of the state decision and availability of the Findings of Fact and Conclusions will be placed in the Minnesota EQB *Monitor*. Mn/DOT will distribute the Negative Declaration and FONSI to the EAW distribution list and those who provided substantive comments.

APPENDICES

APPENDIX A

FIGURES



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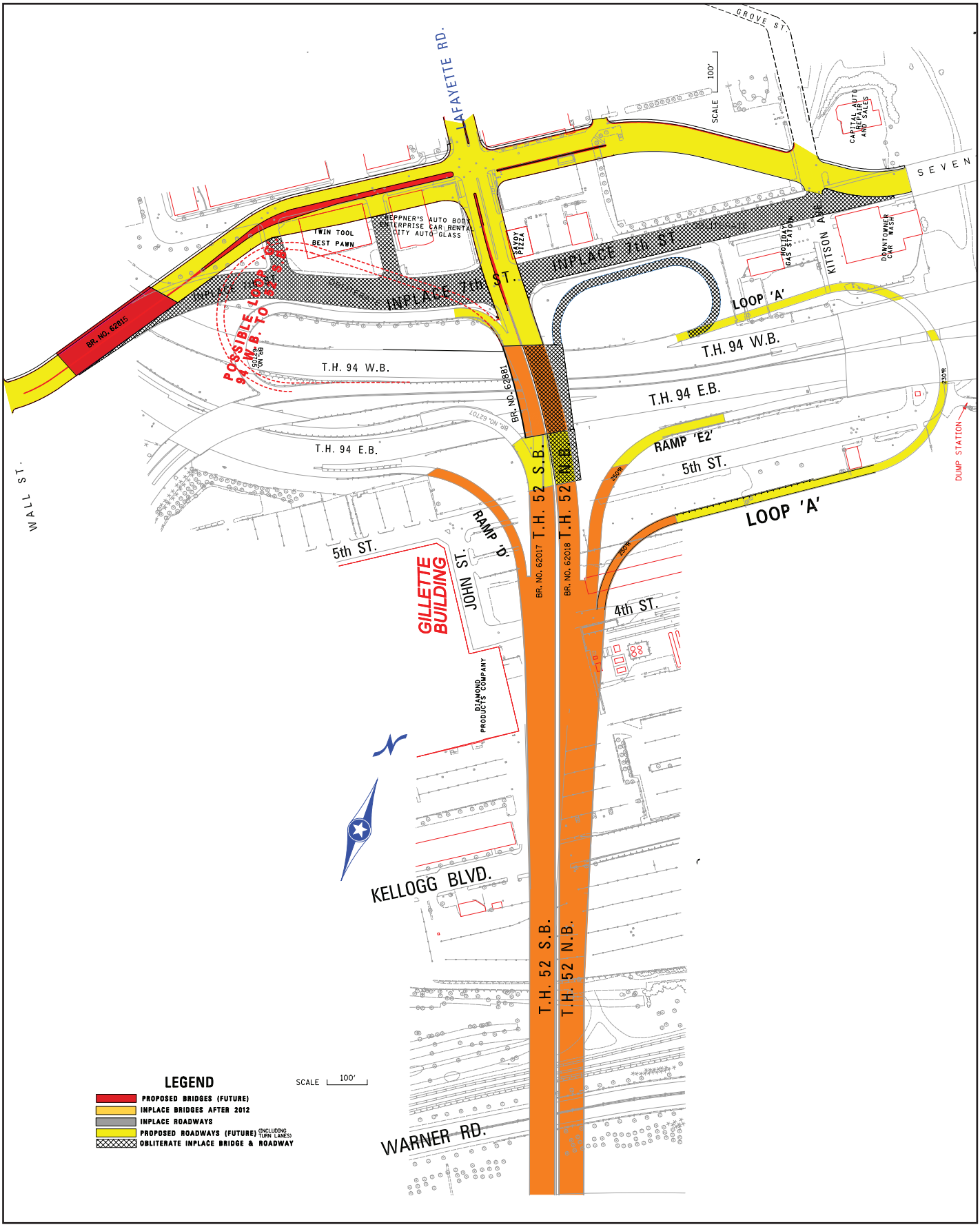
North Area Option 3A

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

Figure 3a



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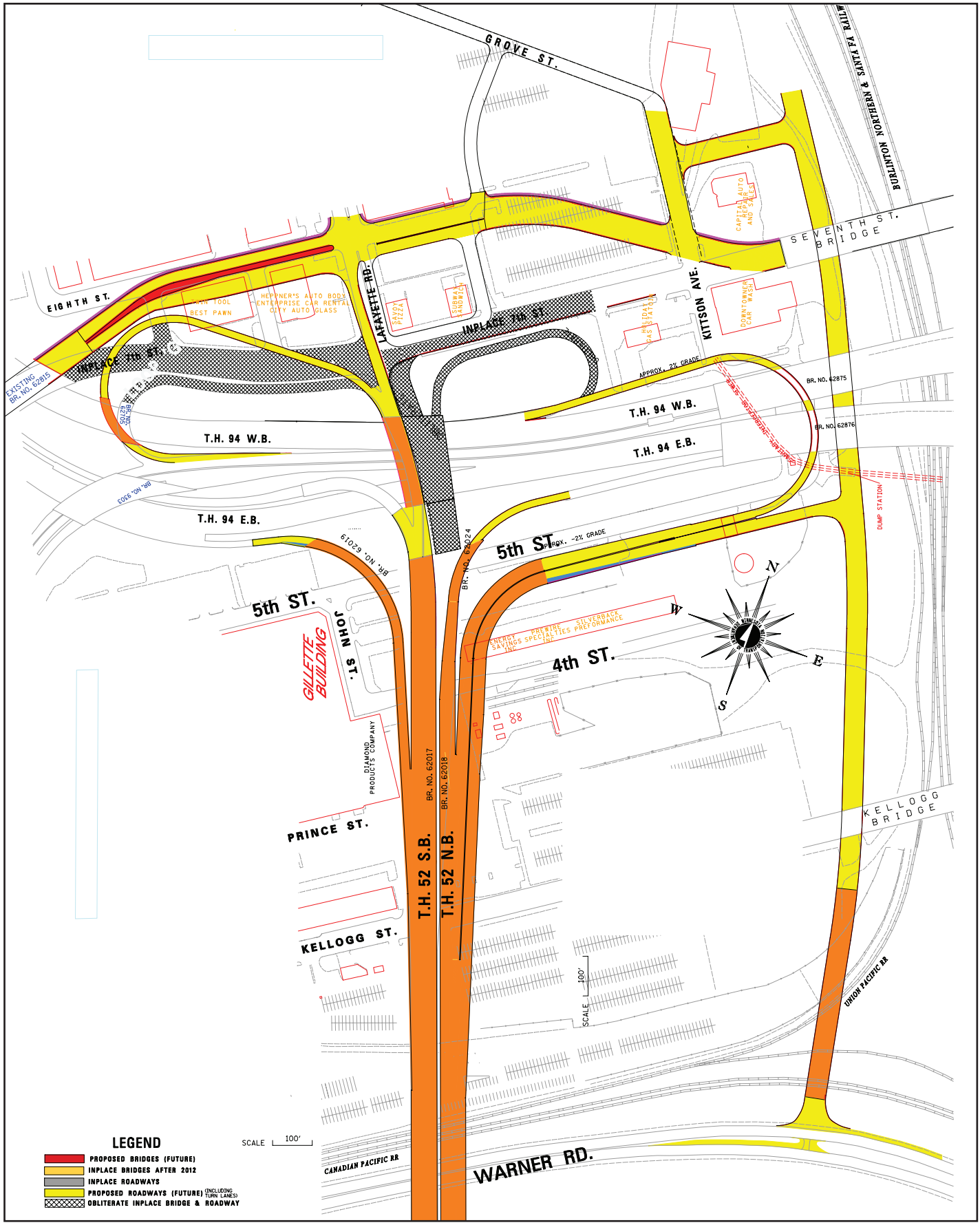
North Area Option 3AA

Figure 3b

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



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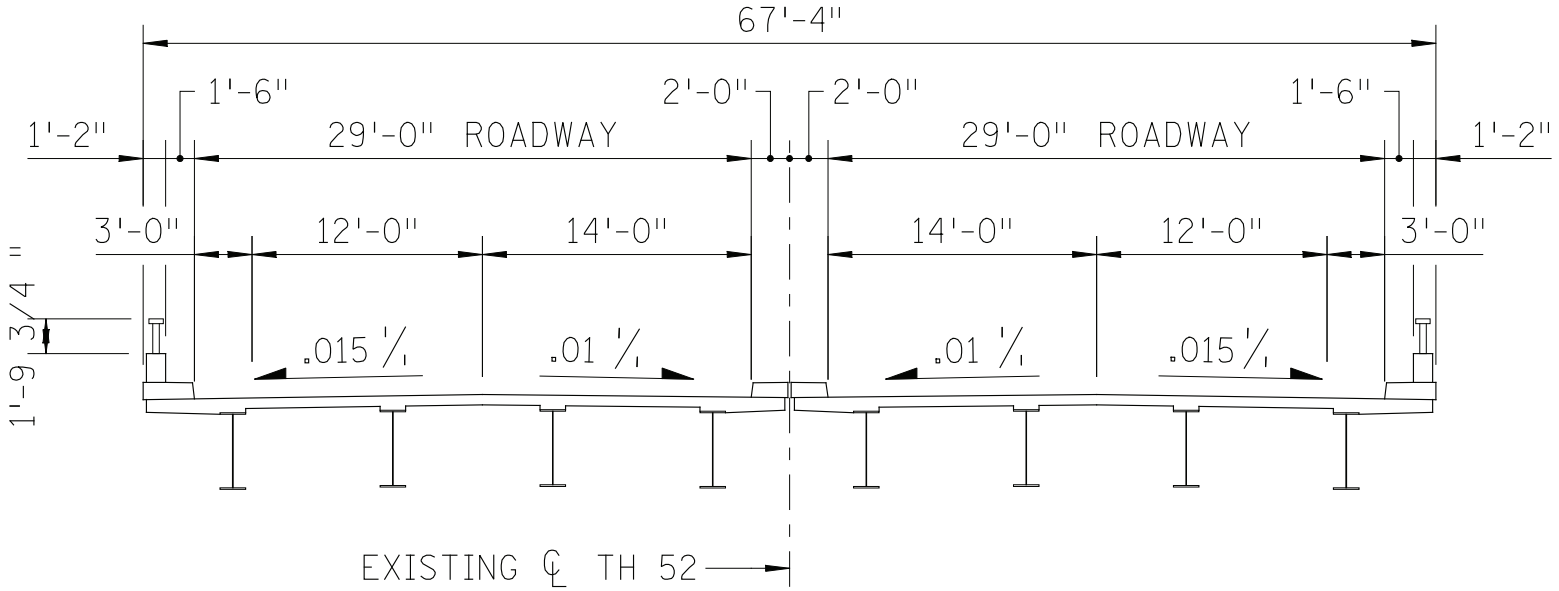
North Area Option 3BB

Figure 3c

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



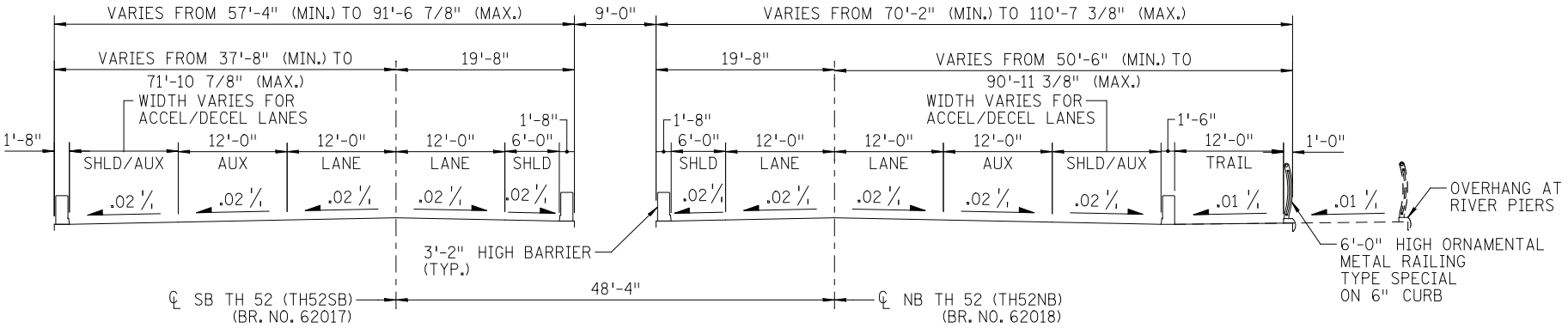
EXISTING TYPICAL SECTION

Graphics/6414 Lafayette Bridge/Report/6414 h-figures.indd

Existing Typical Section

Figure 4a

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



PROPOSED TYPICAL SECTION

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Proposed Typical Section

Figure 4b

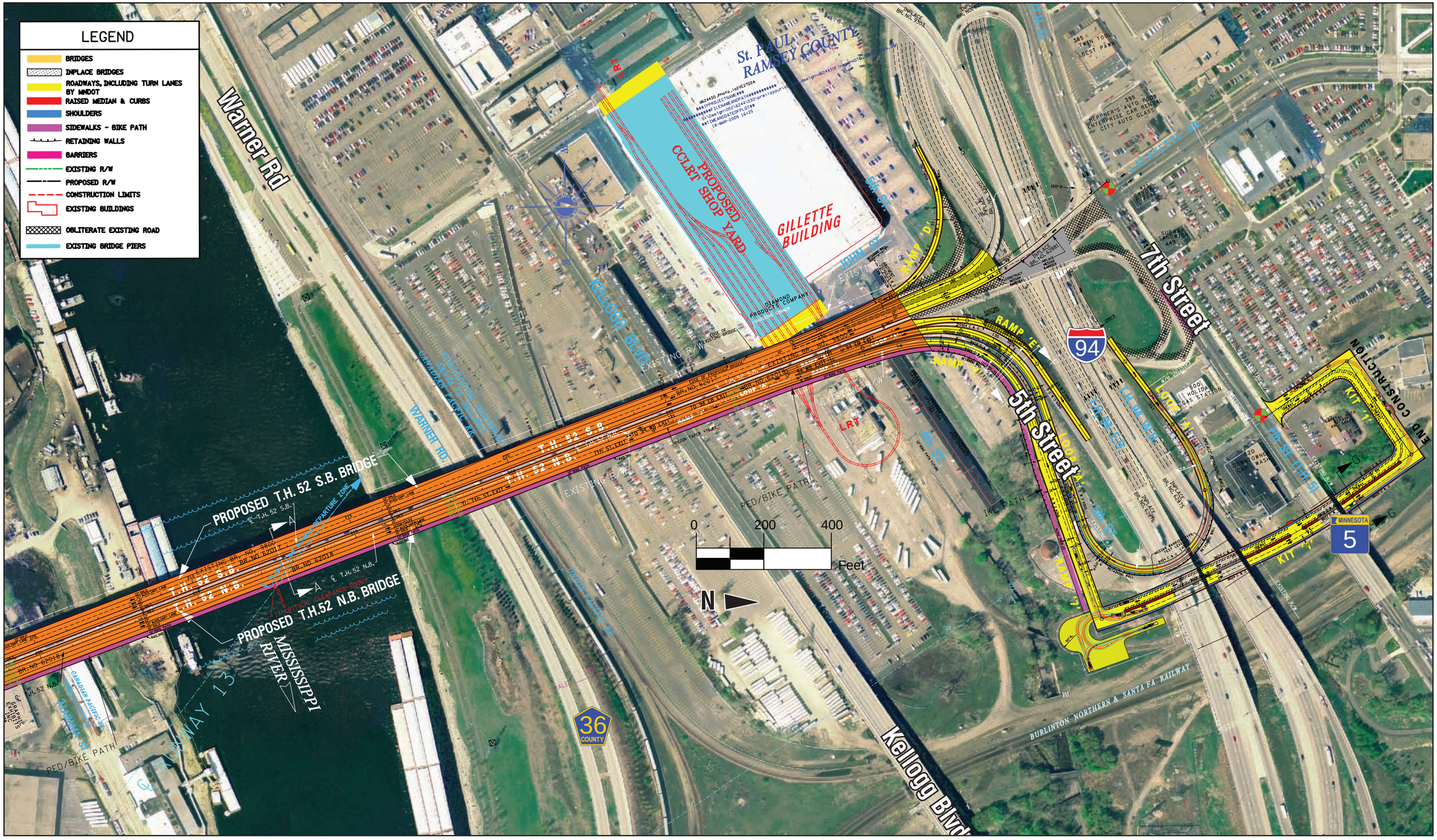
Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

Graphics/6414 Lafayette Bridge/Report/6414 h11x17 figures.indd

Proposed Improvements - Full Extent

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

Figure 5a



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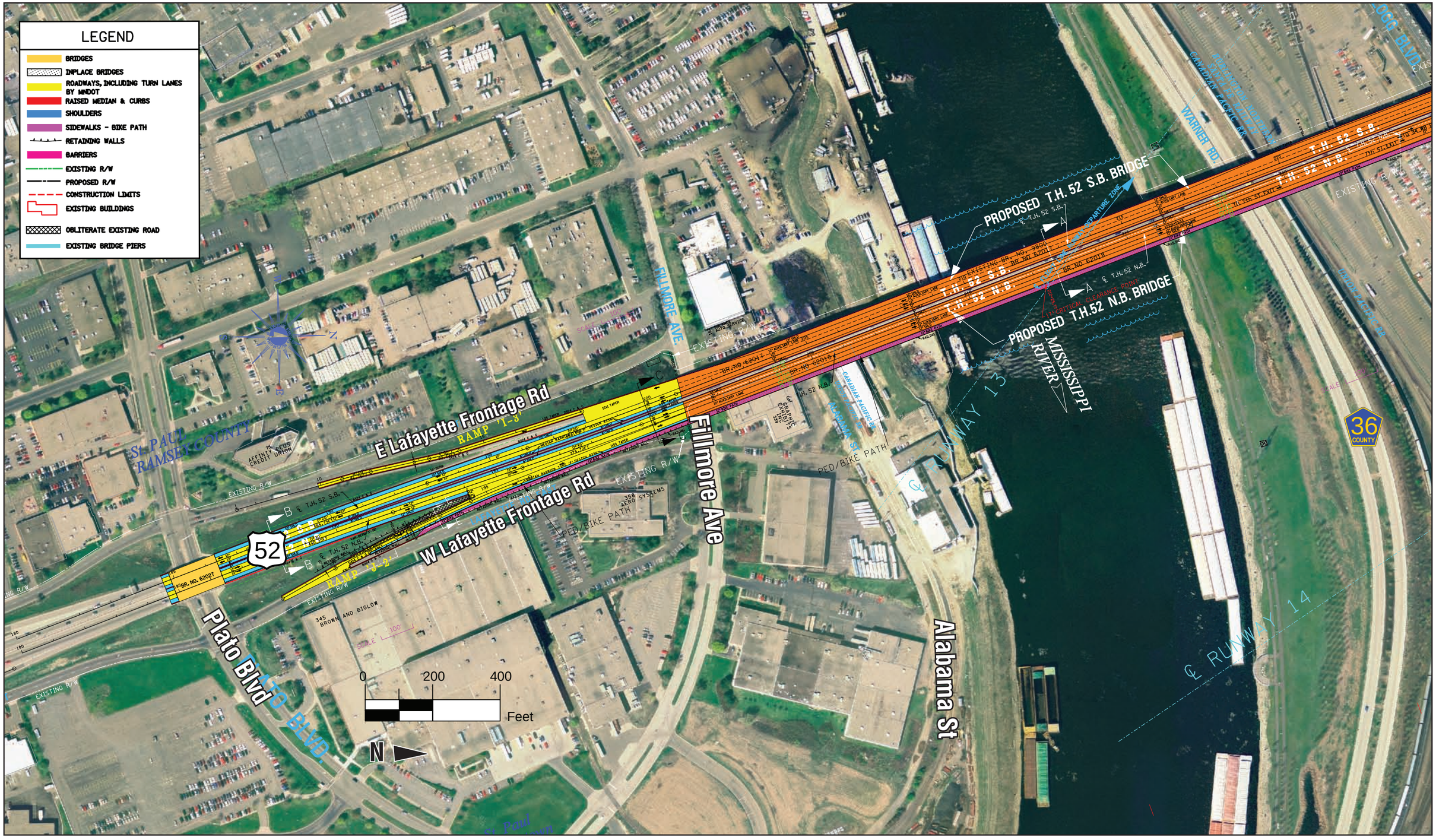
Proposed Improvements - North

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

Figure 5b



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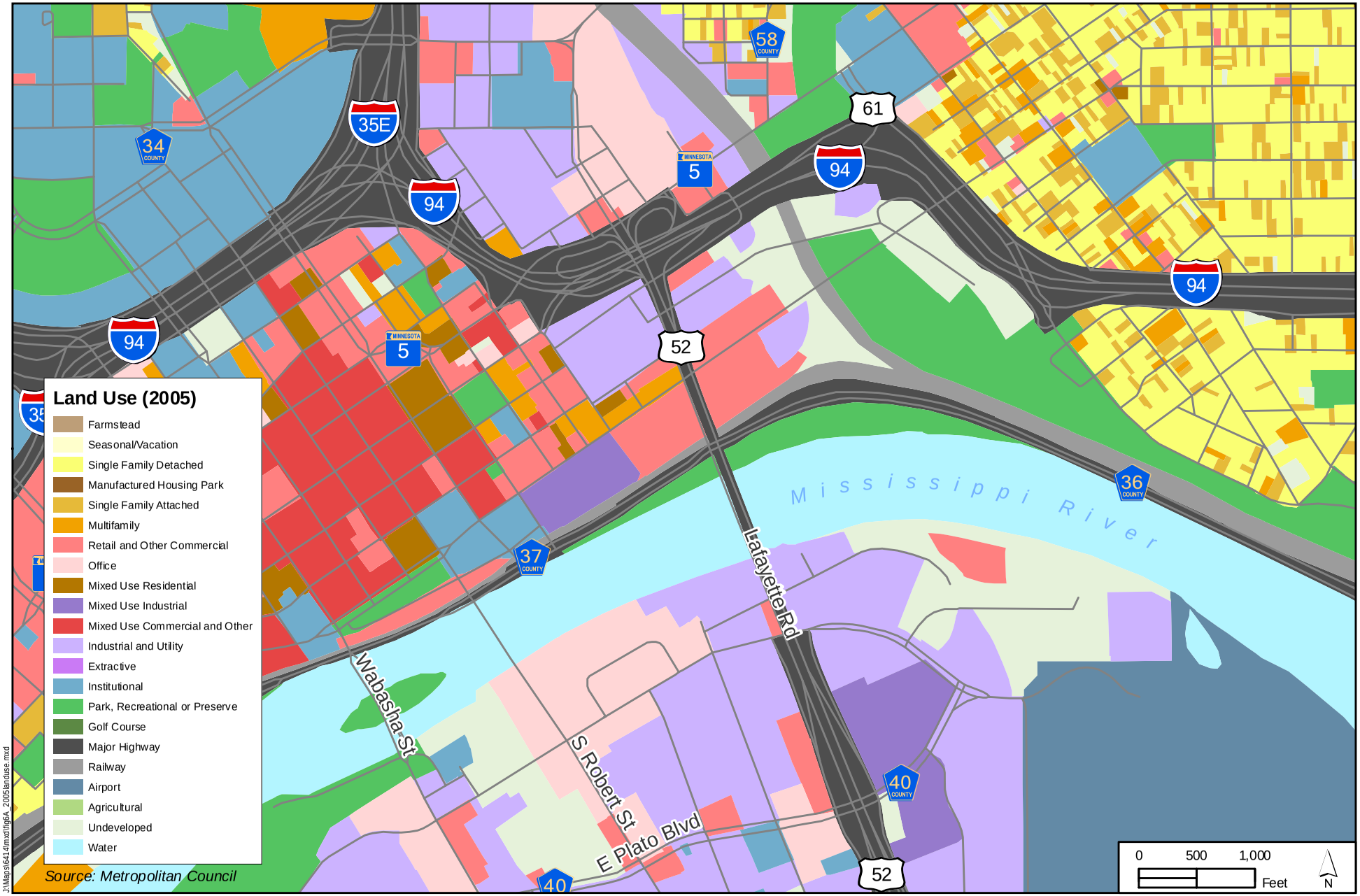
Proposed Improvements - South

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

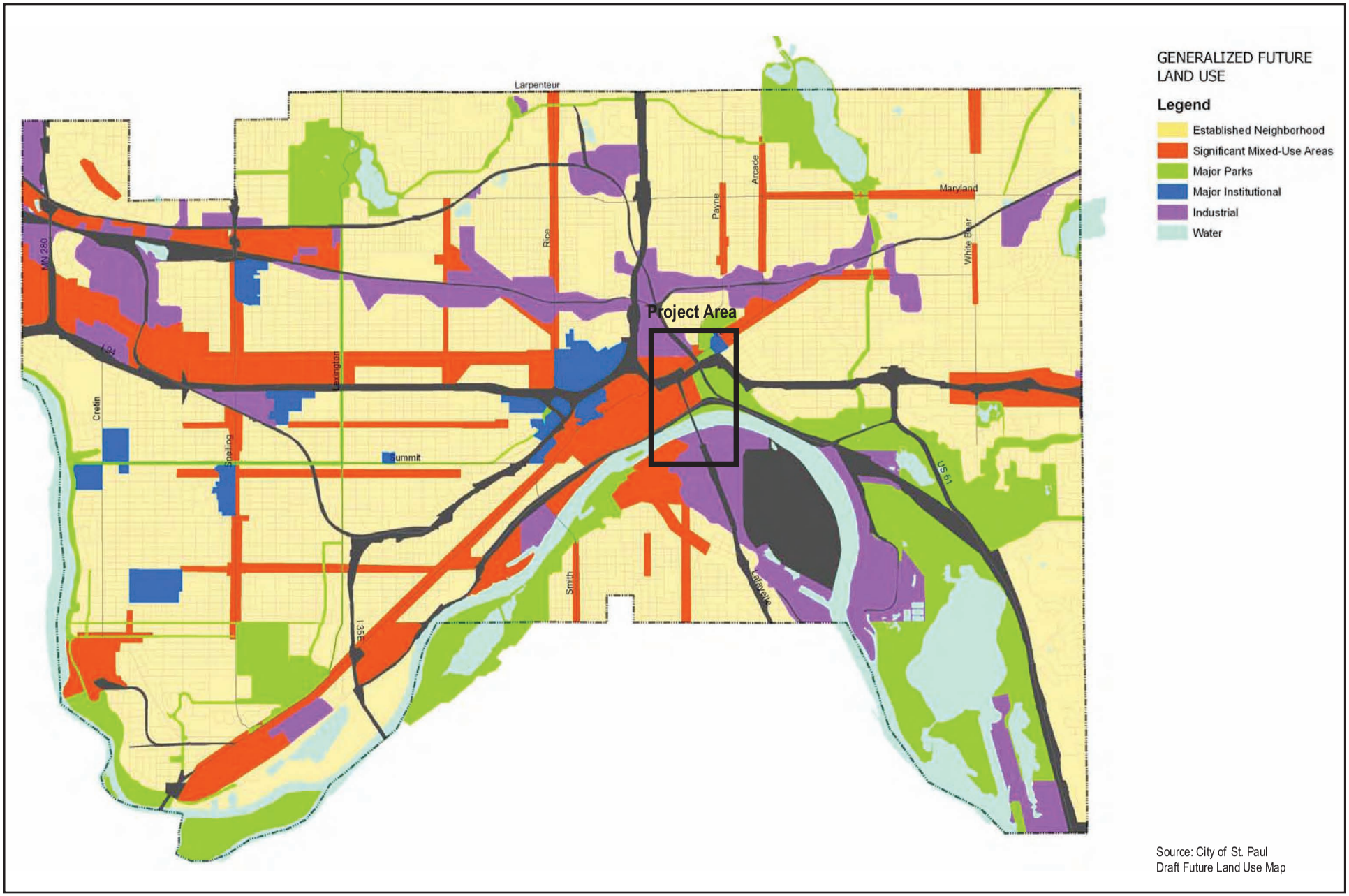
Figure 5c



Existing Land Use

Figure 6a

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



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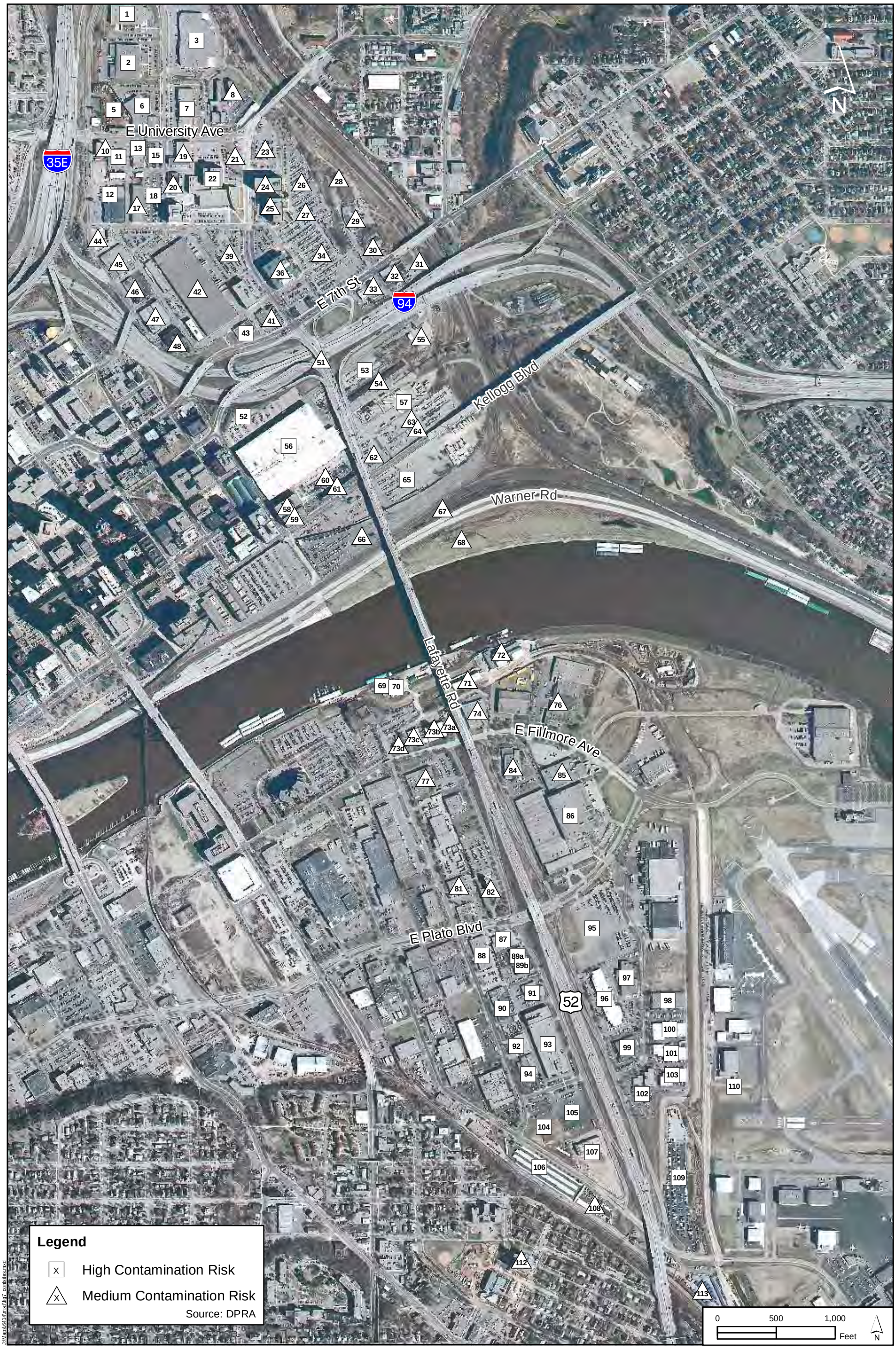
Future Land Use

Figure 6b

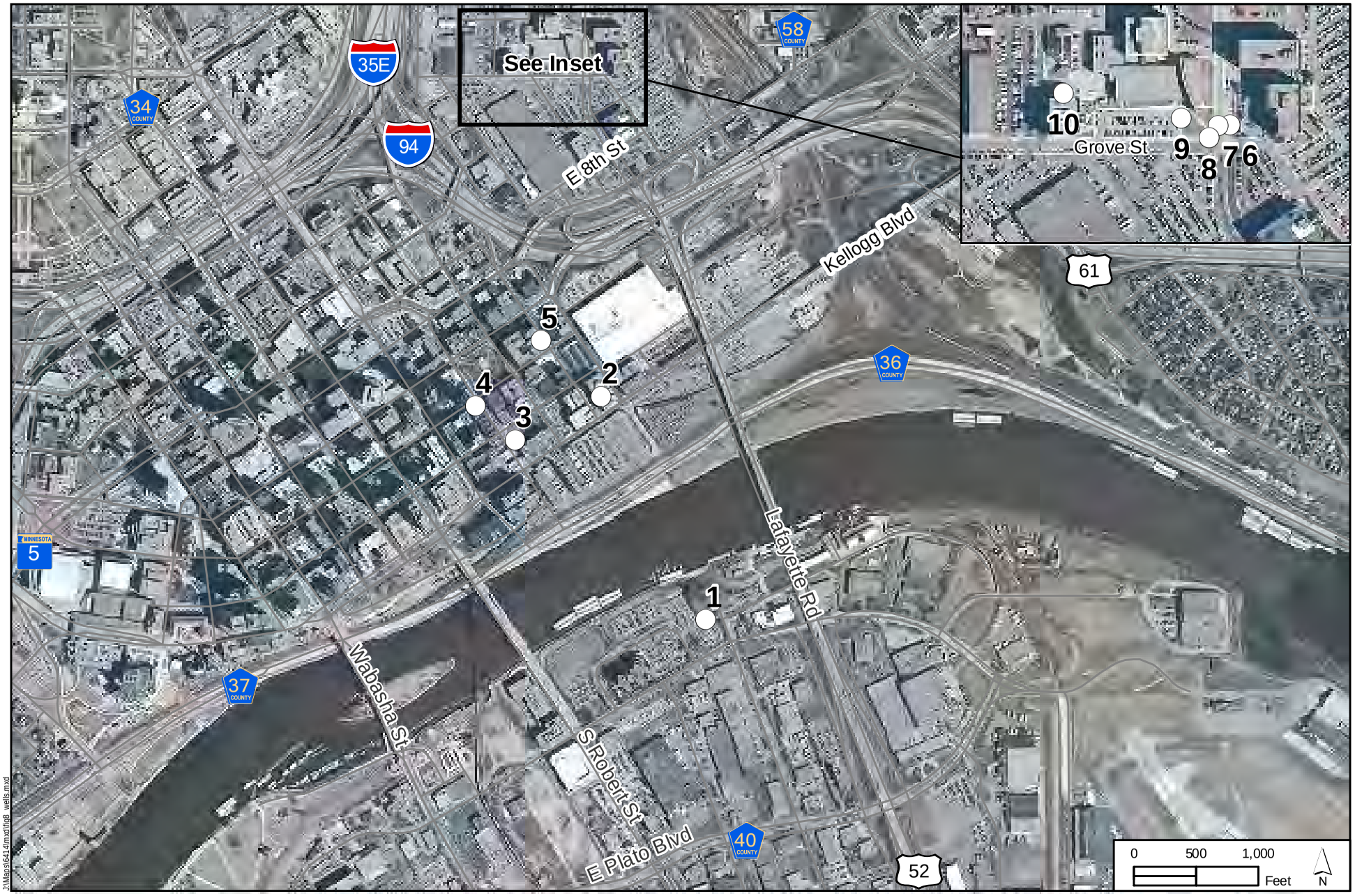
Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



Potentially Contaminated Sites

Figure 7

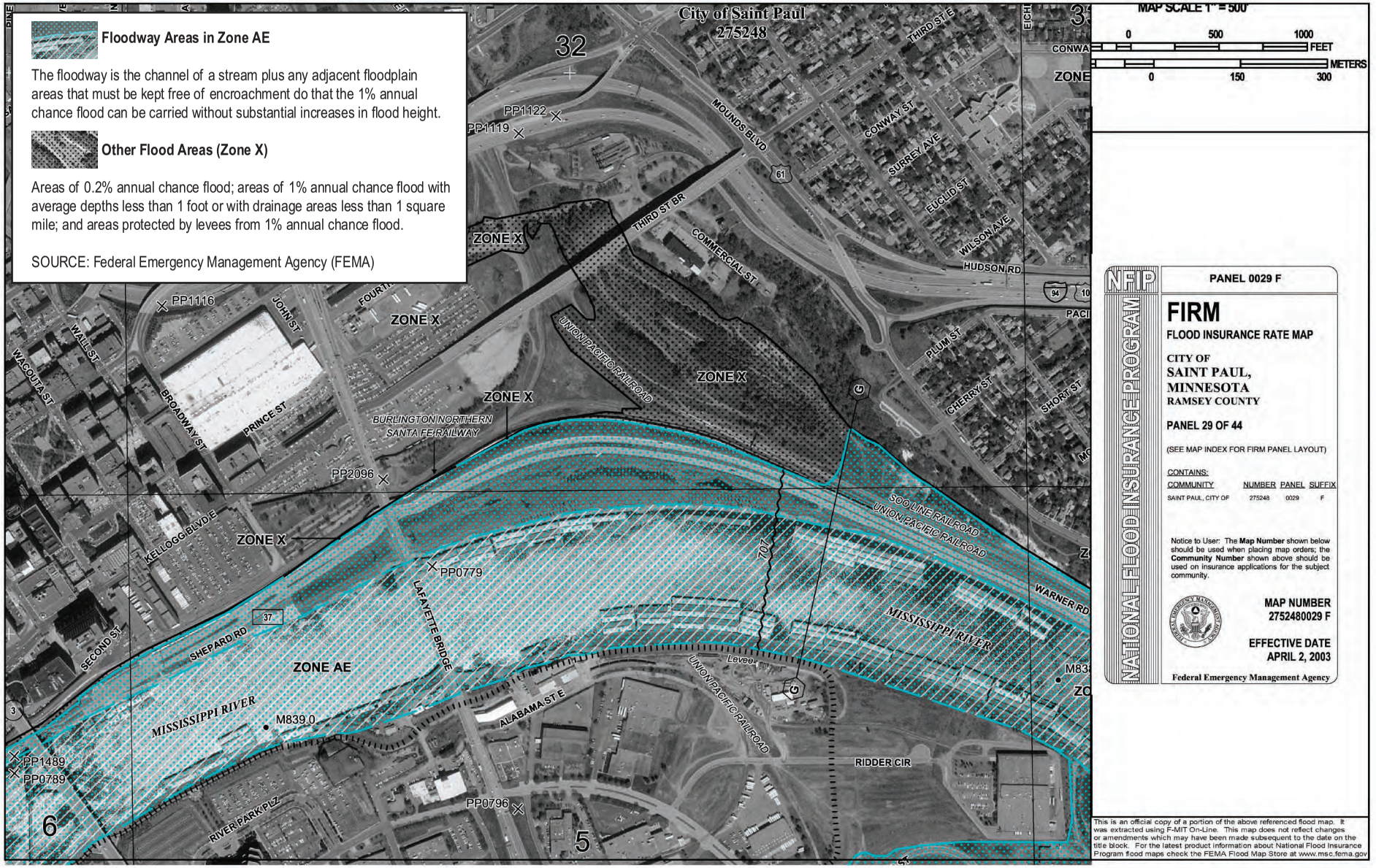
Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



Well Locations

Figure 8

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



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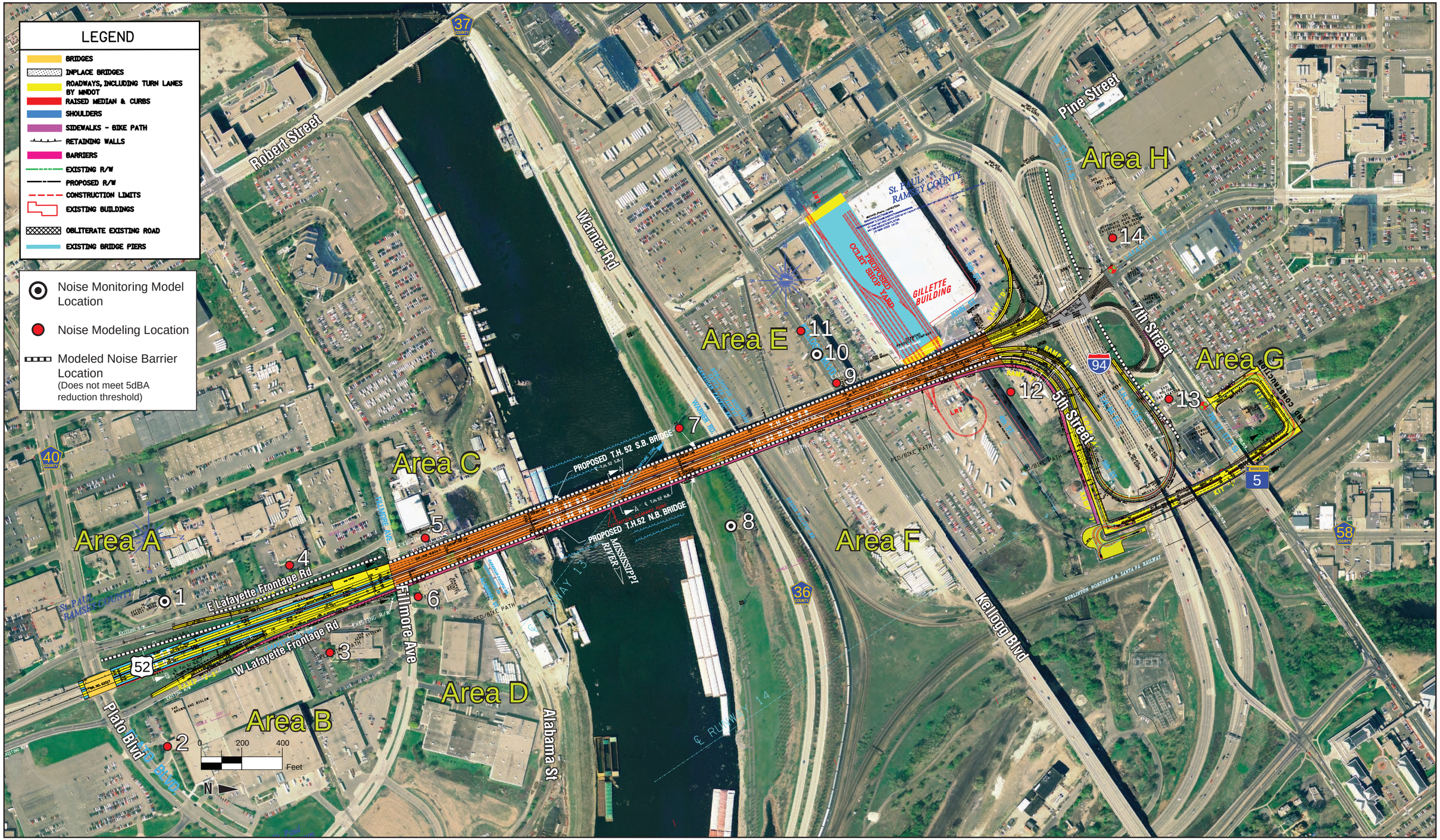
100 Year Floodplain Boundaries

Figure 9

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



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Noise Receptor and Modeled Noise Barrier Locations

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

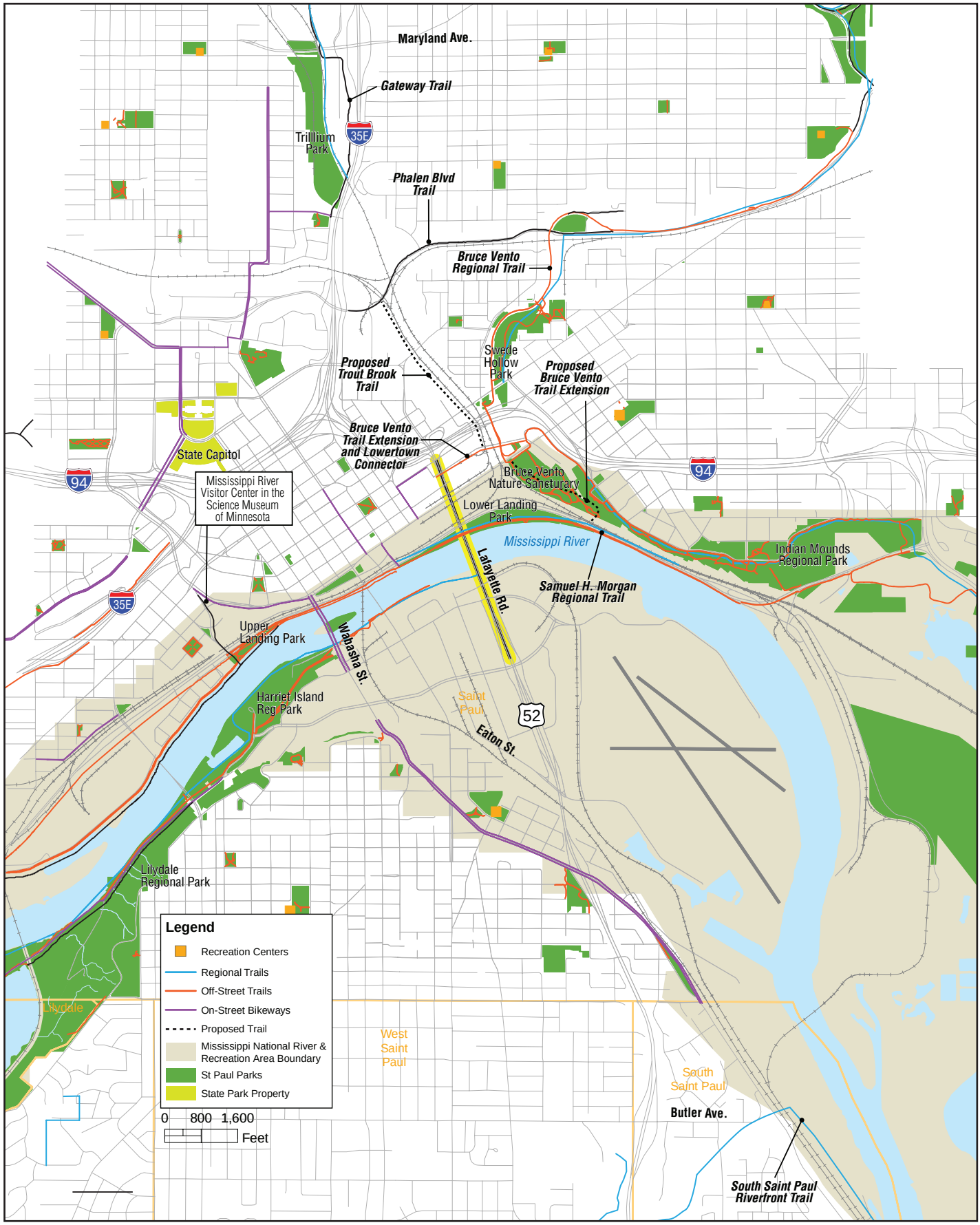
Figure 10

J:\Maps\6414\mxd\fig11_histprop.mxd

Historic Properties and Districts

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

Figure 11



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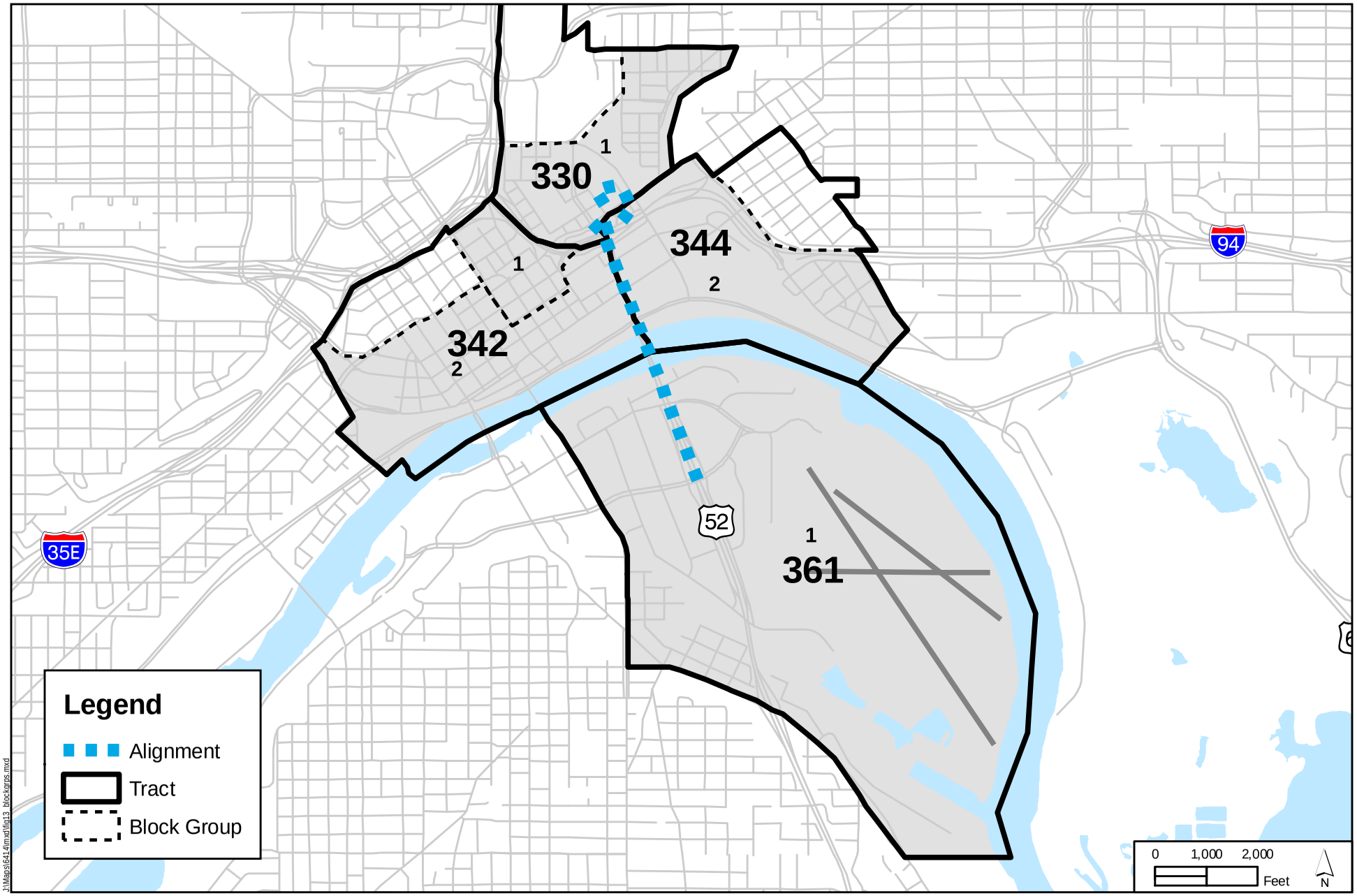
Parks and Trails

Figure 12

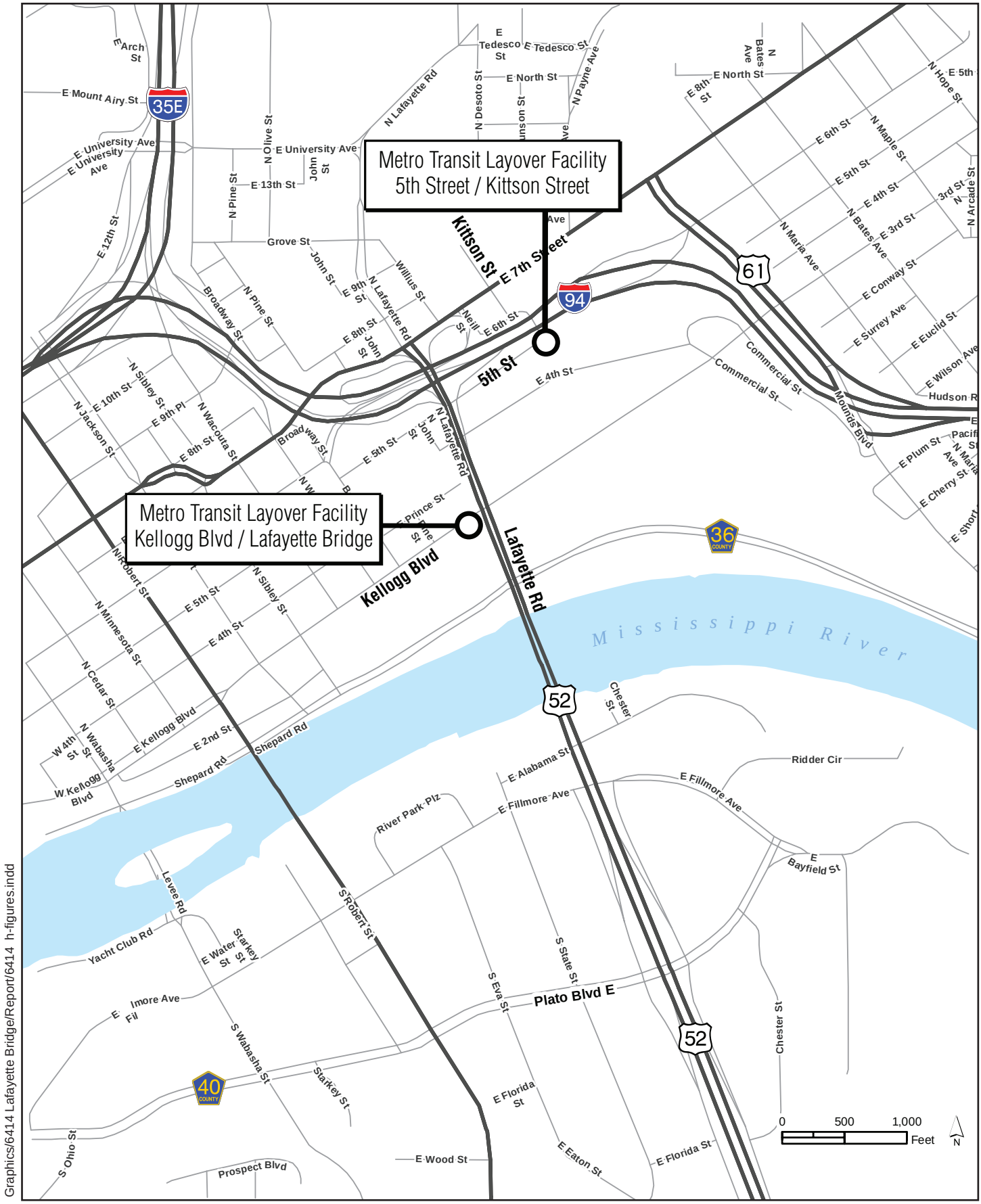
Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



Census Block Groups

Figure 13

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



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Metro Transit Layover Facilities

Figure 14

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

APPENDIX B

CORRESPONDENCE

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-4010

July 19, 2005

Valerie Galajda
Metro Division
1500 West Co. Rd. B2
Roseville, MN 55113

RE: Response to MnDOT/DNR Questionnaire Request Form Regarding Natural Resources and Recreational Resources, TH 52 Mississippi Bridge Reconstruction (S.P. 6244-30), Ramsey County

Dear Ms. Galajda:

The Minnesota Department of Natural Resources (DNR) has completed review of the information submitted in the MnDOT/DNR Questionnaire Request Form regarding a proposed reconstruction of the TH 52 bridge over the Mississippi River (Lafayette Bridge), Ramsey County. The following comments were submitted to me during field review of the project:

- All options presented will require a Public Waters Work Permit. However, General Permit (GP) 2004-0001 has been issued and may be applied to this project should the conditions of the permit be met. I have attached a copy of the permit to the cover email of this letter. As the project moves forward, design of the bridge should meet the conditions listed in the GP. Additional design considerations and information on specific GP conditions are:

  1. GP 2004-0001 Condition #7: Zebra Mussels are of concerns on this portion of the Mississippi River. In water construction equipment will be required to be decontaminated prior to moving to other locations.

  2. GP 2004-0001 Condition #10: Construction shall not obstruct navigation on the Mississippi River.

  3. GP 2004-0001 Condition #12: It is assumed the design will be of a similar construction and will have a similar cross-sectional area for flood stages. However, a hydrologic report, will be required for review prior to authorization under the GP.

  4. GP 2004-0001 Condition #18A: Work Exclusion dates for non-trout streams in DNR Region 3 is March 15 through June 15. Work between these dates will require a waiver from the DNR Area fisheries Supervisor.

  5. Other concerns are that demolition debris not be allowed to fall into the river, and that the new stormwater collection system not be allowed to directly discharge to the river.

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

- The DNR is aware of plans for local bike/pedestrian trail connections in the area. The Bruce Vento Regional Trail connection to downtown Saint Paul will be constructed under the TH 52 bridge during the spring of 2006. This is an important trail connection, connecting over 85 miles of trail into Downtown Saint Paul. The trail alignment was selected partially so that it could be connected to a bike & pedestrian crossing on the TH 52 bridge when it is replaced/rebuilt. The west end of the trail alignment is proposed to follow 4th Street, north on John Street, and then west on 5th Street.

  The Mississippi River and I-94 are both major barriers to bike and pedestrian circulation now. Providing bike and pedestrian access across the bridge will be an important part of the City of Saint Paul's Mississippi River redevelopment. The City of St. Paul and should be contacted regarding designs for this bridge.

- The Minnesota Natural Heritage database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the TH 52 (S.P. 6244-30) project area. Based on this review, there are 4 known occurrences of rare species in the area searched (for details, see cover email for database printouts). If options 1 or 2 (minimum scope) are selected for the final project design, the project should not affect any known occurrences of rare species. However, if options 3 or 4 (medium or maximum scope) are selected, impacts to mussels are possible, and a mussel survey will likely be needed.

  Because our information is not based on a comprehensive inventory, there may be rare or otherwise significant natural features in the state that are not represented in the database. A county-by-county survey of rare natural features is now underway, and has been completed for Ramsey County. Our information about native plant communities is, therefore, quite thorough for that county. However, because survey work for rare plants and animals is less exhaustive, and because there has not been an on-site survey of all areas of the county, ecologically significant features for which we have no records may exist on the project area.

If you have questions regarding this letter, please e-mail me at peter.leete@dot.state.mn.us or call at (651) 296-6569.

On behalf of the DNR
Sincerely,

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

C: ERDB file 20060030

TWP	RNG	PRIMARY SECTION	FED STATUS	MN STATUS	S RANK	ELEMENT and OCCURRENCE NUMBER	MANAGED AREA
T028N	R22W	04		SPC		CYCLEPTUS ELONGATUS (BLUE SUCKER) #108	
T028N	R22W	06		END		QUADRULA NODULATA (WARTYBACK MUSSEL) #27	MISSISSIPPI NATL RIVER & RECREATION AREA
T029N	R22W	31		THR		FALCO PEREGRINUS (PEREGRINE FALCON) #44	
T029N	R22W	31		SPC		MARPISSA GRATA (A SPECIES OF JUMPING SPIDER) #8	

RECORDS PRINTED = 4

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

September 8, 2008

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

Re: Request for Concurrence
S.P. 6244-30, Trunk Highway 52
Lafayette River Bridge Replacement
City of St. Paul
Ramsey County, Minnesota

Dear Mr. Sullins:

The Minnesota Department of Transportation (Mn/DOT) is requesting concurrence from the U.S. Fish and Wildlife Service (Service) that the above referenced action is not likely to adversely affect federally-listed species or adversely modify designated critical habitat.

Project Description
The proposed project involves replacement of the Lafayette Bridge and redecking of the bridge over Plato Boulevard. The new structure will provide two through lanes in each direction and will be the same approximate height and width as the existing structure. The location, number, and size of river piers are not yet known. The potential environmental and social impacts of this action are currently being evaluated in a Federal Environmental Assessment.

Listed Species/Critical Habitat
The County Distribution of Minnesota's Federally-Listed Threatened, Endangered, Proposed, and Candidate Species list provided by the Service indicates that the Ramsey County is within the distribution range of the Higgins eye pearlymussel (*Lampsilis higginsii*), a federally-listed endangered species.

There is no designated critical habitat in Ramsey County.

Known Occurrences
According to information provided by the Natural Heritage Database (NHD) maintained by the Minnesota Department of Natural Resources (MNDNR), no occurrences of federally-listed species have been recorded in the immediate vicinity of the proposed action. See attached NHD Map and Table.

In September of 2007, MNDNR malacologists conducted a preliminary investigation of the project vicinity to see if an official survey was warranted. During this investigation, the MNDNR identified many mussel species some of which are currently protected under State Law. No federally-listed species were identified.

Measures to Minimize the Potential for Impacts
A survey by MNDNR malacologists will be conducted closer to construction. Appropriate measures will be developed and implemented in order to minimize impacts to mussel resources. In the unlikely event that federally-listed species are identified, the Service will be contacted and the consultation process will be reinitiated.

Determination
Therefore, as a result of the commitments identified above, Mn/DOT in acting as the non-federal representative for the Federal Highway Administration, has determined that the proposed action may affect, but is not likely to adversely affect federally-listed species or adversely modify designated critical habitat. We are requesting concurrence that consultation with your office under Section 7 of the Endangered Species Act is complete.

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

Sincerely,

Jason Alcott
Natural Resource Specialist

Attachment(s) NHD Map and Table, Project Layouts (2)

cc: USFWS- Nick Rowse
Mn/DOT- Richard Dalton file

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 American Blvd E.
Bloomington, Minnesota 55425-1665

JAN 21 2009

Mr. Jason Alcott
Natural Resource Specialist
Office of Environmental Services
Minnesota Department of Transportation
395 John Ireland Boulevard
St. Paul, Minnesota 55155-1899

Dear Mr. Alcott:

This responds to your September 8, 2007, letter, requesting concurrence from our agency regarding the potential impacts from replacing the Lafayette Bridge and re-decking the bridge over Plato Boulevard near downtown St. Paul. The Lafayette Bridge connects highway US52 from Plato Boulevard near the St. Paul Airport with I-94 and the downtown area. The potential impacts of this action will be fully evaluated in a federal environmental assessment.

In September, 2007, you stated malacologists from the Minnesota Department of Natural Resources (DNR) conducted a preliminary investigation of the project vicinity to see if a mussel survey was warranted. During this investigation, the DNR identified many mussel species, some of which are currently protected under State law. No federally-listed species were found. At a time closer to project construction, the DNR is proposing to conduct another mussel survey. We will be contacted and the consultation process will be reinitiated.

Our records indicate there are no federally-listed or proposed species and/or designated or proposed critical habitat within the action area of the proposed project. Therefore, we concur with your determination that the project may affect, but is not likely to adversely affect any federally-listed species or adversely modify any designated critical habitat. If project plans change, additional information on listed or proposed species becomes available, or new species are listed that may be affected by the project, consultation should be reinitiated. This concludes section 7 consultation for proposed construction at the above location. Thank you for your cooperation in meeting our joint responsibilities under section 7 of the Endangered Species Act. If you have any further endangered species questions, please contact Nick Rowse of my staff at (612) 725-3548 x2210 or by email at nick_rowse@fws.gov. We appreciate the opportunity to comment and look forward to working with you in the future.

Sincerely,

Tony Sullins
Field Supervisor

From: "Peter Leete" <Peter.Leete@dot.state.mn.us>
To: <kdadlez@srfconsulting.com>
CC: <Dale.Homuth@dnr.state.mn.us>, <Julie.Ekman@dnr.state.mn.us>, <Molly.Sho...
Date: 6/25/2008 10:21 AM
Subject: Re: Lafayette Bridge Project - MNRRA Input

Kady,
I've talked over the MNRRA review issue with a few DNR folks and we have pretty much come up with this:

While the DNR does have authority to review and comment on MNRRA/Critical Area plan decisions, we feel we have greater authority and input on MnDOT bridge design & concerns through interagency coordination and with the Public Waters Work Permit program. In addition, with the National Park Service having authority to review the MNRRA decisions, we will be defering to them for MNRRA compliance on federally funded bridge replacements across the Mississippi River in the corridor.

So in short, we are already fully and directly involved in MnDOT bridge design and will not be doing additional comment on MNRRA compliance, especially since the National Park Service will be having input on the same plans.... So, no need for redundancy. If you have any questions, please contact me.

Peter

Peter Leete
DNR - MnDOT OES Liaison
Transportation Hydrologist
Office of Environmental Services
Minnesota Department of Transportation
395 John Ireland BNlvd., Mail Stop 620
St. Paul, MN 55155
ph: 651-366-3634
fax: 651-366-3603
email: peter.leete@dot.state.mn.us

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-4010

November 26, 2008

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

RE: Amended Statewide General Permit 2004-0001 for Minnesota Department of Transportation

Enclosed is Amended General Public Waters Work Permit (GP) 2004-0001issued to the Minnesota Department of Transportation (MnDOT) for projects to replace or repair bridges, culverts or stormwater outfalls on Public Waters. The permit has been amended to extend the expiration date to November 30, 2013, to extend the authorized work to all Public Waters and to include stormwater outfalls. This General Permit is mutually beneficial and should continue to improve methods and procedures that result in protecting the physical and biological characteristics of Public Waters.

An important aspect of reviewing MnDOT projects for compliance with GP 2004-0001 has been the combining of DNR early environmental review and permit review into MnDOT's internal Early Notification Memo process. Early guidance on meeting provisions of GP 2004-0001 is provided to MnDOT at this early planning stage. Projects can then be authorized under GP 2004-0001 at any time the project is deemed to meet its conditions, often prior to final design of a project. Specific written authorization is provided for each project to show compliance with GP 2004-0001 (a template of this authorization form is attached). Peter Leete, DNR Transportation Hydrologist will continue to be the point of contact for this permit.

GP 2004-0001 is valid until November 30, 2013. The success to continuation of this general permit is contingent upon commitment of staff in MnDOT to assure compliance with its terms and conditions. Projects previously authorized under GP 2004-0001 that have not been completed by November 30, 2008, are authorized under this permit reissue. The reissued General Permit is available on the DNR Waters website: http://www.dnr.state.mn.us/waters/forms.html.

The manual, *Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001* is being updated. The manual provides guidance on meeting the conditions of the GP, though is not intended to be utilized in its entirety for every project. The information in the manual will continue to be developed to aid MnDOT in addressing DNR concerns in their specifications, designs and construction methods. The manual is at:
http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/DNR_GP_Guidance_Manual.pdf

Please do not hesitate to contact Peter Leete, Transportation Hydrologist at (651) 366-3634 or peter.leete@dot.state.mn.us if you have any comments or questions regarding General Permit 2004-0001.

Sincerely
DNR WATERS

Kent Lokkesmoe
Director

Attachments

cc: U. S. Army Corps of Engineers
Minnesota Association of Soil & Water Conservation Districts
Minnesota Association of Watershed Districts
League of Minnesota Cities
MN Pollution Control Agency
DNR Area & Regional Hydrologists
DNR Fisheries
DNR Forestry
DNR Wildlife
DNR Enforcement
DNR Ecological Resources
DNR Trails and Waterways
DNR Waters, Permits Unit

Minnesota Department of Natural Resources

GENERAL PUBLIC WATERS WORK PERMIT

Amended General Permit Number 2004-0001

Pursuant to Minnesota Statutes, Chapter 103G, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant and other supporting data, all of which are made a part hereof by reference, **PERMISSION IS HEREBY GRANTED** to the applicant to perform the work as authorized below:

Public Water Name	**County**
All Waters shown on the Public Waters Inventory Location maps: http://www.dnr.state.mn.us/waters/watermgmt_section/pwi/download.html	All counties in Minnesota
Name of Permittee	**Telephone Number (Include Area Code)**
Minnesota Department of Transportation, Attn: Frank Pafko	651-366-3602

Address (No. & Street, RFD, Box No., City, State, Zip Code

Office of Environmental Services, Mail Stop 620, 7th Floor Transportation Building, 395 John Ireland Blvd., St. Paul, MN 55155

Authorized Work:

Replace or repair bridges, culverts, or stormwater outfalls on Public Waters, where all conditions and provisions specified herein are met.

This permit is valid from the date of issuance until November 30, 2013. Projects authorized under this permit that have not been completed by the expiration date of this permit will require the project engineer to request an extension as noted in condition #7.

Purpose of Permit	**Expiration Date of Permit**
Bridge, Culvert or Stormwater Outfall Repair or Replacement	November 30, 2013

Property Described As:

The Permittee or it's authorized agent must own, control or have permission to access and use all lands affected by the project.

This permit is granted **subject to** the following **CONDITIONS**:

1. The **permittee** is not released from any rules, regulations, requirements, or standards of any applicable federal or state agencies; including, but not limited to, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Board of Water and Soil Resources, MN Pollution Control Agency, or watershed districts.

2. This permit is not assignable by the **permittee** except with the written consent of the Commissioner of Natural Resources.

3. The **permittee** shall notify the DNR Transportation Hydrologist or Area Hydrologist at least five days in advance of the commencement of the work authorized hereunder and notify him/her of its completion within five days. The Notice of Permit issued by the Commissioner shall be kept securely posted in a conspicuous place at the site of operations.

4. The **permittee** shall make no changes, without written permission previously obtained from the Commissioner of Natural Resources, in the dimensions, capacity or location of any items of work authorized hereunder.

5. The **permittee** shall grant access to the site at all reasonable times during and after construction to authorized representatives of the Commissioner of Natural Resources for inspection of the work authorized hereunder.

6. This permit may be terminated by the Commissioner of Natural Resources at any time deemed necessary for the conservation of water resources of the state, or in the interest of public health and welfare, or for violation of any of the conditions or applicable law of this permit, unless otherwise provided in the Permit.

7. Construction work authorized under this permit shall be completed on or before the date specified above. The **permittee** may request an extension of time to complete the project, stating the reason thereof, upon written request to the Commissioner of Natural Resources.

8. In all cases where the **permittee** by performing the work authorized by this permit shall involve the taking, using, or damaging of any property rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the **permittee**, before proceeding, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests needed for the work.

9. This permit is permissive only. No liability shall be imposed by the State of Minnesota or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the **permittee** or any of its agents, employees, or contractors. This permit shall not be construed as stopping or limiting any legal claims or right of action of any person other than the state against the **permittee,** its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as stopping or limiting any legal claim or right of action of the state against the **permittee,** its agents, employees, or contractors for violation of or failure to comply with the permit or applicable provisions of law.

10. Any extension of the surface of Public Waters from work authorized by this permit shall become public waters and left open and unobstructed for use by the public.

11. Where the work authorized by this permit involves the draining or filling of wetlands not subject to DNR regulations, the **permittee** shall not initiate any work under this permit until the **permittee** has complied with the Wetland Conservation Act, any applicable Executive Order, its replacement, or subsequent state policy or law.

See Attachment A: ADDITIONAL CONDITIONS

cc: U. S. Army Corps of Engineers
Minnesota Association of Soil & Water Conservation Districts
Minnesota Association of Watershed Districts
League of Minnesota Cities
MN Pollution Control Agency
DNR Area & Regional Hydrologists
DNR Fisheries
DNR Forestry
DNR Wildlife
DNR Enforcement
DNR Ecological Resources
DNR Trails and Waterways
DNR Waters, Permits Unit

Authorized Signature	Title	Date
Kent Lokkesmoe	Director, Division of Waters	11-26-08

By: Kent Lawrence

Date: 11-26-08

Attachment A: ADDITIONAL CONDITIONS
Bridge and Culvert General Permit No. 2004-0001

12. **Notification and Project authorization.** This permit provides conditions to aid project planning and facilitate initial design to streamline DNR regulatory approval. A project must be reviewed by the DNR Transportation Hydrologist through the MnDOT Early Notification Memo (ENM) process in order for it to qualify for authorization under this permit. The existing framework of MnDOT environmental review by the applicable DNR personnel will be utilized to review projects at the earliest possible stage for permit needs and additional conditions. Additional design information may be required of MnDOT during this process. If a project cannot meet the conditions of this permit, a separate individual permit will be required. If emergency or unforeseen projects arise that can not include the framework of environmental review (ENM), the permittee shall contact the DNR Transportation Hydrologist or Area Hydrologist immediately to provide details and discuss project design and applicable standards for authorization under this permit. **Work shall not commence until written approval that the project will meet these (and any additional written) permit conditions is received from the applicable DNR Hydrologist.**

13. **Applicable Projects.** Except as allowed by Condition #15, this permit applies only to the replacement, reconstruction, or repair (including associated minor channel work) of existing structures in Public Waters that are designed under the supervision of a registered professional engineer. A project not meeting applicable conditions of this permit or a project the DNR identifies as having the potential for significant resource impacts is not authorized herein. Rather, such projects will require an individual permit application.

14. **Environmental Review.** If the bridge/culvert construction is part of a road project that requires mandatory environmental review pursuant to MN Environmental Quality Board rules, then the permit is not valid until environmental review is completed.

15. **Maintenance Projects.** Prior to commencing structural or hydraulic maintenance at Public Waters, the Permittee shall discuss with the DNR Transportation Hydrologist or Area Hydrologist the extent and method of required maintenance. Maintenance work shall not be commenced until permittee receives approval from the applicable DNR Hydrologist.

16. **Notification of Wetland Work Above OHW.** The MnDOT Project Manager or designee shall notify the MnDOT District wetland contact or other MnDOT personnel having Wetland Conservation Act oversight if any grading or filling is to be done in wetlands above (landward) the ordinary high water mark.

17. **Photos and As-Builts.** Upon completion of the authorized work, the permittee may be required to submit a copy of established benchmarks, representative photographs, and may be required to provide as-built surveys of Public Watercourse crossing changes.

18. **Invasive Species.** All equipment intended for use at a project site must be free of prohibited invasive species and aquatic plants ***prior*** to being transported into or within the state and placed into state waters. All equipment, used in state waters known to contain aquatic invasive species that are designated as infested waters, shall be inspected by MnDOT or it's contractors and adequately decontaminated ***prior*** to being transported. The DNR is available to train MnDOT site inspectors and/or assist in these inspections. A list of designated infested waters can be found at http://files.dnr.state.mn.us/eco/invasives/infestedwaters.pdf.

    Basic measures to prevent the spread of aquatic invasive species are:

    A. Before transporting equipment from a work site, inspect all equipment that had been in contact with the water and remove all visible aquatic remnants [plants, seeds, mud, soil, and animals]. Powerwashing followed by drying (7 days) is an acceptable method to ensure killing and removal of invasive species.

    B. Before transporting equipment from a work site, drain all water from equipment where water may be trapped, such as tanks, pumps, hoses, silt curtain, and water-retaining components of boats/barges.

    C. After spraying and draining, dry equipment that has been in infested waters for a minimum of 7 days before reuse.

    Should the methods above not be able to be met, contact the DNR Transportation Hydrologist to determine alternative treatments.

By: Kurt Lawrence

Date: 11-26-08

Permit 2004-0001, Attachment A continued

19. **State & Federal Listed Species Prohibition.** If there are unresolved concerns regarding impacts to federally or state listed species (endangered, threatened, or special concern), the general permit is not applicable, and the project must be submitted as a separate permit application. Compliance with DNR and federal guidelines established for a listed species (e.g. Topeka Shiner conditions) would constitute a resolved concern.

20. **Preliminary Engineering.** This permit authorizes preliminary engineering studies in the water associated with bridge planning (EG core sampling). All core holes must be sealed in accordance with Department of Health well sealing requirements. On infested waters, all equipment in contact with the water must be decontaminated per condition #18.

21. **Demolition and Construction methods.** Temporary work below the OHW such as channel diversions, placement of fill for temporary work pads, bypass roads, or coffer dams to aid in the demolition or construction of any authorized structure shall be reviewed and approved in writing by the DNR Transportation Hydrologist or Area Hydrologist prior to beginning work. Where permitted, temporary fill shall be washed inorganic material free of pollutants or nutrients and all such material shall be removed prior to project completion. Hydrologic modeling may be required to show impacts to the 100yr flood elevation (see provision #25), or contingency plans developed to ensure all construction equipment and unsecured construction materials are removed to prevent impacts to the 100yr flood elevation or from being swept away by flood waters.

22. **Navigation Maintained or Improved.** The structure's final design will not obstruct reasonable public navigation, as determined by the DNR. For bridges, three feet above the calculated 50-year flood stage ordinarily satisfies navigational clearance requirements. For culverts, three feet of clearance above the ordinary high water level (top of the bank) ordinarily satisfies navigational requirements. All work on navigable waters shall be so conducted that free navigation of waterways will not be interfered with, except as allowed by permits issued by the proper public authority. [See MnDOT Standard Specifications for Navigable Waters (spec #1709) of MnDOT Standard Specifications for Construction, 2005 edition, or its successor http://www.dot.state.mn.us/tecsup/spec/ .]

23. **Dewatering.** Temporary dewatering for bridge, culvert, or stormwater outfall work is authorized by this permit. Stream diversion water must be kept separate from worksite dewatering. All worksite discharge water must be treated for sediment reduction prior to return to the waterbody (see condition #30). Stream diversion water shall be immediately returned to the original channel downstream. On infested waters, pumped water shall not be utilized in a matter that could spread invasive species (such as dust control), and all equipment in contact with the water must be decontaminated per condition #18.

24. **Flowline/Gradient not changed.** Replacement of culverts or crossings are to follow (or be restored to) the natural alignment and profile of the stream. Changes from the existing flowline, gradient or alignment must be consistent with Conditions 27 & 32 and authorized by the DNR Transportation Hydrologist or Area Hydrologist.

25. **Hydrologic/Hydraulic data reporting.** Unless waived by the DNR Transportation Hydrologist or Area Hydrologist, hydrologic modeling to show the impacts of the structure on the 100yr flood elevation is required. Additional modeling may also be required for temporary fill or temporary structures required during demolition or construction. Calculations showing calculated velocities through the structures at 2-year peak flows may also be required.

26. **Flood stages/damages not increased.**
    A. No approach fill for a crossing shall encroach upon a DNR approved community designated floodway. When a floodway has not been designated or when a floodplain management ordinance has not been adopted and approved, increases in flood stage in the regional flood of up to one-half of one foot shall be approved if they will not materially increase flood damage potential. Additional increases may be permitted if: a field investigation and other available data indicate that no significant increase in flood damage potential would occur upstream or downstream, and any increases in flood stage are reflected in the floodplain boundaries and flood protection elevation adopted in the local floodplain management ordinance as determined by the applicable DNR Hydrologist;

    B. If the existing crossing has a swellhead of one-half of one foot or less for the regional flood, the replacement crossing shall comply with the provisions for new crossings in (A). If the existing crossing has a swellhead of more than one-half of one foot for the regional flood, stage increases up to the existing swellhead may be allowed if field investigation and other available data indicate that no significant flood damage potential exists upstream from the crossing based on analysis of data submitted by the applicant. The swellhead for the replacement crossing may exceed the existing swellhead if it complies with the provisions found in (A) above.

By: Kent Lawrence

Date: 11-26-08

Permit 2004-0001, Attachment A continued

27. **Water Level Control.** Permittee is responsible for maintaining existing water level control elevations.

28. **Material Handling.** Except as allowed under Condition #21, project materials must be deposited or stored in an upland area, in a manner where the materials will not be deposited into the public water by reasonably expected high water or runoff.

29. **State Trails.** Projects proposed near an existing or proposed state trails system should be consistent therewith.

30. **Erosion and Sediment Control.** In all cases adequate measures [Best Management Practices (BMPs)] to control sediment from leaving the worksite shall be installed adjacent to Public Waters and on in-water work areas. Adequate erosion control BMPs, and/or sediment control BMPs, such as mulches, blanket, temporary coverings, silt fence, silt curtains/barriers, vegetation preservation, redundant BMPs, isolation of flow, or other engineering practices shall be installed concurrently or within 24hrs after the start of the project. These measures shall be maintained (or improved if needed) for the duration of the project in order to prevent sediment from leaving the worksite. Adequate measures are provided:

    A. For projects that have worksites one acre or greater; MPCA's General Stormwater Permit for Construction Activity (MN R100001) requirements and enforcement actions apply. A copy of the Stormwater Pollution Prevention Plan (SWPPP) and a Site Plan (per MnDOT Spec #1717) shall be submitted to the DNR Transportation Hydrologist or Area Hydrologist for review. Failure to prevent sediment from entering Public Waters may result in both MPCA and DNR enforcement actions.

    B. For projects with worksites less than one acre (when an MPCA General Stormwater Permit for Construction Activity is not required); Part IV Construction Activity Requirements of the MPCA General Stormwater Permit for Construction Activity can be utilized to meet DNR Erosion and Sediment Control requirements [see http://www.pca.state.mn.us/publications/wq-strm2-51.doc]. A Site Plan (per MnDOT Spec #1717) shall be submitted to the DNR Transportation Hydrologist or Area Hydrologist for review. Failure to prevent sediment from entering Public Waters may result in DNR enforcement actions.

    C. All projects must also adhere to MnDOT Standard Specifications for Construction, 2005 edition, (eg. specs 1701, & 1717), its supplements or its successor [see http://www.dot.state.mn.us/tecsup/spec/].

    Should differing requirements, specifications, or measures exist, the more restrictive shall apply. DNR requirements may be waived in writing by the DNR Transportation Hydrologist or Area Hydrologist based on site conditions, expected weather conditions, and/or project completion timelines.

31. **Work Exclusion Dates for Fish Spawning and Movement:** Work within Public Waters may be restricted due to fish spawning and migration concerns. Dates of fish spawning and migration vary by species and location throughout the state. Specific dates for each DNR Region may be found on page 1-2 of the manual, *Best Practices for Meeting DNR General Waters Work Permit GP2004-0001*:
    http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/DNR_GP_Guidance_Manual.pdf
    Work in the water is not allowed within these dates. The DNR Transportation Hydrologist, Area Hydrologist, or Area Fisheries Supervisor shall be contacted about waiving work exclusion dates where work is essential or where MnDOT demonstrates that a project will minimize impacts to fish habitat, spawning, and migration.

32. **Fish Passage:** Bridges, culverts and other crossings shall provide for fish movement unless the structure is intended to impede rough fish movement or the stream has negligible fisheries value as determined by the Transportation Hydrologist or Area Hydrologist in consultation with the Area Fisheries Manager. The accepted practices for achieving these conditions include:

    A. Where possible a single culvert or bridge shall span the natural bankfull width adequate to allow for debris and sediment transport rates to closely resemble those of upstream and downstream conditions. A single culvert shall be recessed in order to pass bedload and sediment load. Additional culvert inverts should be set at a higher elevation. All culverts should match the alignment and slope of the natural stream channel, and extend through the toe of the road side slope. "Where possible" means that other conditions may exist and could take precedence, such as unsuitable substrate, natural slope and background velocities, bedrock, flood control, 100yr flood elevations, wetland/lake level control elevations, local ditch elevations, and other adjacent features.

    B. Rock Rapids or other structures may be used to retrofit crossings to mimic natural conditions.

By: Kent Lawrence

Date: 11-26-08

Permit 2004-0001, Attachment A continued

33. **Species Movement.** Structures shall not be detrimental to significant wildlife habitat. In some cases the DNR may require crossings be designed for species movement. If the crossing is located at a significant wildlife travel corridor as determined by DNR Wildlife or Ecological Services Staff, the crossing shall be designed to minimize concerns. Generally, bridges are preferred over culverts because they accommodate wildlife movement as long as there is adequate clearance for passage beneath road decks, and /or the presence of a stream bank (dry ground) at normal flow conditions.

34. **Nesting Birds.** MnDOT adherence to existing federal migratory bird protection programs will suffice for DNR concerns. Should active nests be encountered on the project (including swallow nests attached to bridges or culverts), contact MnDOT Office of Environmental Services (jason.alcott@dot.state.mn.us, ph; 651-366-3605), for specific guidance relating to Federal Threatened and Endangered Species and U.S. Fish and Wildlife Service coordination.

35. **Native Plant Communities and Sites of Biodiversity Significance.** If DNR Ecological Resources staff determines that Native Plant Communities or Sites of Biodiversity Significance are present in or adjacent to Public Waters, precautions must be implemented to ensure protection and restoration of vegetation. MnDOT Standard Specifications for Protection and Restoration of Vegetation (spec #2572) of MnDOT Standard Specifications for Construction, 2005 edition, or its successor must be followed to minimize disturbance to such areas [see http://www.dot.state.mn.us/tecsup/spec/]. This may include, but is not limited to, the following: (1) During the project, parking, placement of temporary structures or material shall not be allowed outside the existing road right-of-way; (2) Place temporary fence at the construction limits and at other locations adjacent to vegetation designated to be preserved; (3) Minimize vehicular disturbance in the area (no unnecessary construction activities; (4) Leave a buffer of undisturbed vegetation between the critical resource and construction limits; (5) Precautions should be taken to ensure that borrow and disposal areas are not located within native plant communities; and (6) Revegetate disturbed soil with native species suitable to the local habitat and selected in consultation with DNR Ecological Resources staff.

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
St. Paul, Minnesota 55155-1899

December 29, 2008

Mr. Dennis A. Gimmestad
Government Programs & Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

Re: S.P. 6244-30 (Lafayette Bridge Replacement, St. Paul, Ramsey County)
SHPO Number 2008-2155

Dear Mr. Gimmestad:

We have reviewed the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) (June 2005). We previously wrote to your office on May 21, 2008, with a determination on the structures in the project area, and with an approach for finalizing the archaeological survey work for the area. Also, the approach for completing the archaeology was included in the project's memorandum of agreement (MOA) under Stipulation III.

Our office has defined the area of potential effect (APE) for the archaeological resources as the proposed construction limits. Once the APE was established, we examined the SHPO database for the list of previously recorded resources in the area. Based on these queries, there are no previously recorded archaeological resources within the APE, or adjacent to it. Although the area has been extensively disturbed by previous roadway, railroad, residential and commercial development; and much of the area is historic fill, we hired Foth Infrastructure and Environment, LLC to conduct a geomorphological analysis in order to determine if there was any potential for deeply buried archaeological deposits. The consultant conducted fieldwork in February and March 2008, and recommended that the majority of the project area had low to no potential for containing intact, significant buried archaeological deposits due to the fact that the sedimentary packages were either too old, were in too high of an energy environment, were too wet, or had been too disturbed. Based on the geomorphological coring, the project area is primarily fill that was placed throughout the late nineteenth and twentieth century, and even into the late twentieth century when soil remediation occurred in several areas under the bridge. Also, based on an examination of Sanborn maps, the area south of 4th Street contained only railroad tracks and freight houses. The area north of 4th Street did contain some industries such as a Northern States Power Plant; however, these areas have been severely impacted by subsequent industrial construction and the construction of Interstate 94 through the area. Based on the results of the first geomorphological study and the previous impacts to the area, our office previously determined that it is unlikely that the project area contains intact, significant archaeological deposits (see May 21, 2008 letter). The one exception to this was the oxidized levee deposits located between Warner Road and the river edge (see hatched area on Figure 2 in the previously submitted report *Geomorphic Investigations of the Trunk Highway 52 Lafayette Bridge and Union Depot Maintenance Facilities, St. Paul, Minnesota* by Foth Infrastructure & Environment May 2008).

Current plans call for two piers to be located in this area, although the exact placement has not been identified. Because the preliminary fieldwork indicated there was some potential for intact sites within the oxidized levee deposits and since there will be construction work in the area (including pier construction), Mn/DOT CRU hired a geomorphologist and archaeologist to test the levee to see if there are intact, significant archaeological deposits. The work was completed this summer and fall. The enclosed report details the methodology and results of the investigation. The Phase I archaeological investigations consisted of a literature search and fieldwork components, along with further geomorphological testing. The results of the fieldwork helped to recognize one new sedimentary package and verify three previously recognized packages. These combined four packages include, from oldest (deepest) sampled to youngest (shallowest): 1gleyed alluvium and wetland sediments, 2) oxidized fluvial deposits, 3) oxidized levee deposits, and 4) oxidized fill materials. The uppermost "gleyed alluvium and wetland deposits" and the "oxidized levee deposits" were found to contain precontact or contact-period microartifacts, as well as historical-period microartifacts. Radiocarbon dates, however, from the oxidized fluvial deposits and the natural levee deposits suggest that the artifacts are not *in situ*. Because the geological evidence indicates that the artifacts are detrital, the Office of the State Archaeologist determined that they do not constitute an archaeological site, and no site forms were completed. Because the artifacts are not from a definable context, are non-diagnostic, and occur in an extremely low density within the survey area, the artifacts were recommended as not eligible by the consultant. We agree with this recommendation. **It is the determination of this office, therefore, that the project as currently proposed will not impact intact, significant archaeological sites, and no further archaeological work is required for the Lafayette Bridge Replacement Project.**

The original determination of an **adverse effect to the Lafayette Bridge remains appropriate,** with no other properties affected. As per the terms of the 2005 PA and the Lafayette Bridge Replacement Project MOA, please provide your comments on this project within 30 days of receipt. This letter fulfills the terms of the MOA, Stipulation III. We look forward to completing the work associated with the other stipulations with you over the next several months.

Encs. (one copy of the report; one CD of the report)

Sincerely,

Kristen Zschomler

Kristen Zschomler, RPA
Historian/Archaeologist
Cultural Resources Unit (CRU)

cc: Amy Spong, St. Paul HPC
Dr. John Anfinson, MNRRA
Rick Dalton, Mn/DOT Metro (2 copies of report; 1 CD)
Darwin Yasis, Mn/DOT Metro
Curt Hudak, Foth Infrastructure and Environment, LLC
Andrea Vermeer, Summit Envirosolutions
Dr. Scott Anfinson, State Archaeologist
Joe Hudak, Mn/DOT CRU
Legislative Library (1 copy of report)
Mn/DOT CO File
Mn/DOT CRU Project File

Minnesota
Historical Society

February 2, 2009

Ms. Kristen Zschomler
Cultural Resources Unit
MN Dept. of Transportation
Transportation Building, MS 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

Re: S.P. 6244-30, Lafayette Bridge Replacement
St. Paul, Ramsey County
SHPO Number: 2008-2155

Dear Ms. Zschomler:

Thank you for your letter regarding the archaeological assessment for the area of the above referenced project. We have reviewed it pursuant to Stipulation III of the Section 106 agreement for the project.

We concur with your determination that the project is unlikely to affect significant archaeological properties, and that no further archaeological investigations are needed.

We look forward to working with you to address the other provisions of the agreement. We note that a copy of the executed agreement is needed for our files.

Sincerely,

Dennis A. Gimmestad
Government Programs & Compliance Officer

cc: Amy Spong, St. Paul Heritage Preservation Commission

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

May 21, 2008

Mr. Dennis A. Gimmestad
Government Programs & Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

Re: S.P. 6244-30 (Lafayette Bridge Replacement, St. Paul, Ramsey County)

Dear Mr. Gimmestad:

We have reviewed the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) (June 2005).

Mn/DOT Metro Division is proposing to replace the existing Lafayette Bridge, which carries Trunk Highway 52 (TH 52) across the Mississippi River just east of downtown Saint Paul. The Lafayette Bridge was constructed in 1968 using the standard design, detailing and fabrication methods of the late 1960s. Like many bridges of that era, it has developed a history of steel fatigue problems. Additionally, the main spans over the Mississippi River are considered "fracture critical", which means that key structural components (i.e., the supporting steel girders) cannot be taken out of service without removing the entire bridge from service. The new structure will provide two through lanes in each direction. The new bridge structure will be the same approximately height and width as the existing structure, and pier locations will be at approximately the same location and depth. The planned project limits along TH 52 are from West Seventh Street at the north end to roughly 1000 feet south of Plato Avenue on the south end (please see enclosed plan sheet).

The FHWA consulted with tribal groups who have expressed an interest in reviewing projects in this area of the state. The groups contacted were the Flandreau Santee Sioux Tribe, the Lower Sioux Indian Community, the Prairie Island Indian Community, the Santee Sioux Nation, the Sisseton-Wahpeton Oyate Tribe, the Spirit Lake Dakotah Sioux, the Upper Sioux Community, the Shakopee Mdewakanton Sioux Community, the Turtle Mountain Band of Chippewa, and the Fort Peck Tribes. Pamela Halverson, THPO with the Lower Sioux Indian Community, requested any ethnographic information on the Carver Cave site, located approximately ½ mile to the east of the bridge. Mn/DOT CRU staff forwarded a previously completed study *Determination of Eligibility of Carver's Cave (21RA27) and Dayton's Bluff Cave* (21RA 28), Bruce Vento Nature Sanctuary Project, St. Paul, Ramsey County, Minnesota by The 106 Group (2003). None of the other tribes responded with an interest in the project.

Our office has defined the area of potential effect (APE) for the archaeological resources as the proposed construction limits. Once the APE was established, we examined the SHPO database for the list of previously recorded resources in the area. Based on these queries, there are no previously recorded archaeological resources within the APE, or adjacent to it. Although the area has been extensively disturbed by previous roadway, railroad, residential and commercial development; and much of the area is historic fill, we hired Foth Infrastructure and Environment, LLC to conduct a geomorphological analysis in order to determine if there was any potential for deeply buried, archaeological deposits. The consultant conducted fieldwork in February and March 2008, and recommended that the majority of the project area had low to no potential for containing intact, significant buried archaeological deposits due to the fact that the sedimentary packages were either too old, were in too high of an energy environment, were too wet, or had been too disturbed to contain intact archaeology. Based on the geomorphological coring, the project area is primarily fill that was placed throughout the late nineteenth and twentieth century, and even into the late twentieth century when soil remediation occurred in several areas under the bridge. Also, based on an examination of Sanborn maps, the area south of 4th Street contained only railroad tracks and freight houses. The area north of 4th Street did contain some industries such as a Northern States Power Plant; however, these areas have been severely impacted by subsequent industrial construction and the construction of Interstate 94 through the area. Based on the results of this study and the previous impacts to the area, it is unlikely that the project area contains intact, significant archaeological deposits. The one exception to this was the oxidized levee deposits located between the Warner Road and the river edge (see hatched area on Figure 2 in enclosed report *Geomorphic Investigations of the Trunk Highway 52 Lafayette Bridge and Union Depot Maintenance Facilities, St. Paul, Minnesota* by Foth Infrastructure & Environment May 2008). Current plans call for two piers to be located in this area, although the exact placement has not been identified. Because there is some potential for intact sites within the oxidized levee deposits and since there will be construction work in the area (including pier construction), Mn/DOT is hiring a geomorphologist and archaeologist to test the levee to see if there are intact, significant archaeological deposits. The work will occur over this summer. We will work with your office through the testing of the area and if an eligible site is found, we will work with your office and the bridge design team to avoid, minimize or mitigate the site. The process by which we will complete the archaeological testing of the levee area will be detailed in the project memorandum of agreement (MOA).

There are several previously recorded structures in the APE. The Minneapolis, St. Paul & Sault St. Marie Freight House (RA-SPC-5218) will be partially demolished as part of this project. The property was previously evaluated by our office and determined not eligible due to poor integrity (August 3, 2004 letter from Liz Abel to Dennis Gimmestad; S.P. 91-090-33; NRTP 0039-03-3B; Lower Phalen Creek Trail Construction). RA-SPC-4525 (Northwestern Railroad Building) is located immediately to the west of the bridge. Our office determined that this property is not eligible due to the extensive alternations done when it was converted into office space (see enclosed photographs). There are four historic properties within the project APE. RA-SPC-5374 (George E. Hess building) at 447-449 7th Street SE was previously determined eligible for listing on the National Register as an excellent example of a late-nineteenth-century commercial structure. The project will not directly impact the Hess building or change its access or parking, and since the setting of the property has been extremely altered through previous roadway, interstate, and commercial development, the proposed roadway changes around the building will not adversely affect it. The Lowertown Historic District (RA-SPC-4580) is located approximately 150 meters to the east of the project area, and the new bridge will span the Milwaukee Road Railroad line on the north bank and the Mississippi River 9-Ft. Channel Historic District in the river. Since the new bridge will be the same height of the existing structure, widened to the east

away from the historic district) and there will be no piers located in the 9-ft. channel or on the railroad line, the project will not dramatically change the existing conditions. Therefore, it is the determination of this office that **the new bridge will not adversely affect the Lowertown Historic District, the Mississippi River 9-Ft. Navigational Channel, or the Milwaukee Road Railroad line. This determination is based on the condition that our office and the SHPO review the bridge design plans as they are developed and provide comments on proposed design. Also, members from our office, the SHPO, and/or the St. Paul HPC will be invited to serve on or review design items from the Visual Quality Advisory Team for the new bridge design to ensure that viewshed issues from historic resources to the bridge are considered.**

It is also the determination of this office that the Lafayette Bridge is eligible for listing on the National Register of Historic Places. Numerous bridges built during the 1960s developed fracture critical status shortly after construction. New bridge design requirements grew out of the studies of problems with bridges, especially the Lafayette Bridge. These requirements transformed the bridge building industry and the design of modern bridges so that fatigue and fracture are rare in bridges built in the past 20 years. Also, the diagnostic tests on how to identify fractural critical members were primarily developed on the Lafayette Bridge, along with several other national examples. The Lafayette Bridge, therefore, meets the National Register Criterion C for engineering significance and Criterion Consideration G due to its extraordinary significance in the area of bridge engineering. Since preservation of this fracture critical bridge is not feasible, we look forward to working with your office to develop appropriate mitigation items for this impact. As we have previously discussed, we will perform a Minnesota Historic Property Record (MHPR) of the structure.

It is the determination of this office that the proposed project will have an **adverse effect to the Lafayette Bridge.** As per the terms of the 2005 PA, please provide your comments on this project within 30 days of receipt. If the project scope changes, we will conduct an additional review. We look forward to completing the MOA with your office and the invited and consulting parties.

encs.

Sincerely,

Kristen Zschomler

Kristen Zschomler, RPA
Historian/Archaeologist
Cultural Resources Unit (CRU)

cc: Amy Spong, St. Paul HPC (1 copy of report)
Dr. John Anfinson, MNRRA (1 copy of report)
Rick Dalton, Mn/DOT Metro (1 copy of report)
Darwin Yasis, Mn/DOT Metro (1 copy of report)
Curt Hudak, Foth Infrastructure and Environment, LLC
Andrea Vermeer, Summit Envirosolutions (1 copy of report)
Dr. Scott Anfinson, State Archaeologist (1 copy of report)
Joe Hudak, Mn/DOT CRU
Legislative Library (1 copy of report)
Mn/DOT CO File
Mn/DOT CRU Project File

MINNESOTA HISTORICAL SOCIETY

State Historic Preservation Office

June 13, 2008

Ms. Kristen Zschomler
Cultural Resources Unit
MN Dept. of Transportation
345 Kellogg Blvd. West
St. Paul, MN 55155-1899

Re: S.P. 6244-30, Lafayette Bridge Replacement on T.H. 52 over the Mississippi River
St. Paul, Ramsey County
SHPO Number: 2008-2155

Dear Ms. Zschomler:

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 concur with your determination that the Lafayette Bridge, the George E. Hess Building, the Milwaukee Road Railroad Line, and the Mississippi River 9-foot Channel Historic District all meet National Register criteria. In addition, the APE includes the Lowertown Historic District, which is listed on the National Register.

We concur with your determination that the removal of the Lafayette Bridge will constitute an adverse effect on historic properties. We look forward to entering into the consultation process with you to seek ways to avoid, reduce, and/or mitigate effects and develop a memorandum of agreement.

Contact us at 651-259-3455 with questions or concerns.

Sincerely,

Britta L. Bloomberg
Deputy State Historic Preservation Ofifcer

cc: Amy Spong, St. Paul
John Anfinson, NPS

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

June 17, 2008

Mr. Robin Schroeder
Division Administrator
U. S. Department of Transportation
Federal Highway Administration, Minnesota Division
Galtier Plaza
380 Jackson Street, Suite 500
St. Paul, MN 55101-2904

RE: S.P. 6244-30 (Lafayette Bridge Reconstruction, St. Paul, Ramsey County)
SHPO No. 2008- 2155

Dear Mr. Schroeder:

Pursuant to the regulations implementing Section 106 of the National Historic Preservation Act (36 CFR 800.6[a][3]) and the responsibilities delegated to Mn/DOT by the FHWA, enclosed please find documentation for a finding of adverse effect to the Lafayette Bridge. The Lafayette Bridge is considered eligible for the National Register of Historic Places under Criterion C and Criterion Consideration G. The project as currently proposed will remove the Lafayette Bridge. We are currently consulting with the Minnesota State Historic Preservation Office to develop a Memorandum of Agreement for this project.

If you have any questions concerning the documentation or other aspects of our review, please call me at 651/366-3633.

Sincerely,

Kristen Zschomler

Kristen Zschomler, RPA
Archaeologist/Historian
Cultural Resources Unit (CRU)

enc.

cc: Nancy Frick, SRF Consulting Group
Rick Dalton, Mn/DOT Metro
Joe Hudak, Mn/DOT CRU
Mn/DOT CRU/CO Files

FEDERAL HIGHWAY ADMINISTRATION
DOCUMENTATION OF SECTION 106 FINDING OF ADVERSE EFFECT TO THE LAFAYETTE BRIDGE PURSUANT TO 36 CFR 800.6(a)(3)
LAFAYETTE BRIDGE RECONSTRUCTION PROJECT, ST. PAUL, RAMSEY COUNTY, MINNESOTA
(S.P. 6244-30)

Description of the Undertaking

Mn/DOT Metro Division is proposing to replace the existing Lafayette Bridge, which carries Trunk Highway 52 (TH 52) across the Mississippi River just east of downtown Saint Paul. The Lafayette Bridge was constructed in 1968 using the standard design, detailing and fabrication methods of the late 1960s. Like many bridges of that era, it has developed a history of steel fatigue problems. Additionally, the main spans over the Mississippi River are considered "fracture critical", which means that key structural components (i.e., the supporting steel girders) cannot be taken out of service without removing the entire bridge from service. The new structure will provide two through lanes in each direction. The new bridge structure will be the same approximately height and width as the existing structure, and pier locations will be at approximately the same location and depth. The planned project limits along TH 52 are from West Seventh Street at the north end to roughly 1000 feet south of Plato Avenue on the south end (please see enclosed plan sheet).

Identification Efforts

The FHWA consulted with tribal groups who have expressed an interest in reviewing projects in this area of the state. The groups contacted were the Flandreau Santee Sioux Tribe, the Lower Sioux Indian Community, the Prairie Island Indian Community, the Santee Sioux Nation, the Sisseton-Wahpeton Oyate Tribe, the Spirit Lake Dakotah Sioux, the Upper Sioux Community, the Shakopee Mdewakanton Sioux Community, the Turtle Mountain Band of Chippewa, and the Fort Peck Tribes. Pamela Halverson, THPO with the Lower Sioux Indian Community, requested any ethnographic information on the Carver Cave site, located approximately ½ mile to the east of the bridge. Mn/DOT CRU staff forwarded a previously completed study *Determination of Eligibility of Carver's Cave (21RA27) and Dayton's Bluff Cave* (21RA 28), Bruce Vento Nature Sanctuary Project, St. Paul, Ramsey County, Minnesota by The 106 Group (2003). None of the other tribes responded with an interest in the project.

Mn/DOT CRU defined the area of potential effect (APE) for the archaeological resources as the proposed construction limits. Once the APE was established, CRU examined the SHPO database for the list of previously recorded resources in the area. Based on these queries, there are no previously recorded archaeological resources within the APE, or adjacent to it. Although the area has been extensively disturbed by previous roadway, railroad, residential and commercial development; and much of the area is historic fill, CRU hired Foth Infrastructure and Environment, LLC to conduct a geomorphological analysis in order to determine if there was any potential for deeply buried, archaeological deposits. The consultant conducted fieldwork in February and March 2008, and recommended that the majority of the project area had low to no potential for containing intact, significant buried archaeological deposits due to the fact that the sedimentary packages were either too old, were in too high of an energy environment, were too wet, or had been too disturbed to contain intact archaeology. Based on the geomorphological coring, the project area is primarily fill that was placed throughout the late nineteenth and twentieth century, and even into the late twentieth century when soil remediation occurred in several areas under the bridge. Also, based on an examination of

Sanborn maps, the area south of 4th Street contained only railroad tracks and freight houses. The area north of 4th Street did contain some industries such as a Northern States Power Plant; however, these areas have been severely impacted by subsequent industrial construction and the construction of Interstate 94 through the area. Based on the results of this study and the previous impacts to the area, it is unlikely that the project area contains intact, significant archaeological deposits. The one exception to this was the oxidized levee deposits located between the Warner Road and the river edge. Current plans call for two piers to be located in this area, although the exact placement has not been identified. Because there is some potential for intact sites within the oxidized levee deposits and since there will be construction work in the area (including pier construction), Mn/DOT is hiring a geomorphologist and archaeologist to test the levee to see if there are intact, significant archaeological deposits. The work will occur over this summer. The process by which CRU will complete the archaeological testing of the levee area will be detailed in the project memorandum of agreement (MOA).

Several previously recorded structures were identified in the APE. The Minneapolis, St. Paul & Sault St. Marie Freight House (RA-SPC-5218) will be partially demolished as part of this project. The property was previously evaluated by CRU and determined not eligible due to poor integrity. RA-SPC-4525 (Northwestern Railroad Building) is located immediately to the west of the bridge. CRU determined that this property is not eligible due to the extensive alternations done when it was converted into office space. There are four historic properties within the project APE. RA-SPC-5374 (George E. Hess Building) at 447-449 7th Street SE was previously determined eligible for listing on the National Register as an excellent example of a late-nineteenth-century commercial structure. The project will not directly impact the Hess building or change its access or parking, and since the setting of the property has been extremely altered through previous roadway, interstate, and commercial development, the proposed roadway changes around the building will not adversely affect it. The Lowertown Historic District (RA-SPC-4580) is located approximately 150 meters to the east of the project area, and the new bridge will span the Milwaukee Road Railroad line on the north bank and the Mississippi River 9-Ft. Channel Historic District in the river. Since the new bridge will be the same height of the existing structure, widened to the east away from the historic district) and there will be no piers located in the 9-ft. channel or on the railroad line, the project will not dramatically change the existing conditions.

Mn/DOT CRU determined that the project would have an adverse effect to the Lafayette Bridge (see May 21, 2008 letter from Kristen Zschomler to Dennis A. Gimmestad [attached]). The Minnesota State Historic Preservation Office (SHPO) has concurred with the Mn/DOT CRU's findings (see June 13, 2008, letter from Dennis A. Gimmestad to Kristen Zschomler [attached]).

Description of the Affected Historic Property

Numerous bridges built during the 1960s developed fracture critical status shortly after construction. New bridge design requirements grew out of the studies of problems with bridges, especially the Lafayette Bridge. These requirements transformed the bridge building industry and the design of modern bridges so that fatigue and fracture are rare in bridges built in the past 20 years. Also, the diagnostic tests on how to identify fractural critical members were primarily developed on the Lafayette Bridge, along with several other national examples. The Lafayette Bridge, therefore, meets the National Register Criterion C for engineering significance and Criterion Consideration G due to its extraordinary significance in the area of bridge engineering.

Effect of the Undertaking on the Historic Property

The Lafayette Bridge will be replaced with a new bridge.

Application of the Criteria of Adverse Effect (36 CFR 800.5)

On behalf of the FHWA, the Mn/DOT CRU has determined that the undertaking as currently proposed will have an adverse effect on the Lafayette Bridge, and the MnSHPO concurred.

Consultation

The FHWA consulted with tribal groups interested in reviewing projects in this area of the State of Minnesota. On behalf of the FHWA, the Mn/DOT CRU has consulted with the SHPO (see attached correspondence), the St. Paul HPC, and the Mississippi National River Recreation Area (MNRRA). We will consult with these and other parties to determine the appropriate mitigation for the adverse effects, and to complete a MOA.

U.S. Department
of Transportation
Federal Highway Administration

Minnesota Division

380 Jackson Street
Galtier Plaza, Suite 500
St. Paul, MN 55101-4802

651.291.6100
651.291.6000 fax

www.fhwa.dot.gov/mndiv

September 5, 2008

Thomas K. Sorel
Commissioner
Department of Transportation
MS 100, Transportation Building
St. Paul, Minnesota 55155

Re: Section 106 Memorandum of Agreement
State Project No. 6244-30
Replacement of Lafayette Bridge
Trunk Highway 52 over the Mississippi River
St. Paul, Ramsey County, Minnesota

Dear Mr. Sorel:

Please find enclosed a copy of the fully executed Section 106 Memorandum of Agreement (MOA) for the referenced project. By carrying out the terms of the MOA, the requirements of Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations have been concluded for this project.

If you have any questions, please contact me at (651) 291-6122.

Sincerely yours,

William R Lohr

William R. Lohr, P.E.
Area Engineer

AMERICAN ECONOMY

Minnesota
Federal Highway Administration

Preserving America's Heritage

September 3, 2008

William R. Lohr, P.E.
Area Engineer
Department of Transportation
FHWA-Minnesota Division
380 Jackson Street
Galtier Plaza, Suite 500
St. Paul, MN 55101-4802

Ref: *Proposed Replacement of Lafayette Bridge*
Ramsey County, Minnesota

Dear Mr. Lohr:

On August 28, 2008, the Advisory Council on Historic Preservation (ACHP) received your notification regarding the adverse effects of the referenced undertaking. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Minnesota SHPO, and any other consulting parties, and related documentation at the conclusion of the consultation process. The filing of the MOA with the ACHP and fulfillment of its stipulations are required to complete your compliance responsibilities under Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Hector Abreu at 202 606-8517 or habreu@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Federal Permitting, Licensing and Assistance Section
Office of Federal Agency Programs

MEMORANDUM OF AGREEMENT
PURSUANT TO SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) AND THE
MINNESOTA STATE HISTORIC PRESERVATION OFFICE (SHPO)
REGARDING THE LAFAYETTE BRIDGE RECONSTRUCTION (S.P. 6244-30)
CITY OF ST. PAUL, RAMSEY COUNTY, MINNESOTA

WHEREAS, the Federal Highway Administration (FHWA) is providing funds to the Minnesota Department of Transportation (Mn/DOT) for the reconstruction of the Lafayette Bridge on TH 52 in St. Paul; and

WHEREAS, the Minnesota Department of Transportation (Mn/DOT) Cultural Resources Unit (CRU), on behalf of the FHWA, has defined the area of potential effect (APE) of the undertaking in consultation with the Minnesota State Historic Preservation Office (MnSHPO); and

WHEREAS, the Mn/DOT CRU, on behalf of the FHWA, identified the following historic properties within the APE: The George E. Hess Building, the Lowertown Historic District, the Milwaukee Road Railroad line, the Mississippi River 9-ft. Channel Historic District and the Lafayette Bridge. The project will result in the removal of the Lafayette Bridge; therefore, Mn/DOT CRU determined that the project would have an adverse effect to the property, and the MnSHPO concurred with this determination; and

WHEREAS, the Mn/DOT CRU, on behalf of the FHWA, conducted a geomorphological investigation of the project area to identify any portions that had potential to contain deeply buried archaeological resources. The study identified one limited area with moderate potential that will be further tested as per Stipulation III of this MOA; and

WHEREAS 16 U.S. C., 460zz-3(b)(1) requires the National Park Service to review Federal undertakings within the 72 miles of the Mississippi National River and Recreation Area (MISS) to ensure that they are compatible with the MISS Comprehensive Management Plan, the MISS is invited to concur in this Memorandum of Agreement (MOA); and

WHEREAS, Mn/DOT, as project sponsor, has been invited by the FHWA to sign this agreement in accordance with 36 CFR 800(c)(4); and

WHEREAS, the St. Paul Heritage Preservation Commission (HPC) was invited to be a consulting party to this Section 106 review, and has decided to not participate; and

WHEREAS, the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its finding of adverse effect in accordance with 36 CFR 800.6(a)(1), and has provided the documentation specified in 36 CFR 800.11(e) and the ACHP has chosen not to participate in the consultation;

NOW, THEREFORE, the FHWA and the MnSHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties:

STIPULATIONS

The FHWA will ensure that the following measures are carried out:

STIPULATION I. RECORDATION OF THE LAFAYETTE BRIDGE

Mn/DOT will have the Lafayette Bridge documented to the Minnesota Historic Property Record (MHPR). The historical narrative will discuss the importance of the bridge type, and large-format, black-and-white, archival-quality images will be taken according to the photographic recordation standards of the MHPR and the Historic American Engineering Record (HAER). Copies of the bridge plans will also be prepared in a format agreed upon by the Mn/DOT CRU and MnSHPO. The MHPR report will be submitted to and accepted by the MnSHPO, and archived within the Minnesota Historic Society (MHS) MHPR collection within eighteen (18) months of the signing of this MOA.

Mn/DOT will also work with the MnSHPO and the MHS Archives Department to clarify the MHPR guidelines and make them more applicable to engineering resources. This work will include, but not necessarily be limited to: discussion of appropriate narrative format; resources materials and access within Mn/DOT archives and libraries; and discussion of appropriate photographic recordation standards in relation to engineering structures. The revised MHPR guidelines will be submitted to the SHPO within eighteen (18) months of the signing of this MOA.

STIPULATION II. MEASURES TO MINIMIZE EFFECTS TO OTHER HISTORIC PROPERTIES

Certain measures have been agreed upon to minimize effects to other historic properties within the project area.

A) Mn/DOT Metro will submit plans to the Mn/DOT CRU office throughout the design process in order for the CRU to determine if there are any substantial changes from the original review; and CRU will notify MnSHPO of any such changes and any other potential effects on historic properties. In particular, further review will occur during the design process related to area near the George Hess Building, the Mississippi River 9 ft. Channel Historic District, the Lowertown Historic District, and the Milwaukee Road Railroad Line. Any additional adverse effects identified will be addressed by an agreement between Mn/DOT CRU and MnSHPO, after appropriate consultation with the public, MNRRA, and the ACHP.

B) The MnSHPO, the St. Paul HPC, MNRRA, and/or the Mn/DOT CRU historian will either serve on and/or be kept apprised of design approaches by the Visual Quality Advisory Team (VQAT) to ensure that aesthetic issues related to adjacent historic properties are considered. Aesthetic treatment plans need to be submitted to Mn/DOT CRU and will require CRU approval and SHPO concurrence to ensure the design is appropriate in relation to adjacent historic properties.

STIPULATION III. ARCHAEOLOGY

Mn/DOT CRU, on behalf of the FHWA, had a geomorphological investigation conducted in the project area to identify any buried landscapes that may have the potential to contain

archaeological deposits. The majority of the project area had no to very low potential for buried landscapes; however, one portion of the project area had moderate potential for containing buried landscapes. The following steps will be taken to complete the archaeological review of the project area.

A. During August 2008, Mn/DOT CRU will have further geomorphological and archaeological testing done on the possible natural levee feature located between Warner Road and the north bank of the Mississippi River. The Mn/DOT CRU and MnSHPO will agree on the methodology for conducting the deep testing in this area.
B. If no sites are identified, Mn/DOT CRU and MnSHPO will document the finding through additional determination letters, and the obligations under this stipulation will be complete.
C. If archaeological sites are found, Mn/DOT CRU will make a determination on if the site is eligible for listing on the National Register of Historic Places following the process outlined in the Stipulation III of the 2005 Section 106 Programmatic Agreement between the FHWA and MnSHPO (2005 Section 106 PA). If the site is determined not eligible, Mn/DOT CRU and MnSHPO will document the finding through additional determination letters, and the obligations under this stipulation will be complete. If the site is determined to be eligible, Mn/DOT CRU and the MnSHPO will work with Mn/DOT Metro, Mn/DOT Bridge Office, the FHWA, and other design participants to seek ways to avoid impacts to the site. If avoidance is not feasible, Mn/DOT CRU and MnSHPO will develop and implement an appropriate mitigation plan. The current MOA will be amended to address any additional mitigation needs. Mn/DOT CRU will consult with MNRRA and other interested agencies or the public.

STIPULATION IV. AMENDMENTS

Any signatory to this Memorandum of Agreement (MOA) may request in writing that it be amended, whereupon the parties shall consult to consider the proposed amendment. The regulations at 36 CFR 800 shall govern the execution of any such amendment.

STIPULATION V. DISPUTE RESOLUTION

Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree, any one of the signatories may request the participation of the ACHP to assist in resolving the dispute.

STIPULATION VI. TERMINATION

Any signatory to this Memorandum of Agreement may terminate the agreement by providing thirty (30) days' written notice to the other signatories, provided the signatories consult during the period prior to termination to agree on amendments or other actions that would avoid termination. If the agreement is terminated and the FHWA elects to continue with the undertaking, the FHWA will reinitiate review of the undertaking in accordance with 36 CFR 800.

STIPULATION VII. DURATION

If the terms of this agreement have not been implemented within one (1) year of its full execution date, this agreement will be considered null and void. If the FHWA anticipates that

the agreement will not be implemented within this timeframe, it will notify the signatories in writing at least thirty (30) days prior to the agreement becoming invalid. The agreement may be extended by the written concurrence of the signatories. If the agreement becomes invalid and the FHWA elects to continue with the undertaking, the FHWA will reinitiate review of the undertaking in accordance with 36 CFR 800.

Execution of this Memorandum of Agreement by the FHWA and the MnSHPO and implementation of its terms evidence that the FHWA has taken into account the effects of its undertaking on historic properties, and has afforded the Advisory Council on Historic Preservation opportunity to comment.

FEDERAL HIGHWAY ADMINISTRATION (FHWA)

By: _____ 9/4/08
Robin Schroeder, Acting Division Director — Date

MINNESOTA STATE HISTORIC PRESERVATION OFFICE (SHPO)

By: Nina Archabal 8/12/08
Nina Archabal, State Historic Preservation Officer — Date

Invited Signatory:

MINNESOTA DEPARTMENT OF TRANSPORTATION

By: _____ 8/4/08
Thomas Sorel, Commissioner — Date

MISSISSIPPI NATIONAL RIVER AND RECREATION AREA

By: _____ 7-29-08
Paul Labovitz, Superintendent — Date

Minnesota Department of Transportation

Office of Environmental Services
Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155

Office Tel: (651) 366-3633
Fax: (651) 366-3603

March 24, 2009

Mr. Dennis A. Gimmestad
Government Programs & Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55101

Re: S.P. 6244-30 (Lafayette Bridge Replacement, St. Paul, Ramsey County)
SHPO Number 2008-2155

Dear Mr. Gimmestad:

We have reviewed the above-referenced undertaking pursuant to our FHWA-delegated responsibilities for compliance with Section 106 of the National Historic Preservation Act, as amended (36 CFR 800), and as per the terms of the Programmatic Agreement (PA) between the FHWA and the Minnesota State Historic Preservation Office (SHPO) (June 2005). We previously wrote to your office on May 21, 2008, with a determination on the structures in the project area, and on December 29, 2008, with a determination on the results of the archaeological and geomorphological investigations. Since that time, the project scope has changed to include the placement of piers within the Union Depot Elevated Rail Yards (RA-SPC-6904), which is eligible for listing on the National Register of Historic Places.

The current Lafayette Bridge has four piers located within the Union Depot Elevated Rail Yards. The current design for the new bridge would include the removal of the existing four piers and the placement of two new piers in the center of the Union Depot Elevated Rail Yards. Since the design of the bridge is not finalized, a determination of effects is difficult at this point. Since the removal of the existing piers and the placement of the new piers has some potential to adversely effect the Elevated Rail Yards, our office would propose the following steps to help avoid or minimize adverse effects to the property. These steps will be formalized in an amendment to the existing project memorandum of agreement (MOA).

1) Inclusion of Mn/DOT CRU and the MnSHPO in the design of the new piers, and the removal and repair plans for the removal of the existing piers to avoid or minimize aesthetic and structural issues to the Elevated Rail Yards.
2) Discussions with Mn/DOT Metro, Mn/DOT CRU, MnSHPO, and The St. Paul Regional Rail Authority to help identify any potential issues that the pier placement may have on the future use of this historic property.

The original determination of an **adverse effect to the Lafayette Bridge remains appropriate**. As per the terms of the 2005 PA and the Lafayette Bridge Replacement Project MOA, please provide your comments on this project within 30 days of receipt.

Encs. (Plan sheets showing the proposed pier placements options for the new Lafayette Bridge)

Sincerely,

Kristen Zschomler

Kristen Zschomler, RPA
Historian/Archaeologist
Cultural Resources Unit (CRU)

cc: Amy Spong, St. Paul HPC
Dr. John Anfinson, MNRRA
Rick Dalton, Mn/DOT Metro
Darwin Yasis, Mn/DOT Metro
Joe Hudak, Mn/DOT CRU
Mn/DOT CO/CRU Project File

DEPARTMENT OF PARKS AND RECREATION

CITY OF SAINT PAUL
Mayor Christopher B. Coleman

Suite 840
50 West Kellogg Blvd.
Saint Paul, Minnesota 55102
www.stpaul.gov/parks

Telephone: 651-266-6400
Facsimile: 651-292-7405

March 27, 2009

Ms. Josephine Lundquist, P.E.
Minnesota Department of Transportation
Metropolitan District
1500 West County Road B2
Roseville, MN 55113

SUBJECT: Trunk Highway 52/Lafayette Bridge Replacement Project
State Project 6244-30
Proposed Impacts to Lower Landing Park in the City of Saint Paul

Dear Ms. Lundquist:

The purpose of this letter is to document the current understanding between the City of Saint Paul Parks and Recreation Department and the Minnesota Department of Transportation (Mn/DOT) regarding the proposed impacts of the Trunk Highway 52 (TH 52)/Lafayette Bridge replacement project on Lower Landing Park, a Section 4(f) resource, and mitigation for the identified impacts. This understanding is the result of ongoing project coordination between a number of City of Saint Paul departments and Mn/DOT.

Proposed Impacts to Lower Landing Park and Proposed Mitigation

Currently there are two pier locations in Lower Landing Park; the piers take up approximately 410 square feet of area. Mn/DOT has a highway easement on the parkland from the City for the existing piers. As proposed there will be one pier for each bridge (one northbound and one southbound); the piers will take up approximately 600 square feet of area, resulting in an approximate 190 square foot increase in the use of parkland. The highway easement for the existing bridge will be perpetuated and expanded to accommodate the new bridge. Mn/DOT will obtain a temporary easement prior to construction and will coordinate with the City consistent with the City's guidelines for use of parkland. This increased easement size and use of parkland will require that chapter 13.1.01 of the Saint Paul City Charter be enforced. St. Paul Parks Department is in general approval of diverting the parkland for the purposes stated in this letter and we will work with MNDOT and St. Paul City Real Estate section to process the diversion request. Please submit the attached petition to divert or dispose of city parkland so that we can begin this process and get on the April Parks and Recreation Commission agenda.

We understand that use of parkland for bridge piers is unavoidable since the bridge is being replaced on its current alignment. The proposed bridge design and location of river piers are

constrained by the proximity of the project area to Holman Field Airport and the river navigational channel. There is no feasible and prudent alternative to the use of parkland. All possible planning has been done to minimize harm to Lower Landing Park by limiting the number and size of land piers and careful placement of those piers. Mitigation for the impact to Lower Landing Park includes park restoration to an equal or improved condition as approved by by the Parks and Recreation Design Section.

The City of Saint Paul Parks and Recreation Department has reviewed the proposed impacts, including consideration of impact avoidance, minimization, and mitigation or enhancement measures, and has determined that the use of parkland for transportation purposes does not adversely affect the activities, features, and attributes that qualify Lower Landing Park for protection under Section 4(f) legislation as established under the Department of Transportation Act of 1966 (49 USC 303, 23 USC 138). We of course would prefer that no bridge piers be placed in the park but we understand that their placement in the park is unavoidable. We further understand that the Federal Highway Administration can make a de minimis impact finding following public review and comment on the effects of the project on the protected activities, features, and attributes of Lower Landing Park. The public comment period for the Environmental Assessment/Environmental Assessment Worksheet (EA/EAW), which will include a public hearing, will serve as the public review for the Section 4(f) determination.

The City of Saint Paul Parks and Recreation Department concurs with the use of parkland for the proposed project and the de minimis impact finding.

We look forward to continuing working with Mn/DOT on this important project in the City and the metropolitan area.

Sincerely,

Mike Hahm, Director
Saint Paul Parks and Recreation

PETITION TO DIVERT OR DISPOSE OF CITY PARK LAND

I (we), the undersigned, do hereby petition the Council of the City of Saint Paul to divert or dispose of its interests in the park land described as follows:

(If available, include a legal description of the park land to be disposed of or diverted, or attach a detailed map to scale)

I (we) request this diversion or disposal for the following reason(s).

(Indicate whether you will be building on the site)

I (we) have attached 2 copies of the site plans of any development intended for construction on the land to be diverted or disposed of.

Petitioner(s)

Name:		Name:	
Address:		Address:	
Cy/St/Zp:		Cy/St/Zp:	
Phone:		Phone:	

Please return the completed petition to:

Public Works/Technical Services – Real Estate
1000 City Hall Annex
25 W. Fourth St.
Saint Paul, MN 55102 Attention: Park Land Replacement

CITY OF SAINT PAUL
Mayor Christopher B. Coleman

Bob Bierscheid, CPRP
Director

300 City Hall Annex
25 West Fourth Street
Saint Paul, Minnesota 55102
www.ci.stpaul.mn.us/depts/parks

Telephone: 651-266-6400
Facsimile: 651-292-7405
TTY: 651-266-6378

"Saint Paul Parks and Recreation- Helping to Make Saint Paul, The Most Livable City in America"

June 26, 2008

Chris Roy, North Metro Area Manager
Minnesota Department of Transportation
Metropolitan District
Waters Edge Building
1500 West County Road B-2
Roseville, MN 55133

Dear Mr. Roy,

Saint Paul Parks and Recreation strongly encourages the Minnesota Department of Transportation (MNDOT) to incorporate a bike/pedestrian trail into the design of the new Lafayette Bridge scheduled to begin construction in October 2010. This bridge is located within the Mississippi National River and Recreation Area (MNRRA), a unit of the national park system designated by Congress in 1988.

One of the important visions identified for the MNRRA in its 1995 Comprehensive Management Plan is for a "continuous 72-mile trail and open space corridor on both sides of the Mississippi River in the Twin Cities metro area". Since 1996, the National Park Service (NPS) and its Trails and Open Space Partnership, a group of over 50 agencies and organizations working together to complete this vision, has made great progress and contributed significant state and federal resources to completing the 72-mile recreational corridor. The successful completion of this vision is contingent on providing adequate access to existing and planned state and regional trails and river crossings; in this case the Gateway State Trail, Sam Morgan Regional Trail and the Bruce Vento Regional Trails on the North end of the bridge to the South Saint Paul Regional Trail and Big Rivers Regional Trails on the South end of the bridge.

The City of Saint Paul is in the final stages of completing a revision to its Comprehensive Plan. One of the important goals of this plan is elimination of gaps in the City's bikeway system and expanding connectivity into all neighborhoods along its river corridor. The absence of a pedestrian/bicycle crossing on the Lafayette Bridge is seen as a major gap in the bikeway system and the need for such a connection has been identified in the City's transportation plan for many years. A river crossing at this location would connect the downtown core and east side neighborhoods with the west side of Saint Paul and the planned Regional Trail to South Saint Paul.

We highly encourage MNDOT to incorporate a bike/pedestrian crossing into the Lafayette Bridge project with a design that minimizes impacts to the Mississippi River, supports regional trail and open space plans, furthers implementation of the National Mississippi River Trail , and provides maximum access to recreational and commuter trail users. Although I understand *that current project funding does not provide for a trail connection with this bridge*, this is a tremendous one time opportunity for MNDOT to implement an alternative transportation link across the river, which will be lost to future generations if not implemented along with construction of the new bridge.

We look forward to our continued involvement in the Lafayette Bridge's design and development. Please do not hesitate to call me at 651-266-6409 or Don Ganje at 651-266-6425, if you need further information or assistance.

Sincerely,

Bob Bierscheid, CPRP
Director of Parks and Recreation

cc:
Mayor Chris Coleman
Council President Kathy Lantry
Katy Dadlez, SRF Consulting
Jody Martinez, City of St. Paul Parks and Recreation
Don Ganje, City of St. Paul Parks and Recreation
Mary Jackson, MNDOT
Peggy Lynch, Friends of Ramsey County Parks
Carol Zoff, MNDOT
Terry Eastin, MRT Inc.
Dorian Grilley, MRT, Inc.
Sarah Clark, Lower Phalen Creek Group
Congresswoman Betty McCollum

United States Department of the Interior

NATIONAL PARK SERVICE
Mississippi National River and Recreation Area
111 E Kellogg Blvd, Suite 105
St Paul Minnesota 55101

OFFICIAL ELECTRONIC CORRESPONDENCE
HARD COPY TO FOLLOW

June 26, 2008

Chris Roy, North Metro Area Manager
Minnesota Department of Transportation
Metropolitan District
Waters Edge Building
1500 West County Road B-2
Roseville, MN 55133

Dear Mr. Roy,

The National Park Service strongly encourages the Minnesota Department of Transportation (MNDOT) to incorporate a bike/pedestrian component into the design of the new Lafayette Bridge scheduled to begin construction in October 2010. This bridge is within the Mississippi National River and Recreation Area (MISS), a unit of the national park system designated by Congress in 1988 to *protect, preserve, and enhance the significant values of the Mississippi River throughout the Twin Cities metropolitan area, to encourage coordination of federal, state, and local programs, and to ensure orderly public and private development".* (P.L. 100-696).

One of the important visions identified for the MISS in its 1995 Comprehensive Management Plan is for a "continuous 72-mile trail and open space corridor on both sides of the Mississippi River in the Twin Cities metro area". Since 1996, the National Park Service (NPS) and its Trails and Open Space Partnership, a group of over 50 agencies and organizations working together to complete this vision, has made great progress and contributed significant state and federal resources to completing the 72-mile recreational corridor. The successful completion of this vision is contingent on multiple partners working together to ensure its implementation and adequate access to regional parks, trails and river crossings, in this case the Sam Morgan, Bruce Vento, South St. Paul Riverfront, and Harriet Island/Lilydale Regional Parks and Trails. We highly encourage MNDOT to incorporate a bike/pedestrian crossing into the Lafayette Bridge that connects these regional parks and trails at a cost and location that minimizes impacts to the Mississippi River, supports regional trail, open space, and commuter rail plans, the Great River Park Master Plan, plans for the Mississippi River Trail (MRT), a 3,000 – mile national millennium trail and bike route from the headwaters of the Mississippi River in northern Minnesota to the Gulf of Mexico, and provides the maximum access to recreational and commuter trail users to and from St. Paul. In partnership with MNDOT, the NPS has secured and is seeking additional federal resources to sign and complete the MRT in the MISS. It would be a mistake for MNDOT not to include a bike/pedestrian component along the Lafayette Bridge to connect trails on both sides of the nationally significant Mississippi River and MRT in St. Paul. Bicycle/pedestrian connections are extremely important components of the Twin Cities' economy, livability, and environment and in many cases, required to be included in new transportation infrastructure to ensure a variety of multi-modal transportation opportunities for the area.

We look forward to our continued involvement in the Lafayette Bridge's design and development. Please do not hesitate to call me at 651-290-3030, ext. 222, or Susan Overson at ext. 225, if you need further

information or assistance.

Sincerely,

/s/ Paul Labovitz

Paul Labovitz
Superintendent

cc:
Katy Dadlez, SRF Consulting
Don Gange, City of St. Paul Parks and Recreation
Mary Jackson, MNDOT
Peggy Lynch, Friends of Ramsey County Parks
Carol Zoff, MNDOT
Terry Eastin, MRT Inc.
Dorian Grilley, MRT, Inc.
Congresswoman Betty McCullum

CITY OF SAINT PAUL, MINNESOTA
Bicycle Advisory Board
800 CHA, 25 West 4th Street, Saint Paul, MN 55112 – ph. 651-266-6217

August 14, 2008

Chris Roy, North Metro Area Manager
Minnesota Department of Transportation
Metropolitan District
Waters Edge Building
1500 West County Road B-2
Roseville, MN 55133

Dear Mr. Roy,

Over the last few years travel by bicycle has become as much a mode of choice for commuting as it is for recreational use. As such, bicycle facilities are needed that meet the needs of the people and overcome barriers to travel by bicycle. When opportunities arise where new bicycle infrastructure can be included as part of a public works improvement project, meet the needs of the people, and overcome barriers, those opportunities need to be seized. As it relates to the planned design and construction of a new Lafayette bridge over the Mississippi River, the Saint Paul Bicycle Advisory Board (BAB) strongly encourages the Minnesota Department of Transportation (MnDOT) to incorporate bidirectional bicycle facilities as an integral part of the design and implementation of the project.

Incorporating bicycle facilities into the Lafayette bridge project is important for a number of reasons such as:

- Meeting the needs of bicyclists north and south of the river who would like access across the river that can be accessed from downtown
- Meeting the requirements of various planning documents such as the Metropolitan Councils' Transportation Plan, the City of St. Paul's' Transportation Plan (both current and planned revision) and MnDOT's Bicycle Modal Plan.
- Providing system continuity to existing facilities such as those in the Bruce Vento Nature sanctuary and on Wabasha Street as well as facilities planned for Payne Avenue and Plato Boulevard.

Please contact me if you have any questions or need additional information.

Sincerely,

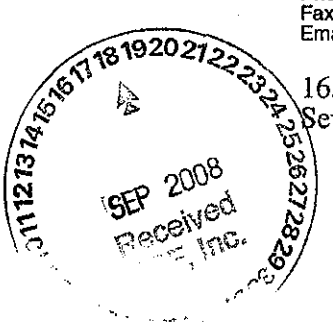
Rob Barbosa, Chair
Saint Paul Bicycle Advisory Board

U.S. Department of Homeland Security

United States Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: dwb
Phone: (314)269-2380
Fax: (314)269-2737
Email:



16591.1/ 838.7 UMR
September 9, 2008

Mr. Daniel Dorgan
Office of the State Bridge Engineer
Minnesota Department of Transportation
3485 Hadley Avenue North
Oakdale, MN 55128-3307

Subj: PROPOSED LAFAYETTE BRIDGE REPLACEMENT PROJECT, MILE 838.7, UPPER MISSISSIPPI RIVER

Dear Mr. Dorgan:

Please refer to our letter of August 27, 2008, regarding re-evaluation of the proposed pier placement for the subject bridge project. After careful consideration we have determined the replacement piers are to be shifted 55 feet to the south of the existing bridge piers in order to meet the present and future needs of navigation. This determination is our final decision on pier placement and must be incorporated into the bridge design.

We appreciate the opportunity to comment on this project at this early stage. You may contact Mr. Peter Sambor at the above number if you have questions.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

Copy: Lee Nelson, URS
Larry Erickson, SRF

APPENDIX C

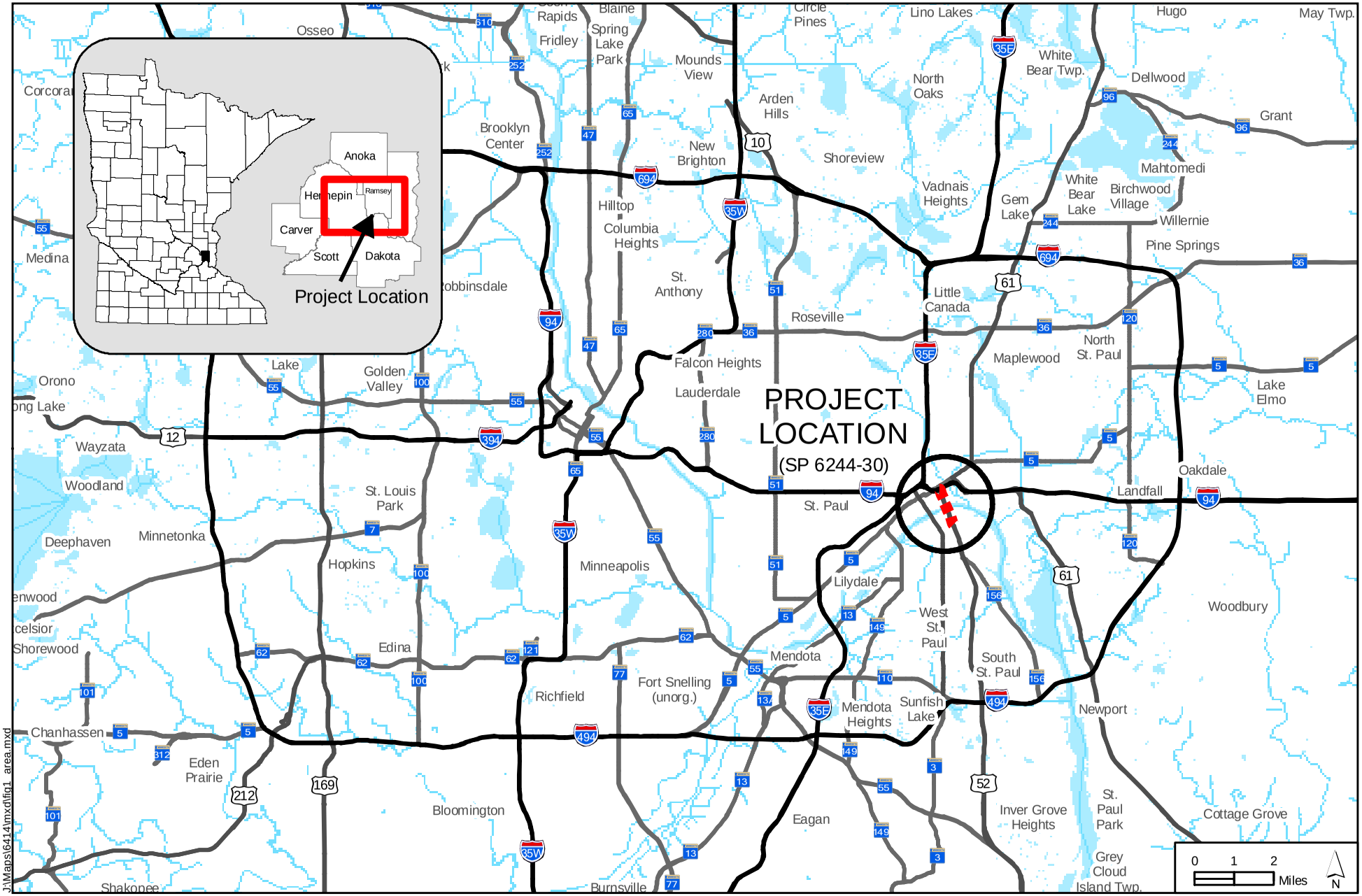
SECTION 4(F) EVALUATION

Programmatic
Section 4(f) Evaluation
Trunk Highway 52/Lafayette Bridge

Trunk Highway 52/Lafayette Bridge Replacement Project

State Project: S.P. 6244-30
St. Paul, Ramsey County, Minnesota

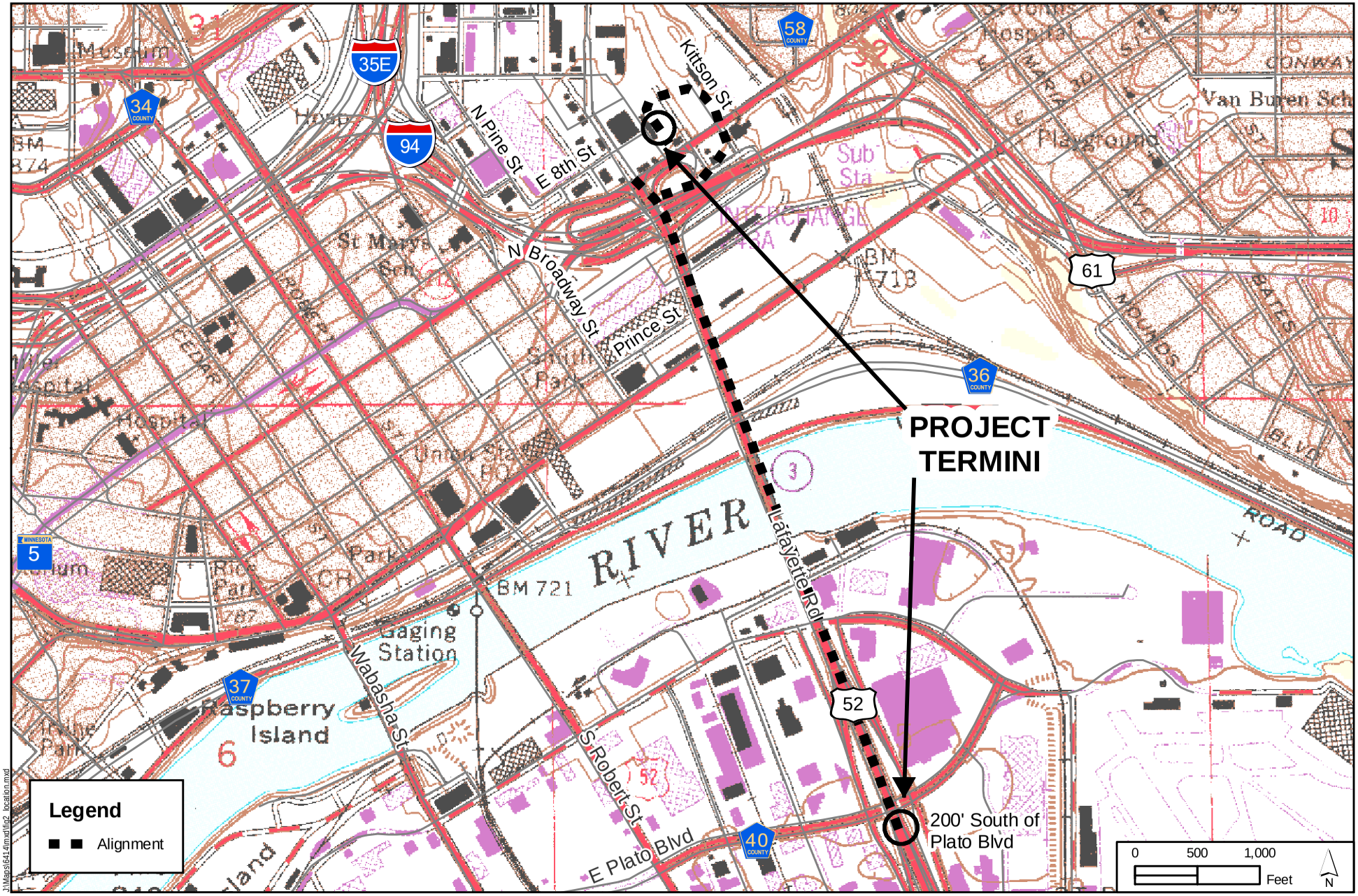
Replacement of the existing Trunk Highway 52/Lafayette Bridge over the Mississippi River between 200 feet south of Plato Boulevard and East 8th Street, and development of a preferred alternative modification to the project's North Area (East 7th Street at Trunk Highway 52, including the northbound Trunk Highway 52 to westbound I-94 connection). Existing Bridge 9800 will be replaced with Bridges 62017 (southbound) and 62018 (northbound).



Area Location

Figure 1

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT



Project Location USGS

Figure 2

Trunk Highway 52/Lafayette Bridge Replacement
SP 6244-30
Mn/DOT

TABLE OF CONTENTS

APPENDIX

- Memorandum of Agreement

I. 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 Federal Highway Administration (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 771.135).

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 Programmatic 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) legislation under the preferred alternative evaluated in the *Truck Highway 52/Lafayette Bridge Environmental Assessment (EA).*

This Section 4(f) Evaluation describes the identified Section 4(f) historic site which is proposed to be "used" under the preferred alternative, potential impacts on that property, and possible mitigation measures to minimize impacts. (A de minimis finding for the use of Lower Landing Park, a publicly-owned park and therefore a Section 4(f) resource, is proposed as a separate finding, subject to FHWA determination following public comment.

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, and wildlife or waterfowl refuge for highway purposes be evaluated in context with the proposed highway construction/reconstruction activity. An inventory of these types of properties was completed based on a review of the design concept drawings and the project's impacts on these properties were assessed. As noted, the use of Lower Landing Park is addressed as a separate finding.

Avoidance or minimization of use to the Section 4(f) historic site is not possible; due to significant structural deficiencies, the bridge must be replaced.

The following Section 4(f) historic site will be impacted by the proposed project (see Figure 2): Trunk Highway 52/Lafayette Bridge (Lafayette Bridge).

The Programmatic Section 4(f) Evaluation for the Lafayette Bridge satisfies the requirements of Section 4(f) by meeting the following criteria:

- **The resource is a historic bridge that is not a National Historic Landmark.** The bridge has been determined to be eligible for the National Register of Historic Place (NRHP). It is not a National Historic Landmark.

- **If the bridge is replaced, the existing bridge must be made available for alternative use.** The Minnesota Department of Transportation (Mn/DOT) will comply with the Historic Bridge Requirements and Uniform Relocation Assistance Act of 1987, Section 123(f). The Lafayette Bridge is a massive structure that physically cannot be moved and adapted for alternative use. In addition, the bridge cannot remain on its current alignment since the present bridge structure is located at the only feasible and prudent site for the proposed bridge structure. Therefore, the bridge was not marketed for sale.

- **A Programmatic Section 4(f) Evaluation cannot be used for projects that require an Environmental Impact Statement (EIS).** An EIS is not required for the proposed project.

- **The State Historic Preservation Office (SHPO) must concur in writing with the assessment of impacts and proposed mitigation.** SHPO has concurred with the Section 106 determination of effect and is a signatory to the Memorandum of Agreement (MOA) stipulating mitigation for the impact.

II. PROPOSED ACTION

Bridge

The proposed project incorporates a girder bridge. The bridge will consist of two bridges (northbound and southbound) and span the Mississippi River from Fillmore Avenue on the south to the northern approach near Interstate 94, a length of approximately 3,200 feet. Space will be provided on the south and north ends of the bridge for stormwater treatment.

This project will preserve the existing navigation channel and will include two piers in the Mississippi River for each bridge, compared to two piers for the existing bridge. The Xcel Energy electrical transmission line near the north end of the bridge will be relocated. Construction of the bridge's footings and foundations will not preclude future use of the corridor for light rail transit.

Roadway

On the bridge the proposed roadway will be a six-lane section, consisting of two through lanes in each direction, one auxiliary lane in each direction, 12-foot shoulders on the outside lanes, and six-foot shoulders on the inside lanes in each direction. Roadway improvements north of the bridge will correct geometric deficiencies and provide modified connections to the local roadway network.

Pedestrian and Bicycle Accommodations

The new bridge will include provisions for pedestrian and bicycle traffic. A 10.5-foot trail with overlooks at the river piers will be constructed on the east side of the northbound bridge.

III. SECTION 4(f) PROPERTY

Map of Section 4(f) property

Figure 2 shows the Section 4(f) resource.

Description

The Lafayette Bridge is owned by Mn/DOT. The bridge crosses the Mississippi River connecting St. Paul's West Side neighborhood with downtown St. Paul on the east bank. This four-lane bridge consists of two 32-foot wide concrete bridge decks supported by steel girder superstructures and has 29 spans stretching 3,366 feet in length.

The Lafayette Bridge was determined eligible for listing on the National Register of Historic Places (NRHP) by the Mn/DOT Cultural Resources Unit (CRU) in March 2008. Numerous bridges built during the 1960s developed fracture critical status shortly after construction. New bridge design requirements grew out of the studies of problems with bridges, especially the Lafayette Bridge. These requirements transformed the bridge building industry and the design of modern bridges so that fatigue and fracture are rare in bridges built in the past 20 years. The bridge meets National Register Criterion C for engineering significance and Criterion Consideration G due to its extraordinary significance in the area of bridge engineering.

IV. IMPACTS ON THE SECTION 4(f) PROPERTY

The proposed project includes the replacement of the Lafayette Bridge, causing a direct impact to the historic resource due to its demolition.

V. AVOIDANCE ALTERNATIVES

No Build

The No Build alternative would avoid a direct impact on the Lafayette Bridge. However, this alternative ignores the basic transportation needs and is not feasible and prudent. The No Build alternative does not correct the situation that causes the bridge to be considered structurally deficient and fracture critical and normal maintenance is not considered adequate to cope with the situation. Because of these deficiencies, the bridge poses serious and unacceptable safety hazards to the traveling public.

Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the National Historic Preservation Act.

The present bridge structure is located at the only feasible and prudent site. To build a new bridge at another site would result in extraordinary bridge and approach engineering and construction costs resulting in an economic impact of extraordinary magnitude due to displacement of a significant number of businesses. Constraints imposed by regulations related to the river navigation channel and nearby airport flight path further limit the location of the new bridge. This alternative was not pursued because it would result in increased right of way, economic, and environmental impacts and may interfere with the navigation channel and airport flight path.

Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the National Historic Preservation Act.

The bridge is so structurally deficient that it cannot be rehabilitated to meet the minimum acceptable load requirements or be widened to meet the minimum required capacity of the transportation system on which it is located without affecting the historic integrity of the bridge. Therefore, rehabilitation was not considered a viable option.

VI. 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. An MOA, among Mn/DOT, the FHWA, the SHPO, and the Mississippi River National River Recreation Area (MNRRA) stipulates that Mn/DOT will have the Lafayette Bridge documented to the Minnesota Historic Property Record (MHPR) and HAER standards as mitigation for the project impact. See the MOA in the Appendix.

VII. COORDINATION

The SHPO, MNRRA, Ramsey County Historical Society, and the St. Paul Heritage Preservation Commission were consulted to discuss impacts and solicit recommendations regarding mitigation of the bridge. An MOA has been executed that includes documentation to the MHPR with photographs and a narrative that discusses the importance of bridge type.

VIII. CONCLUSION

Based upon the above considerations, there is no feasible and prudent alternative to the use of the Lafayette Bridge and the proposed action includes all possible planning to minimize harm to the Lafayette Bridge resulting from such use.

APPENDIX

Memorandum of Agreement

U.S. Department
of Transportation
Federal Highway Administration

Minnesota Division

380 Jackson Street
Galtier Plaza, Suite 500
St. Paul, MN 55101-4802

651.291.6100
651.291.6000 fax

www.fhwa.dot.gov/mndiv

September 5, 2008

Thomas K. Sorel
Commissioner
Department of Transportation
MS 100, Transportation Building
St. Paul, Minnesota 55155

Re: Section 106 Memorandum of Agreement
State Project No. 6244-30
Replacement of Lafayette Bridge
Trunk Highway 52 over the Mississippi River
St. Paul, Ramsey County, Minnesota

Dear Mr. Sorel:

Please find enclosed a copy of the fully executed Section 106 Memorandum of Agreement (MOA) for the referenced project. By carrying out the terms of the MOA, the requirements of Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations have been concluded for this project.

If you have any questions, please contact me at (651) 291-6122.

Sincerely yours,

William R Lohr

William R. Lohr, P.E.
Area Engineer

MOVING THE
AMERICAN ECONOMY

Minnesota
Federal Highway Administration

STIPULATIONS

The FHWA will ensure that the following measures are carried out:

STIPULATION I. RECORDATION OF THE LAFAYETTE BRIDGE

Mn/DOT will have the Lafayette Bridge documented to the Minnesota Historic Property Record (MHPR). The historical narrative will discuss the importance of the bridge type, and large-format, black-and-white, archival-quality images will be taken according to the photographic recordation standards of the MHPR and the Historic American Engineering Record (HAER). Copies of the bridge plans will also be prepared in a format agreed upon by the Mn/DOT CRU and MnSHPO. The MHPR report will be submitted to and accepted by the MnSHPO, and archived within the Minnesota Historic Society (MHS) MHPR collection within eighteen (18) months of the signing of this MOA.

Mn/DOT will also work with the MnSHPO and the MHS Archives Department to clarify the MHPR guidelines and make them more applicable to engineering resources. This work will include, but not necessarily be limited to: discussion of appropriate narrative format; resources materials and access within Mn/DOT archives and libraries; and discussion of appropriate photographic recordation standards in relation to engineering structures. The revised MHPR guidelines will be submitted to the SHPO within eighteen (18) months of the signing of this MOA.

STIPULATION II. MEASURES TO MINIMIZE EFFECTS TO OTHER HISTORIC PROPERTIES

Certain measures have been agreed upon to minimize effects to other historic properties within the project area.

A) Mn/DOT Metro will submit plans to the Mn/DOT CRU office throughout the design process in order for the CRU to determine if there are any substantial changes from the original review; and CRU will notify MnSHPO of any such changes and any other potential effects on historic properties. In particular, further review will occur during the design process related to area near the George Hess Building, the Mississippi River 9 ft. Channel Historic District, the Lowertown Historic District, and the Milwaukee Road Railroad Line. Any additional adverse effects identified will be addressed by an agreement between Mn/DOT CRU and MnSHPO, after appropriate consultation with the public, MNRRA, and the ACHP.

B) The MnSHPO, the St. Paul HPC, MNRRA, and/or the Mn/DOT CRU historian will either serve on and/or be kept apprised of design approaches by the Visual Quality Advisory Team (VQAT) to ensure that aesthetic issues related to adjacent historic properties are considered. Aesthetic treatment plans need to be submitted to Mn/DOT CRU and will require CRU approval and SHPO concurrence to ensure the design is appropriate in relation to adjacent historic properties.

STIPULATION III. ARCHAEOLOGY

Mn/DOT CRU, on behalf of the FHWA, had a geomorphological investigation conducted in the project area to identify any buried landscapes that may have the potential to contain

Preserving America's Heritage

September 3, 2008

William R. Lohr, P.E.
Area Engineer
Department of Transportation
FHWA-Minnesota Division
380 Jackson Street
Galtier Plaza, Suite 500
St. Paul, MN 55101-4802

Ref: *Proposed Replacement of Lafayette Bridge*
Ramsey County, Minnesota

Dear Mr. Lohr:

On August 28, 2008, the Advisory Council on Historic Preservation (ACHP) received your notification regarding the adverse effects of the referenced undertaking. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Minnesota SHPO, and any other consulting parties, and related documentation at the conclusion of the consultation process. The filing of the MOA with the ACHP and fulfillment of its stipulations are required to complete your compliance responsibilities under Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Hector Abreu at 202 606-8517 or habreu@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Federal Permitting, Licensing and Assistance Section
Office of Federal Agency Programs

MEMORANDUM OF AGREEMENT
PURSUANT TO SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) AND THE
MINNESOTA STATE HISTORIC PRESERVATION OFFICE (SHPO)
REGARDING THE LAFAYETTE BRIDGE RECONSTRUCTION (S.P. 6244-30)
CITY OF ST. PAUL, RAMSEY COUNTY, MINNESOTA

WHEREAS, the Federal Highway Administration (FHWA) is providing funds to the Minnesota Department of Transportation (Mn/DOT) for the reconstruction of the Lafayette Bridge on TH 52 in St. Paul; and

WHEREAS, the Minnesota Department of Transportation (Mn/DOT) Cultural Resources Unit (CRU), on behalf of the FHWA, has defined the area of potential effect (APE) of the undertaking in consultation with the Minnesota State Historic Preservation Office (MnSHPO); and

WHEREAS, the Mn/DOT CRU, on behalf of the FHWA, identified the following historic properties within the APE: The George E. Hess Building, the Lowertown Historic District, the Milwaukee Road Railroad line, the Mississippi River 9-ft. Channel Historic District and the Lafayette Bridge. The project will result in the removal of the Lafayette Bridge; therefore, Mn/DOT CRU determined that the project would have an adverse effect to the property, and the MnSHPO concurred with this determination; and

WHEREAS, the Mn/DOT CRU, on behalf of the FHWA, conducted a geomorphological investigation of the project area to identify any portions that had potential to contain deeply buried archaeological resources. The study identified one limited area with moderate potential that will be further tested as per Stipulation III of this MOA; and

WHEREAS 16 U.S. C., 460zz-3(b)(1) requires the National Park Service to review Federal undertakings within the 72 miles of the Mississippi National River and Recreation Area (MISS) to ensure that they are compatible with the MISS Comprehensive Management Plan, the MISS is invited to concur in this Memorandum of Agreement (MOA); and

WHEREAS, Mn/DOT, as project sponsor, has been invited by the FHWA to sign this agreement in accordance with 36 CFR 800(c)(4); and

WHEREAS, the St. Paul Heritage Preservation Commission (HPC) was invited to be a consulting party to this Section 106 review, and has decided to not participate; and

WHEREAS, the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its finding of adverse effect in accordance with 36 CFR 800.6(a)(1), and has provided the documentation specified in 36 CFR 800.11(e) and the ACHP has chosen not to participate in the consultation;

NOW, THEREFORE, the FHWA and the MnSHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties:

archaeological deposits. The majority of the project area had no to very low potential for buried landscapes; however, one portion of the project area had moderate potential for containing buried landscapes. The following steps will be taken to complete the archaeological review of the project area.

A. During August 2008, Mn/DOT CRU will have further geomorphological and archaeological testing done on the possible natural levee feature located between Warner Road and the north bank of the Mississippi River. The Mn/DOT CRU and MnSHPO will agree on the methodology for conducting the deep testing in this area.
B. If no sites are identified, Mn/DOT CRU and MnSHPO will document the finding through additional determination letters, and the obligations under this stipulation will be complete.
C. If archaeological sites are found, Mn/DOT CRU will make a determination on if the site is eligible for listing on the National Register of Historic Places following the process outlined in the Stipulation III of the 2005 Section 106 Programmatic Agreement between the FHWA and MnSHPO (2005 Section 106 PA). If the site is determined not eligible, Mn/DOT CRU and MnSHPO will document the finding through additional determination letters, and the obligations under this stipulation will be complete. If the site is determined to be eligible, Mn/DOT CRU and the MnSHPO will work with Mn/DOT Metro, Mn/DOT Bridge Office, the FHWA, and other design participants to seek ways to avoid impacts to the site. If avoidance is not feasible, Mn/DOT CRU and MnSHPO will develop and implement an appropriate mitigation plan. The current MOA will be amended to address any additional mitigation needs. Mn/DOT CRU will consult with MNRRA and other interested agencies or the public.

STIPULATION IV. AMENDMENTS

Any signatory to this Memorandum of Agreement (MOA) may request in writing that it be amended, whereupon the parties shall consult to consider the proposed amendment. The regulations at 36 CFR 800 shall govern the execution of any such amendment.

STIPULATION V. DISPUTE RESOLUTION

Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree, any one of the signatories may request the participation of the ACHP to assist in resolving the dispute.

STIPULATION VI. TERMINATION

Any signatory to this Memorandum of Agreement may terminate the agreement by providing thirty (30) days' written notice to the other signatories, provided the signatories consult during the period prior to termination to agree on amendments or other actions that would avoid termination. If the agreement is terminated and the FHWA elects to continue with the undertaking, the FHWA will reinitiate review of the undertaking in accordance with 36 CFR 800.

STIPULATION VII. DURATION

If the terms of this agreement have not been implemented within one (1) year of its full execution date, this agreement will be considered null and void. If the FHWA anticipates that

the agreement will not be implemented within this timeframe, it will notify the signatories in writing at least thirty (30) days prior to the agreement becoming invalid. The agreement may be extended by the written concurrence of the signatories. If the agreement becomes invalid and the FHWA elects to continue with the undertaking, the FHWA will reinitiate review of the undertaking in accordance with 36 CFR 800.

Execution of this Memorandum of Agreement by the FHWA and the MnSHPO and implementation of its terms evidence that the FHWA has taken into account the effects of its undertaking on historic properties, and has afforded the Advisory Council on Historic Preservation opportunity to comment.

FEDERAL HIGHWAY ADMINISTRATION (FHWA)

By: _____ 9/4/08
Robin Schroeder, Acting Division Director — Date

MINNESOTA STATE HISTORIC PRESERVATION OFFICE (SHPO)

By: Nina Archabal 8/12/08
Nina Archabal, State Historic Preservation Officer — Date

Invited Signatory:

MINNESOTA DEPARTMENT OF TRANSPORTATION

By: _____ 8/4/08
Thomas Sorel, Commissioner — Date

MISSISSIPPI NATIONAL RIVER AND RECREATION AREA

By: _____ 7-29-08
Paul Labovitz, Superintendent — Date