Trunk Highway 22 Flood Mitigation Project

Environmental Assessment/
Environmental Assessment Worksheet (EA/EAW)

Prepared by:
Minnesota Department of Transportation (MnDOT) and the Federal Highway Administration

December 2014

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ENVIRONMENTAL ASSESSMENT

Trunk Highway 22 – Flood Mitigation Project
Minn. Project No. 4012-36

From: the US Highway 169/Highway 22 intersection to the south end of the Highway 22 bridge over the Minnesota River (approximately 0.59 miles)
City of Saint Peter, Nicollet County, Minnesota
Section(s), Township, Ranges: Sec. 21 and 28, T 110 N, R 26 W

Submitted Pursuant to 42 USC 4332 and Minn. Statute 116D by the U.S Department of Transportation Federal Highway Administration (FHWA), and the Minnesota Department of Transportation (MnDOT)
for

Reconstruction of approximately 0.59 miles of Highway 22 as a rural two-lane roadway above the 100-year flood elevation of the Minnesota River and construction of an overflow bridge structure (approximately 105' 6" long) to maintain the flowable area of the river and floodplain.

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Recommended for Approval by:

District Engineer — Date: 12-9-14

Approved:

MnDOT Chief Environmental Officer — Date: 12-10-14

FHWA — Date: 12/11/2014

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Figure 1 – – State/County and USGS Location Map

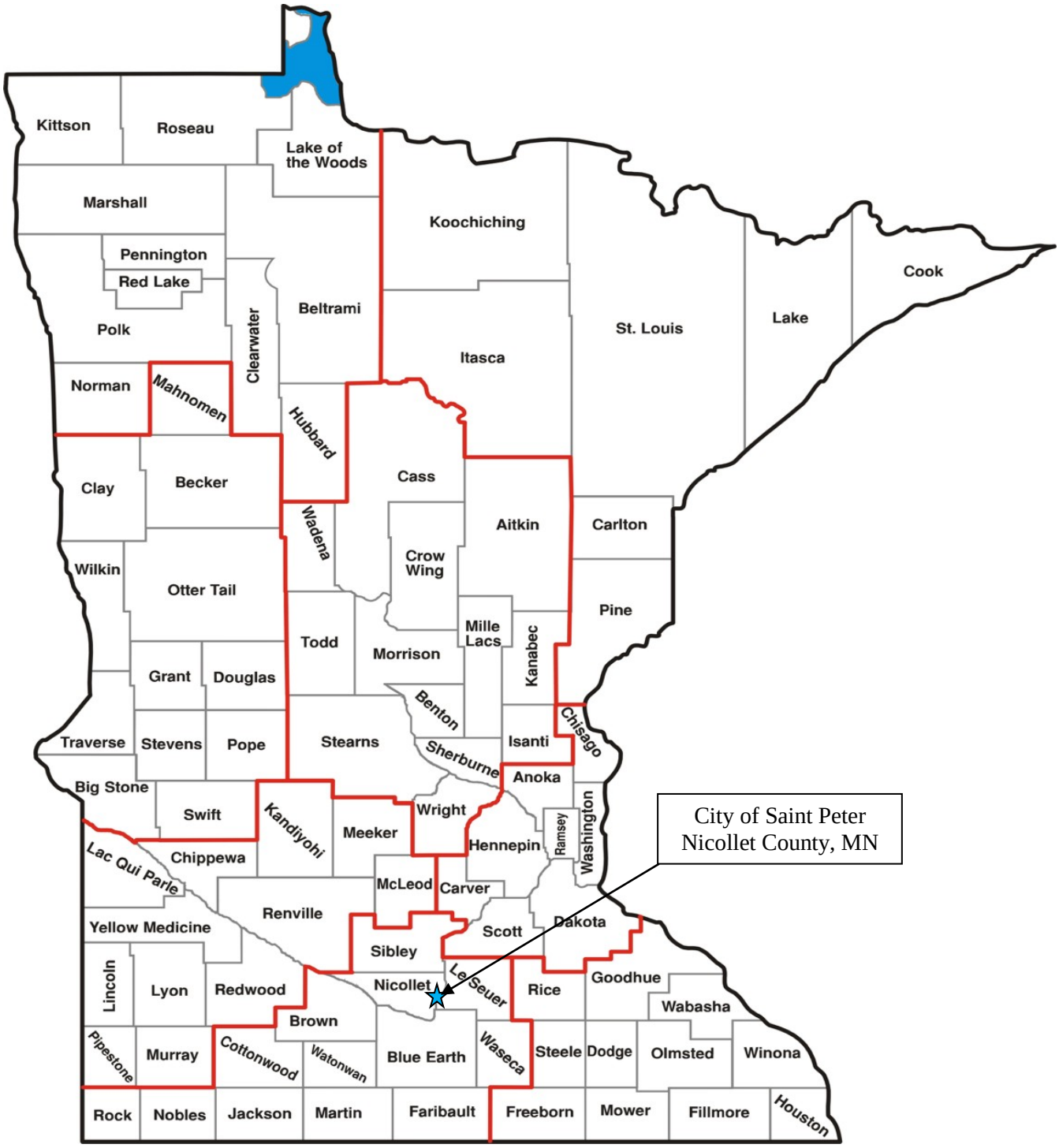
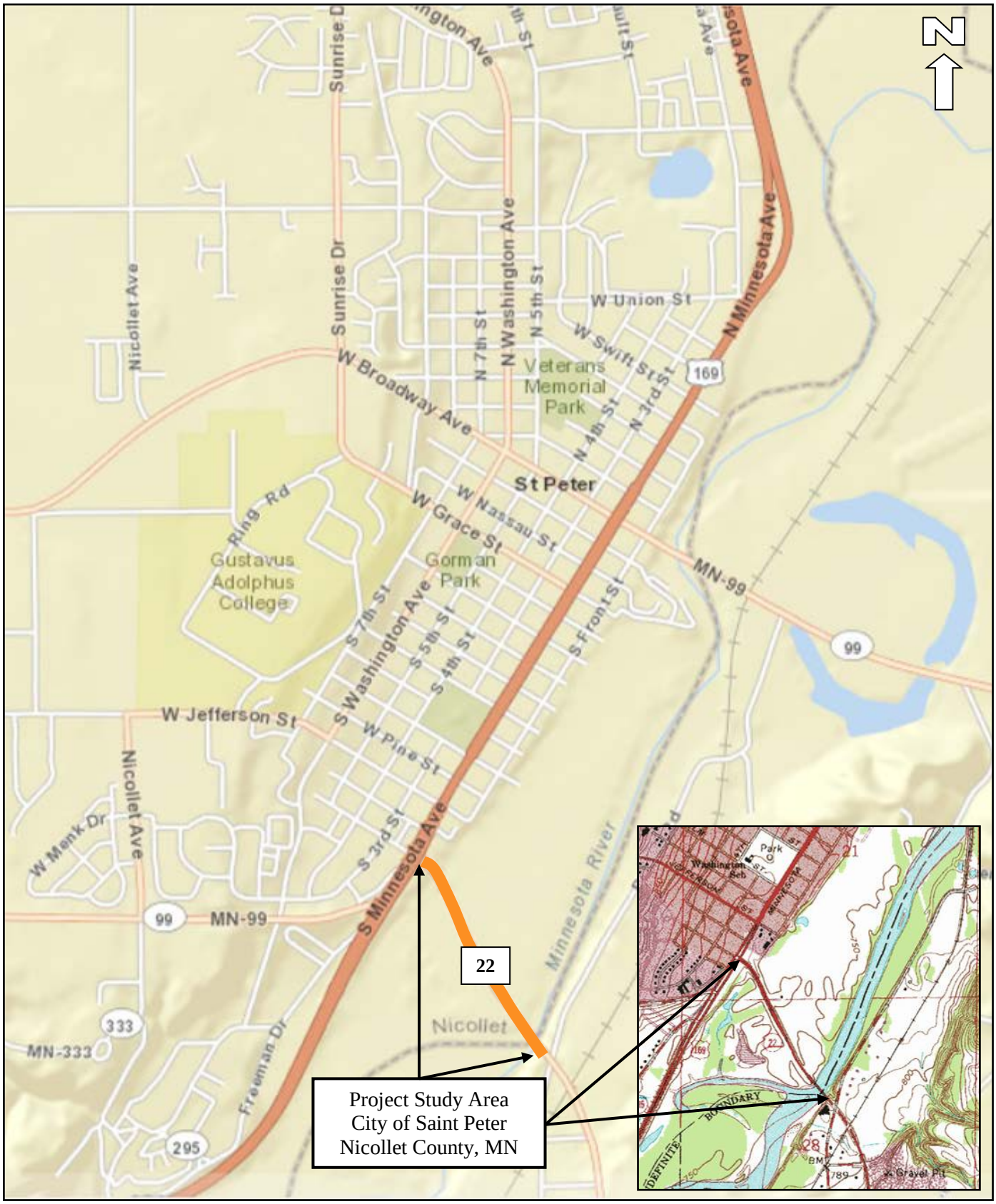


Figure 2 – – Project Study Area Map & USGS Map



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I. REPORT PURPOSE

This Environmental Assessment (EA) provides background information including:

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

This EA was prepared as a part of the National Environmental Policy Act (NEPA) process and state environmental review process to fulfill requirements of both 42 USC 4332 and M.S. 116D. At the federal level, the EA is used to provide sufficient environmental documentation to determine the need for an Environmental Impact Statement (EIS) or that a Finding of No Significant Impact (FONSI) is appropriate. At the state level, the EA document is used to provide sufficient environmental documentation to determine the need for a state EIS or that a Negative Declaration is appropriate.

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

The Minnesota Department of Transportation (MnDOT) is the proposer and the Responsible Governmental Unit (RGU) for the state environmental review process. MnDOT has received Federal funding to provide flood mitigation in order to improve the movement of travelers and goods and services along this regional significant transportation corridor. MnDOT has been working in cooperation with the Federal Highway Administration (FHWA), National Parks Service, and the Minnesota Department of Natural Resources on the development of this project and environmental documentation to address the National Environmental Policy Act (NEPA) requirements.

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

II. PROJECT PURPOSE AND NEED

A. PROJECT BACKGROUND

This portion of Minnesota Trunk Highway 22 is a 2-lane roadway that provides a critical connection for commuters and commercial vehicles between the City of Saint Peter and the east side of Mankato. The current average daily traffic (ADT) volume on this segment of highway is 8,100 trips (730 trips or 9-percent of the ADT is classified as heavy commercial vehicles). Approximately one-half mile south of the US Highway 169 intersection, Highway 22 traverses the Minnesota River via Bridge No.40002.

This segment of Highway 22 has been overtopped with flood waters from the Minnesota River three times since 2004 with the most recent occurring in June 2014. The overtopping of the roadway creates road closures, as well as added maintenance due to wash outs of the highway shoulders and side slopes.

B. PURPOSE OF THE PROPOSED ACTION

The purpose of the Highway 22 Flood Mitigation Project is to provide roadway improvements that will ensure a safe, reliable, and efficient connection between Saint Peter and east Mankato during seasonal flooding. The project also provides the opportunity to improve traffic operations at the Highway 22/US Highway 169 intersection and resolve land ownership (MnDOT right of way) concerns in the project area.

C. NEED FOR PROPOSED ACTION

The Project "Need" identifies transportation deficiencies or problems that need to be addressed. The identified needs for this project have been defined with respect to their relative importance as project objectives (primary vs. secondary). The primary needs are those problems that were the basis for initiating this project. Secondary needs are opportunities for other system benefits within the project study area that may be able to be addressed or enhanced, if feasible, concurrent with addressing the primary needs. The need for the project is centered on the following:

- Primary Need – Reduce the frequency and duration of roadway closures due to seasonal flooding.
- Secondary Needs – Improve traffic operations at the US Highway 169 and Highway 22 intersection.
- Other Considerations – Complete the right of way acquisition and parkland conversion process associated with Riverside Park that remains from a previous transportation project.

<u>Primary Needs</u>

The primary need for the project stems from issues concerning roadway closures that result when seasonal flood waters overtop the existing roadway. The low point of the Highway 22 roadway profile is located between the bridge over the Minnesota River and US Highway 169. The current road overtopping condition

occurs at an elevation of 761.1, which is the low point on the centerline of Highway 22 in several locations. According to the Minnesota Department of Natural Resources (MNDNR) and U.S. Army Corps of Engineers (USACE) Hydrologic Analysis for the Minnesota River, this elevation corresponds with the 25-year flood frequency/elevation for this segment of the river. In just the past four years (2010-2014) this segment of Highway 22 has closed three times due to high flood waters. The most recent occurred when heavy rainfalls caused the water level in the Minnesota River to quickly rise and on June 22, 2014 flood waters overtopped Highway 22 between US Highway 169 and the Minnesota River Bridge. During this occasion the roadway remained closed for two days.

Picture taken near US Highway 169 and Highway 22 intersection looking south toward Minnesota River Bridge (summer 2010).

Information on the extent of the last three Highway 22 flood related closures is presented in Table 1. While not flood stage information is available, the roadway was overtopped by several feet. It should be noted that the 100-year flood elevation, as taken from the Flood Insurance Rate Maps (FIRM)[1] is 764 and 763 on the up and downstream ends of the Highway 22 Bridge. The elevation of the existing bridge is 764.35.

Table 1 – Flood History For Highway 22 in Saint Peter

Year	Closure Duration (days)	Original Length (miles)	Detour Length (miles)[1]	Estimate Repair Costs
2014	2	9.9	17.5	Unavailable
2011	44	9.9	13.5 (detoured to US 169)	$632,500
2010	5	9.9	Unavailable	$29,400

In addition to repair costs associated with Highway 22, flood related closures have a direct cost to travelers in terms of longer vehicle trips between Saint Peter and East Mankato and increased travel times. As indicated in Table 1, the typical detour route through Nicollet County adds approximately 7.6 miles and ten minutes per trip that would have otherwise used Highway 22.

Secondary Needs

A secondary project need is to improve traffic operations at the signalized Highway 22/US Highway169 intersection, especially for westbound Highway 22

[1] Flood Insurance Rate Map Numbers 27103C0330G & 27103C0340G, effective date of July 21, 1999.

traffic turning north (right) onto US Highway 169. Observations made by transportation professionals have determined that this traffic turning movement experiences delays during weekday PM peak hours (4-6 p.m.). It has been observed that several times each week at times of peak traffic demand, the queuing of vehicles in the right turn lane on Highway 22 back up to a point that exceeds the storage capacity of the turn lane. This creates a situation where northbound vehicles waiting to turn right onto US 169 limit access to the left turn lane resulting in unnecessary delays for trips destined to southbound US Highway 169.

Additional Considerations

A MnDOT project completed in the late 1990's (S.P. 0714-28, 4012-29, 4012-18, and 4012-20) that involved the reconstruction of Highway 22 and the existing roadway embankment and a spur dike near the Minnesota River Bridge previously encroached into park property that was not owned by MnDOT. While this earlier project went through the appropriate review and approval processes, including state and federal environmental review and Section 4(f)/6(f) documentation, the right of way acquisition process of converting the impacted property over to highway right of way was never completed. The 1990s project did provide a replacement plan that included recreational improvements associated with the Sakatah Regional Trail. While these improvements were completed the process of transferring the park property to highway right of way was never finished. As a result, portions of the existing Highway 22 (approximately 2.71 acres); including portions of the roadway embankment, ditches, driving surface, and Minnesota River Bridge, are located on property under the ownership of the City of Saint Peter and is currently designated as city park property (Riverside Park).

III. ALTERNATIVES

This section of the EA discusses the alternatives development and evaluation process used by MnDOT to identify the proposed improvements as part of the Highway 22 Flood Mitigation Project.

A. ALTERNATIVES DEVELOPMENT AND EVALUATION

Following back-to-back years (2010-2011) of seasonal flooding and needing to close Highway 22 for several days during each flood event, MnDOT initiated the Highway 22 Flood Mitigation Study to identify transportation improvements that would address the primary need of reducing the frequency and duration that the highway is required to be closured due to seasonal flooding along the Minnesota River.

Based on recommendations from a technical hydraulics assessment conducted by the MnDOT Bridge Office in 2013, it was determined that the improvements should raise the roadway surface to an elevation above the 100-year flood elevation (764') in order to allow the highway to remain open under a 100-year flood event. The 100-year flood elevation was selected by MnDOT because this is the same design standard used along US Highway 169 both north and south of Saint Peter where segments of the highway have also experienced periodic seasonal flooding. The Highway 22 hydraulics analysis determined that placing the roadway at a higher elevation, which would require additional fill, would potentially result in an increase in the flood stage while a lower elevation of the roadway would remain subject to frequent seasonal flooding. As a result, all of the Build alternatives developed for the project included this basic criteria in the consideration of improvements. Furthermore, it was determined that all Build alternatives would include appropriate geometrics at the Highway 22/US Highway 169 intersection to provide safe and efficient traffic operations.

A limited number of alternatives were identified in part due to the location of the existing Highway 22 Bridge over the Minnesota River. Early in the project development process it was determined that the existing bridge was not in need of replacement and was not planned to be affected by the flood mitigation improvements.

Existing Alignment Alternative

An existing alignment concept was developed that would raise the existing Highway 22 profile (road surface) to an elevation of 764.5', which is above the documented 100-year flood elevation for this section of the Minnesota River. This alternative requires increasing the grade of the roadway (through placement of fill) by approximately 3.5 feet. This alternative would also include reconfiguring the lane geometry at the east leg of the Highway 22/US Highway 169 in order to allow for dual right turn lanes for westbound to northbound turning movements. The existing pavement width on this leg of the intersection is sufficient to allow for this change in lane assignments and the improvements could be made simply by restriping the Highway 22 approach to the intersection. As part of the evaluation process it was determined that this alternative would potentially fill approximately 0.35 acres of wetland and require only a small temporary occupancy of parkland (Riverside Park). The previous right of way impacts to Riverside Park could also be rectified as part of the Existing Alignment Alternative.

B. ALTERNATIVES CONSIDERED, BUT REJECTED

The following conceptual alternatives and design modifications were considered and screened from further consideration and the rationale behind why they were eliminated are identified below.

1. New Location Alternatives

No new location alternatives were considered since Highway 22 is an historically established route that has received substantial public investment in the past. Also, it was determined by MnDOT that the existing Highway 22 Bridge over the Minnesota River was sufficient and compatible with meeting the project needs. A new location for the Highway 22 alignment would have resulted in substantially greater social, economic, and environmental impacts to this sensitive river valley area that is characterized by wetland, floodplain, and wild habitat resources. Furthermore, the proximity of other publically owned recreational properties would have likely been affected by any relocation of the highway corridor. Therefore, it was decided that the existing bridge would remain inplace and continue to be utilized for Highway 22 and that no location alternatives and/or new crossings of the Minnesota River would be considered.

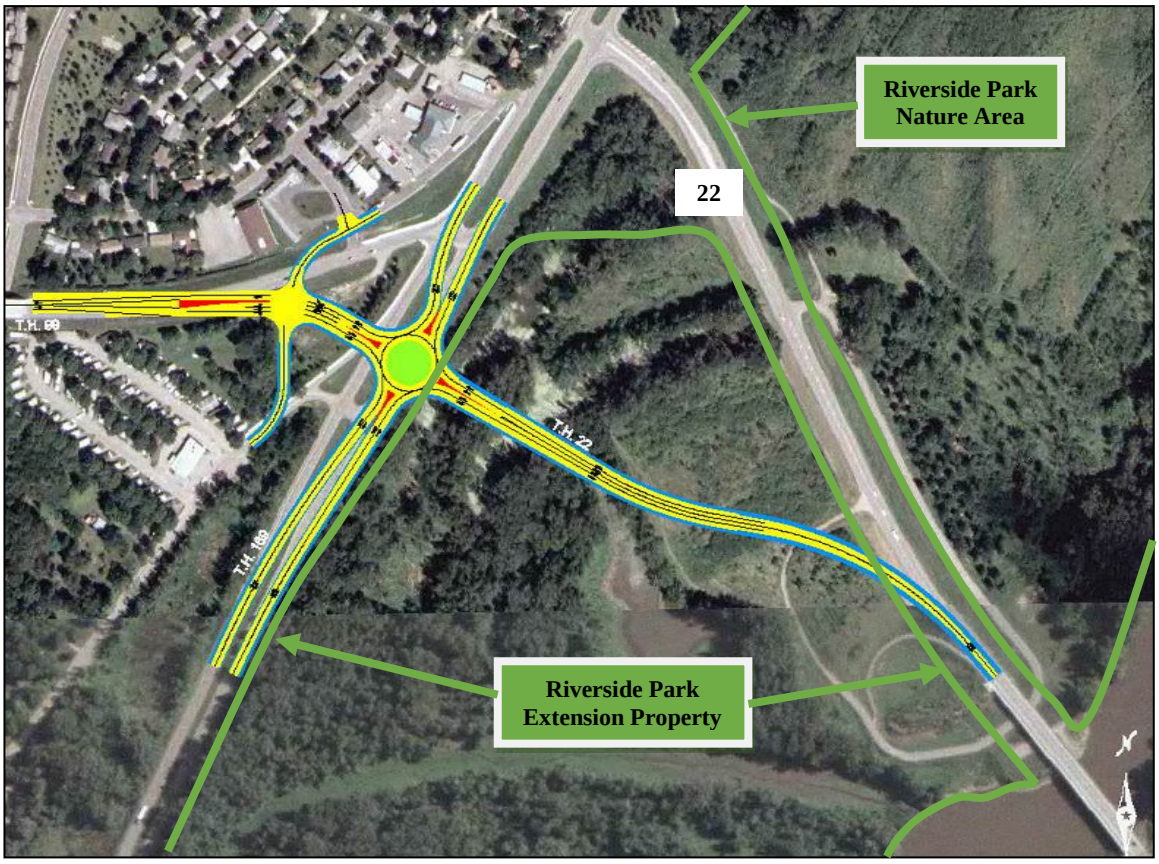
2. Existing Location Options and Design Modifications

Several existing location options and design modifications were developed and evaluated. The primary purpose of these options was to determine the best design elements that would meet the project's needs, while also minimizing potential social, economic, and environmental impacts.

Minor Alignment Shifts

In addition to making improvements completley within the existing highway corridor, MnDOT considered a slight alignment shift to the southwest for Highway 22 (see Figure 3 below). This would have allowed Highway 22 to intersect with US Highway 169 at the same location of the existing west leg of Highway 99, thereby creating a single intersection (roundabout or signalized intersection) along US Highway 169. The improvements would require placing new fill for the roadway embankment along the alignment to an elevation of 764.5, which is above the 100-year flood elevation. This option was dismissed from further consideration due to additional social, economic, and enviroenmental impacts. Specifically, the minor alignment shift would have greater Section 4(f)/6(f) impacts to the Riverside Park Extension Area since the realignment and all additional right of way needed (6.15 acres) would be located on existing park property. Also, according to wetland datasets the alignment shift would have potentailly impacted approximatley 3 acres of riverine and freshwater forested/shrub wetlands and placed greater amounts on new fill material within the Minnesota River floodplain, which would have resulted in a flood stage increase and would have required mitigation for floodplain impacts. It was determined that this option would not likely meet the least environmentally damaging practicable alternative (LEDPA) criteria for Section 404 permitting nor would it provide a substantial transportation benefit or reduce project costs.

Figure 3 – Highway 22/Highway 99 Concept (Dismissed)



Design Modifications

Bridge Extensions

MnDOT considered extending the existing bridge structure across the Minnesota River floodplain to a point just south of the Highway 22/Highway 169 intersection (approximately 2,500-feet of new bridge). This alternative would have allowed the roadway to be raised above the 100-year flood elevation while also avoiding and/or minimizing impacts to wetlands, Riverside Park, floodplains, and vegetation. Removal of the exisiting spur dike in the river and modifications to the existing trail would also be required if the bridge were extended across the floodplain. This option was dismissed from consideration by MnDOT due to economic factors. It was determined that the substantial cost (approximatley $15 Million) for the new bridge structure was not a reasonable use of funding.

MnDOT also considered a design modification that would raise the roadway on it's existing alignment above the 100-year flood elevation and would have added a jump span bridge at the north side of the Highway 22 Bridge (taking the north abutment and converting it to a pier while widening the river channel and providing a new abutment further north). This design alternative was reviewed by the MnDOT Bridge Hydraulics Unit. Several concerns with this design modification were expressed including impacts to the channel of the Minnesota River, possible need to modify the existing upstream spur dike, and additional costs. No substantial changes in the amount of anticipated impacts to Riverside

Park were identified, however, any modifications to the existing spur dike would likely impact the park property. This design modification was dismissed from further consideration due to higher construciton costs and impacts to the Minnesota River.

Other design modifications/options were considered in the early planning and design process. These design options included lane widths, outside shoulder widths, inslope dimensions, installing guardrail, adding an off-road pedestrian/bike trail, and extending the westbound single left and right turn lanes approaching the US Highway 169/Highway 22 intersection.

Grade Raise

This design option would raise the grade of the highway, but to a lower elevation. This option was considered to reduce potential environmental impacts (e.g. wetlands and floodplain). A hydraulic analysis conducted by the MnDOT Bridge Office determined that the 100-year flood elevation of this segment of the Minnesota River is 764'. It was determined that reconstructing the roadway to an elevation lower than 764' would not allow for the highway to remain open to traffic under a 100-year flood event. The 100-year flood elevation was selected by MnDOT because this is the same design standard used along US Highway 169 both north and south of Saint Peter where segments of the highway have also experienced periodic seasonal flooding. A lower grade raise would not satisfy the primary project purpose and was dismissed from further consideration.

Lane Widths

This alternative would involve building 11-foot lanes instead of the standard 12-foot. MnDOT determined that the Highway 22 travel lanes through the project area would follow the standard 12-foot lane width This decision was based on two primary factors: 1) the approximatlely 0.59 mile project area is part of a larger 10 mile corridor between Saint Peter and Mankato and in order to maintain corridor consistency and enhance driver expectancy the travel lanes for the entire corridor were recommended by traffic and design engineers to remain 12-feet wide; 2) MnDOT's latest design and safety guidance recommends for using 12-foot lanes on high speed Principal Arterial highways and reducing the lane widths on Highway 22 would be inconsistent with this guidance.

Shoulder Widths

The latest MnDOT guidance on shoulder design width recommends a minimum of 8-foot to 10-foot shoulders for two-lane rural arterials with an average daily traffic volme greater than 2,000 trips. While the majority of the Highway 22 corridor currently has 10-foot wide shoulders, it was determined that a narrower 8-foot shoulder width along the northern portion of the project area could be utilized since speeds are lower as vehicle approach the Highway 22/US Hihgway 169 intersection. Reducing the shoulders to 6-foot was considered, however, this would provide less recovery distance for errant vehicles and would not accommodate stalled vehicles or safe police pullovers. Given the volumes on this roadway, a 6-foot shoulder width is not considered an appropriate design.

Sideslopes

MnDOT considered several variations of sideslope design options to reduce the overall footprint of construction. The options considered ranged from 1:6 (flattest) to 1:3 (steepest) inslopes. A 1:2 sideslope, accompanied by guardrail, was also considered and is further discussed in the next design option. The various sideslope options were assessed to balance safety conditions and potential impacts.

- 1:6 Inslopes – This is the preferred inslope for vehicle safety, but the flatter slopes result in a wider impact area (increase wetland, parkland, and floodplain impacts) and as a result was dismissed from consideration.

- 1:5 Inslopes – This is a reasonable inslope that allows vehicles to recover if they leave the roadway. This was considered to be the base design for the Highway 22 Flood Mitigation Project.

- Broken back 1:5 to 1:3 Inslopes – This design option changes the slope from a 1:5 inslope to a 1:3 at the clear zone (a distance from the travel lane in which most vehicles are able to recover). This allows for a narrower construcion limit and reduction in impacts. This was the selected sideslope design standard for the preferred alternative.

- Broken back 1:4 to 1:3 Inslopes – This option considered a steeper slope near the highway which then changed to the gentler slope at the clear zone. Because the clear zone of a 1:4 slope is steeper than 1:5 slopes, this option would have slighlty reduced the overall impact area. However, future maintenance overlays would steepen the slope beyond 1:4 making it unrecoverable for errant vehicles, which would create a future safety concern or result in regrading the slopes resulting in additional impacts. As a result, this option was dismissed from consideration.

- 1:3 Inslopes – This option would eliminate a recoverable slope within the clear zone. Under this condition, an errant vehicle would be able to traverse the slope to the bottom and regain control at the bottom of the slope. All trees would need to be kept clear of the bottom of the slope to eliminate collision hazards. This option could potnetially result in reduced impacts, but this design option strategy does not meet MnDOT safety standards and was dtermined to not be a safe design for this type of roadway.

Installing Gaurdrail

Guardrail is a design element typically used to reduce the severity of run-off-road crashes, to protect against a fixed object within the clearzone, or used in areas where sideslopes are deemed unrecoverable. This segment of Highway 22 does not have an existing safety concern with vehicle leaving the roadway nor are there fixed objects or steep slopes immediately adjacent to the roadway.

The installation of guardrail along portions of the outside shoulder of the reconstructed roadway was considered in an effort to reduce the construction limits and area of impacts. This option would place guardrail at the edge of the shoulder, provide a gentle slope just behind the guardrail, then break to a steep 1:2 slope. However, guardrail eliminates the opportunity for errant vehicles to recover because it is a fixed object located at the edge of the roadway. This creates a safety along Highway 22 becasuse a quardrail system has a higher rate of crashes as compared to a clear zone with no fixed objects and flatter slopes.

According the the Highway Safety Manual, a typical highway section has a 42 percent crash reduction over sections with guardrail. Increasing crash frequency would also result in higher maintenance costs (repairing the guardrail system when it is damamged after a crash). For these reasons, a guardrail system was dismissed from further consideration.

Extend Turn Lanes At Highway 22/US Highway 169 Intersection

An option was considered that would have extended the length of the left and right turn lanes for westbound Highway 22 in order to add storage capacity at the US Highway 169 intersection. Lengthening the turn lanes would require widening the roadway south of the existing turn lanes, which would have potentially impacted parkland and wetlands. It was determined that this option should be dismissed since another option involving the restriping the exisitng intersection geometry to include dual right turn lanes was adequate to improve traffic operations without any further construction.

As discussed above, all these design options were evaluated and dismissed for varying reasons including safety, potential parkland and environmental impacts, and higher costs.

C. ALTERNATIVES UNDER CONSIDERATION

The alternatives under consideration and described in the EA include the No-Build Alternative and the Preferred Alternative. The following discussion describes each alternative in detail.

1. No-Build Alternative

The No-Build Alternative would involve no improvements being made to Highway 22. The existing roadway profile (elevation), number of lanes, intersection geometrics, and all existing access and traffic control would remain in place. The No-Build Alternative does not preclude ongoing maintenance work along this segment of Highway 22. This alternative fails to address the primary need of raising the roadway surface above the 100-year flood elevation of the Minnesota River and does not address the secondary need of improving traffic operations at the Highway 22/US Highway 169 intersection.

The No-Build Alternative provides the basis of comparison, or benchmark, for the Build alternatives and includes the impacts associated with doing nothing (e.g., related to project needs).

2. Preferred Alternative

The limits of the Highway 22 Flood Mitigation Project lie within the city of Saint Peter and extend from the south end of the Highway 22 Bridge over the Minnesota River on the east to the Highway 22/US Highway 169 intersection on the west. The total distance of the project is approximately 0.59 miles. The preferred alternative includes raising Highway 22 (driving surface) by approximately 3.5 feet to an elevation of 764.5.

An overflow bridge structure along Highway 22 is also proposed to be added, which has been designed to compensate for the decrease in flowable area in the floodplain. Construction will consist of removing the existing bituminous surface and roadbed material and placing additional fill material on the roadbed and embankments, and paving. A single span bridge structure (approximately 55' wide by 105' 6" long) will be constructed along TH 22 at a location between the US Highway 169 intersection and the access road to Riverside Park. This new bridge structure will provide additional flowable area during seasonal flood events that will have been lost due to the heightened profile of Highway 22. The Preferred Alternative is a 2-lane rural highway section that includes 12-foot driving lanes, 8'-10' outside shoulders, recoverable 1:5 inslopes that break to 1:3 at the clear zone. The rural highway section includes adjacent grass drainage ditches that will collect, infiltrate, and convey roadway runoff.

While the width of pavement at the Highway 22/US Highway 169 intersection is not proposed to be expanded, the striping and lane configurations will be modified to accommodate a dual right turn from westbound Highway 22 to northbound US Highway 169. The existing traffic signal system and street lighting will remain unchanged.

The existing bridge approach panels for the Highway 22 Bridge over the Minnesota River will also be replaced as part of this project. No other work on the bridge is proposed.

It is anticipated the material excavated during the project will be reused for aggregate or other purposes where appropriate and in accordance with best management practices (BMPs) established in MnDOT's Standard Specifications for Construction. BMPs will also be used to control construction-related runoff and sedimentation.

Figure 4 on the following page depicts the preferred alternative improvements for the Highway 22 Flood Mitigation Project.

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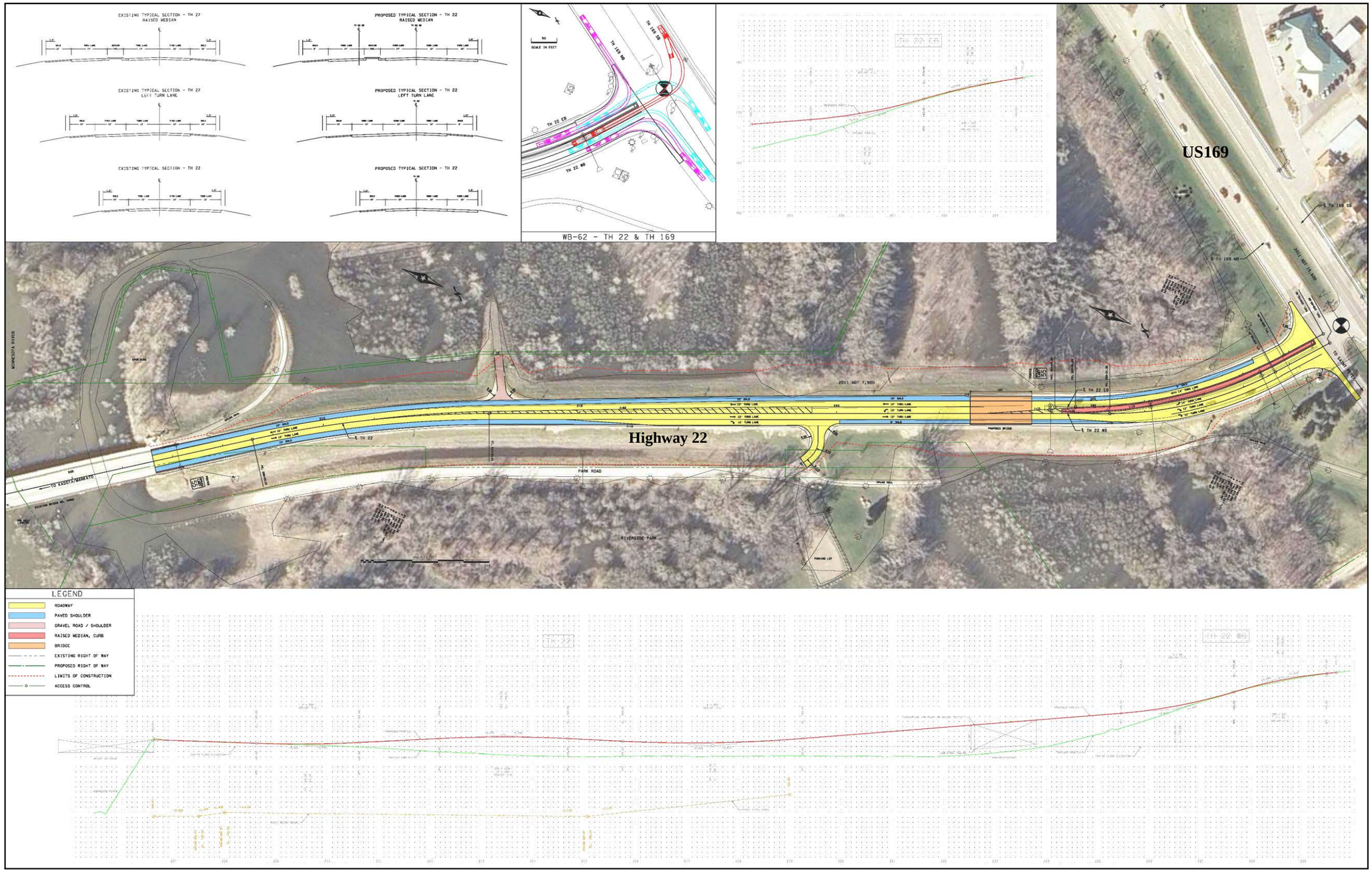
Figure 4 – Highway 22 Flood Mitigation Project – Preferred Alternative Preliminary Layout



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IV. PROJECT COST, FUNDING & SCHEDULE

A. PROJECT COST AND FUNDING

The construction and acquisition of necessary right-of-way for the project is expected to be primarily funded through Federal Surface Transportation Program (STP) and MnDOT Trunk Highway (TH) funding. The estimated construction cost associated with the TH 22 Flood Mitigation Project is approximately $2.5 million. The 2014-2017 State Transportation Improvement Program (STIP) has $2,000,000 in federal funding and $500,000 in state funding scheduled for this project in 2015. The anticipated funding sources are shown below:

Federal:	$2,000,000
State TH	$500,000
Total	$2,500,000

B. SCHEDULE

The primary tasks to be completed for the TH 22 Flood Mitigation Project include:

Project Task	Anticipated Completion Date
Environmental Assessment	December 2014
Public Hearing	January 2015
Findings of Fact & Conclusions	February 2015
FONSI Request	February 2014
Bid Letting	Spring 2015
Construction	Summer 2015

Construction of the Highway 22 Flood Mitigation Project is scheduled to begin in the spring 2015 and be substantially completed in the fall 2015.

C. FUTURE STAGES OR IMPROVEMENTS

There are no future stages or improvements proposed along this segment of Highway 22.

V. SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS

This section discusses environmental impacts of alternatives identified in the Alternatives section. It contains two sub-sections:

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

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

A. ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW) - JULY 2013 FORMAT

The EAW form and Guidelines are available at the Environmental Quality Board's website at: http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

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

1. Project Title: Highway 22 Flood Mitigation Project

2. Proposer: Minnesota Department of Transportation
Contact person: Greg Ous
Title: MnDOT District 7
Address: 2151 Bassett Drive
City, State, ZIP: Mankato, MN 56001
Phone: 507-304-6101
Email: greg.ous@state.mn.us

3. RGU: Same as Proposer
Contact person: Zachary Tess
Title: MnDOT District 7
Address: 2151 Bassett Drive
City, State, ZIP: Mankato, MN 56001
Phone: 507-304-6199
Email: zachary.tess@state.mn.us

4. Reason for EAW Preparation: (check one)

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

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

5. Project Location: See Figures 1, 2, & 4
County: Nicollet
City/Township: City of Saint Peter
PLS Location (¼, ¼, Section, Township, Range): Pt. of Sec. 21 and 28, T26W, R110N
Watershed: Minnesota River
GPS Coordinates: N/A (linear roadway project)
Tax Parcel Number: N/A (linear roadway project)

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

- County map showing the general location of the project (See Figure 1);
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and (See Figure 2)
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan. (See Figure 4 in Section III. Alternatives)

6. Project Description:

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

The Highway 22 Flood Mitigation Project is located in the City of Saint Peter, Nicollet County, in south-central Minnesota. The project area stretches along approximately 0. 59 miles of Highway 22 from the south side of the highway bridge over the Minnesota River to the intersection of US Highway 169 (See Figures 2 and 4). The primary purpose of the project is to raise the roadway profile above the 100-year flood elevation of the Minnesota River to reduce the frequency and duration of road closures during high water events.

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

Section III. Alternatives, presented earlier in the document, contains a complete description of the preferred alternative. Section IV.B lists the anticipated project schedule.

c. **Project Magnitude:**

Total Project Acreage (area within proposed right of way limits for the preferred alternative)	15.25 acres
Linear project length	Approximately 0.59 miles
Number and type of residential units	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	N/A
Structure height(s)	N/A

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

Section II, earlier in the document, provides a complete description of the project's purpose and need. The project will be carried out by the Minnesota Department of Transportation (MnDOT). Beneficiaries of the project will include motorists in the immediate area and region since the highway improvements are anticipated to improve traffic operations/mobility and safety for the travelling public by reducing the frequency and duration of highway closures due to seasonal flooding.

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

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

As previously discussed in Section II.C., a MnDOT project completed in the late 1990's involved the construction of the existing roadway embankment and a spur dike near the Minnesota River Bridge. An Environmental Assessment and Section 4(f) Evaluation was completed prior to construction.

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

A GIS land use/land cover dataset, was used to estimate "Before" and "After" acreages for the proposed improvements (see Table 2). The analysis of cover types before and after were calculated for the area within the proposed construction limits. It is assumed that following construction, the area within the construction limits that is outside the roadway and trail surfaces will be reestablished as grass side slopes. The estimations are based on preliminary design information and are subject to change throughout the design and construction phases of the project.

Table 2 – Highway 22 Project Study Area: Before & After Cover Type Estimates

Cover Type	Alternative	
	Before	After
Wetlands	0.35	0
Deep water/streams	0	0
Wooded/forest	0.44	0
Brush/Grassland	5.46	6.37
Cropland	0	0
Lawn/landscaping	*0*	0
Impervious Surface	3.05	2.93
Other	0	0
TOTALS	**9.3**	**9.3**

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

Table 3 – Project Permits and Approvals

Unit of Government	Type of Application/Permit	Status
Federal Agency		
Federal Highway Administration	Environmental Assessment Approval	Completed
	EIS Need Decision	To be completed
	Section 106 Determination	Complete
National Park Service	Section 6(f) LAWCON Conversion	To be completed
U.S. Army Corps of Engineers	Section 404 Permit – Letter of Permission (LOP)	To be requested
U.S. Fish & Wildlife Service	Endangered Species Act Section 7 Determination	Complete
State Agency		
MnDOT	Environmental Assessment Approval	Completed
	EIS Need Decision	To be requested
	Minnesota Wetland Conservation Act	To be requested
State Historic Preservation Office	Section 106 Consultation	Complete
MN Department of Natural Resources	State Endangered Species Review	Completed under Lic. Agr.# LA614
	Public Waters Work Permit	To be requested, if needed
	Water Appropriations Permit	To be requested, if needed
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System Construction Storm Water Phase II Permit	To be requested
	401 Water Quality Certification	To be requested
Local Agency		
City of Saint Peter	Municipal Consent	To be completed
	Temporary Occupancy Concurrence – Riverside Park	Completed

Cumulative Potential Effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

Cumulative potential effects of the project will be addressed in EAW Item No. 19.

9. Land use:

a. Describe:

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

The land use within the project area is primarily open space consisting of public right of way for Highways 22 and US Highway 169, public parkland (Riverside Park), and the Minnesota River. The parkland is generally characterized as forestlands and wetlands. The park includes passive use amenities (trails), a canoe launch on the river, and an eighteen-hole disc golf course. None of the park amenities will be impacted by the project.

According to the NRCS Web Soil Survey, some of the soils within the project area are identified as prime, unique, or of statewide importance. However, none of these areas are used for farming because they are under public ownership (city park and road right of way). Additional information regarding soils found in the study area can be found under EAW Question 10b.

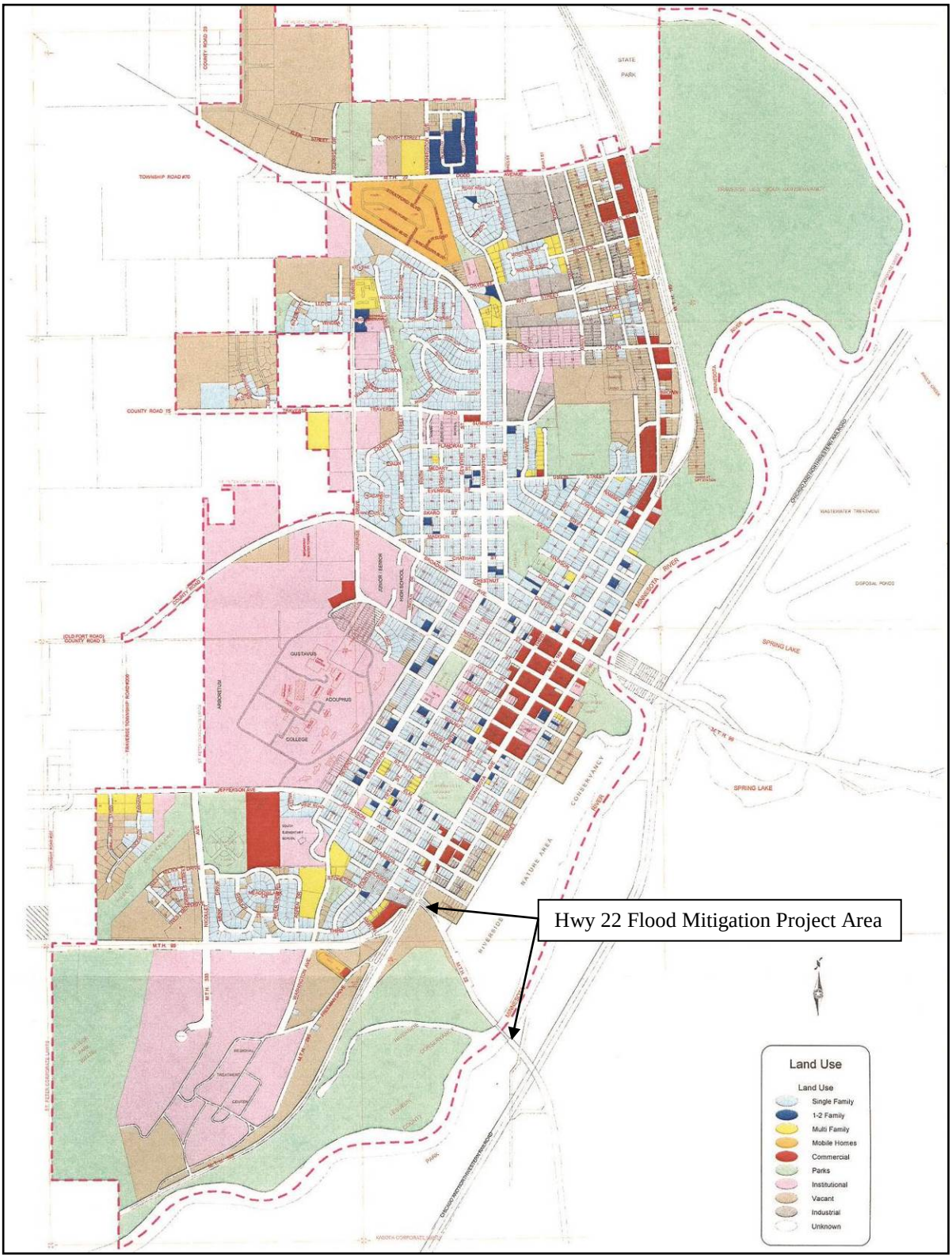
A MNDNR public grant-in-aid snowmobile trail has been identified in the project area. The trail map shows the route paralleling both sides of Highway 22 and passing under the Minnesota River Bridge. These trails are generally used for recreational purposes only during winter months, which will be outside the anticipated highway construction season. The location of these public trails can also change from year to year as they require access easements through permission from property owners. MnDOT has historically allowed such snowmobile trails within their highway right of way.

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

According to the City of Saint Peter Comprehensive Plan, the land surrounding the Highway 22 corridor is classified as “Riverside Nature Area” (see Figure 5 on the following page). The City does have plans for future improvements to Riverside Park including added amenities (trails, benches, signage, etc.) and the possibility of expanding the disc golf course to include an additional eighteen holes. Land use in the area must comply with the allowed permitted and conditional uses for the designated zoning district (see EAW Item 9.a.iii below).

The Minnesota State Comprehensive Outdoor Recreation Plan (SCORP) is an outdoor recreation policy plan that provides outdoor recreation decision-makers and managers a focused set of priorities and suggested actions to guide them as they make decisions about outdoor recreation. An electronic copy of Minnesota’s SCORP is available at: http://files.dnr.state.mn.us/aboutdnr/reports/scorp_final_3308.pdf.

Figure 5 – City of Saint Peter Land Use Plan Map



The primary goal of the SCORP is to increase participation in outdoor recreation by all Minnesotans and visitors. The plan also identifies four key strategies:

- Acquire, protect, and restore Minnesota's natural resource base, on which outdoor recreation depends. This includes obtaining prime outdoor recreation areas throughout the state prior to anticipated land use changes.
- Develop and maintain a sustainable and resilient outdoor recreation infrastructure.
- Promote increased outdoor recreation participation through targeted programming and outreach.
- Evaluate and understand the outdoor recreation needs of Minnesotans and the ability of Minnesota's natural resources to support those needs.

The Highway 22 Project is in accordance with the SCORP in that it will protect all recreational functions and amenities currently found at Riverside Park. The project improvements will also help maintain safe and convenient access to the park by establishing a resilient infrastructure, including Highway 22 and the park access road.

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

According to Saint Peter's Zoning Map, the zoning districts in the project area include: Floodplain (FP), Shoreland, and Highway Service Commercial (C-4). The proposed transportation improvements associated with the preferred alternative is not anticipated to result in substantial use changes other than converting existing parkland/open space to a transportation use.

The City has adopted a shoreland ordinance that overlays portions of the project area that lie adjacent to the Minnesota River. Land use restrictions within a floodplain and shoreland districts varies depending on the activity proposed and is typically reviewed and enforced through permits and ordinance standards adopted by the City.

Floodplain

Minnesota Statutes 103F.101 to 103F.155 requires agencies carrying out projects, to provide leadership and action to reduce the risk of flood loss and minimize the impacts of floods on human safety. Supporting references for this floodplain assessment include the USGS Quadrangle Maps, aerial photographs, and Federal Emergency Management Agency (FEMA), Flood Insurance Rate Maps (FIRM) for the project area.

The MnDOT Bridge Office and State Hydraulics Engineer analyzed the waterway needs for this segment of the Minnesota River in relation to the existing conditions and proposed Highway 22 Flood Mitigation Project. The hydrology for this analysis was taken from the MNDNR and US Army Corps of Engineers (USACOE) Hydrologic Analysis for the main stem of the Minnesota River from Ortonville, Minnesota to its confluence with the Mississippi River at Mendota Heights, Minnesota (dated December 19, 2001).

Hydrologic Engineering Centers River Analysis System (HEC-RAS) computer modeling (version 4.1.0) was used for the hydraulic analysis. This is the Federal Emergency Management Agency (FEMA) recognized model for riverine systems. The HEC-RAS

model was developed by the USACOE for the Lower Minnesota River between Mankato and the confluence with Mississippi River. The full model was broken out into multiple segments; this segment is for the area near St Peter between Nicollet and Le Sueur counties. The Flood Insurance Studies for Nicollet and Le Sueur counties were completed based on this model and published in 1999. The model was revised in 2001. Copies of the National Flood Insurance Program Flood Insurance Rate Maps (FIRMs) for the City of Saint Peter, Nicollet County, are shown in Figures 6 and 7. According to the FIRM maps, this segment of the Minnesota River has an established 100-year flood elevation of approximately 764 feet upstream of Highway 22 and 763 feet downstream.

The updated HEC-RAS model incorporated the proposed roadway profile (including additional fill) along Highway 22, which identified the need for an overflow structure to keep the road from being overtopped during 100-year flood events, without causing an increase in the 100-year water surface elevation upstream of the structure.

The objectives of the HEC-RAS modeling were to: a) assess water surface elevation in the existing conditions and provide the necessary information for highway design; and b) assess the impact of different design alternatives for highway improvement on the frequency of flooding and road closures. As a result of the modelling, it has been recommended that the improvement include placing a single span overflow structure in the Minnesota River floodplain to help alleviate roadway overtopping on Highway 22 up through the current 100-year event.

In addition, a two-dimensional Finite Element Surface Water Modeling System (FESWMS) model is being developed for this area to better define local flow patterns and velocities at the overflow structure and along the roadway. Typically, ice and debris along the Minnesota River travels along the main channel, however there may be some debris and ice loading on the proposed structure. Model results illustrating flood extents, change in water surface elevation, velocity profiles, and changes in velocities indicate little to no change for each of the modeled events (50-year, 100-year, and 500-year flood events). Model results showed that the proposed Highway 22 roadway would not flood during a 100-year However, portions of Highway 22 would be underwater during a 500-year event. The hydraulic data for the new single span structure is as follows:

Hydraulic Data				
(1)	Vertical Datum	NGVD 29	NAVD 88	Unit
*	Stream Name	Minnesota River		NA
	Drainage Area	15,020		mi^2
(2)	Flood of record	94,100		ft^3/s
(3)	Maximum observed high water elevation	761.8	762.0	ft.
*	Basic and Design Flood **(100-yr flood frequency)**	92,000		ft^3/s
(4)	Road sag point elevation	763.3	763.5	ft
*	Headwater elevation	761.6	761.8	ft
	Headwater elevation of the inplace condition	761.6	761.8	ft
	Stage increase over inplace condition	0.0		ft
	Minimum waterway opening	864		ft^2
	Below elevation	760.8	761.0	ft

Hydraulic Data				
	Low member at or above elevation	761.8	762.0	ft
(5)	Mean velocity through structure	10.4		ft/s
(5)	Main channel velocity	1.4		ft/s
*	Greatest flood **(500-yr frequency)**	130,000		ft^3/s
(4)	Road sag point elevation	763.3	763.5	ft
*	Headwater elevation	762.8	763.0	ft
	Headwater elevation of the inplace condition	762.4	762.6	ft
	Stage increase over the inplace condition	0.4		ft
(5)	Mean velocity through structure	12.0		ft/s
(5)	Main channel velocity	2.0		ft/s
*	Other flood **(50-yr frequency)**	77,000		ft^3/s
*	Headwater elevation	760.1	760.3	ft
	Headwater elevation of the inplace condition	760.2	760.4	ft
	Stage increase over the inplace condition	0.1		ft
(5)	Mean velocity through structure	3.0		ft/s
(5)	Main channel velocity	1.3		ft/s
	Approximate flowline elevation	749.3	749.5	ft
	skew	0		Degrees
(6)	Riprap size	Class V		

* Items to be shown on grading plan

(1) NAVD88 = NGVD29 + 0.2-ft at this location, per MnDOT geodetic monument 4012 E.

(2) From USGS Gage 05325000, Minnesota River at Mankato, MN recorded on April 10, 1965.

(3) Approximate maximum observed highwater elevations at inplace crossing, using photos from September 2010 event. Bridge No. 40002 and the adjacent TH 22 roadway section was reconstructed in 2000. Corresponding peak flowrate at the USGS Gage 05325000 for that event was 84,600 cfs.

(4) From proposed profile provided by District 7 staff.

(5) Rough estimate from HEC-RAS model, will be refined using the 2D model.

(6) Riprap size will likely be adjusted after 2D model is completed and refined.

Figure 6 – Flood Insurance Rate Map – Panel #0330G

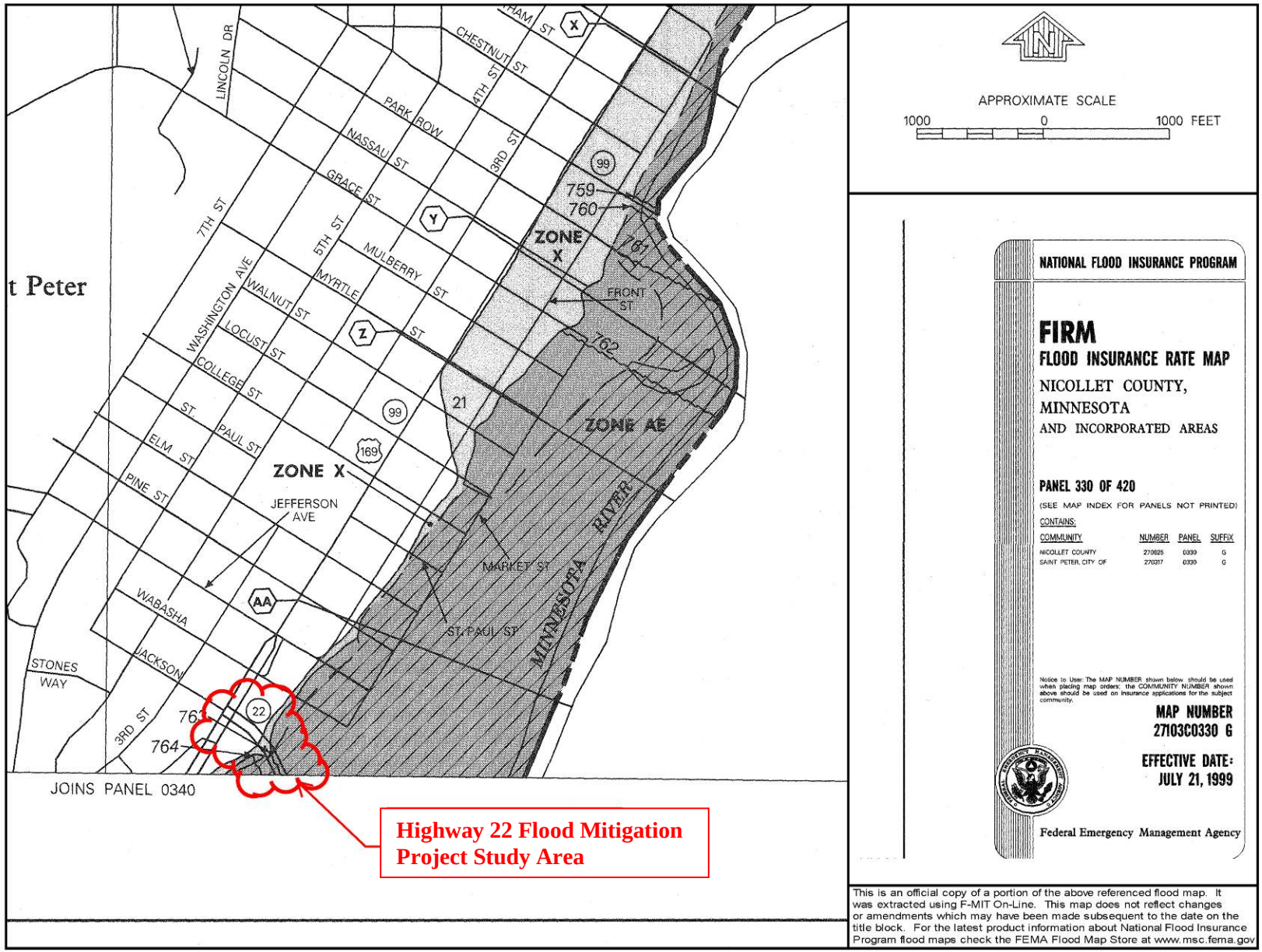
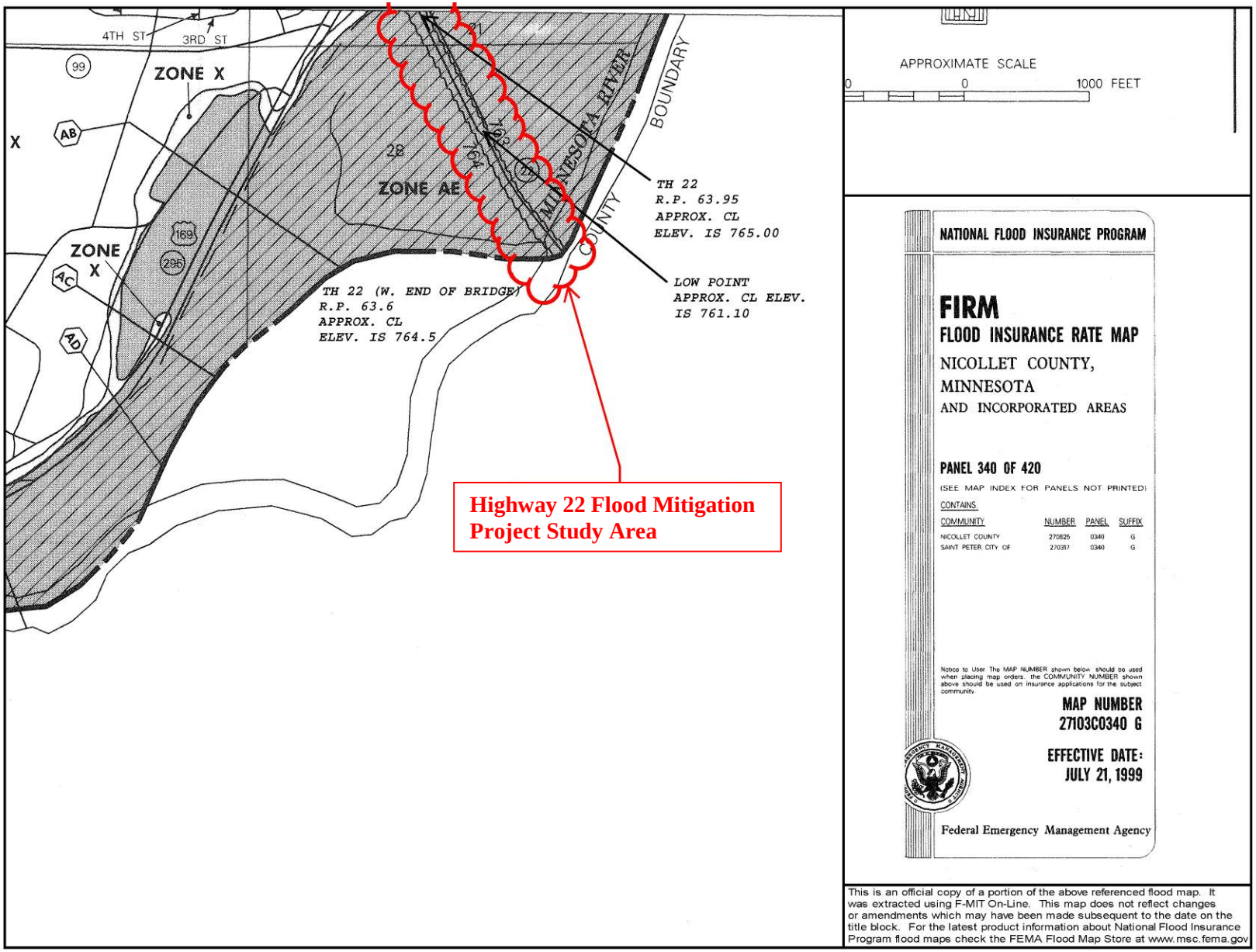


Figure 7 – Flood Insurance Rate Map – Panel #0340G



Additional Floodplain Assessment
In addition to the hydraulic analysis, a floodplain assessment was conducted and concluded the following:

1. The proposed improvements to Highway 22 would not result in permanent interruption or termination of a transportation facility, which is needed for emergency vehicles or which provides the only evacuation route for a city or surrounding communities. The proposed roadway would be constructed above the 100-year flood elevation, which would in fact reduce temporary interruptions due to closures during flood events.

2. No substantial adverse impact on natural and/or beneficial floodplain values should result from this project. The project will require fill to be placed in the floodplain, but the flowable area will be accommodated with the inclusion of a new single span bridge structure.

    - No fisheries impact is anticipated.
    - The project improvements would not increase flow velocities in the rivers for most flow conditions.
    - The project area is not located in any State or Federal Wild and Scenic River sections. This segment of river is designated as a state Water Trail (formerly known as a canoe & boating route). No work below the ordinary high water mark is proposed.
    - There are no known occurrences of federally-listed species or designated critical habitat within the proposed project study area, therefore, a determination of no effect has been made. State-listed rare, threatened, and endangered (RT&E) species or critical habitats was also reviewed. The MNDNR National Heritage Information System (NHIS) database identified two records in the immediate project area including the western foxsnake (*Pantherophis ramspotti*) and the smooth softshell turtle (*Apalone mutica*). The western foxsnake, while identified in the NHIS database, is not a listed species and does not have special status in Minnesota. The smooth softshell (MN Special Concern) habitat includes large river systems with sandy or mud bottoms. These turtles typically nest on sand beach areas with minimal vegetation. Additionally, one bald eagle (*Haliaeetus leucocephalus*) (MN Special Concern) nesting area was identified approximately 1,200 feet south of Highway 22. No adverse impacts to these species or habitats are anticipated.
    - Appropriate turf establishment and erosion control measures will be used. Contractors will be required to comply with MnDOT and all special permit construction specifications regarding erosion control and protection of public waters. An erosion control plan and best management practices will be employed that will include temporary and permanent measures such as temporary seeding, bale ditch checks, silt fences, energy dissipaters and re-vegetation of disturbed areas with native species.

3. Based on the hydraulic modelling results, no stage increase over the in place condition would result. There is also no change expected to the floodway elevation since the existing bridge and waterway opening will not be altered.

Minor roadway embankment work would encroach into the floodplain. This segment of existing roadway has been overtopped with flood waters during seasonal flood conditions. The proposed improvements include raising the roadway profile above the 100-year flood elevation, thus reducing the frequency of roadway closures and/or duration of closures.

4. Any Alternative chosen would cross other flood prone areas.

5. This project should not result in any incompatible floodplain development nor will is provide new access to the floodplain. The proposed improvements are consistent with local land use and zoning regulations. These local regulating documents/standards will ensure development within floodplain areas are not incompatible floodplain developments.

Mitigation
The Highway 22 Flood Mitigation Project improvements will not cause restrictions to the Minnesota River. The proposed project improvements will raise the existing roadway above the 100-year flood elevation, maintaining the flowable area with the construction of a new single span bridge overflow structure.

No Practicable Alternative Finding
The alternatives described in this Environmental Assessment (see Section III., Alternatives) were evaluated in accordance with Executive Order 11990, as described above. Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measure to minimize harm to wetlands which may result from such use.

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

The project is compatible with local land use and zoning plans. The proposed highway improvements are not expected to influence development decisions with the project area and region. Early coordination with representatives from the City of Saint Peter, MNDNR, and the National Park Service has occurred and focused around anticipated impacts to Riverside Park. The MNDNR has reviewed the EA and Project Description-Environmental Screening Form (PD-ESF) that will be used to complete the Section 6(f) parkland conversion process. Continued coordination will occur during the final design, right-of-way acquisition, and construction phases of the project.

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

The proposed transportation improvements are compatible with existing and planned land use in the area.

10. Geology, Soils and Topography/Land Forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the

project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

No geologic site hazards to groundwater are known to occur within the construction limits of the Highway 22 corridor. Sinkholes, shallow limestone formations, and karst features are not known to exist in the immediate project area.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/ sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

Soils

Soils information was gathered for the study area using the Natural Resources Conservation Service (NRCS) Web Soil Survey for Nicollet County. Soils within the project study area are listed in Table 4. The soils within the project area consist of medium textured to moderately fine textured soils on floodplains along the Minnesota River.

Table 4 – Highway 22 Project Area Soil Types

Highway 22 Project Area Soils	
Map Unit Symbol	**Map Unit Name**
317	Oshawa silty clay loam
329	Chaska loam
463A	Minneiska sandy loam, 0 to 2 percent slopes
852	Copaston-Urban land complex
W	Open Water (Minnesota River)

Topography

Topography in the immediate project area is characterized by the lowlands of the Minnesota River floodplain located south and east of US Highway 169. There are no steep slopes (defined as being greater than 12 percent) within the project area.

At the completion of construction, newly constructed slopes within the project area are not expected to exceed a 1:4 (V:H) ratio for the side slopes and 1:2 for the ditch slopes. Soils that are less prone to erosion will be used when constructing side slopes.

The area inside the proposed construction limits is approximately 8.8 acres. The existing roadway low-point elevation is 761.1 and the proposed improvements include raising the roadway profile to an elevation of approximately 764.5. As a result the amount of soil to be moved onto the site is estimated at 50,000 cubic yards of fill. This quantity is an estimate based on preliminary design and is subject to change during final design and construction. The contractor will install and maintain erosion control measures, such as silt fence and ditch blocks, before grading begins.

11. Water Resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mi of the project. Include DNR Public Waters Inventory numbers, if any.

Several water resources (river and wetlands) are found within close proximity of the proposed project (see Figures 4 and 8). This section of the Minnesota River is designated as a State Water Trail (formally known as Canoe Route). The Minnesota River is a protected water course and according to MPCA is impaired for PCB in Fish Tissue; Turbidity, Mercury in Fish Tissue; Mercury in Water Column.

Other water resources include wetlands (see EAW Item 11.b.iv., below). Within the construction limits, wetlands have been identified through Level I and Level II (field delineations) assessments. The wetland delineations (completed in July 2014) identified the characteristics of each basin. A wetland delineation report has been prepared and distributed to the Technical Evaluation Panel (TEP) for their review. The TEP has scheduled a September 22, 2014 meeting in the field to review the delineation boundaries and identified wetland characteristics.

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

Based on soils data and soil borings, the depth to groundwater in the project area varies and at its shallowest depth is only 1-2 feet below the ground surface.

The project area is not located within any wellhead protection areas.

<u>Wells</u>

A review of the Minnesota Department of Health (MDH) County Well Index (CWI) was conducted and revealed no well records in the study area. No wells are known within the existing or proposed right of way limits. If any unused or unsealed water wells are discovered in the project area during construction, they will be addressed in accordance with Minnesota Rules, Chapter 4725.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated on site.

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

Not Applicable

2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.

Not Applicable

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

Not Applicable

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

Quantity of Runoff

The volume of runoff is expected to decrease slightly as a result of a decrease in impervious area. The preferred alternative is estimated to reduce the impervious area by approximately 5,000 sq./ft. The reduction primarily occurs near the Highway 22/US Highway 169 intersection where the Highway 22 approach will be narrowed up to 7 feet in some areas.

A storm water treatment plan, primarily consisting of vegetated side slopes, grassed roadside ditches, and infiltration is being developed as part of the final design. The storm water runoff plan will comply with all National Pollutant Discharge Elimination System (NPDES) Permit requirements (NPDES general permit MN# R100001).

Quality of Runoff

Traffic-related pollutants consist of copper, lead, zinc, and phosphorus. A study conducted by the U.S. Environmental Protection Agency (EPA) entitled, Results of the Nationwide Urban Runoff Program, December 1983, have identified the above pollutants as the predominant constituents in roadway runoff. Other common pollutants are total suspended solids (TSS) and chloride. TSS and chloride are introduced into roadway runoff primarily from winter deicing practices. The amounts vary depending upon the application rates and the number of ice/snowfall events in a given year. An effective means of reducing the level of pollutants discharged into the receiving stream/water body is to provide grass side slopes and ditches and detention areas.

Highway 22 Roadway Design

The project is required to treat storm water runoff prior to discharge offsite in accordance with the NPDES Permit. The downstream receiving water bodies include wetland basins and the Minnesota River. As a result, erosion prevention stabilization activities will be initiated immediately after construction activity has ceased. The project proposes to utilize vegetated side slopes, grassed roadside ditches, and infiltration to treat storm water runoff. The proximity to wetlands, floodplains, other topographical constraints restrict the use of wet sedimentation basins or large infiltration basins to treat storm water runoff. The Storm Water Pollution Prevention Plan (SWPPP) that will be prepared

as part of the NPDES permit will detail the measures to be taken to minimize potentially adverse impacts on receiving waterbodies. The SWPPP will also provide methods, schedules and details for the BMPs to be used to prevent water quality impacts. The SWPPP will be incorporated into and made part of the construction documents. Erosion control measures will be in place and maintained throughout the entire construction period with implementation timing as stated in the SWPPP. Removal of erosion measures will not occur until all disturbed areas have been stabilized.

Other Water Quality Best Management Practices

Temporary erosion and sediment control measures will be implemented throughout the construction activities to protect drainage areas. The NPDES permit has both temporary directives used primarily during construction, as well as permanent requirements, which the project must meet. Below is a summary of best management practices and sediment control methods that may be used:

- Horizontal slope grading, construction phasing, and other techniques designed to reduce erosion and sedimentation.
- Implementation of temporary controls to protect exposed soil areas, such as mulch cover, cover crop seeding, hydromulching, erosion control blanket, silt fence, bio-rolls and stabilization of steep slopes.
- Prior to any connection of a pipe or outfall structure to a water of the state, installation of inlet protection and temporary energy dissipation using riprap to control the outfall water will be implemented.
- Perimeter barriers for sediment control BMPs will be in place on down gradient perimeters where runoff will discharge off site before construction disturbance begins.
- Minimization of vehicle soil tracking onto paved surfaces will occur by limiting construction equipment use on paved roads and using rock construction entrances throughout the project.
- Permanent cover will be provided post construction using topsoil, seed and mulch, erosion control blanket, sod or hydroseeding.

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The project improvements will not require any creation, connection, or change to a public water supply; therefore, no wells in or near the project area will be used as water sources. No permanent wells will be installed for any of the proposed project improvements; therefore, no permanent appropriation of water is anticipated.

Dewatering during excavation may be necessary during construction of the proposed single span bridge structure due to shallow groundwater levels in the study area. If it is

determined dewatering is required and dewatering exceeds 10,000 gallons/day or one million gallons/year, a water appropriation permit application will be completed and submitted to the MNDNR for approval prior to any dewatering activities taking place.

iv. Surface Waters

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

A Level II field delineation of wetlands within the project area was completed in July 2014. The results of the Level II wetland delineations were used to assess potential project related wetland impacts.

Level II Wetland Delineation and Classification

Various types of data were used in conjunction to identify and delineate wetlands throughout the project area including field investigations/delineations, aerial imagery, topography, and other ancillary information.

Aerial imagery was gathered from various years and from various seasons for the project area including Farm Service Agency (FSA) National Agricultural Imagery Program (NAIP) imagery from 2013, 2010, 2009, 2008, and 2003. The NAIP imagery is typically flown in midsummer when, in years with normal precipitation, the annual river flooding has subsided. Additional imagery was flown by the Minnesota Department of Natural Resources in 2011 in the spring prior to leaf out conditions. While this allows the observer to view beneath the tree canopy in forested areas, annual river flooding was at its peak during this time. The NAIP imagery from 2013 and 2008, as well as the 2011 MNDNR imagery, included infrared imagery which allows for discrimination of various surface features and vegetation not otherwise possible with standard color imagery.

The MNDNR Lidar data was also used to aid in identifying potential wetland boundaries. Other ancillary data used in identifying potential wetlands included the National Wetlands Inventory and the Soil Survey for Nicollet County.

Delineation Results

The Level 2 wetland assessment identified, delineated, and classified eight wetlands. Table 5 is a summary table of the wetland type and characteristics. Figure 8 depicts the location and boundary of wetland basins within the study area and potential impacts based on the preliminary construction limits.

Table 5– Wetland Characteristics

Wetland ID	Circular 39 (Cowardin) Plant Comm. Type[1]	Dominant Vegetation	Setting and Inlet/Outlet
1	Type 1 (PFO1A)	Reed canary grass, American elm, green ash	Minnesota River floodplain
	Floodplain Forest		
2	*Combined with Wetland 1 as a result of field review and removed.*		
3	Type 2 (PEMB)	Reed canary grass, American elm, common buckthorn	Depression / Drainage swale
	Fresh (wet) Meadow		
4	Type 2 (PEMB)	Reed canary grass	Depression / Drainage Swale
	Fresh (wet) Meadow		
5	Type 1 (PFO1A)	Reed canary grass, eastern woodland sedge, willow, quaking aspen	Minnesota River floodplain
	Floodplain Forest		
6	Type 1 (PFO1A)	Reed canary grass, Canadian wood-nettle, green ask, American elm	Minnesota River floodplain
	Floodplain Forest		
7	Type 5 (PUBG)	Reed canary grass and quaking aspen	Minnesota River floodplain
	Shallow Open Water		
8	Type 2 (PEMB)	Species of sedge, reed canary grass	Depression
	Fresh (wet) Meadow		

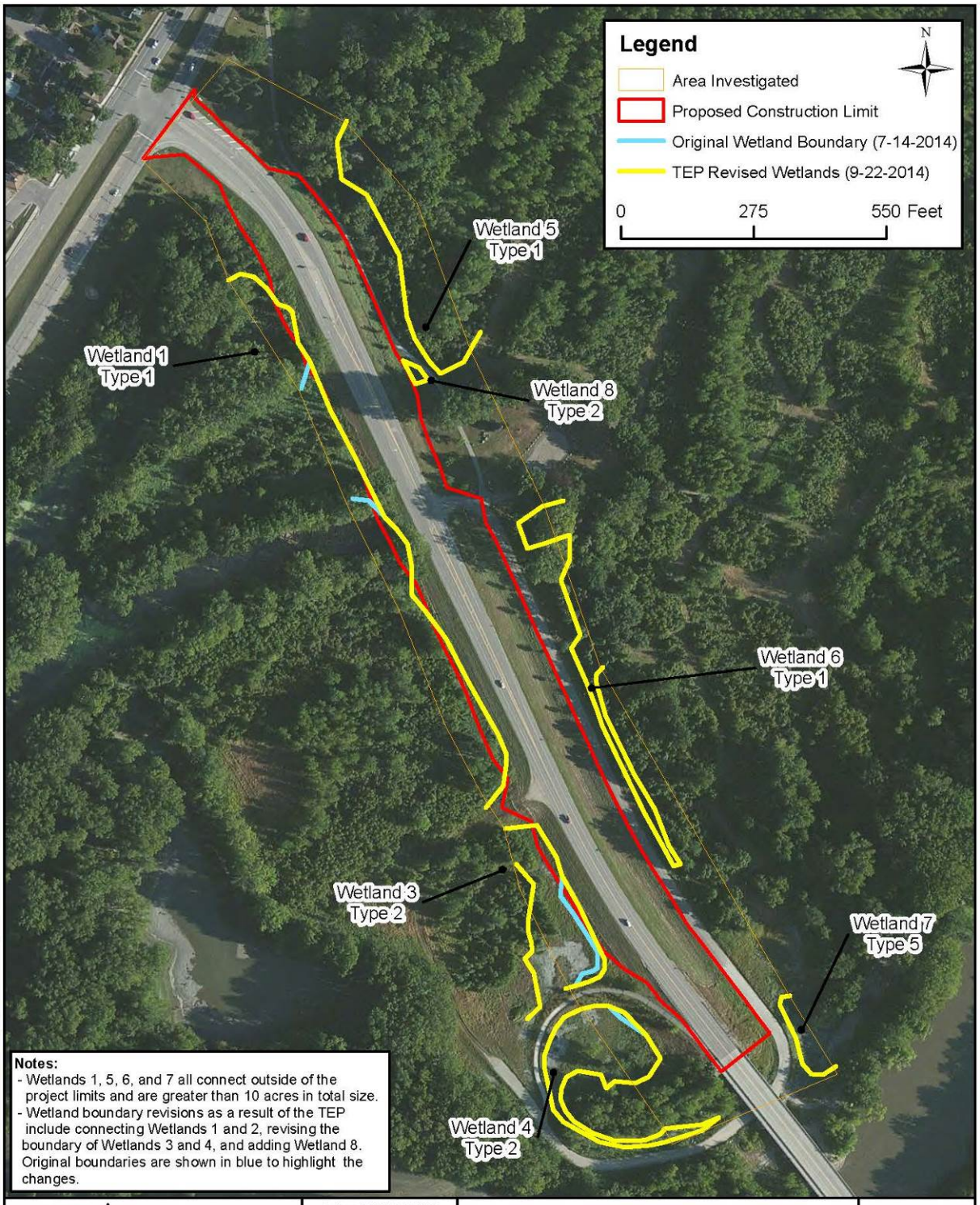
[1] Plant communities are those described in Eggers and Reed, 1997.

Typical characteristics of the types of wetlands are described below.

- Type 1 (PFO1A) Floodplain Forest

  Wetlands 1, 5, and 6 are classified as Type 1 (PFO1A) floodplain forests. These wetlands are part of the Minnesota River floodplain system. The dominant wetland species observed during the on-site evaluation includes reed canary grass (*Phalaris arundinacea* – FACW), jewelweed/spotted touch-me-not (*Impatiens capensis* – FACW), eastern woodland sedge (*Carex blanda* – FAC), Canadian wood-nettle (*Laportea canadensis* – FACW), green ash (*Fraxinus pennsylvanica* – FACW), sandbar willow (*Salix interior* – FACW), gray willow (*Salix bebbiana* – FACW), quaking aspen (*Populus tremuloides* – FAC), American elm (*Ulmus americana* – FACW), and silver maple (*Acer saccharinum* – FACW).

Figure 8 – Level 2 Delineations



- Type 2 (PEMB) Fresh (wet) Meadow
  Wetlands 3, 4, and 8 are classified as Type 2 (PEMB) fresh (wet) meadows. Wetlands 3 and 4 are located along the western side of Highway 22 and likely connect to the Minnesota River and other wetlands during periods of high water. The dominant wetland species observed during the on-site evaluation includes reed canary grass, American elm and common buckthorn. Wetlands 8 and 9 are small depressions that function as wet ditches located on the east side of Highway 22. The dominant wetland species include a species of sedge, yellow bristle grass, and reed canary grass.

- Type 5 PUBG) Shallow Open Water
  Wetland 7 is classified as Type 5 (PUBG) shallow open water. It is located along the eastern side of Highway 22 and portions of the wetland are considered wet ditch. Wetland 7 connects to the Minnesota River and other wetlands during periods of high water. The dominant wetland species observed during the on-site evaluation includes reed canary grass, willow and quaking aspen.

The adjacent upland areas within the Highway 22 Flood Mitigation Project study area are primarily road rights of way. Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and common weed species such as dandelion (*Taraxacum officinale*), red clover (*Trifolium pretense*), white clover (*Trifolium repens*), and sow thistle (*Sonchus arvensis*) are found in the uplands adjacent to the Highway 22 roadway.

Wetland Jurisdiction

Eight wetlands were delineated within the study area. Since the project lies within the Minnesota River floodplain, many of the delineated wetlands extend beyond the boundary of the proposed roadway construction limits and right of way. Furthermore, all of the wetlands are hydrologically connected to the Minnesota River and are all considered Waters of the U.S., and are therefore under the jurisdiction of the USACE. The Minnesota Wetland Conservation act (WCA), administered by the MNDOT, will regulate all of the wetlands within the project area. There are no MNDNR public water bodies or public waters wetlands within one mile of the project area. The Minnesota River is a MNDNR public watercourse. Since no activity is taking place within the Minnesota River itself, it is anticipated that a MNDNR Public Waters Work Permit will not be required for the project.

<u>Wetland Sequencing (Avoidance, Minimization, and Mitigation)</u>

Wetland impacts in the project area result from raising the road embankment, which requires the re-establishment of the road side slopes. The sequencing process described below was followed to assess avoidance, minimization, and mitigation strategies.

- No-Build – This alternative, described in Section III.C.1, would avoid all wetland impacts, but would fail to meet the project purpose and need. It was therefore rejected.

- Extended Highway 22 Bridge – Extending the existing bridge structure across the Minnesota River floodplain to a point just south of the Highway 22/Highway 169 intersection (approximately 2,500-feet of new bridge) was considered as an avoidance alternative. This would have allowed the roadway to be raised above the 100-year flood elevation while also avoiding and/or minimizing impacts to wetlands, Riverside Park, floodplains, and vegetation. Removal of the exisiting spur dike in the river and modifications to the existing trail would also be required if the bridge were extended across the floodplain. This option was dismissed from consideration by MnDOT due to economic factors. It was determined that the substantial cost (approximatley $15 Million) for the new bridge structure was not reasonable compared to other alternatives being considered.

- Reduced Grade Raise – This alternative would still raise the grade, but only not enough to impact wetlands. A hydraulic analysis conducted by the MnDOT Bridge Office determined that the 100-year flood elevation of this segment of the Minnesota River is 764'. It was determined that reconstructing the roadway to an elevation lower than 764' would not allow for the highway to remain open to traffic under a 100-year flood event. The 100-year flood elevation was selected by MnDOT because this is the same design standard used along Highway 169 both north and south of Saint Peter where segments of the highway have also experienced periodic seasonal flooding. A lower grade raise would not satisfy the primary project purpose and was rejected.

- Alignment Shift - Shifting the highway alignment was considered, but dismissed due to greater impacts to wetlands, parkland, right of way, vegetation, and floodplain habitat (see Section III.B.2 for additional details).

- Narrow Shoulders – This strategy reduces shoulder widths from the 10' recommended for higher volume, rural arterials to an 8' design, which is considered acceptable for such roadways. This minimization strategy resulted in the reduction of approximately 0.06 acres of impact. Reducing the shoulder width to a 6' width was also considered as part of a Highway Safety Manual (HSM) analysis. While the 6' shoulder width would further reduce wetland impacts an additional 0.07 acres, it was determined to also result in a 10 percent increase in crashes, relative to 8' shoulders, along this segment of TH 22. This design condition would provide less recovery distance for errant vehicles and would not accommodate stalled vehicles or provide for safe police pullovers. Given the volumes on this roadway, a 6' shoulder width is not considered an appropriate design.

- Steeper Inslopes – Several variations of inslope were evaluated.

    - 1:6 Inslopes – This is the preferred inslope for vehicle safety, but the wetland and other impacts would have been much greater so this was rejected.

    - 1:5 Inslopes – This is a reasonable inslope that allows vehicles to recover. This would be the base design for this project.

- Broken back 1:5 to 1:3 Inslopes – This strategy changes the slope from a 1:5 inslope to a 1:3 at the clear zone (a distance from the travel lane in which most vehicles are able to recover). This results in a 0.67 acre reduction in impacts. This design option was one of the selected wetland impact minimization strategies along with narrowing shoulder width.

- Broken back 1:4 to 1:3 Inslopes – This strategy is to use a steeper slope near the highway and break to the gentler slope at clear zone. Because the clear zone for 1:4 slopes is much greater than 1:5 slopes, this strategy would result in only a 0.05 acre reduction in wetland impacts. However, future maintenance overlays would steepen the slope beyond 1:4 making it unrecoverable for errant vehicles. That would create a future safety concern or result in additional wetland filling later. Therefore, this approach is not an acceptable strategy.

- 1:3 Inslopes – This strategy would be to forego going to the clear zone with a recoverable slope. With that approach errant vehicles would be able to traverse the slope to the bottom and regain control at the bottom of the slope. All trees would need to be kept clear of the bottom of the slope to eliminate collision hazards. This would result in reduced wetland impacts, but this strategy does not meet MnDOT safety standards and would not be considered a safe design for this type of roadway.

- 1:2 Inslopes with Cable Guardrail – This strategy would be to place cable guardrail at the edge of the shoulder, provide a gentle slope just behind the guardrail in the vehicle capture area, then break to a 1:2 slope. This would eliminate all permanent wetland impacts, but eliminates the opportunity for errant vehicles to recover before a damaging crash occurs. Guardrail then requires repair by crews working immediately adjacent to moving traffic. Also, guardrail acts as a catch for snow as it blows across the road and when it is cleared by plow trucks resulting in drifts or icy locations and reduced usable shoulder widths in winter. These inslopes are also less stable. Given that the roadway will be saturated regularly during flooding, there is increased risk of the embankment failing with these slopes. For these reasons it has been determined that this design is unacceptable along this segment of Highway 22.

Wetland Impacts – Preferred Alternative

The Level 2 wetland delineations were used to calculate wetland impacts for the preferred alternative. Table 6 and Figure 9 show the anticipated wetland impacts based on the preliminary construction limits. The project is expected to impact approximately 0.35 acres of wetland. Approximately 0.27 acres of this would be to Type 1 floodplain forest and the remaining 0.08 acres would be to Type 2 fresh (wet) meadows. No further wetland impacts are expected and all design refinements have been considered. Detailed wetland impacts will be described in the wetland permit application in accordance with USACE, WCA, and for the transportation project elements, MnDOT guidance and requirements for sequencing.

Table 6– Highway 22: Preferred Alternative Wetland Impacts

Wetland ID	Circular 39 (Cowardin) Plant Comm. Type1	Dominant Vegetation	Setting and Inlet/Outlet	Delineated Wetland Size2	Wetland Impacts Under Full Design Standards	Wetland Impacts Preferred Alternative (with minimization measures) 3
1	Type 1 (PFO1A)	Reed canary grass, American elm, green ash	Minnesota River floodplain	2.09	0.332	0.273
	Floodplain Forest					
2	Combined with Wetland 1 as a result of TEP field review.					
3	Type 2 (PEMB)	Reed canary grass, American elm, common buckthorn	Depression / Drainage swale	0.73	0.087	0.076
	Fresh (wet) Meadow					
4	Type 2 (PEMB)	Reed canary grass	Depression / Drainage Swale	0.95		--
	Fresh (wet) Meadow					
5	Type 1 (PFO1A)	Reed canary grass, eastern woodland sedge, willow, quaking aspen	Minnesota River floodplain	1.98		--
	Floodplain Forest					
6	Type 1 (PFO1A)	Reed canary grass, Canadian wood-nettle, green ash, American elm	Minnesota River floodplain	>10.00		--
	Floodplain Forest					
7	Type 5 (PUBG)	Reed canary grass and quaking aspen	Minnesota River floodplain	0.7		--
	Shallow Open Water					
8	Type 2 (PEMB)	Species of sedge, reed canary grass	Depression	0.02	0.003	less than 0.001
	Fresh (wet) Meadow					
Total					0.422	0.35 acres

[1] Plant communities are those described in Eggers and Reed, 1997.
[2] Wetland size describes wetlands identified by the Level 2 delineation within 300 feet of Highway 22. Actual wetland size may be larger than shown if the wetland continues outside the study area.
[3] Wetland impacts describes wetlands delineated within the proposed construction limits.

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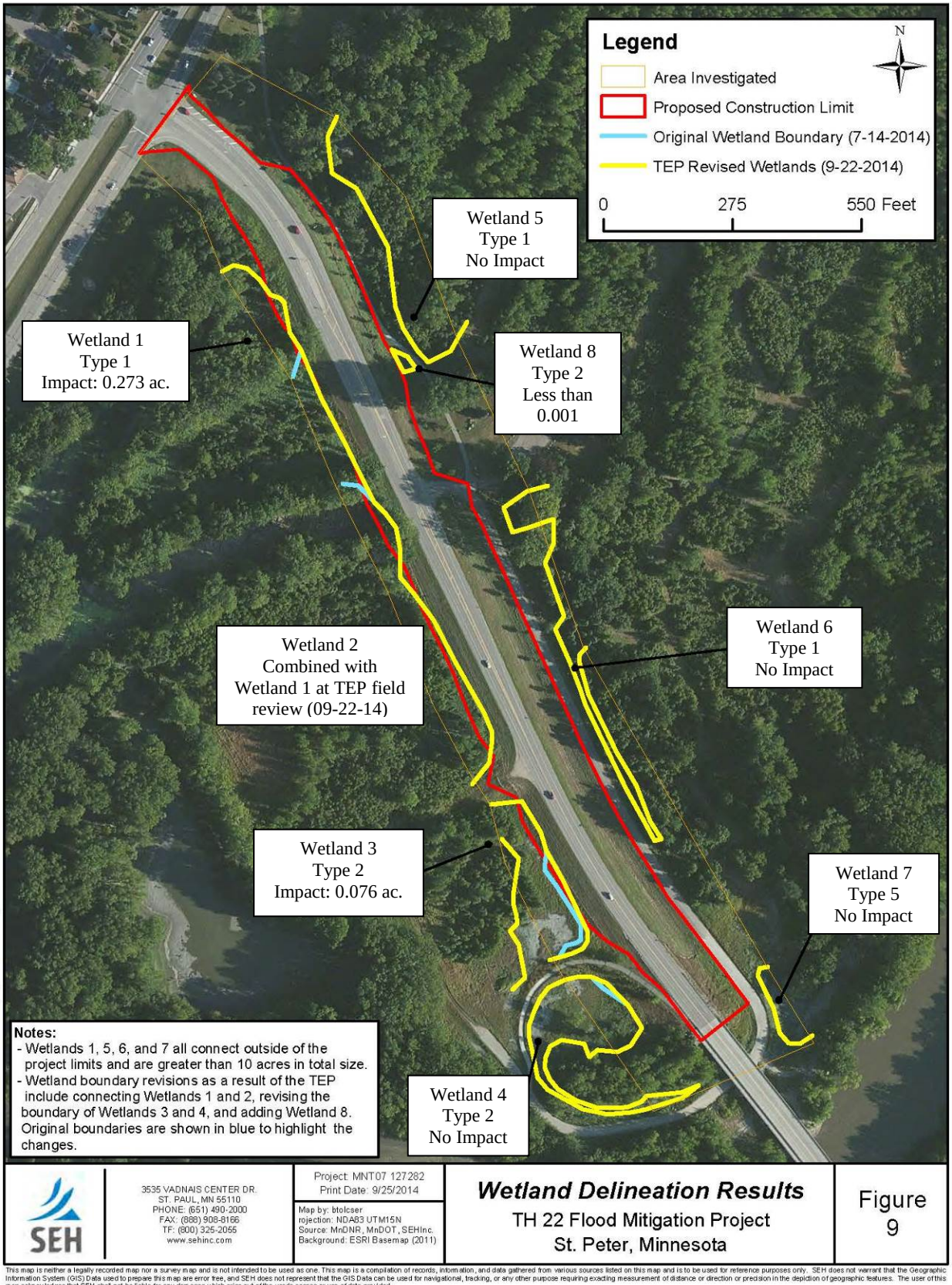
Figure 9 – Preferred Alternative Wetland Impacts



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Wetland Permitting & Mitigation

A Section 404 General Permit (GP) will likely be required for the preferred alternative. The project is located in the USACE Bank Service Area (BSA) #9 and the Minnesota River – Mankato major watershed (#28). The preferred method of wetland mitigation is through the purchase of wetland bank credits. As of November 2014, there are no Corps-approved wetland bank credits in either major watershed #28 or in any other major watershed in BSA #9. There are 100 plus acres of wetland bank credits in Houston County, which is in BSA #8. The standard wetland replacement ratio for outside of BSA replacement is 2.5 under the Wetland Conservation Act and for the USACE Section 404 permit is either 2.25 for same-type credits or 2.5 for different wetland type credits.

The amount of compensatory mitigation will be determined through the Section 404 review and Wetland Conservation Act notification processes. A Wetland Mitigation Plan will be prepared and submitted with the wetland permit application for the preferred alternative. The Plan will include detailed design plans and data, the administrative procedures, and will address the need for wetland replacement. The Mitigation Plan will be submitted with the wetland permit application at MnDOT for WCA approval, USACE for permit approval, and potentially the MNDNR for Public Waters Work Permit approval (if required).

Wetland Decision-Making

Section III – Alternatives of this EA/EAW document, provides a complete description of the Highway 22 Flood Mitigation Project alternatives considered including the rationale for identifying the Preferred Alternative. With respect to wetland regulations, identification of a Preferred Alternative also needs to be consistent with the requirements of Section 404(b)(1) of the Clean Water Act and with the findings required under Executive Order 11990. The following sections describe the decision-making process with respect to these two federal requirements.

Section 404(b)(1) of the Clean Water Act – Least Environmentally Damaging Practicable Alternative (LEDPA)

Federal regulations at 40 CFR 230.10(a) provide the guidance for USACE regarding alternatives considerations for Section 404 permitting, including:

"…no discharge of dredged or fill material shall be permitted if there is a *practicable alternative* to the proposed discharge which would have less adverse *impact on the aquatic ecosystem*, so long as the alternative does not have other *significant adverse environmental consequences*." [*italics added*]
"…(2) An alternative is *practicable* if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." [*italics added*]

An assessment of alternatives and design options was conducted using the three Section 404 considerations: 1) practicability; 2) less adverse impact on aquatic ecosystems; and 3) potential for other significant adverse environmental consequences.

Section 404 (b)(1) of the Clean Water Act -- No Significant Degradation

Another requirement of the Section 404(b)(1) guidelines prohibits any discharge which will cause or contribute to the significant degradation of the waters of the United States. Potential surface water quality impacts have been identified, and measures to avoid, minimize and/or mitigate those impacts have been developed that would be included in the design and implementation of the Preferred Alternative. Therefore, the construction of the Preferred Alternative includes measures that ensure that impacts would not cause or contribute to the significant degradation of waters of the United States and no significant impact to human health or welfare would occur from the proposed impacts to waters of the US.

No significant impact to aquatic ecosystem diversity, productivity and stability, or aquatic ecosystem-dependent wildlife populations would occur from the proposed impacts. In addition, there would be no significant impact to recreational, aesthetic, and economic values of waters of the United States based on the proposed impacts. Coordination with state and federal regulatory/permitting agencies (MNDNR, USFWS, and USACE) has occurred during the preliminary design process and will continue through project permitting to ensure that no significant degradation will occur from the construction of the Preferred Alternative.

Executive Order 11990 – Protection of Wetlands

Executive Order 11990 includes the requirement that federal agencies "to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the … agency finds (1) that there is *no practicable alternative* to such construction, and (2) that the proposed action includes *all practicable measures to minimize harm* to wetlands which may result from such use. In making this finding the head of the agency *may take into account economic, environmental and other pertinent factors*." [*italics added*].

The US Department of Transportation issued DOT Order 5660.1A in response to Executive Order 11990. The DOT Order includes the following: "5. Policy. …new construction located in wetlands shall be avoided unless there is no practicable alternative to the construction and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such construction. In making a finding of no practicable alternative, economic, environmental and other factors may be taken into account." "7. Procedures. ….h. For any major action which entails construction located in wetlands, a specific finding should be made by the affected operating administration that (1) there is no practicable alternative to construction in the wetland and (2) that all practicable measures to minimize harm have been included."

Based on these Orders, the Project Wetland Finding under EO 11990 follows:

- Finding (1) – there is no practicable alternative to construction in wetlands: Discussion: The No Build Alternative would avoid construction in wetlands, and that alternative is not practicable, since it would not meet the project purpose and need. Construction of an extended bridge structure across the Minnesota River floodplain would avoid wetland impacts. Due to economic factors (approximately $15 Million construction cost), MnDOT determined a

new bridge was not a practicable alternative. Installation of cable guardrail with 1:2 slopes would likely avoid wetlands. While this option may have avoided the wetland impacts, it was determined by MnDOT that this design option was not practicable due to to safety concerns. Also, guardrail acts as a catch for blowing snow that can result in drifting and/or icy conditions. Furthermore, the 1:2 inslopes would be less stable and more susceptible to embankment failure since these slopes will be exposed to saturated conditions during seasonal high water levels.

- Finding (2) – the proposed action includes all practicable measures to minimize harm: the Preferred Alternative includes measures such as narrowing shoulders to 8' width, in the northern portion of the project where the bridge is being installed, and steepening inslopes (broken back 1:5 to 1:3) to minimize harm, and is the practicable alternative with the least harm to wetlands.

Conclusion: Based upon the above findings, it is determined that there is no practicable alternative to the proposed construction in the identified wetlands, and the proposed action includes all practicable measures to minimize harm to wetlands.

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

No other physical impacts to surface waters are anticipated. Furthermore, the project is not anticipated to change the number or type of watercraft use on any of the surrounding water resources. The canoe launch located in Riverside Park will remain in its current condition. Access to the canoe launch will remain (by foot only) through Riverside Park and the existing trails system.

12. Contamination/Hazardous Materials/Wastes:

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

The presence of potentially-contaminated properties (defined as properties where soil and/or groundwater contain pollutants, contaminants, or hazardous wastes) is a concern in the development of highway projects. Liabilities are associated with ownership of such properties, their cleanup costs, and various safety concerns, especially where encountered

by personnel with unsuspected wastes or contaminated soil or groundwater is possible. Contaminated materials encountered during roadway 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. Contaminated materials also cause adverse impacts on roadway projects by increasing construction costs and causing construction delays, which also can increase general project costs.

In April 2013, a Phase I Environmental Site Assessment (ESA) has been completed for the Highway 22 Project. The ESA included a review of historical records and an environmental database search, which identifies sites with possible soil and/or groundwater contamination. A complete copy of the Phase I ESA is available from MnDOT by contacting the contact person listed under EAW Item 2.

If hazardous materials are encountered, MnDOT will properly handle and treat the material in accordance with all applicable state and federal regulations. MnDOT will work with the Minnesota Pollution Control Agency (MPCA) Voluntary Investigation and Cleanup (VIC) Unit and/or the Voluntary Petroleum Investigation and Cleanup (VPIC) Unit, if appropriate, to obtain assurances that contaminated site cleanup work, or contaminated site acquisition, will not associate MnDOT with long-term environmental liability for the contamination.

Sites of potential concern identified by a Phase I ESA can be categorized into four environmental risk areas: high, medium, low, and sites with no potential risk for contamination. Table 6 provides definitions for sample properties considered to have high, medium, and low risks for contamination. The Phase I ESA identified several known or potentially contaminated sites in the project area. Each identified site was assigned a risk rating (as defined in Table 7).

Table 7 – Potential For Contamination Definitions

Contamination Risk Potential	Risk Definition and Rationale
High Risk	Sites where there are one or more of the following: • Active and inactive Voluntary Investigation and Cleanup (VIC) Program and Minnesota Environmental Response and Liability Act (MERLA) sites. • Active and inactive dumpsites. • Active Leaking Underground Storage Tank (LUST) sites. • Industrial sites, vehicle fueling and/or repair sites, and dry cleaners with poor housekeeping practices. • Parcels adjoining and down gradient of release sites (release within 250')
Medium Risk	Sites where there are one or more of the following: • Sites known to have soil or groundwater contamination, but current information indicates contamination is being remediated, does not require remediation, or that continued monitoring is required. • Site where a contaminant release has been investigated, remediated and/or closed by the MPCA. • Sites that contain underground or above ground tanks with no history of leaks or spills • Sites that have handled or store regulated substances but have no documented spill or release • Sites that are occupied by industrial uses (e.g. filling stations, vehicle repair services, dry cleaners, etc.) with acceptable housekeeping practices. • Parcels adjoining and down-gradient of potential release sites (potential release within 100')
Low Risk	Sites where there are one or more of the following: • Sites where hazardous materials or petroleum products may have been stored or used; however, based on the file and field review, there is no known contamination associated with the property.

Table 8 lists nine sites from the Phase I ESA that are in the general location of the Highway 22 Project. Figure 10 on the following page depicts the general location of each of the sites.

Table 8 – Sites with Potential Risk For Contamination

Site #	General Location	Risk Ranking	Environmental Concerns
1	1305 S. Minnesota Ave (US Highway 169/Jefferson Ave.).	Medium	Past use (1950-1985) was a gas station and auto repair shop (closed LUST site #17636). Currently a Kwik Trip Gas Station.
2	Parcel located immediately southeast of Site #1 (Kwik Trip)	High	Large amounts of surface and partially buried debris observed along sloping banks.
3	Northeast quadrant of TH 22/US Highway 169 intersection	Medium	Past land use included gas station from approximately 1937-1950. Current use is MnDOT right-of-way.
4	Southeast quadrant of TH 22/US Highway 169 intersection	Medium	Dumped concrete and asphalt debris located in storm water ravine area. Current use is MnDOT right-of-way.
5	Parcel located immediately southeast of Sites #2 and #3.	High	Undeveloped land with large amounts of surface and partially buried debris observed along sloping banks.
6	Parcel located immediately southeast of Sites #4	Low	Undeveloped land with no evidence of current or historical hazardous material concerns.
7	Riverside Park Nature Area – north side of TH 22	High	Concrete debris and rusted metal has been dumped near south end of parcel. Historic use included residential site with private septic system and may have included small farm dump.
8	Riverside Park Extension – south side of TH 22	Low	Undeveloped land with no evidence of current or historical hazardous material concerns.
9	Highway 22 right-of-way	Low	Transportation corridor, no evidence of current or historical hazardous material concerns.

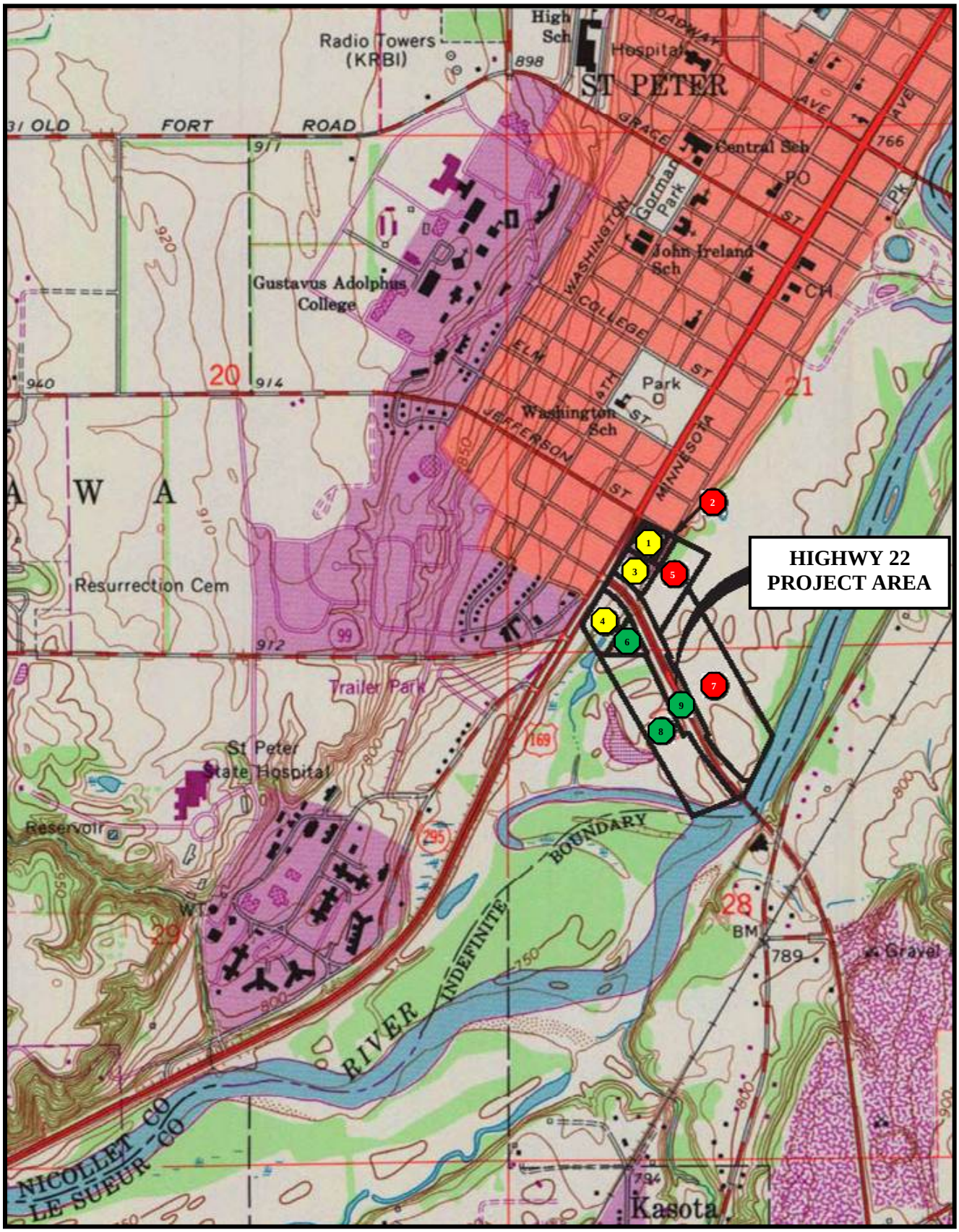
Mitigation

The Phase I ESA provides detailed information about each site. A copy of the document is available by contacting the MnDOT contact person listed in EAW Item 2 Contacts. The results of this investigation has determined the project has a low risk of encountering levels of contamination that would alter the design of the preferred alternative. If an environmental concern is encountered, an action plan would be developed for properly handling and treating contaminated soil and/or groundwater. Any soil and groundwater remediation activities would be coordinated with appropriate local, state, and federal regulatory agencies.

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

All solid wastes generated by construction of the proposed transportation improvements will be disposed of properly in a permitted, licensed solid waste facility or a similarly regulated facility elsewhere. Project demolition of concrete, asphalt, and other potentially recyclable construction materials will be directed to the appropriate storage, crushing or renovation facility for recycling or reuse.

Figure 10 – Sites with Potential Risk for Contamination



Materials anticipated to be present on-site during construction are those normally associated with the operation or maintenance of construction equipment including petroleum products such as gasoline and other engine fluids.

No other toxic or hazardous materials are anticipated during construction and none will be present following construction. No above- or below-ground storage tanks are planned for permanent use in conjunction with the highway project. Temporary storage tanks for petroleum products may be located in the project area for refueling construction equipment during roadway construction activities. Appropriate measures will be taken during construction to avoid spills that could contaminate groundwater and/or surface water in the project area. In the event that a leak or spill occurs during construction, appropriate action to remedy the situation will be taken immediately in accordance with MPCA guidelines and regulations.

If a spill of hazardous/toxic substances should occur during or after construction of the proposed project, it is the responsibility of MnDOT and their contractor(s) to notify the Department of Public Safety, Division of Emergency Services, to arrange for corrective measures to be taken pursuant to 6 MCAR 4.9005E. Any contaminated spills or leaks that occur during construction are the responsibility of the contractor and would be responded to according to MPCA containment and remedial action procedures.

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

See response 12.b. above.

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

See response 12.b. above.

13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

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

The project area is located within the Minnesota River floodplain. With the exception of the initial construction of Highway 22, only minor development has taken place within the project vicinity. The City of Saint Peter manages Riverside Park, located adjacent to the project area, which includes paved recreational trails, a parking lot for park access, and a disc golf course.

The floodplain habitat found adjacent to the highway corridor consists primarily of forested wetlands with smaller areas of grasslands. The Minnesota County Biological Survey (MCBS) identifies the plant communities southwest of Highway 22 as areas with moderate

biodiversity significance and classifies the habitat as Silver Maple – (Virginia Creeper) Floodplain Forest (MNDNR Native Plant Community Code FFs68a). This 'Area of Environmental Sensitivity' is located outside the proposed construction limits. Areas immediately adjacent to Highway 22 that comprise the impact area (construction limits) are primarily road side slopes and right of way with typical roadside grasses and trees.

The floodplain habitat nearby the project area does not support permanent or semi-permanent areas of standing water under normal conditions. As such, no fish habitat is present in the floodplains in the project vicinity.

No designated fish or wildlife habitats, state or federal wildlife management areas, refuges, or preserves, or hunting preserves were identified in the project area.

Federal Threatened and Endangered Species

For the FHWA, MnDOT's Office of Environmental Services was contacted regarding the potential for Section 7 impacts to species protected under the Federal Endangered Species Act on behalf of FHWA. A determination of "No Effect" was made and is included in a correspondence letter located in Appendix A).

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (**LA-614**) and/or correspondence number (ERDB #_____) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

The MnDOT Early Notification Memo process has initiated as part of the project development process. The memo was submitted to the Minnesota Department of Natural Resources (MNDNR) along with information regarding the proposed project improvements. A copy of the MNDNR response letter is included in Appendix A.

Available information regarding reported occurrences of rare, threatened, and endangered (RT&E) species or critical habitats was reviewed by a biologist using the MNDNR National Heritage Information System (NHIS) database by the MNDNR as well as under License Agreement LA-614. The NHIS data identified two records in the immediate project area including the western foxsnake (*Pantherophis ramspotti*) and the smooth softshell turtle (*Apalone mutica*). The western foxsnake habitat includes forest edges in riverine environments. The western foxsnake, while identified in the NHIS database, is not a listed species and does not have special status in Minnesota. The smooth softshell (MN Special Concern) habitat includes large river systems with sandy or mud bottoms. These turtles typically nest on sand beach areas with minimal vegetation. Additionally, one bald eagle (*Haliaeetus leucocephalus*) (MN Special Concern) nesting area was identified approximately 1,200 feet south of Highway 22.

Section 7 of Endangered Species Act of 1973, as amended (Act), requires each Federal agency to review any action that it funds, authorizes or carries out to determine whether it may affect threatened, endangered, proposed species or listed critical habitat. Federal agencies (or their designated representatives) must consult with the U.S. Fish and Wildlife Service (USFWS) if any such effects may occur as a result of their actions. According to the official County Distribution of Minnesota's Federally-Listed Threatened, Endangered,

Proposed, and Candidate Species list (revised in June 2014), maintained by USFWS, the project county (Nicollet) is within the distribution range of the following:

Nicollet County	Northern long-eared bat Myotis septentrionalis	Proposed as Endangered	Hibernates in caves & mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer.

There are no known occurrences of federally-listed species or designated critical habitat within the proposed project study area, therefore, a determination of no effect has been made (see Appendix A for determination correspondence).

The USFWS is currently working on developing consultation guidance for lead federal agencies to use in making determinations of effect for the Northern long-eared bat. Until this guidance is distributed and the species officially listed, the lead federal agency must assess the potential for jeopardy.

There is a known northern long-eared bat hibernaculum within the general vicinity of the proposed action (approximately 1 mile). Given the relatively close proximity of this hibernaculum, it can be reasonably assumed that this project will be taking place in an area that the northern long-eared bat uses during its summer foraging activities. This action has been coordinated with the USFWS and it has been determined that because the construction of this project will not directly or indirectly impact the hibernaculum and will only involve a minimal amount of tree removal (less than ½ acre –see attached pictures), that this action will not jeopardize the continued existence of this species. However, it is noted that if the proposed project has not been completed by the time the listing becomes official, further coordination and possible consultation with the USFWS may be necessary.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

Impacts to fish, wildlife, and native plant communities associated with the proposed action are expected to be minor. Impacts to fringes of native plant communities are expected, but these impacts are limited to areas directly adjacent to the existing Highway 22 corridor. With no existing opportunities for wildlife crossings on Highway 22 between the Minnesota River and US Highway 169, habitat fragmentation is an existing issue in the area. The construction of a single span bridge under the Highway 22 corridor will provide an opportunity for wildlife passage under the preferred alternative.

The introduction of exotic, non-native, or invasive species can change a diverse native plant community into a monotype of undesirable species. MNDOT will follow construction BMPs to control and prevent the spread of invasive species including MNDOTs Standard Specification for Construction 2572 (Protection and Restoration of Vegetation). In order to protect the native plant communities that exist outside of the construction limits, special attention will be paid to 2572.3A, which can including measures such as the use of temporary fences for tree protection in areas of unique floodplain habitat.

While the NHIS database identified rare species within the vicinity of the project, the MNDNR staff indicated that the project is not expected to negatively impact any known occurrences of rare features in the Minnesota River. With appropriate BMPs employed,

impacts to any state-listed (endangered, threatened, or special concern species) or rare plant communities are not anticipated.

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

Where reasonable and feasible, steeper side slopes have been incorporated into the preliminary project design in order to minimize the effects on wetlands, plant communities, and wildlife habitat. During construction, BMPs will be implemented to control erosion and sediment discharge to adjacent wetlands and the Minnesota River. Impacts to wetlands will be mitigated through the purchase of wetland credits from a certified wetland bank. Areas disturbed during construction will be re-vegetated following MnDOT's "Turf Establishment Recommendations", dated April 14, 2014. A copy of the recommendations can be found at: http://www.dot.state.mn.us/environment/erosion/seedmixes.html. Revegetation may include woody vegetation (trees and shrubs) in addition to grasses and/or forbs.

Due to the presence of amphibians and reptiles in the vicinity of the project, the construction specifications will require the use of erosion control products such as 'bio-netting', 'natural-netting', or woven type products, and will specifically prohibit the use of welded plastic mesh netting.

14. Historic properties:

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

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires projects that involve a federal action take into account the effects of the undertaking on historic properties. Federal undertakings refer to any federal involvement including funding, permitting, licensing, or approval. The Advisory Council on Historic Preservation (ACHP) issues regulations that implement Section 106 of the NHPA. By definition, historic properties are properties eligible for or listed on the National Register of Historic Places (NRHP). Section 106 sets up the review process whereby a federal agency consults with the State Historic Preservation Officer (SHPO), Native American tribes, other interested parties, and the public to identify, evaluate, assess effects, and mitigate adverse impact on any historic properties affected by the undertaking.

As per the terms of the Programmatic Agreement Among the Federal Highway Administration; the Minnesota State Historic Preservation Office; the Advisory Council on Historic Preservation; the Department of the Army, Corps of Engineers, St. Paul District; and the Minnesota Department of Transportation Regarding the Implementation of the Federal-Aid Highway Program in Minnesota (2005), the Corps recognizes the FHWA as the lead federal agency and has no further Section 106 obligations on the undertaking. Also, as per the PA, when MnDOT CRU makes a finding of No Historic Properties Affected, the Section 106 process is complete and no consultation with the SHPO is required.

Section 106 regulations apply to the Highway 22 Flood Mitigation Project because the project will utilize FHWA funding and will require a federal permit from the US Army Corp of Engineers (COE) for proposed wetland impacts. A Consultation with Native American tribes who have

expressed an interest reviewing project in this area of the state was undertaken. The MnDOT Cultural Resources Unit (CRU) reviewed the proposed project area with respect to federal Section 106 requirements on behalf of FHWA and made a finding of No Historic Properties Affected by the build alternatives as currently proposed. The MnDOT CRU findings letters can be found in Appendix B.

15. Visual:

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

The project area is an existing transportation corridor. The proposed project will slightly widen the footprint of the existing roadway section within the rise in the roadway profile and corresponding side slopes. The project area is located in the Minnesota River Valley, which provides scenic views of the river valley and bluffs. No substantial adverse impacts to the visual quality of the area are expected since the proposed roadway improvements follow the existing roadway alignment. Some vegetation clearing/removal will be required in order to reconstruct the roadway. Revegetation of the disturbed areas will follow MnDOT's "Turf Establishment Recommendations" that includes seeding with native seed mixes.

16. Air:

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

The proposed improvements will not have stationary source air emission concerns.

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

Introduction to Transportation Air Quality

Motorized vehicles affect air quality by emitting airborne pollutants. Changes in traffic volumes, travel patterns, and roadway locations affect air quality as the number of vehicles and the congestion levels in a given area change. The adverse impacts this project could have on air quality have been analyzed by addressing criteria air pollutants, a group of common air pollutants that are regulated by the U.S. Environmental Protection Agency (EPA) on the basis of specific criteria that reflect the effects of pollution on public health and the environment. The criteria air pollutants identified by the EPA are ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. Potential impacts resulting from these pollutants are assessed by comparing the project's projected concentrations to National Ambient Air Quality Standards (NAAQS).

In addition to the criteria air pollutants, the EPA also regulates a category of pollutants known as air toxics, which are generated by emissions from mobile sources. The Federal Highway Administration (FHWA) provides guidance for the assessment of Mobile Source Air Toxic (MSAT) effects for transportation projects in the National Environmental Policy Act (NEPA) process. A quantitative evaluation of MSATs has been performed for this project, as documented below. The scope and methods of the analysis performed were developed in collaboration with the Minnesota Department of Transportation (MnDOT), the Minnesota Pollution Control Agency (MPCA), and the Federal Highway Administration (FHWA).

NAAQS Criteria Pollutants

Ozone

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

The MPCA, in cooperation with various other agencies, industries, and groups, has encouraged voluntary control measures for ozone concentrations 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 states in the document, Air Quality in Minnesota: 2013 Report to the Legislature (January 2013, page 8), that: *All areas of Minnesota currently meet the federal ambient 8-hour standard for ozone but Minnesota is at risk for being out of compliance. In 2008, EPA tightened the federal eight-hour ambient air standard for ozone to 75 parts per billion (ppb). EPA plans to propose a revised ozone standard in December 2014, with a final standard planned for November 2015. Preliminary documents indicate that EPA believes the scientific evidence on the health impacts of ozone shows that the current ambient standard is insufficient to protect public health. EPA's Clean Air Scientific Advisory Committee has recommended that a new ambient standard be set in the range of 60-70 ppb to ensure public health protection with an adequate margin of safety. In 2010, EPA proposed a revised ozone standard in the range of 60-70 ppb but withdrew the proposal in fall 2011. Many areas of Minnesota would not meet the revised standard if the EPA sets the standard at the lowest end of the advisory committee's recommended range.*
In addition to currently meeting the federal ambient 8-hour standard for ozone concentrations, the State of Minnesota is classified by the EPA as an "ozone attainment area," which means that Minnesota has been identified as a geographic area that meets the national health-based standards for ozone levels. Because of these factors, a quantitative ozone analysis was not conducted for this project.

Particulate Matter

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

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

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

(Source: http://www.epa.gov/air/particlepollution/health.html)

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

With regard to primary (health-based) standards for fine particles (generally referring to particles less than or equal to 2.5 micrometers (mm) in diameter, PM2.5), the EPA is strengthening the annual $PM_{2.5}$ standard by lowering the level to 12.0 micrograms per cubic meter (µg/m3). The existing annual standard, 15.0 µg/m3, was set in 1997. The EPA is revising the annual $PM_{2.5}$ standard to 12.0 µg/m3 so as to provide increased protection against health effects associated with long- and short-term exposures (including premature mortality, increased hospital admissions and emergency department visits, and development of chronic respiratory disease), and to retain the 24-hour $PM_{2.5}$ standard at a level of 35 µg/m3 (the EPA issued the 24-hour standard in 2006). The EPA is revising the Air Quality Index (AQI) for $PM_{2.5}$ to be consistent with the revised primary $PM_{2.5}$ standards. (Source: http://www.epa.gov/pm/actions.html).

The agency also retained the existing standards for coarse particle pollution (PM_{10}). The NAAQS 24-hour standard for PM_{10} is 150 µg/m3, which is not to be exceeded more than once per year, on average, over three years.

The Clean Air Act conformity requirements include the assessment of localized air quality impacts of federally-funded or federally-approved transportation projects that are located within PM nonattainment and maintenance areas and deemed to be projects of air quality concern. This project is not located in one of these areas nor is the proposed improvements deemed to have air quality concerns. plan/minnesota-state-implementation-plan-sip.html) NOTE: Quantitative evaluation of PM_{10} impacts is not required for this project because it is not considered a culpable source of PM_{10} or a project of air quality concern regarding PM_{10} emissions. In addition, the project is located in an area that has been designated as an unclassifiable/attainment area for $PM_{2.5}$. This means that the project area has been identified as a geographic area that meets the national health-based standards for $PM_{2.5}$ levels, and therefore, is exempt from detailed analyses.

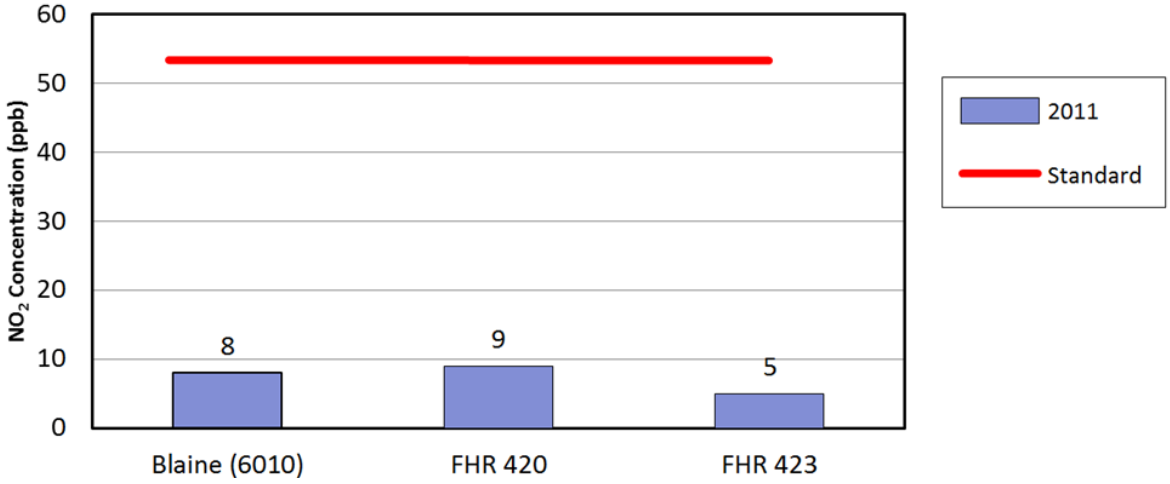
Nitrogen Dioxide (Nitrogen Oxides)

Nitrogen Oxides, or NO_X, is the generic term for a group of highly reactive gases, including nitrogen dioxide (NO_2), all of which contain nitrogen and oxygen in varying amounts. Nitrogen oxides are formed when fuel is burned at high temperatures, as in a combustion process. The primary sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels. The MPCA's *Air Quality in Minnesota: 2013 Report to the Legislature* (January 2013, page 10) indicates that:

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

Minnesota currently meets federal nitrogen dioxide standards, as shown in Exhibit 1, below. (Source: Minnesota Pollution Control Agency. July 2012. *Annual Air Monitoring Network Plan for Minnesota, 2013*. Exhibit 1: Average Annual NO_2 Concentrations compared to the NAAQS.) In the MPCA's report, *Annual Air Monitoring Network Plan for Minnesota, 2013* (July 2012), the following statement is made on page 32 with regard to NO_2: "A monitoring site meets the annual NAAQS for NO_2 if the annual average is less than or equal to 53 ppb. Minnesota averages ranged from 5 ppb at FHR 423 to 9 ppb at FHR 420; therefore, Minnesota currently meets the annual NAAQS for NO_2."

Exhibit 1: Average Annual NO_2 Concentrations Compared to the NAAQS



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

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

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

Sulfur Dioxide

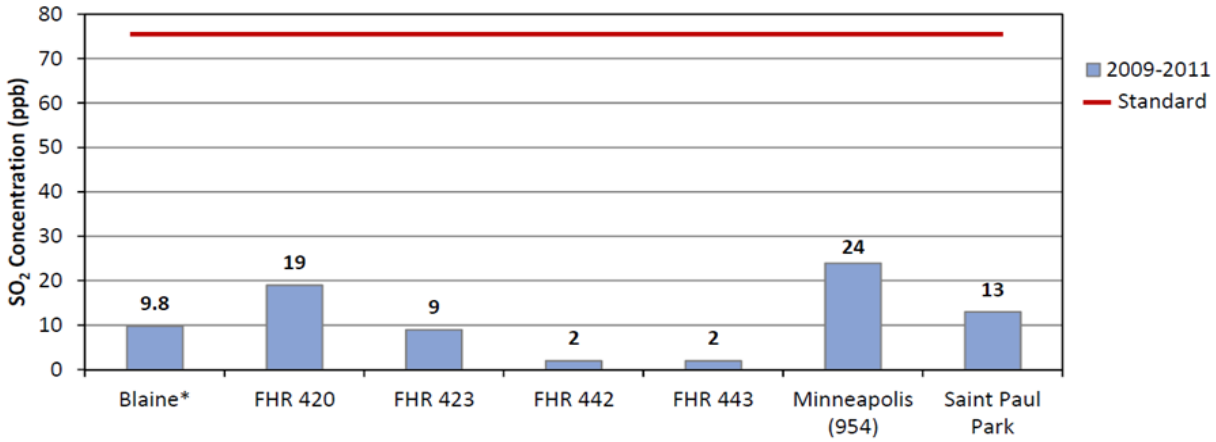
Sulfur dioxide (SO_2) and other sulfur oxide gases (SO_x) are formed when fuel containing sulfur, such as coal, oil, and diesel fuel is burned. Sulfur dioxide is a heavy, pungent, colorless gas. Elevated levels can impair breathing, lead to other respiratory symptoms, and at very high levels, can aggravate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

As the MPCA states in *Air Quality in Minnesota: 2013 Report to the Legislature*, monitoring in Minnesota in 2011 indicated ambient SO2 concentrations were at 32 percent of federal standards at that time. In other words, the SO2 levels were consistently below state and federal standards. (Source: *Air Quality in Minnesota: 2013 Report to the Legislature*, January 2013, page 4.) The MPCA also states in that report that about 70 percent of SO_2 released into the air comes from electric power generation (page 20). Therefore, only a fraction of the total SO_2 released into the air in Minnesota is attributable to on-road mobile sources. The MPCA has concluded that long-term trends in both ambient air concentrations and total SO2 emissions in Minnesota indicate steady improvement.

Minnesota currently meets federal SO_2 standards as shown in Exhibit 2, below. (Source: Minnesota Pollution Control Agency, July 2012: Annual Air Monitoring Network Plan for Minnesota, 2013, Exhibit 2: 1-hour SO_2 Concentrations Compared to the NAAQS.) In the MPCA's report, Annual Air Monitoring Network Plan for Minnesota, 2013 (July 2012), the following statement is made on page 33 with regard to SO_2:

On June 2, 2010, the EPA finalized revisions to the primary SO_2 NAAQS. EPA established a new 1-hour standard which is met if the three-year average of the annual 99th percentile daily maximum 1-hour SO2 concentration is less than 75 ppb. In addition to creating the new 1-hour standard, the EPA revoked the existing 24-hour and annual standards. Exhibit 24 describes the 2009-2011 average 99th percentile 1-hour SO_2 concentration and compares them to the 1-hour standard. Minnesota averages ranged from 2 ppb at FHR 442 and FHR 443 to 24 ppb in Minneapolis (954); therefore, all Minnesota sites currently meet the1-hour NAAQS for SO_2.

Exhibit 2: 1-hour SO2 Concentration Compared to the NAAQS



* The monitoring site did not meet the minimum completeness criteria for design value calculations. A site meets the completeness requirement if 75% of required sampling days are valid for each calendar quarter included in the design value calculation. SO_2 at Duluth was part of a one-year assessment and not intended to collect 3 years of data for design value calculations.

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

Lead

With the phase out of leaded gas, lead is no longer a pollutant concern with vehicle emissions.

Carbon Monoxide

Carbon monoxide (CO) is the traffic-related pollutant that has been of concern in Minnesota. Evaluation of CO for assessment of air quality impacts is required for environmental approval in NEPA documents. The Twin Cities metropolitan area has been designated by the EPA as a maintenance area for CO. This means the area was previously classified as a nonattainment area but has now been found to be in attainment. This project is not located within the Twin Cities maintenance area, so demonstration of air quality conformity is required. Federally-funded and state-funded projects are also subject to "hot spot" analysis requirements to demonstrate that no localized CO concentrations will exceed NAAQS limits.

CO Conformity

The EPA issued final rules (1993) on transportation conformity (40 CFR 93, Subpart A) which describe the methods required to demonstrate State Implementation Plan (SIP) compliance for transportation projects. As demonstrated by the above information, this project conforms to the requirements of the Clean Air Act Amendments and to the Conformity Rules. Therefore, no regional modeling is required.

Hot-Spot Analysis

This project is located in an area where conformity requirements do not apply. Furthermore, the scope of the project does not indicate that air quality impacts would be expected. The EPA has approved a screening method to determine which intersections need hot-spot analysis. MnDOT has demonstrated by the results of the screening procedure that there are no high volume or signalized intersections included in the project area that require hot-spot analysis. Therefore, no carbon monoxide hot-spot analysis is necessary.

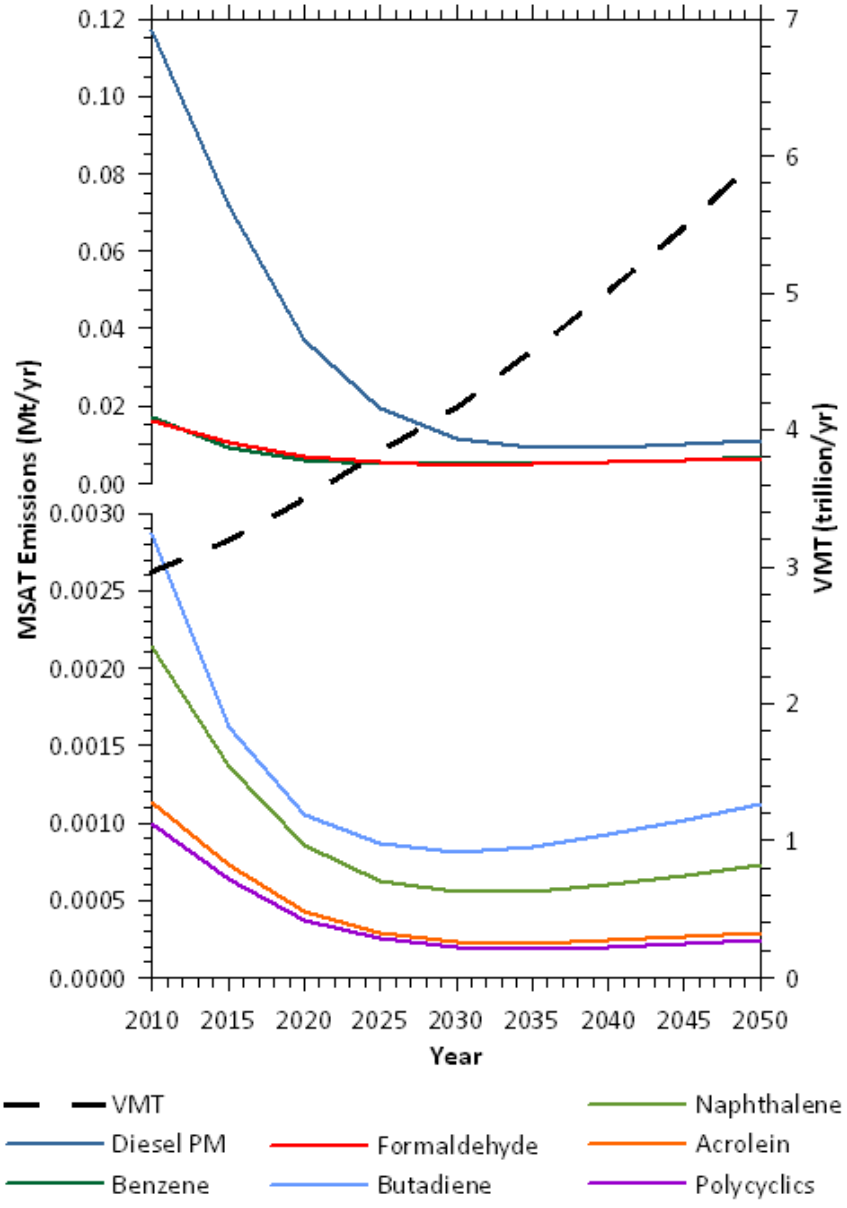
Mobile Source Air Toxics (MSAT)

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/).

In addition, the EPA identified seven compounds with significant contributions from mobile sources that are among the national- and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are Acrolein, Benzene, 1,3-Butidiene, Diesel Particulate Matter, plus diesel exhaust organic gases (Diesel PM), Formaldehyde, Naphthalene, and Polycyclic Organic Matter (POM). The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines.

Based on an FHWA analysis using EPA's MOVES 2010b model, as shown in Exhibit 3 on the following page, even if vehicle-miles travelled (VMT) increases by 102 percent, as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period. 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 project area are likely to be lower in the future in nearly all cases. On a regional basis, EPA's vehicle and fuel regulations will, over time, cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than they are today.

Exhibit 3: National MSAT Emission Trends, 1999-2050, for Vehicles Operating on Roadways Using EPA's MOVES 2010b Model[2]



[2] Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA (http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm)

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

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

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

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in *FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents.* Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

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

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

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282).

As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. EPA (http://www.epa.gov/risk/basicinformation.htm#g) and HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

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

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

Dust

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

Odors

No long-term odors will be generated by the proposed project. Odors may be generated by exhaust from diesel engines engaged in construction activities and fuel storage areas. All machinery will be properly equipped to control emissions.

17. Noise

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

Construction Noise

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

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

Table 9 – Typical Construction Equipment Noise Levels at 50 feet

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

Source: United States Environmental Protection Agency and Federal Highway Administration

Elevated noise levels are, to a degree, unavoidable for this type of project. MnDOT will require that construction equipment be properly muffled and in proper working order. Contractor(s) will be required to comply with applicable local noise restrictions and ordinances to the extent that is reasonable. Advanced notice will be provided to affected property owners of any planned abnormally loud construction activities. It is anticipated that night construction may sometimes be required to minimize traffic impacts and to improve safety. However, construction will be limited to daytime hours as much as possible. This project is expected to be substantially completed in one construction season (2015).

Any associated high-impact equipment noise, such as pile driving, pavement sawing, or jack hammering, will be unavoidable with construction of the proposed project. The use of high-impact equipment will be prohibited during nighttime hours.

Traffic Noise

A detailed traffic noise study was conducted using noise analysis software MINNOISEV3.1, a modified version of FHWA's STAMINA 2.0. The analysis modeled noise levels for existing conditions, 2035 No-Build Alternate, and 2035 Build Alternate (Preferred Alternative).

Noise Description

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 represent the logarithmic increase in sound energy relative to a reference energy level. For

highway traffic noise, an adjustment, or weighting, of the high- and low-pitched sounds is made to approximate the way that an average person hears sounds. The adjusted sound levels are stated in units of "A-weighted decibels" (dBA). A sound increase of 3 dBA is barely perceptible to the human ear, a 5 dBA increase is clearly noticeable, and a 10 dBA increase is heard twice as loud. For example, if the sound energy is doubled (e.g. 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 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 hour of the day and/or night that has the heaviest traffic. These levels are identified as the L10 and L50. The L10 value is compared to FHWA noise abatement criteria. The following chart provides a rough comparison 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	Jackhammer (at 3 feet)
90	Chainsaw/Lawn Mower (at 3 feet)
80	Heavy Truck Traffic
70	Business Office/Vacuum Cleaner
60	Conversational Speech
50	Library
40	Bedroom
30	Secluded Woods
20	Whisper

Source: "A Guide to Noise Control in Minnesota," Minnesota Pollution Control Agency, http://www.pca.state.mn.us/index.php/view-document.html?gid=5355.

State of Minnesota Noise Regulations

Minnesota state noise standards are for a one-hour period and apply to outdoor areas (i.e. exterior noise levels). The standards are in terms of the L10 and L50 noise descriptors. The L10 is the sound level exceeded ten percent of the time or six minutes out of an hour. The L50 is the sound level exceeded fifty percent of the time or thirty minutes out of an hour. State noise standards have been established for daytime and nighttime periods. 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.

Table 10 provides the Minnesota State Noise Standards for three Noise Area Classifications (NAC), and for daytime, nighttime, L10 and L50. The standards for NAC-1 apply to residential areas and other uses intended for overnight sleeping (hotels, motels, mobile homes, etc.). The NAC-1 standards also apply to schools, churches, medical services, and park areas. The nighttime standards differ from the daytime standards only in areas intended for overnight sleeping. The NAC-1 daytime standards apply during nighttime hours at other NAC-1 uses not intended for overnight sleeping. The NAC-2 standards are applicable to certain NAC-1 land uses if the following criteria are met:

- The building noise attenuation is at least 30 decibels (dBA),
- The building has year-round indoor climate control,
- The building has no facilities for outdoor activities.

Table 10 – Minnesota State Noise Standards

Noise Area Classification (NAC)	General Land Use Type	Sound Level (dBA)			
		Day (7:00 am-10:00 pm)		Night (10:00 pm-7:00 am)	
		L10	L50	L10	L50
1	Residential	65	60	55	50
2	Commercial	70	65	70	65
3	Industrial	80	75	80	75

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

Federal Noise Abatement Criteria (NAC)

In the Federal NAC, for residential and recreational uses (Federal Land Use Category B), the Federal L_{10} standard is 70 dBA for both daytime and nighttime. For recreational areas such as Riverside Park (Federal Land Use Category C), the Federal L_{10} standard is 70 dBA for both daytime and nighttime. Locations where noise levels are "approaching" (defined in Minnesota 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. The Federal NAC are shown in Table 11.

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. MnDOT considers an increase of five dBA or greater a substantial noise level increase.

Table 11 – Federal Noise Abatement Criteria

Activity Category	Activity Criteria (1,2) L10(h) dBA	Evaluation Location	Activity Description
A	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B(3)	70	Exterior	Residential
C(3)	70	Exterior	Exterior Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E(3)	75	Exterior	Exterior Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-----	-----	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources/treatment, electrical), and warehousing
G	-----	-----	Undeveloped lands that are not permitted

Notes: (1) L 10(h) shall be used for impact assessment.
(2) The L 10(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
(3) Includes undeveloped lands permitted for this activity category.

The Minnesota State Noise Standards apply to the Highway 22 Project and because federal funds will likely be used as part of this project, the federal noise criteria also apply to the project.

Traffic Noise Analysis Methodology and Assumptions

The project is located in an undeveloped part of Saint Peter where existing land uses adjacent to the highway include floodplains and Riverside Park (NAC-2). No residential developments (year-round or seasonal) are located immediately adjacent to the highway corridor.

Traffic noise is generated by vehicles traveling on Highway 22, as well as, along US Highway 169. Other noise sources in the area may be generated by train traffic and boat traffic with an active rail line and the Minnesota River found in close proximity of the study area.

Existing and future noise levels (2035) were modeled using the MnDOT noise prediction model MINNOISEV3.1. Noise projections were based on existing and forecasted peak hour traffic volumes, vehicle speeds, mix of vehicles, roadway grades, and the distance from the roadway center-of-lanes to the receptor (horizontal and vertical). The following assumptions were used in modeling the noise levels:

Daytime vs. Nighttime Traffic Volumes:

- Daytime hours were between 7:00 a.m. and 10:00 p.m.; nighttime hours were between 10:00 p.m. and 7:00 a.m.
- The noisiest daytime and nighttime hours were selected based on traffic and heavy truck volume. The nighttime noisiest hour, which for this study was the design AM peak hour (6:00 a.m. to 7:00 a.m.) is approximately 4 percent of the average daily traffic volume. The daytime noisiest hour corresponds with the PM peak hour (4:00 p.m. to 5:00 p.m.), which is approximately 9 percent of the average daily traffic volume.

Vehicle Speeds:

- Highway 22 was modeled using posted limits of 55 miles per hour (MPH).

Ground Cover:

- For a linear noise source, such as a road, sound traveling through air attenuates 3 dBA for every doubling of distance. Ground cover can provide additional noise attenuation in absence of a noise barrier. The two default ground values for the noise model are soft ground, which represents open, grassy areas that provide additional acoustical attenuation of 1.5 dBA per doubling of distance, and hard ground, which represents surfaces such as asphalt or open water which do not provide acoustical attenuation. The study area is in an undeveloped environment with primarily a mixture of heavy foliage and grassy areas. Therefore, the default value for soft ground with an alpha value of 0.5 was used.

Noise Receptor Sites

Four monitoring sites representing the state NAC-2 (parkland) and Federal Land Use Category C were identified and existing noise levels were monitored in May and June 2013. Monitored noise levels ranged from 61.7 dBA (L10) to 67.6 dBA (L10). In addition to the four monitoring sites, traffic noise levels were modeled at 37 representative receptor locations within the study area (see Figure 11). All receptor sites have been categorized as under the state NAC-2 (parkland) and Federal Land Use Category C.

Noise Analysis Results

The MINNOISEV3.1 noise model applies three scenarios for comparison of the noise levels. The scenarios are: 1) Existing Conditions using 2013 traffic conditions; 2) 2035 No-Build Alternate; and 3) 2035 Build Alternative. The results of the daytime and nighttime noise modeling analysis is summarized below and tabulated in Tables 12 and 13.

Figure 11 – Highway 22 Noise Receptors and Monitoring Locations

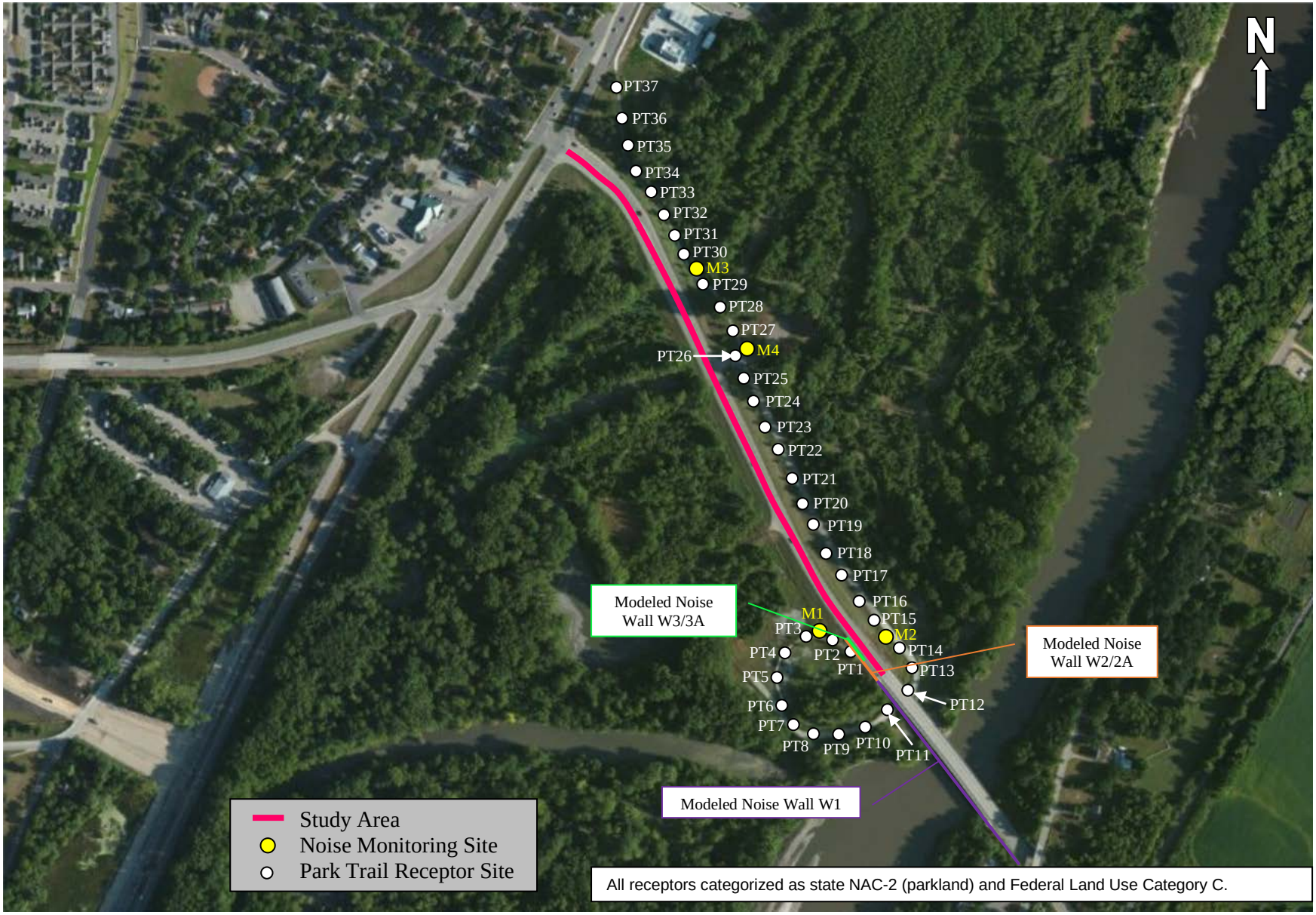


Table 12 – TH 22 Noise Model: Daytime Results

Receptor*	Monitored Noise Levels (dBA) (1)		Daytime Modeled Noise Levels (dBA) (4:00 TO 5:00 PM)									
			Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with No mitigation		Difference Between Existing (2013) and Build with NO Mitigation (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}
M1 (CAA) (1)	65.1	59.9	63.5	53.8	63.7	54.3	0.2	0.5	63.7	54.2	0.2	0.4
M2 (CAA) (1)	65.9	61.1	61.0	51.6	61.3	52.4	0.3	0.8	61.3	52.3	0.3	0.7
M3 (CAA) (1)	61.9	56.6	65.1	55.3	65.2	55.7	0.1	0.4	64.4	54.5	-0.7	-0.8
M4 (CAA) (1)	67.1	61.6	64.1	55.2	64.5	56.1	0.4	0.9	64.1	55.5	0.0	0.3
PT01 (CAA) (1)			68.7	58.0	69.6	59.3	0.9	1.3	69.6	59.3	0.9	1.3
PT02 (CAA) (1)			66.6	55.9	66.8	56.3	0.2	0.4	66.7	56.2	0.1	0.3
PT03 (CAA) (1)			62.8	53.3	63.0	53.8	0.2	0.5	63.0	53.8	0.2	0.5
PT04 (CAA) (1)			59.3	50.6	59.6	51.4	0.3	0.8	59.6	51.4	0.3	0.8
PT05 (CAA) (1)			56.8	48.6	57.2	49.5	0.4	0.9	57.2	49.5	0.4	0.9
PT06 (CAA) (1)			55.2	47.2	55.7	48.1	0.5	0.9	55.7	48.1	0.5	0.9
PT07 (CAA) (1)			54.0	46.0	54.5	47.1	0.5	1.1	54.5	47.1	0.5	1.1
PT08 (CAA) (1)			53.7	45.6	54.3	46.7	0.6	1.1	54.3	46.7	0.6	1.1
PT09 (CAA) (1)			54.2	45.8	54.8	46.8	0.6	1.0	54.8	46.8	0.6	1.0
PT10 (CAA) (1)			54.7	46.0	55.3	47.0	0.6	1.0	55.3	47.0	0.6	1.0
PT11 (CAA) (1)			56.6	48.5	57.4	49.7	0.8	1.2	57.4	49.7	0.8	1.2
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State daytime standards.
Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).
(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial
* Number in "receptor" column is the number of residences represented by each modeled receptor location.
(1) Average of daytime (morning and afternoon) monitored noise levels.

All receptors categorized as state NAC-2 (parkland) and Federal Land Use Category C.

Table 12 (continued) – TH 22 Noise Model: Daytime Results

Receptor*	Monitored Noise Levels (dBA) (1)		Daytime Modeled Noise Levels (dBA) (4:00 TO 5:00 PM)									
			Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with No mitigation		Difference Between Existing (2013) and Build with NO Mitigation (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}
PT12 (CAA) (1)			56.5	48.1	57.3	49.3	0.8	1.2	57.3	49.3	0.8	1.2
PT13 (CAA) (1)			57.4	48.2	58.0	49.2	0.6	1.0	58.0	49.2	0.6	1.0
PT14 (CAA) (1)			60.3	50.1	60.7	50.8	0.4	0.7	60.7	50.9	0.4	0.8
PT15 (CAA) (1)			62.9	52.7	63.1	53.1	0.2	0.4	63.1	53.1	0.2	0.4
PT16 (CAA) (1)			64.5	54.7	64.7	55.3	0.2	0.6	64.7	55.2	0.2	0.5
PT17 (CAA) (1)			65.1	55.6	65.4	56.3	0.3	0.7	65.3	56.1	0.2	0.5
PT18 (CAA) (1)			65.4	56.0	65.8	56.8	0.4	0.8	65.5	56.4	0.1	0.4
PT19 (CAA) (1)			65.5	56.1	65.9	56.8	0.4	0.7	65.5	56.3	0.0	0.2
PT20 (CAA) (1)			65.4	56.1	65.8	56.8	0.4	0.7	65.4	56.2	0.0	0.1
PT21 (CAA) (1)			65.3	56.0	65.7	56.7	0.4	0.7	65.2	56.2	-0.1	0.2
PT22 (CAA) (1)			65.2	55.9	65.5	56.6	0.3	0.7	65.2	56.1	0.0	0.2
PT23 (CAA) (1)			65.1	55.8	65.5	56.5	0.4	0.7	65.2	56.1	0.1	0.3
PT24 (CAA) (1)			65.1	55.8	65.4	56.5	0.3	0.7	65.1	56.1	0.0	0.3
PT25 (CAA) (1)			65.2	56.0	65.6	56.8	0.4	0.8	65.2	56.2	0.0	0.2
PT26 (CAA) (1)			64.6	55.6	65.1	56.5	0.5	0.9	64.6	55.8	0.0	1.2
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State daytime standards.
Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).
(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial
* Number in "receptor" column is the number of residences represented by each modeled receptor location.
(1) Average of daytime (morning and afternoon) monitored noise levels.

All receptors categorized as state NAC-2 (parkland) and Federal Land Use Category C.

Table 12 (continued) – TH 22 Noise Model: Daytime Results

Receptor*	Monitored Noise Levels (dBA) (1)		Daytime Modeled Noise Levels (dBA) (4:00 TO 5:00 PM)									
			Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with No mitigation		Difference Between Existing (2013) and Build with NO Mitigation (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}
PT27 (CAA) (1)			64.0	55.2	64.5	56.0	0.5	0.8	64.0	55.4	0.0	0.2
PT28 (CAA) (1)			63.8	54.8	64.1	55.5	0.3	0.7	63.7	54.9	-0.1	0.1
PT29 (CAA) (1)			64.6	55.1	64.7	55.5	0.1	0.4	64.1	54.6	-0.5	-0.5
PT30 (CAA) (1)			65.6	55.4	65.6	55.7	0.0	0.3	62.8	53.9	-2.8	-1.5
PT31 (CAA) (1)			63.5	54.0	63.8	54.7	0.3	0.7	62.1	53.4	-1.4	-0.6
PT32 (CAA) (1)			62.3	52.8	62.7	53.6	0.4	0.8	61.5	52.9	-0.8	0.1
PT33 (CAA) (1)			62.6	52.7	63.0	53.4	0.4	0.7	62.2	53.2	-0.4	0.5
PT34 (CAA) (1)			64.6	53.7	64.5	53.8	-0.1	0.1	63.5	53.6	-1.1	-0.1
PT35 (CAA) (1)			61.5	51.3	61.6	51.7	0.1	0.4	61.5	51.6	0.0	0.3
PT36 (CAA) (1)			58.0	48.5	58.3	49.2	0.3	0.7	58.1	49.1	0.1	0.6
PT37 (CAA) (1)			55.5	46.7	56.0	47.6	0.5	0.9	55.8	47.5	0.3	0.8
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State daytime standards.
Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).
(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial
* Number in "receptor" column is the number of residences represented by each modeled receptor location.
(1) Average of daytime (morning and afternoon) monitored noise levels.

All receptors categorized as state NAC-2 (parkland) and Federal Land Use Category C.

Table 13 – TH 22 Noise Model: Nighttime Results

Receptor*	Nighttime Modeled Noise Levels (dBA) (6:00 TO 7:00 AM)									
	Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
M1 (CAA) (1)	59.1	48.3	60.1	49.6	1.0	1.3	60.1	49.5	1.0	1.2
M2 (CAA) (1)	56.8	46.4	57.8	47.7	1.0	1.3	57.8	47.7	1.0	1.3
M3 (CAA) (1)	60.5	49.6	61.5	51.0	1.0	1.4	60.7	49.8	0.2	0.2
M4 (CAA) (1)	60.1	50.2	61.1	51.5	1.0	1.3	60.6	50.9	0.5	0.7
PT01 (CAA) (1)	64.8	53.2	65.9	54.6	1.1	1.4	65.9	54.6	1.1	1.4
PT02 (CAA) (1)	62.0	50.3	63.1	51.6	1.1	1.3	63.0	51.5	1.0	1.2
PT03 (CAA) (1)	58.4	47.8	59.4	49.1	1.0	1.3	59.4	49.1	1.0	1.3
PT04 (CAA) (1)	55.2	45.5	56.2	46.8	1.0	1.3	56.2	46.8	1.0	1.3
PT05 (CAA) (1)	52.9	43.6	53.8	44.9	0.9	1.3	53.8	44.9	0.9	1.3
PT06 (CAA) (1)	51.4	42.3	52.4	43.6	1.0	1.3	52.3	43.6	0.9	1.3
PT07 (CAA) (1)	50.2	41.2	51.2	42.5	1.0	1.3	51.2	42.5	1.0	1.3
PT08 (CAA) (1)	49.9	40.8	50.9	42.1	1.0	1.3	50.9	42.1	1.0	1.3
PT09 (CAA) (1)	50.4	40.9	51.4	42.2	1.0	1.3	51.4	42.2	1.0	1.3
PT10 (CAA) (1)	50.8	41.1	51.8	42.4	1.0	1.3	51.8	42.4	1.0	1.3
PT11 (CAA) (1)	53.1	43.8	54.1	45.2	1.0	1.4	54.1	45.2	1.0	1.4
State Nighttime Standard (NAC-1)	55	50	55	50	--	--	55	50	--	--
State Nighttime Standard (NAC-2)	70	65	70	65	--	--	70	65	--	--
State Nighttime Standard (NAC-3)	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State nighttime standards.
Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).
(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.
All receptors categorized as state NAC-2 (parkland) and Federal Land Use Category C.

Table 13 (continued) – TH 22 Noise Model: Nighttime Results

Receptor*	Nighttime Modeled Noise Levels (dBA) (6:00 TO 7:00 AM)									
	Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
PT12 (CAA) (1)	52.9	43.3	53.9	44.7	1.0	1.4	53.9	44.7	1.0	1.4
PT13 (CAA) (1)	53.5	43.2	54.5	44.5	1.0	1.3	54.5	44.5	1.0	1.3
PT14 (CAA) (1)	56.0	44.8	57.0	46.1	1.0	1.3	57.0	46.2	1.0	1.4
PT15 (CAA) (1)	58.4	47.1	59.4	48.4	1.0	1.3	59.4	48.4	1.0	1.3
PT16 (CAA) (1)	60.1	49.3	61.1	50.6	1.0	1.3	61.1	50.5	1.0	1.2
PT17 (CAA) (1)	60.9	50.3	61.9	51.7	1.0	1.4	61.7	51.4	0.8	1.1
PT18 (CAA) (1)	61.2	50.8	62.3	52.1	1.1	1.3	61.9	51.7	0.7	0.9
PT19 (CAA) (1)	61.3	50.8	62.3	52.1	1.0	1.3	61.9	51.6	0.6	0.8
PT20 (CAA) (1)	61.2	50.8	62.3	52.1	1.1	1.3	61.8	51.5	0.6	0.7
PT21 (CAA) (1)	61.1	50.7	62.1	52.0	1.0	1.3	61.7	51.5	0.6	0.8
PT22 (CAA) (1)	61.0	50.6	62.0	51.9	1.0	1.3	61.6	51.5	0.6	0.9
PT23 (CAA) (1)	60.9	50.5	61.9	51.9	1.0	1.4	61.6	51.5	0.7	1.0
PT24 (CAA) (1)	60.9	50.5	61.9	51.8	1.0	1.3	61.6	51.4	0.7	0.9
PT25 (CAA) (1)	61.1	50.8	62.1	52.1	1.0	1.3	61.6	51.5	0.5	0.7
PT26 (CAA) (1)	60.6	50.6	61.6	51.9	1.0	1.3	61.0	51.2	0.4	0.6
State Nighttime Standard (NAC-1)	55	50	55	50	--	--	55	50	--	--
State Nighttime Standard (NAC-2)	70	65	70	65	--	--	70	65	--	--
State Nighttime Standard (NAC-3)	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State nighttime standards.
Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).
(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.

All receptors categorized as state NAC-2 (parkland) and Federal Land Use Category C.

Table 13 (continued) – TH 22 Noise Model: Nighttime Results

Receptor*	Nighttime Modeled Noise Levels (dBA) (6:00 TO 7:00 AM)									
	Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
PT27 (CAA) (1)	60.0	50.0	61.0	51.3	1.0	1.3	60.5	50.8	0.5	0.8
PT28 (CAA) (1)	59.6	49.5	60.6	50.8	1.0	1.3	60.2	50.3	0.6	0.8
PT29 (CAA) (1)	60.1	49.5	61.1	50.8	1.0	1.3	60.5	49.9	0.4	0.4
PT30 (CAA) (1)	60.9	49.6	61.9	50.9	1.0	1.3	59.2	49.3	-1.7	-0.3
PT31 (CAA) (1)	59.2	48.7	60.3	50.0	1.1	1.3	58.6	48.8	-0.6	0.1
PT32 (CAA) (1)	58.1	47.6	59.2	48.9	1.1	1.3	58.0	48.2	-0.1	0.6
PT33 (CAA) (1)	58.3	47.4	59.4	48.7	1.1	1.3	58.7	48.5	0.4	1.1
PT34 (CAA) (1)	59.7	47.7	60.8	49.0	1.1	1.3	59.9	48.8	0.2	1.1
PT35 (CAA) (1)	56.9	45.7	57.9	47.0	1.0	1.3	57.8	46.9	0.9	1.2
PT36 (CAA) (1)	53.7	43.2	54.7	44.5	1.0	1.3	54.6	44.4	0.9	1.2
PT37 (CAA) (1)	51.5	41.6	52.5	43.0	1.0	1.4	52.4	42.9	0.9	1.3
State Nighttime Standard (NAC-1)	55	50	55	50	--	--	55	50	--	--
State Nighttime Standard (NAC-2)	70	65	70	65	--	--	70	65	--	--
State Nighttime Standard (NAC-3)	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State nighttime standards.
Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).
(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial
* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.

All receptors categorized as state NAC-2 (parkland) and Federal Land Use Category C.

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Existing daytime modeled noise levels at modeled receptor locations range from 53.7 to 68.7 dBA for L10 and 45.6 to 58.0 dBA for L50. The existing nighttime modeled noise levels range from 49.9 to 64.8 dBA for L10 and 40.8 to 53.2 dBA for L50. It is noted that all receptors are below the state and federal noise standards for parkland/recreational lands under the existing conditions for the year of 2013.

Under future 2035 No Build Alternative, daytime modeled noise levels range from 54.3 to 69.6 dBA for L10 and, 46.7 to 59.3 dBA for L50. The 2035 No Build Alternative nighttime modeled noise levels range from 50.9 to 65.9 dBA for L10 and 42.1 to 54.6 dBA for L50. It is noted that all receptors are below the state and federal noise standards, but one receptor has a modeled noise level approaching (69.6 dba) the federal standard. Also, no receptors experience a 5 dBA increase in noise levels.

Under future 2035 Build (with no mitigation), daytime modeled noise levels range from 54.3 to 69.6 dBA for L10 and, 46.7 to 59.3 dBA for L50. The future 2035 Build (with no mitigation), nighttime modeled noise levels range from 50.9 to 65.9 dBA for L10 and 42.1 to 54.6 dBA for L50. All receptors are below the state and federal noise standards with one receptor approaching the (69.6 dBA) federal standard. Again, no receptors experience a 5dBA increase in noise levels.

Noise Barrier Evaluation

Because receptor site PT01 approaches the Federal Noise Abatement Criteria threshold of 70 dBA, mitigation measures (noise barriers) have been analyzed. In order for a noise barrier to be proposed as part of a project, it must be both feasible and reasonable. Feasibility refers to physical constraints and engineering considerations (i.e., can a noise barrier be constructed at this location). For a noise barrier to be considered reasonable, it must meet the following 3 criteria:

1. It must be acoustically effective by providing a substantial reduction in noise, defined as a 5 decibel reduction or more. Additionally, 1 receiver must receive a 7 decibels or greater reduction.
2. It must meet MnDOT's cost effectiveness criteria of $43,500 per receptor/residence, and
3. It must consider the viewpoint of the benefited (i.e. park/trail users, residences, land owners).

Noise barriers were analyzed for four cases along Highway 22. The barrier locations are shown on Figure 11 and the detailed model output tables are included in the Noise Mitigation Technical Memorandum found in Appendix C of this EA.

CASE 1: Wall W1 (680' long, 10' high) located on the bridge and Wall W2 (100' long, 20' high) located north of the bridge. This combination of barriers is acoustically effective in providing noise reduction, but is not cost effective at a cost of $100,146.15 /benefited receptor.

CASE 1A: Wall W1 (680' long, 10' high) located on the bridge and Wall W2 (100' long, 10' high) located north of the bridge. This combination of barriers is acoustically effective in providing noise reduction, but is not cost effective at a cost of $90,146.15 /benefited receptor.

CASE 2: Wall W3 (80’ long, 20’ high) located just north of the bridge. This barrier was also acoustically effective in providing noise reduction, but is not cost effective at a cost of $139,924.00 /benefited receptor.

CASE 2A: Wall W3 (80’ long, 10’ high) located just north of the bridge. This barrier was not acoustically effective in providing noise reduction.

Noise Assessment Conclusions

One receptor site approached the federal NAC for the daytime condition. This receptor is located on the west side of Highway 22 near the north end of the existing Minnesota River Bridge. An analysis of noise barrier mitigation demonstrated that barriers will not meet MnDOT’s cost-reasonableness criteria at any of the areas. Therefore, noise barrier mitigation is not proposed. Furthermore, no state noise thresholds were exceeded.

Other Noise Abatement Measures

Other noise mitigation measures have been considered, as listed in 23 CFR 772.13(c) and are addressed below:

a. Traffic management measures: The primary purpose of the facility is to move people and goods. Restrictions of certain vehicles or speeds would not be consistent with the functional classification of the highway and its setting.

b. Alteration of horizontal and vertical alignments: Portions of the vertical alignment of the highway were altered in order to raise the roadway above the 100-year flood elevation of the Minnesota River. Further redesigning the horizontal and/or vertical alignments to minimize noise impacts would result in greater impacts to Section 4(f) resources, floodplains and wetlands because of larger roadway footprint requirements.

c. Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise: The property in which the receptor is located is part of the MnDOT right of way and is utilized as a multi-use trail. There is no current or planned development in the areas along the project limits.

d. Noise insulation of public use or nonprofit institutional structures: Noise insulation does not address the outside environment. Therefore, noise insulation is not proposed as a part of the project. Under MnDOT and FHWA guidelines, only public buildings such as schools and hospitals should be considered for acoustical insulation. No public buildings are located with the Highway 22 project area.

18. Transportation

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

The proposed flood mitigation improvements will not generate new trips but are being proposed in response to existing conditions where seasonal flooding requires closure of the highway corridor.

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

MnDOT completed a detailed assessment of traffic and safety conditions along the corridor. The analysis considered existing and future conditions for the project area. Section II. Purpose and Need, and Section III. Alternatives of this EA/EAW explains the project purpose and identifies the transportation needs along this segment of Highway 22.

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

The proposed transportation improvements associated with the preferred alternative will address present and future traffic conditions.

19. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

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 reasonable way as to cause cumulative impacts. Such future projects would be those that are actually planned or for which a basis of expectation has been laid. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects (or discuss each cumulative effect under appropriate Items(s) elsewhere on this form.

In addition to the state definition of cumulative potential effect described above, cumulative impacts are defined by the federal Council on Environmental Quality (CEQ) as "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions" (40 CFR 158.7). The findings below pertain to both cumulative potential effects and cumulative impacts. In the discussion that follows, the terms "cumulative potential effects" and "cumulative impacts" are used interchangeably.

Cumulative potential effects are not necessarily causally linked to the reconstruction of Highway 22 and the related transportation improvements. Rather, cumulative potential effects are the total effect of all known actions (past, present, and future) in the vicinity of the project with impacts on the same types of resources. The purpose of cumulative potential impacts analysis is to look for impacts that may be individually minimal, but which could accumulate and become substantial and adverse when combined with the effects of other actions.

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

The geographic scale of this cumulative potential effects analysis varies by the resource under examination, as described in EAW 19.c. (see below). The cumulative potential effects

analysis is limited to those resources, ecosystems, and human communities directly affected by the proposed project (e.g. wetlands, floodplain, recreational resources, etc.).

The temporal scope of the analysis attempts to consider previous impacts to the resources that occur over time. The year 2025 is considered the current limit of comprehensive planning activities for the area, as the extent of transportation and land use planning projections are generally available up to that date. Thus, year 2025 is used as the temporal horizon for assessing future cumulative impacts.

Past actions in the project vicinity include decades of agricultural, residential, institutional, industrial and commercial development. In addition, there have been transportation infrastructure improvements. All these have resulted in the current state of built environment in the vicinity of the Highway 22 Flood Mitigation Project.

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

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

- MnDOT has had several recently completed highway improvements surrounding the Highway 22 project area and has programmed several future improvements including the following projects:
    - 1998 – Replacement of the Highway 22 Bridge over Minnesota River;
    - 2000 – Highway 22 resurfacing from Blue Earth County line to Minnesota River Bridge;
    - 2001 – Replacement of the Highway 99 Bridge over Washington Avenue;
    - 2009 – Reconstruction of US Highway 169 through Saint Peter;
    - 2014 – Rehabilitation of the Highway 99 Bridge over Minnesota River
    - 2014 – Resurfacing and flood mitigation (raise roadbed) of southbound lanes along US Highway 169 between St Peter and Le Sueur;
    - 2016 – Resurfacing and flood mitigation (raise roadbed) along US Highway 169 between Mankato and Saint Peter;
    - 2018 – Resurfacing northbound lanes along US Highway 169 between Saint Peter and Le Sueur;
    - 2019 – Resurfacing Highway 99 from top of bluff east of Saint Peter to Le Center.
- The City of Saint Peter has had several redevelopment project including commercial improvements at the US Highway 169/Jefferson Avenue intersection and the Nicollet

County Health and Human Services redevelopment located at the US Highway 169/Walnut Street intersection in downtown Saint Peter. Other future land developments in the southern part of Saint Peter are also expected, but no specific plans have been brought forth.

- A regional bike trail between Saint Peter and Mankato is in the early planning stages. The trail will utilize the Highway 22 Bridge and the existing pedestrian/bicycle crossing on the bridge. Once east of the Minnesota River the trail corridor is expected to following the river through the City of Kasota and terminate in east Mankato. An exact alignment has not been determined and the MNDNR will be working with the local units of government to plan the route. Construction of this recreational corridor is not anticipated to occur for several years.

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

Potential impacts from past and reasonable foreseeable future projects have been discussed with the City of Peter. The primary impacts associated with the Highway 22 Flood Mitigation Project will likely involve wetlands, floodplains, vegetation/wildlife, and parklands. Cumulative impacts to these resources from the proposed project and from anticipated future projects are discussed in the sections that follow.

Wetlands

Existing Conditions

Many wetland basins are present in the area and are primarily associated with the Minnesota River floodplain. Many wetlands in the vicinity are in their natural state while other have been affected directly or indirectly over time as a result of past human settlement/development.

Impacts from Proposed Action

As described in EAW Item 11.b.iv – Water Resources (Wetlands), the proposed project will place fill in four wetland basins, resulting in approximately 0.35 acres of permanent wetland impacts. Wetland impacts will be mitigated in accordance with state regulatory requirements through banking. The project is located in the USACE Bank Service Area (BSA) #9 and the Minnesota River – Mankato major watershed (#28). As of November 2014, there are no Corps-approved wetland bank credits in either major watershed #28 or in any other major watershed in BSA #9. A Wetland Mitigation Plan will be prepared and submitted with the wetland permit application for the preferred alternative. The Plan will include detailed design plans and data, the administrative procedures, and will address the need for wetland replacement. The Mitigation Plan will be submitted with the wetland permit application at MnDOT for WCA approval, USACE for permit approval, and potentially the MNDNR for Public Waters Work Permit approval (if required).

Impacts from Other Actions

Wetlands in the project vicinity may be affected by anticipated future development and transportation projects listed above. However, these impacts will be mitigated, as required by state and federal regulations.

Cumulative Potential Effects

Wetlands in Minnesota are protected by Federal law (the Clean Water Act – Section 404) and State law (Minnesota Wetland Conservation Act and Executive Orders) that mandate "no net loss" of wetland functions and values. These federal and state laws require the avoidance of wetland impacts when possible, and when avoidance is not possible, impacts must be minimized and compensated. Both federal and state laws require permits. The Minnesota Wetland Conservation Act requires mitigation of wetland impacts be provided at a minimum 2:1 ratio. Therefore, no substantial cumulative wetland impacts are anticipated to result from the Highway 22 Flood Mitigation Project plus other foreseeable actions in the vicinity.

Floodplain

Existing Conditions

The movement of the Minnesota River across the floodplain area has created a wide array of habitat type suitable for many different plant and animal species. The river floodplain acts as a flood buffer, water filter, and center of biological life in the river ecosystem. However, the floodplain has been affected directly and indirectly over time as a result of past human settlement/development. In some areas the Minnesota River floodplain has been dramatically altered by construction of levees and dams (e.g. Mankato area), impacted by livestock grazing, river channel incision, and floodplain filling.

Impacts from Proposed Action

As described in EAW Item 9.a.iii (Floodplain District), portions of the existing Highway 22 alignment lie within the Minnesota River floodplain and are prone to flooding during flood events. The proposed project will elevate the existing section of Highway 22 above the 100-year flood elevation. A hydrodynamic modeling effort of the Minnesota River, conducted by MnDOT, illustrates that following construction of the proposed Highway 22 improvements that there will be little to no change in flood extents, water surface elevation, velocity profiles, or changes in velocities for each of the modeled events (50-yr., 100-yr., and 500-yr. flood events). This is primarily due to the fact that the proposed improvements include the construction of a new overflow single span bridge along Highway 22 that will maintain the flowable area near Highway 22 even though the raising of the roadway requires added fill material within the Minnesota River floodplain.

Impacts from Other Actions

The Minnesota River floodplain may be affected by the anticipated future transportation and land use developments listed above. In fact, several areas along existing US Highway 169, both north and south of Saint Peter, are proposed to be raised above the 100 year flood elevation of the Minnesota River as part of other flood mitigation projects. These improvements have also undergone floodplain modeling to ensure no adverse impacts to the floodplain, including flood extents, water surface elevation, velocities, and flood profiles will occur. Appropriate mitigation for floodplain impacts (habitat, wetlands, etc.) will be required for each project and will be identified as part of their environmental review and permitting processes.

The anticipated changes to the Minnesota River floodplain that will result from the proposed Highway 22 Project and the other actions have been incorporated in to hydrodynamic modeling efforts completed by MnDOT. The model results indicate there will be no change

in flood extents, water surface elevation, velocity profiles, or changes in velocities for each of the modeled events

Cumulative Potential Effects

Presidential Executive Order 11988 and Minnesota Statute 103F.101-155 on floodplain management set the basis for consideration, evaluation, and mitigation of floodplain impacts. These federal and state requirements protect against substantial increases in flood risk, impacts to a floodplain's natural and beneficial values and prohibit incompatible floodplain development. Therefore, no substantial cumulative floodplain impacts are anticipated to result from the Highway 22 Flood Mitigation Project plus other foreseeable actions in the vicinity.

Vegetation and Wildlife

Existing Conditions

Where development has occurred in the study area, impacts to vegetation and wildlife have also occurred. Impacts are greatest where natural areas are developed and trees, vegetation and wildlife habitat are impacted. The health and abundance of wildlife populations is largely dependent on the quality and quantity of habitat available to support them. In some areas, past and present development has fragmented and reduced the quality of wildlife habitat.

The Highway 22 Flood Mitigation Project study area contains several different ecosystems due to the proximity of the Minnesota River, associated floodplain, and upland areas. Vegetative resources in and near the study area include, but are not limited to, floodplain forest, lowland forests, wetlands, and brushlands. Threatened and endangered plant and animal resources have been identified in the study area (see EAW Item 13.b).

Impacts from Proposed Action

The Highway 22 corridor passes through an area characterized by the Minnesota River floodplain, which is rich in natural resources and wildlife. The proposed action will result in minor impacts to wildlife habitat as the highway corridor will continue to create a barrier to wildlife movements within the floodplain and along the banks of the river.

Since the Highway 22 alignment is proposed to remain in its current corridor, areas impacted by the project would experience continued exposure to items such as storm water runoff, roadway debris, road salts used for winter deicing, and noise. Impacts to vegetation and wildlife habitat have the potential for indirect impacts to resources within the broader ecosystem due to the interconnectedness of ecological relationships among habitat and wildlife. Raising the roadway on the existing alignment minimizes potential harm. Storm water treatment and construction BMPs will be utilized to avoid and minimize impacts.

Impacts from Other Actions

Other future actions in the cumulative potential effects geographic study area could result in loss of native vegetation, wooded areas, wetlands, and wildlife habitat. The majority of land located immediately adjacent to the Highway 22 study area is under public ownership (City of Saint Peter, LeSueur County, and MNDNR) and thereby protected from future land use development. However, other lands within the area are privately owned and future actions, including residential and/or commercial developments, could impact vegetation and wildlife habitat. Local land use planning and preliminary studies required by the City and County will

help avoid and/or minimize potential impacts and where impacts are unavoidable, it is likely that the exercise of land use controls through project review and permitting by the appropriate regulatory agencies would include use of design considerations and mitigation to reduce the overall impact.

Cumulative Potential Effects

The Highway 22 Project, in combination with other foreseeable actions in the area, could result in cumulative impacts on vegetative and wildlife habitat resources. Development controls of the governmental units within the study area (City of Saint Peter and Nicollet County) include one or more of the following: natural resource corridor plan, conservation easements, woodland management ordinance, shore land protection ordinance, tree preservation and reforestation ordinance, bluff protection ordinance, wetland protection ordinance, wooded steep slopes ordinance. These local land use controls will help protect natural areas as development proposals are brought forth for consideration. In addition, large tracts of land that provide critical habitat would continue to exist in a natural state through the protection of publically owned land along the banks of the Minnesota River.

Parklands

Existing Conditions

Parklands in the cumulative potential effects geographic study area include several City of Saint Peter and LeSueur County park properties. These properties provide an array of passive and active recreational opportunities. Immediately adjacent to the Highway 22 corridor is Riverside Park (Nature Area and Extension), which consists of over 200 acres of passive use parkland. Some recreational amenities/improvements have been made to the park including multi-use trail, canoe launch along Minnesota River, an eighteen hole disc golf course, and walking trails. South of Highway 22 and Riverside Park Extension Area lies approximately 60 acres of LeSueur County Parkland. This site is unimproved floodplain forestland.

Impacts from Proposed Action

The proposed improvements will require the temporary occupancy of approximately 0.046 acres of Riverside Park, a Section 4(f) & Section 6(f) resource, in order to reconstruct the park access road approach to Highway 22. Furthermore, the 2.71 acres of parkland that were planned to be acquired as part of the early transportation improvements to Highway 22 (constructed in 1999) will be transferred over to MnDOT right of way. As part of the mitigation for the conversion of Section 6(f) land, MnDOT is proposing to acquire land from the MNDNR Forestry Division. The replacement property is located immediately south of Riverside Park. The replacement property will be of equal or greater value and recreational use as the property and will be transferred to the City of Saint Peter.

Impacts from Other Future Actions

Future transportation projects and land use developments are not anticipated to substantially affect area parklands. However, improvements proposed along US Highway 169 in the area of Seven Mile Creek Park will potentially require the acquisition of park property owned and operated by Nicollet County. Similar to the Highway 22 Flood Mitigation Project, the improvements along US Highway 169 propose raising the roadway profile several feet in order to lift the road surface above the 100 year flood elevation of the Minnesota River. Also, as the case with Highway 22, the US Highway 169 corridor is bordered on both sides by park property, which limits the options for making the

improvements without impacting parkland. A separate environmental review will be conducted for improvements to US Highway 169.

Cumulative Potential Effects

Foreseeable future actions and the proposed highway improvements have been in the planning stage for several years and coordination with local units of government have been ongoing including the likely impacts to parkland. Mitigation for potential impacts will likely include replacement parkland of equal or great value and recreational use.

Cumulative Potential Effects Conclusion

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

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

Not applicable.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature: _____ Date: 12-10-14

Lynn Clarkowski, PE

Title: Chief Environmental Officer, MnDOT Environmental Stewardship Department Director

B. ADDITIONAL FEDERAL SOCIAL, ECONOMIC AND ENVIRONMENTAL ISSUES

This section details those environmental subject areas not addressed as part of the EAW form presented in Section V.A.

1. Section 4(f) of the Transportation Act of 1966 and Section 6(f) of the Land and Water Conservation Fund Act of 1965

Section 4(f) legislation as established under the Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) and as revised in 2005 by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) [which included moving the Section 4(f) regulations to 23 CFR 774] provides protection for publicly owned parks, recreation areas, historic sites, wildlife and/or waterfowl refuges from conversion to a transportation use.

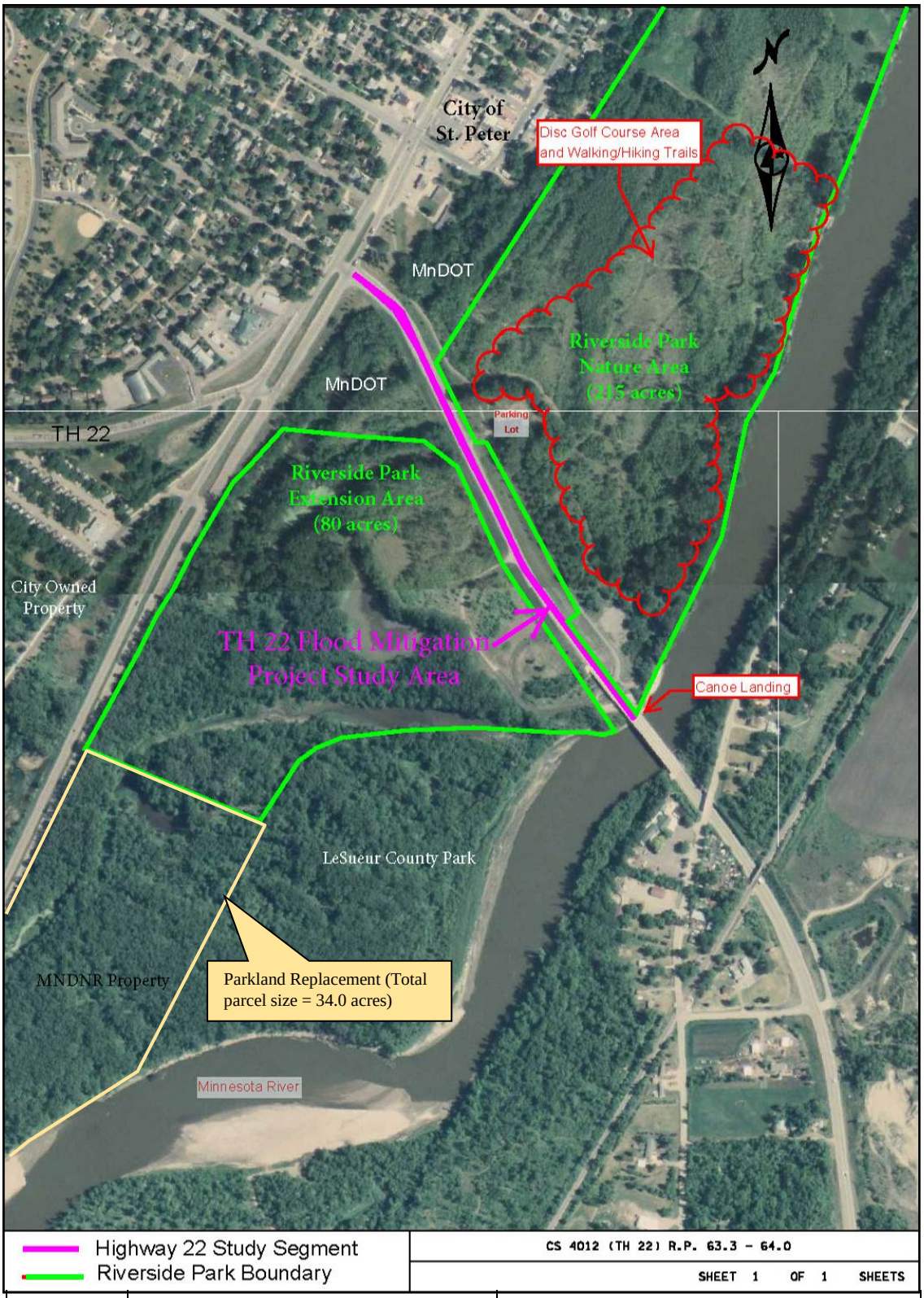
Land acquired or improved with funding through the Land and Water Conservation (LAWCON) Act of 1965, is eligible for protection under Section 6(f) legislation (16 USC 4602-8(f) (3)). The intent of LAWCON is to protect land used for outdoor recreational purposes. LAWCON stipulates that any land planned, developed or improved with LAWCON funds cannot be converted to other than outdoor recreational use unless replacement land of at least equal fair market value and reasonably equivalent usefulness is provided. Generally, when LAWCON funds are used to purchase parkland or make site improvements the Section 6(f) regulations indicate that the entire park shall then be considered as covered under the conversion restriction.

Section 4(f)/6(f) Resources

Within the Highway 22 Flood Mitigation Project study area, Riverside Park Nature Area and Riverside Park Extension are located immediately adjacent to the north and south sides of the highway, respectively (See Figure 12 on the following page). The Riverside Park properties are owned by the City of Saint Peter and are considered a Section 4(f) resource. Also, LAWCON funding was applied to Riverside Park, making it eligible for protection under Section 6(f). The combined size of Riverside Park Nature Area and Riverside Extension Area is 295 acres.

The main function of the parkland is to provide public open space for passive recreational activities. The park has limited improved amenities, but does include walking/hiking trails, a canoe landing on the Minnesota River, shore fishing, and an 18-hole disc golf course (see Figure 12). Access to the parkland is gained off Highway 22 where a small parking lot is located. Other means of access to the park are from the Minnesota River (via watercraft) or hiking trails to the north that connect to other city-owned park property (Mill Pond-Riverside Park). A City owned pedestrian path from the north (near US Highway 169) also provides access to the Riverside Park Nature Area. Access to the Riverside Park Extension property (located south of Highway 22) is gained via a trail connection under the Highway 22 Bridge over the Minnesota River.

In December 1996, an Environmental Assessment and Final Section 4(f)/Section 6(f) Evaluation was approved for a project that included the reconstruction of Highway 22 (State Project 0714-28, 4012-29, 4012-18, & 4012-20). Appendix D contains a copy of the 1996 Final Section 4(f)/6(f) Evaluation.



Highway 22 Flood Mitigation Project

Figure 12
Riverside Park Location Map

The 1996 project included constructing a new bridge across the Minnesota River, constructing a spur dike upstream from the new bridge, reconstructing roadway embankments, and trail improvements. The documentation identified construction impacts to 1.4 acres of Riverside Park Nature Area and Riverside Park Extension. Impacts from the 1996 project were mitigated off-site with the establishment (by MnDOT) of a trailhead (parking lot) for the Sakatah Regional Trail. However, the Section 6(f) conversion process that should have turned the park property over to highway right of way was never finished.

MnDOT had also identified an additional 1.36 acres of land that should have been identified in the original documentation as permanent right of way for maintaining Highway 22 and the transportation related infrastructure (roadway, bridge, spur dike, drainage features, etc.).

Since completion of the earlier Highway 22 improvements (constructed in 1999), MnDOT has been operating and maintaining the transportation facilities in the area of Riverside Park Nature Area and Riverside Park Extension to ensure safe and efficient conditions for the travelling public. No recreational improvements have been constructed and none are planned within these areas (totaling 2.76 acres) that have been proposed to be acquired as roadway right of way.

The Highway 22 Flood Mitigation Project, which includes raising the highway driving surface by several feet in the area of the park access road, will require a temporary easement from the City of Saint Peter within an approximately 0.05 acre area of Riverside Park Nature Area in order to flatten the grade of the park access road to Highway 22. This temporary occupancy would not constitute a Section 4(f) use because it meets all of the conditions listed in 23 CFR 774.13(d) as follows:

- The duration of reconstruction of the roadway approach within the 0.05 acre area of Riverside Park will be temporary (1-2 weeks) in nature, less than the time needed for construction of the project, and there will be no change in ownership of the land;
- The scope of the work will be minor, and the nature and the magnitude of the changes to the Section 4(f) property are minimal. Reconstruction of the park road consists of flattening the steepness of the slope in order to meet the grade raise of Highway 22;
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of Riverside Park, on either a permanent or temporary basis;
- The 0.05 acres of land being used will be fully restored to a condition that is at least as good as the condition that existed prior to the project.

The agency with jurisdiction over the Section 4(f) land, the City of Saint Peter, has concurred that the proposed reconstruction of the park road constitutes a temporary occupancy of Section 4(f) land (see correspondence in Appendix E). Furthermore, the reconstruction of the park road will not cause the conversion of any land acquired, planned or developed with LAWCON funds.

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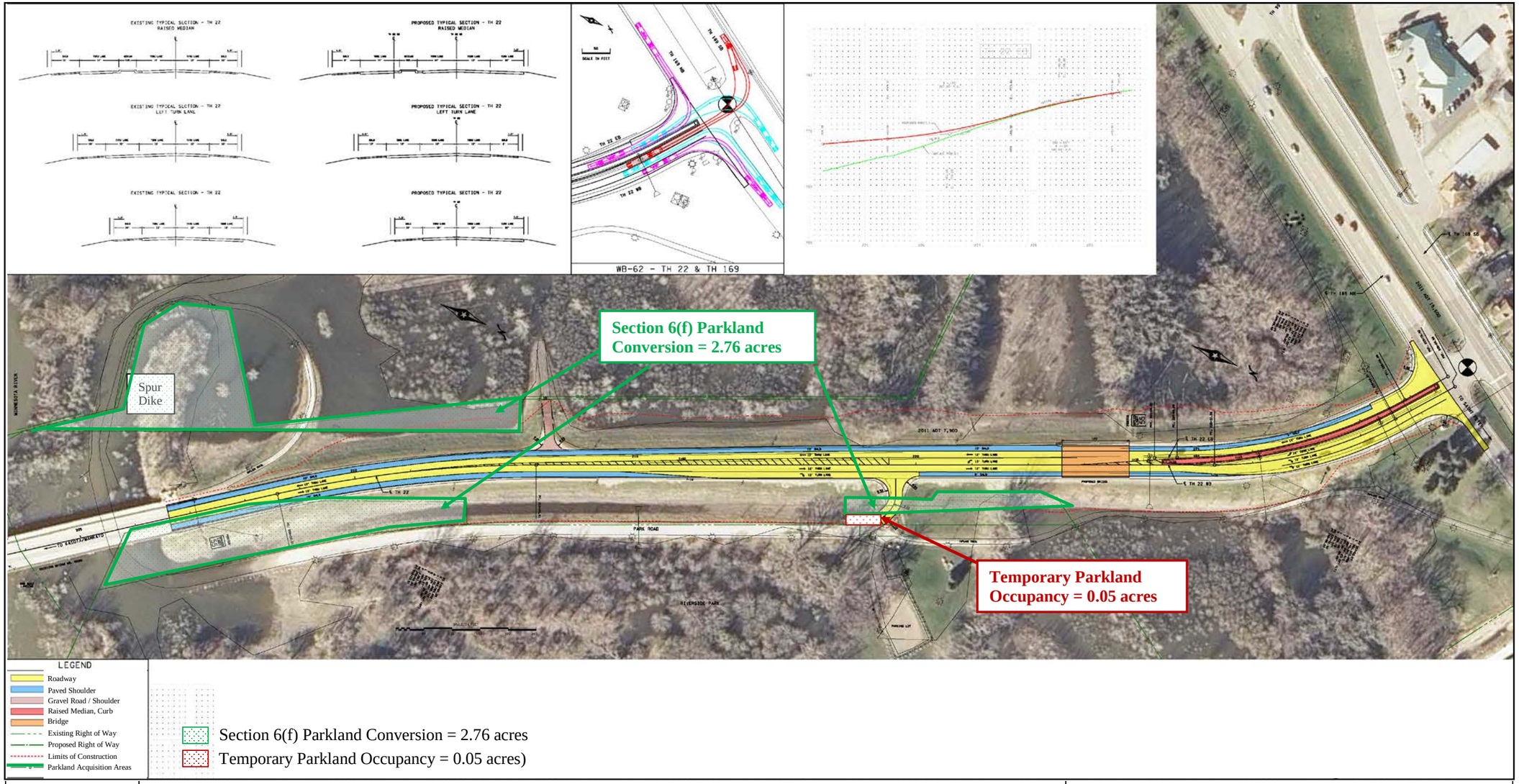

MINNESOTA DEPARTMENT OF TRANSPORTATION	**Highway 22 Flood Mitigation Project**	**Figure 13** **Preliminary Layout and Parkland Impacts**

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Section 4(f)/6(f) Coordination

Coordination with the City of Saint Peter began in 2010 when the Minnesota River flood waters closed Highway 22 to traffic for the second time that year. Ongoing coordination between MnDOT and the City has occurred during the planning and preliminary design phase of the project development process. Coordination with the MNDNR Parks Grant Coordinator for the Section 6(f) process, Minnesota State Historic Preservation Office, and the US Department of Interior has also occurred regarding the proposed project components and effects on adjacent parklands.

Through these coordination efforts, replacement parkland from an adjacent parcel owned by the MNDNR and managed as a forest resource has been identified. MnDOT, the MNDNR, and the City of Saint Peter are discussing the details of the land transfer. Because the MNDNR parcel is larger than the amount required for LAWCON replacement, it has been determined that MnDOT will acquire the land from the MNDNR and transfer an amount to the City that is of equal or greater value and equivalent function (approximately 30 acres) of the Riverside Park property that will have been converted as a result of transportation improvements to Highway 22. The MNDNR Parks Grant Coordinator has reviewed the Project Description-Environmental Screening Form (PD-ESF) and has indicated that the Department of Interior documentation will be processed following completion of the federal environmental review process.

2. Right-of-Way and Relocation

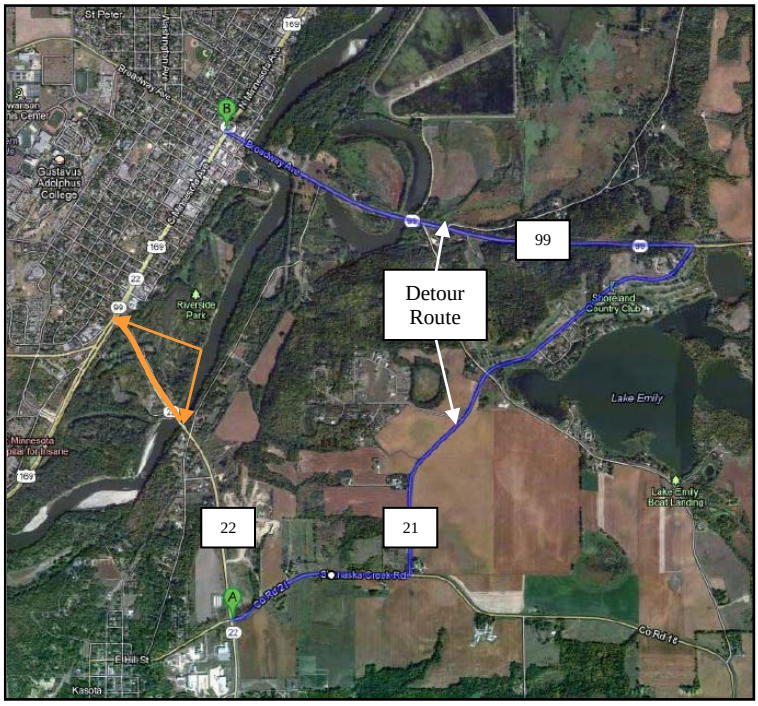
No relocations are anticipated with the project improvements. If during the final design process of the preferred alternative it is determined that relocation(s) are necessary, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and 49 CFR Part 24 will be followed, which provides that assistance be granted to persons, businesses, farms, and non-profit organizations that are displaced by public improvements, such as the Highway 22 Project.

A MnDOT project completed in the late 1990's that involved the construction of the existing roadway embankment and a spur dike near the Minnesota River Bridge previously encroached into property that was not owned by MnDOT. While this earlier project went through the appropriate review and approval processes, including state and federal environmental review and Section 4(f)/6(f) documentation, the actual right of way acquisition process of converting the impacted property over to highway right of way was never completed. As a result, portions of the existing Highway 22, including portions of the roadway embankment, ditches, driving surface, and Minnesota River Bridge, are located on property under the ownership of the City of Saint Peter and is currently designated as city park property (Riverside Park). As a result, the proposed Highway 22 Flood Mitigation Project will rectify the transportation right-of-way and require approximately 2.76 acres of land from Riverside Park.

3. Social and Community Impacts

Construction Period – Temporary Impacts

The entire corridor west of the TH 22 Bridge over the Minnesota River will need to be closed for the duration of construction. Traffic will be directed to follow a detour route along the east side of the Minnesota River. The detour route will utilize LeSueur County Road 21 which generally runs north-south between Highways 22 and 99. A detailed construction staging plan will be prepared during final design and will indicate when and where detours would be expected. The staging plan will be shared with the City of Saint Peter, Nicollet and LeSueur Counties, media outlets, and posted on the project website.



Long-term Impacts

The proposed project would reduce the number of road closures caused by flooding and improve mobility. Therefore it is not expected to cause any adverse long-term impacts to the surrounding community. No categories of those uniquely sensitive to transportation (i.e. children, elderly, minorities, and/or persons with mobility impairments) would be affected by the project.

Beyond Riverside Park, there are no other community facilities located directly adjacent to the Highway 22 project area. Existing pedestrian and bicycle access and movements will be maintained and improved since roadway closures will be reduced with the raising of the roadway profile above the 100-year flood elevation.

4. Considerations Relating to Pedestrians and Bicycles

The existing conditions in the project area include a moderate amount of pedestrian and bicycle facilities. The existing Highway 22 alignment has paved shoulders that allows commuter bicycles to utilize the outside shoulders of transportation corridor. Furthermore, an existing 8-foot wide paved trail is located along the north side of Highway 22 and provides access to Riverside Park via US Highway 169. The trail connects to the existing parking lot and park access road which parallels Highway 22 to the Minnesota River and canoe launch area. The trail passes under the Highway 22 Bridge over the Minnesota River and loops around to provide a connection to the highway bridge. The bridge includes a separated trail (via barrier and guardrail) along the south side and the trail continues southeast along Highway 22.

During construction the 8-foot paved trail will remain open to provide access to Riverside Park. Commuter bicycles will also be able to access the bike path on the Highway 22 Bridge via the park road under the bridge and bike path connection to the bridge. Temporary closers of the bike path connection may be necessary, but will be minimized to the extent possible.

5. Environmental Justice

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.

Background

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994, directed that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority populations and low-income populations in the United States..." ['Minority' and 'low income' are defined in the federal environmental justice guidance. 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.] This project has federal funding and federal permit requirements and is considered a federal project for purposes of compliance with the Executive Order.

Project Area Demographics

The first step in the Environmental Justice evaluation and documentation process is to determine if an environmental justice 'population' is present in the project area. Review of census data (i.e., race and income characteristics) is a useful starting point for this assessment. The two census blocks that make up the Highway 22 project area contain only publically owned land (City of Saint Peter – Riverside Park, MnDOT right-of-way, and MNDNR Forestry property) and no population. Therefore, census block group data was used for analyzing project

area demographics. A map locating the census blocks, block groups, and census tract for the project area vicinity can be found in Appendix F.

Minority Populations

The information used in this analysis is from the 2010 Census. Minority data for the project area is summarized by census block group in Appendix F. The term "minority" is defined using race and ethnicity definitions from Census 20103. Minority populations are identified when the minority percentage in a given block group exceeds the minority percentage of the county.

As indicated in the census data provided in Appendix F, the project area is predominantly comprised of white population, while minority populations comprise much lower percentages of the population. For the identified block groups within the project area, Census 2010 data indicate a minority population between approximately eight and fourteen percent of the block group population, which is slightly greater than the Nicollet County average of approximately six percent. As such, a closer look at the project area was necessary to determine if the study area contained any readily identify minority populations.

The Highway 22 Flood Mitigation Project study area is located in a part of Saint Peter with minimal development due to the proximity of the Minnesota River and existing transportation infrastructure. Currently, there are no private developments that directly abut this segment of Highway 22 and no privately owned right-of-way impacts are proposed.

Low-Income Populations

For the purposes of this study, the term "low-income" is defined as persons with incomes below the 2010 poverty level. Income data for the study area came from the year 2008-2012 American Community Survey (ACS) 5-year Estimates. Because this data is not available at the block group level, data from the census tract within the project area is reported. Low-income populations are identified when the percentage of low-income persons in a given census tract exceeds the percentage of low-income persons in the city and/or county.

As indicated in the ACS income data, the median household income of the City of Saint Peter is $50,279 and 22.9 percent of persons within the City have income below the 2012 poverty level. For the identified census tract (Tract 4804) within the project area, the ACS data reports 21.6 percent of persons with income below the 2012 poverty level. A manufactured home development is located in the southern part of Saint Peter. This residential development is located approximately ½-mile southwest of the Highway 22 project area near the intersection of US Highway 169 and the west leg of Highway 99.

[3] Minority: Black or African American, Hispanic, Asian American, American Indian/Alaskan Native, and Native Hawaiian or Pacific Islander.

Environmental Justice Analysis

Available census data and a field review of the project area indicated that minority and low-income populations are not likely to be present in the project area. Therefore, a detailed analysis as defined by Executive Order 12898 is not required for the proposed action to determine if there are disproportionately high or adverse effects.

Environmental Justice Finding

The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations. Project impacts are distributed evenly throughout the project corridor, and the proposed improvements will not have disproportionately high or adverse human health or environmental effects on any minority population or low-income population.

VI. PUBLIC/AGENCY INVOLVEMENT

A. PUBLIC AND AGENCY OUTREACH

The Highway 22 Flood Mitigation Project development process included a public and agency involvement program that was initiated at the on-set of the study, and was ongoing and active throughout the project development process. There were several elements to the involvement program, each of which is detailed below.

Target Audiences:

- City of Saint Peter
- Area Residents/Commuters/Users
- Resource Agencies (MNDNR, NPS, USACE, etc.)

This early coordination process has provided the opportunity for interested individuals to express their ideas and concerns. MnDOT will continue to cooperatively work with the public and other agencies to address these and additional concerns.

Project Web Page

An informational project web page has been established at http://www.dot.state.mn.us/d7/projects/floodmitigation/index.html. The site provides an additional means of distributing information. The site is periodically updated to reflect project developments, planning/design changes, and to address new issues.

B. PUBLIC COMMENT PERIOD AND PUBLIC MEETING

A public meeting will be held during the required comment period for the EA/EAW and Section 4(f) Evaluation. The public meeting will provide an overview of the potential project impacts, environmental documentation, and an opportunity to ask questions and to formally submit public comments verbally or in writing. Comments will be received at the meeting and for a minimum of 10 days thereafter and will become a part of the official record.

C. REPORT DISTRIBUTION

Copy(ies) of this document have been sent to federal and state resource agencies, local government units, libraries, and others as per Minnesota Rule 4410.1500 (Publication and Distribution of an EAW).

D. PROCESS BEYOND THE PUBLIC COMMENT PERIOD

Following the comment period, MnDOT and the FHWA will make a determination as to the adequacy of the environmental documentation. If further documentation is necessary it could be accomplished by preparing an Environmental Impact Statement (EIS), by revising the Environmental Assessment, or clarification in the Findings of Fact and Conclusions, whichever action is appropriate. The National Park Service (NPS) will make a determination regarding the proposed conversion of LAWCON property (Riverside Park) and the proposed mitigation for the impacts.

If an EIS is not necessary, MnDOT will prepare a Findings of Fact and Conclusions (FOF&C) and a Negative Declaration for the state environmental requirements. The FOF&C will include a Final Section 4(f) Evaluation and any additional information that has become available since the publication of the EA/EAW. If the FHWA agrees that the EA is adequate and the project does not have the potential to result in significant environmental harm, it will issue a Finding of No Significant Impact (FONSI). Notices of the federal and state decisions and availability of the above documents/determinations, will be placed in the Federal Register and the Minnesota Environmental Quality Board (EQB) Monitor. MnDOT will distribute the FOF&C, Negative Declaration, and FONSI to the EA/EAW distribution list and publish notices in local media announcing the environmental and project alternatives decisions that were made. Copies of these documents will be made available to the public upon request.

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Appendix A

MnDOT Office of Environmental Stewardship: Section 7 Correspondence and MNDNR Early Notification Response

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From:	Alcott, Jason (DOT)
To:	Harff, Peter (DOT)
Cc:	Bob Rogers (brogers@sehinc.com); Moynihan, Debra (DOT); Andrew_Horton@fws.gov
Subject:	S.P. 4012-36 - ESA (Section 7) - Determination of No Effect/No Jeopardy
Date:	07/16/2014 10:48 AM
Attachments:	Tree Impacts_photos.jpg

No Effect Determination/No Jeopardy:
S.P. 4012-36, Trunk Highway 22
Flood Mitigation Project - Roadway Reconstruction
City of St. Peter, Nicollet County

Federally-Listed Species/Designated Critical Habitat in the Action Area
Section 7 of Endangered Species Act of 1973, as amended (Act), requires each Federal agency to review any action that it funds, authorizes or carries out to determine whether it may affect threatened, endangered, proposed species or listed critical habitat. Federal agencies (or their designated representatives) must consult with the U.S. Fish and Wildlife Service (Service) if any such effects may occur as a result of their actions. Consultation with the Service is not necessary if the proposed action will not directly or indirectly affect listed species or critical habitat. If a federal agency finds that an action will have no effect on listed species or critical habitat, it should maintain a written record of that finding that includes the supporting rationale. According to the official County Distribution of Minnesota's Federally-Listed Threatened, Endangered, Proposed, and Candidate Species list (revised in June 2014), maintained by the Service, the project county is within the distribution range of the following:

Nicollet	Northern long-eared bat Myotis septentrionalis	Proposed as Endangered	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer.

There are no known occurrences of federally-listed species or designated critical habitat within the action area, therefore, a determination of no effect has been made.

Proposed Federal Species in the Action Area
Section 7(a)(4) requires Federal agencies to confer with the Services on any agency action that is likely to jeopardize the continued existence of any species proposed for listing or result in the adverse modification of critical habitat proposed to be designated. A conference may involve informal discussions between the Services, the action agency, and the applicant. Following informal conference, the Services issue a conference report containing recommendations for reducing adverse effects. These recommendations are discretionary, because an agency is not prohibited from jeopardizing the continued existence of a proposed species or from adversely modifying proposed critical habitat. However, as soon as a listing action is finalized, the prohibition against jeopardy or adverse modification applies, regardless of the stage of the action.

According to the official County Distribution of Minnesota's Federally-Listed

Threatened, Endangered, Proposed, and Candidate Species list (revised in June 2014), maintained by the Service, the project county is within the distribution range of the Northern long-eared bat (Myotis septentrionalis) which is currently proposed for listing as an endangered species (Federal Register October 2, 2013). The Service is currently working on developing consultation guidance for lead federal agencies to use in making determinations of effect for this species. Until this guidance is distributed and the species officially listed, the lead federal agency must assess the potential for jeopardy.

There is a known northern long-eared bat hibernaculum within the general vicinity of the proposed action (approximately 1 mile). Given the relatively close proximity of this hibernaculum, it can be reasonably assumed that this project will be taking place in an area that the northern long-eared bat uses during its summer foraging activities. This action has been coordinated with the Service and it has been determined that because the construction of this project will not directly or indirectly impact the hibernaculum and will only involve a minimal amount of tree removal (less than ½ acre –see attached pictures), that this action will not jeopardize the continued existence of this species. Please note: if the project has not been completed by the time the listing becomes official, further coordination and possible consultation with the Service may be necessary.

Jason Alcott
Minnesota Department of Transportation
Office of Environmental Stewardship
395 John Ireland Boulevard
St. Paul, MN 55155
Phone: 651-366-3605
Email: Jason.alcott@state.mn.us

From: Harff, Peter (DOT)
To: Tess, Zachary (DOT); Bob Rogers
Subject: Fwd: DNR comments on MnDOT Early Notification Memo, TH22 crossing of Minn R floodplain at St Peter (SP4012-36)
Date: 06/20/2014 11:45 AM
Attachments: (Email status Peter Harff) MnDOT Early Notification Memo, change of TH 22 Minn R floodplain at St. Peter (SP4012-36).pdf
ATT00001.htm
BR 40005 Hydraulic Letter 20Nov2013.pdf
ATT00002.htm
DNRbasemap(new).pdf
ATT00003.htm
Entanglement EC blanket.pdf
ATT00004.htm

From: "Leete, Peter (DOT)" <peter.leete@state.mn.us>
To: "Novak, Rebecca (DOT)" <rebecca.novak@state.mn.us>, "Harff, Peter (DOT)" <peter.harff@state.mn.us>
Cc: "Alcott, Jason (DOT)" <jason.alcott@state.mn.us>, "Beckman, Craig (DNR)" <craig.beckman@state.mn.us>, "Straumanis, Sarma (DOT)" <sarma.straumanis@state.mn.us>, "Joyal, Lisa (DNR)" <Lisa.Joyal@state.mn.us>, "Troyer, Brett (DOT)" <brett.troyer@state.mn.us>, "Mixon, Kevin (DNR)" <kevin.mixon@state.mn.us>, "Bennett, Garry (DNR)" <garry.bennett@state.mn.us>, "Sundmark, Lee J (DNR)" <lee.sundmark@state.mn.us>, "Stangel, Joseph (DNR)" <joseph.stangel@state.mn.us>
Subject: DNR comments on MnDOT Early Notification Memo, TH22 crossing of Minn R floodplain at St Peter (SP4012-36)

Rebecca/Peter,
This email is the DNR response for your project records. This project has been reviewed in bits and pieces over recent years, though I have not put things into a single ENM comment for your records. This project is a proposed reconstruction of TH22 between TH169 and the Minnesota River Bridge. Reconstruction includes raising the road grade and construction of an additional bridge to act as a flood flow structure. Overall the ENM and early design identifies DNR concerns, though please consider the following comments as final designs and special provisions are developed:

1. For MnDOT planning purposes, attached to this email is a map of the project area (DNRbasemap.pdf) showing nearby locations of DNR areas concern (if they exist), such as Public Waters (in dark blue), designated aquatic invasive species (red), snowmobile Trails (in pink), and various green shaded polygons for Sites of Biodiversity Significance. These are all publically available information layers. The Natural Heritage Information System (NHIS) database has been reviewed, though in order to prevent the inadvertent release of a rare features location, those details are not shown on the map. Comments on potential impacts to rare features listed in the NHIS comments are below. If you have questions regarding proposed work near any of the data shown, please give me a call. Your GIS folks also can access this data from the DNR's Data Deli website at http://deli.dnr.state.mn.us/. The following files will allow the creation of the same map and ease your cross reference for road locations.

MCBS Railroad Rights-of-Way Prairies

MCBS Native Plant Communities

MCBS Sites of Biodiversity Significance

Public Waters Inventory (PWI) Watercourse Delineations

Public Waters Inventory (PWI) Basin Delineations

DNR managed lands such as Wildlife Management Areas, Scientific & Natural Areas, Public Access, State Parks, State Forests, etc

Trout streams, including PLS sections with trout streams

FEMA layers for flood impact potential

Minnesota Trails (water, state, and snowmobile).

2. The Minnesota River is a DNR Public Waters. However, no in-water work is proposed at the river bridge itself, though there is not enough information for a determination of impacts to Public Waters within the floodplain at this time. When the project gets to 60% plans, please submit them for DNR permit determination. Specific items to incorporate into design and construction are:

a. We typically limit work in the water (Work Exclusion dates) to allow for undisturbed fish migration and spawning. The restriction dates for lakes are Ice Out (~March 1) through June 15 and for river and streams. While we may revise these dates for a particular project, there may still be limitations on the types of work during this time.

b. Please be aware that the MPCA recognizes the DNR "work in water restrictions" during specified fish migration and spawning time frames. During the restriction period, their permit states that all exposed soil areas that are within 200 feet of the water's edge and drain to these waters, must have erosion prevention stabilization activities initiated immediately after construction activity has ceased (and be completed within 24 hours).

c. Revegetation of disturbed soils should include native mixes in areas that are not proposed for mowed turf grass. Please follow the native recommendations in the 'Turf Establishment Recommendations – dated April 14, 2014' for your district as found on the MnDOT website: http://www.dot.state.mn.us/environment/erosion/seedmixes.html. In addition, for meeting DNR concerns, revegetation may include woody vegetation (trees and shrubs) in addition to grasses and/or forbs. Please contact your Districts representatives for the Erosion Control & Stormwater Management Unit, Roadside Vegetation Management Unit, and the Districts Maintenance staff to help determine appropriate permanent revegetation plans.

3. Please remind contractors that a separate water use permit is required for withdrawal of more than 10,000 gallons of water per day or 1 million gallons per year from surface water or ground water. GP1997-0005 (temporary water appropriations) covers a variety of activities associated with road construction and should be applied of if applicable. An individual appropriations permit may be required for projects lasting longer than one year or exceeding 50 million gallons. Information is located at:
http://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/permits.html

4. The Minnesota Natural Heritage Information System (NHIS) has been queried to determine if any rare plant or animal species, native plant communities, or other significant natural features are known to occur within an approximate one-mile radius of the project area). In order to prevent the inadvertent release of the location of specific listed or rare species contained in the NHIS, I have not identified their location on the attached 'DNRbasemap.pdf'. Based on this query, several rare features have been documented within the search area (for details, please contact me). Please note that the following rare features may be impacted by the proposed project:

a. Bat colonies, including a hibernaculum has been identified within the NHIS search area. Contact the MnDOT Biologist (Jason Alcott) at jason.alcott@state.mn.us<mailto:jason.alcott@state.mn.us> or 651-366-3605 in regards to the latest guidance for bat protection measures. As you are aware, a couple bat species are now candidates for federal designation. Jason Alcott is the MnDOT biologist that is in contact with appropriate personnel from both the USFWS and DNR in regards to the latest guidance on this matter.

b. Several State listed Threatened or Endangered species (fish or native mussel populations) are known to exist in the main stem of river. However, given the nature and location of the proposed project, we do not believe the project will negatively affect any known occurrences of rare features in the river itself.

c. Adjacent lands do contain amphibians and reptiles that are listed as state species of concern; Western foxsnake (Apalone mutica), and North American racer (Coluber constrictor) have been documented in the vicinity of the proposed project. Due to their presence, we request that the use of erosion products (EG erosion control blanket) should be limited to 'bio-netting', 'natural-netting' or woven type products, and specifically not allow welded plastic mesh netting. See page 20 of chapter one in the manual:' Best Practices for Meeting GP 2004-0001', at http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html

I've also attached a new draft info sheet on this subject

d. Nearby floodplain forest areas are considered a Site of Biodiversity significance, also ranked 'moderate', for its Maple-Basswood Forest composition. Moderate sites contain occurrences of rare species, moderately disturbed native plant communities, and/or landscapes that have strong potential for recovery of native plant communities and characteristic ecological processes. This area should be identified as an 'Area of Environmental Sensitivity' on plans. See the attached AES best practices guidance. The concern along this segment is that soil disturbance, incidental herbicide exposure, hydrologic alterations, tree disturbance, competition from non-native, sod-forming grasses, introduction of weed seeds, or shading by encroaching shrubs can all lead to degradation of these sites. The attached guidance is based on your spec 2572.3, and includes protection measures of areas such as these. Best Practices #1, #4, #5, #8, and #9 of the attached should suffice.

i. #1. Design the project to avoid impacts to any identified Area of Environmental Sensitivity.

ii. #4. Protect and preserve vegetation from damage in accordance with MnDOT Spec 2572.3

iii. #5. Prohibit vehicle and construction activities, including the location of field offices, storage of equipment and other supplies at least 25 feet outside the dripline of trees or other identified Area of Environmental Sensitivity to be preserved, also in accordance with MnDOT spec 2572.3

iv. #8. Redundant sediment/erosion control Best Management Practices (BMP's) may be required for protection of areas of environmental sensitivity.

v. #9. Revegetate disturbed soils with native species suitable to the local habitat. Revegetation of disturbed soils should include native mixes in areas that are not proposed for mowed turf grass. Please follow the native recommendations in the 'Turf Establishment Recommendations – April 14, 2014' for your district as found on the MnDOT website: http://www.dot.state.mn.us/environment/erosion/seedmixes.html. For bridge replacement or culvert repairs utilize the provided Pond seeding options. In addition, for meeting DNR concerns, revegetation may include woody vegetation (trees and shrubs) in addition to grasses and/or forbs. Please contact your Districts representatives for the Erosion Control & Stormwater Management Unit, Roadside Vegetation Management Unit, and the Districts Maintenance staff to help determine appropriate permanent revegetation plans.

The Natural Heritage Information System (NHIS) is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. If information becomes available indicating additional listed species or other rare features, further review may be necessary.

5. There are local snowmobile trails in the project area. See the pink lines in the attached DNRbasemap.pdf. Any proposed utility work, such as poles and support wires should be aware of this use in your right of way.

6. The Minnesota River is managed as a State Water Trail (formerly known as a 'state canoe route'). Precautions to allow for safe passage by recreational users of the river during construction will need to incorporated into project planning. We can work with MnDOT in alerting the general public during times when conditions are unsafe. We typically will allow contractors or MnDOT to post construction warnings at nearby public access points and can also post to our State Water Trail web site:
http://www.dnr.state.mn.us/watertrails/location_map.html

7. There is a DNR Public Access facility in or adjacent to the TH22 right of way. Please contact Craig Beckman at 507-359-6067 if the operation of this access will be impacted or if there are cooperation opportunities for improvements to this facility. I have cc'd him on this email as well.

Contact me if you have questions
peter

Peter Leete
Transportation Hydrologist (DNR-MnDOT Liaison)
DNR Ecological & Water Resources
Ph: 651-366-3634

Office location: MnDOT's Office of Environmental Stewardship

Appendix B

MnDOT Cultural Resources Unit: Section 106 Correspondence

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Minnesota Department of Transportation

Office of Environmental Services
Mail Stop 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

Office Tel: (651) 366-4291
Fax: (651) 366-3603

October 05, 2012

Rebecca Novak
MnDOT D7 Environmental Coordinator
2151 Bassett Drive
Mankato, MN 56001

Re: S.P. 4012-36 (TH 22 Floodplain Mitagation, St. Peter, Nicolett County)

Dear Ms. Novak,

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 2005 Section 106 Programmatic Agreement between the FHWA and the Minnesota State Historic Preservation Office.

The project consists constructing a new bridge/overflow structure between the Riverside Park frontage road and the raised median that approaches TH 169. In addition the road will be raised to a point above the 100-year floodplain elevation.

The area of potential effects (APE) consists of the proposed construction area. Because all of the construction work will occur within previously disturbed ground, it is unlikely that the APE contains intact, significant archaeological resources. There are no historic structures within the APE.

The finding of this office is that there will be **no historic properties affected** by the project as currently proposed. If the project scope changes, please provide our office with the revised information and we will conduct an additional review.

Sincerely,

Renée L. Hutter
Historian
Cultural Resources Unit

cc: Zachary Test, MnDOT
Mn/DOT CRU Project File

Minnesota Historical Society
STATE HISTORIC PRESERVATION OFFICE

September 26, 2014

Renee Hutter Barnes
Cultural Resources Unit
MN Dept. of Transportation
Transportation Building, MS 620
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 4012-36; Highway 22 District 7 Parkland Replacement Property
T110 R26 S28 NW
St. Peter, Nicollet County
SHPO Number: 2014-2937

Dear Ms. Hutter Barnes:

Thank you for the opportunity comment on the above project. Project information received in our office on 29 August 2014 has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and per the terms of the 2005 Programmatic Agreement between the Federal Highway Administration, the Minnesota Department of Transportation and the Minnesota State Historic Preservation Office.

We concur with your agency's determination that no historic properties will be affected by the proposed park land replacement parcel acquisition.

Please feel free to contact me if you have any questions regarding this comment letter. I can be reached at 651-259-3456 or by email at sarah.beimers@mnhs.org.

Sincerely,

Sarah J. Beimers

Sarah J. Beimers, Manager
Government Programs & Compliance

Appendix C

Noise Mitigation Technical Memorandum

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HZUNITED
3025 Harbor Lane, Suite 121, Plymouth, MN 55447

December 8, 2014

Zachary Tess
MnDOT District 7
2151 Bassett Drive
Mankato, MN 56001

Dear Zachary,

RE: S.P. 4012-36 TH 22 Additional Noise Analysis for Trail

Per your request, attached are our findings from the noise analysis that you have requested for the trail crossing the Minnesota River on TH 22. This analysis used transparent noise barrier walls for their lightweight properties and to mitigate the impact to the view of the river valley from the roadway. Although a noise wall is feasible, the analysis shows that the noise wall is unreasonable due to not being cost effective. See below for the detailed analysis.

CASE 1: Walls W1 and W2 considered: *Wall W1 (680 ft long, 10 ft high) and W2 (100 ft long, 20 ft high):*

Case 1 includes:

- Removing the concrete railing along the west side of the bridge
- Removing the guardrail along southbound TH 22 north of the bridge
- Installing concrete barrier on the bridge in between the roadway and existing trail and installing the concrete barrier from the bridge to 100' north of the bridge
- Installing a 10' transparent noise wall (W1) on top of the concrete barrier on the bridge
- Installing a 20' transparent noise wall (W2) on top of the concrete barrier from the bridge to 100' north of the bridge
- Installing guardrail along the north side of Wall W2.

DAYTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of southbound shoulder. This barrier **satisfies** the 7 dBA noise reduction goal at 8 receptors. This barrier option also produced 8 **benefitted receptors** with at least a 5 dBA noise reduction as depicted in Table B-1. The cost effectiveness of this option as described above is **$100,146.15** / benefited receptor.

NIGHTTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of the southbound travel lane. This barrier **satisfies** the 7 dBA noise reduction goal at 8 receptors. This barrier option also produced 8 **benefitted receptors** with at least a 5 dBA noise reduction as depicted in Table B-2. The cost effectiveness of this option as described above is **$100,146.15** / benefited receptor.

This option is found to be feasible but not reasonable due to cost and is not proposed. (The cost effectiveness threshold is $43,500.00/benefitted receptor.)

763-551-3699 (Office) 763-390-9270 (Fax)

CASE 1A: Walls W1 and W2A considered: *Wall W1 (680 ft long, 10 ft high) and W2A (100 ft long, 10 ft high):*

Case 1A includes:

- Removing the concrete railing along the west side of the bridge
- Removing the guardrail along southbound TH 22 north of the bridge
- Installing concrete barrier on the bridge in between the roadway and existing trail and installing the concrete barrier from the bridge to 100' north of the bridge
- Installing a 10' transparent noise wall (W1) on top of the concrete barrier on the bridge
- Installing a 10' transparent noise wall (W2A) on top of the concrete barrier from the bridge to 100' north of the bridge
- Installing guardrail along the north side of Wall W2A.

DAYTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of southbound shoulder. This barrier **satisfies** the 7 dBA noise reduction goal at 7 receptors. This barrier option also produced 8 **benefitted receptors** with at least a 5 dBA noise reduction as depicted in Table B-1A. The cost effectiveness of this option as described above is **$90,146.15** / benefited receptor.

NIGHTTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of the southbound travel lane. This barrier **satisfies** the 7 dBA noise reduction goal at 7 receptors. This barrier option also produced 8 **benefitted receptors** with at least a 5 dBA noise reduction as depicted in Table B-2A. The cost effectiveness of this option as described above is **$90,146.15** / benefited receptor.

This option is found to be feasible but not reasonable due to cost and is not proposed. (The cost effectiveness threshold is $43,500.00/benefitted receptor.)

CASE 2: Wall W3 considered: *Wall W3 (80 ft long, 20 ft high):*

Case 2 includes:

- Removing the guardrail along southbound TH 22 north of the bridge
- Installing concrete barrier from the bridge to 100' north of the bridge
- Installing a 20' transparent noise wall (W3) on top of the concrete barrier
- Installing guardrail along the north side of Wall W3.

DAYTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of southbound shoulder. This barrier **satisfies** the 7 dBA noise reduction goal at 1 receptor. This barrier option also produced 1 **benefitted receptor** with at least a 5 dBA noise reduction as depicted in Table B-3. The cost effectiveness of this option as described above is **$139,924.00** / benefited receptor.

NIGHTTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of the southbound travel lane. This barrier **satisfies** the 7 dBA noise reduction goal at 1 receptors. This barrier option also produced 1 **benefitted receptor** with at least a 5 dBA noise reduction as depicted in Table B-4. The cost effectiveness of this option as described above is **$139,924.00** / benefited receptor.

This option is found to be feasible but not reasonable due to cost and is not proposed. (The cost effectiveness threshold is $43,500.00/benefitted receptor.)

CASE 2A: Wall W3A considered: *Wall W3 (80 ft long, 10 ft high):*

Case 2A includes:

- Removing the guardrail along southbound TH 22 north of the bridge
- Installing concrete barrier from the bridge to 100' north of the bridge
- Installing a 10' transparent noise wall (W3A) on top of the concrete barrier
- Installing guardrail along the north side of Wall W3A.

DAYTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of southbound shoulder. This barrier **does not satisfy** the 7 dBA noise reduction goal. This barrier option also produced 1 **benefitted receptor** with at least a 5 dBA noise reduction as depicted in Table B-3A. The cost effectiveness of this option as described above is **N.A.**/ benefited receptor.

NIGHTTIME:
A noise barrier was modeled along the west side of TH 22 on the outside edge of the southbound travel lane. This barrier **does not satisfy** the 7 dBA noise reduction goal. This barrier option also produced 1 **benefitted receptor** with at least a 5 dBA noise reduction as depicted in Table B-4A. The cost effectiveness of this option as described above is **N.A.** / benefited receptor.

This option is feasible but not reasonable because it does not meet the 7 dBA noise reduction goal and is not proposed.

If you have any questions please let us know.

Paul Zager
HZ United, LLC
3025 Harbor Lane, Suite 121
Plymouth, MN 55447

763-551-3699 (Office) 763-390-9270 (Fax)

TABLE 6
TH 22 NOISE MODEL RESULTS DAYTIME

Receptor*	Monitored Noise Levels (dBA) (1)		Daytime Modeled Noise Levels (dBA) (4:00 TO 5:00 PM)									
			Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build with NO Mitigation (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}
PT01 (CAA) (1)			**70.3**	60.8	**71.0**	61.9	0.7	1.1	**70.7**	61.6	0.4	0.8
PT02 (CAA) (1)			68.4	58.4	68.7	59.1	0.3	0.7	67.2	58.0	-1.2	-0.4
PT03 (CAA) (1)			64.7	55.9	65.3	56.9	0.6	1.0	64.6	56.0	-0.1	0.1
PT04 (CAA) (1)			61.0	52.8	61.6	53.9	0.6	1.1	60.9	53.0	-0.1	0.2
PT05 (CAA) (1)			59.0	51.2	59.6	52.3	0.6	1.1	59.1	51.6	0.1	0.4
PT06 (CAA) (1)			58.4	50.6	59.0	51.7	0.6	1.1	58.6	51.2	0.2	0.6
PT07 (CAA) (1)			58.2	50.3	58.8	51.5	0.6	1.2	58.5	51.1	0.3	0.8
PT08 (CAA) (1)			59.4	51.2	60.0	52.3	0.6	1.1	59.7	52.1	0.3	0.9
PT09 (CAA) (1)			61.7	52.9	62.2	54.0	0.5	1.1	61.8	53.6	0.1	0.7
PT10 (CAA) (1)			64.8	55.3	65.2	56.1	0.4	0.8	64.8	55.9	0.0	0.6
PT11 (CAA) (1)			67.0	60.2	67.0	56.7	0.0	-3.5	67.6	57.3	0.6	-2.9
PT38 (CAA) (1)			**76.9**	**65.7**	**77.3**	66.4	0.4	0.7	**77.0**	**66.1**	0.1	0.4
PT39 (CAA) (1)			**76.3**	**65.7**	**76.9**	66.7	0.6	1.0	**76.4**	**67.1**	0.1	1.4
PT40 (CAA) (1)			**75.6**	**65.9**	**76.4**	67.1	0.8	1.2	**76.3**	**66.9**	0.7	1.0
PT41 (CAA) (1)			**75.3**	**65.6**	**76.2**	66.8	0.9	1.2	**76.1**	**66.8**	0.8	1.2
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State daytime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).

(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial

* Number in "receptor" column is the number of residences represented by each modeled receptor location.

(1) Average of daytime (morning and afternoon) monitored noise levels.

-Additional points PT38-PT44 were added to analyze noise impacts on trail.

-Trail analysis differs from original analysis, because of where traffic in the model is beginning. Orginally traffic began at the north end of bridge, current trail analysis has traffic beginning at the south end of the bridge. However, only PT01 was significantly impacted.

TABLE 6 CONTINUED

Receptor*	Monitored Noise Levels (dBA) (1)		Daytime Modeled Noise Levels (dBA) (4:00 TO 5:00 PM)									
			Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build with NO Mitigation (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}
PT42 (CAA) (1)			**75.3**	**65.5**	**76.2**	**66.8**	0.9	1.3	**76.1**	**66.8**	0.8	1.3
PT43 (CAA) (1)			**75.1**	**65.3**	**76.0**	**66.6**	0.9	1.3	**76.0**	**66.5**	0.9	1.2
PT44 (CAA) (1)			**74.1**	63.7	**75.0**	**65.0**	0.9	1.3	**74.9**	**65.0**	0.8	1.3
State Daytime Standard (NAC-1)	65	60	65	60	65	60	--	--	65	60	--	--
State Daytime Standard (NAC-2)	70	65	70	65	70	65	--	--	70	65	--	--
State Daytime Standard (NAC-3)	80	75	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	75	--	--	--	75	--	--	--

TABLE 7
TH 22 NOISE MODEL RESULTS NIGHTTIME

Receptor*	Nighttime Modeled Noise Levels (dBA) (6:00 TO 7:00 AM)									
	Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build with NO Mitigation (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
PT01 (CAA) (1)	66.4	55.9	67.4	57.2	1.0	1.3	67.2	56.9	0.8	1.0
PT02 (CAA) (1)	64.1	53.0	65.1	54.4	1.0	1.4	63.7	53.3	-0.4	0.3
PT03 (CAA) (1)	60.8	50.9	61.8	52.3	1.0	1.4	61.1	51.3	0.3	0.4
PT04 (CAA) (1)	57.3	48.0	58.2	49.3	0.9	1.3	57.5	48.4	0.2	0.4
PT05 (CAA) (1)	55.3	46.4	56.3	47.7	1.0	1.3	55.7	47.0	0.4	0.6
PT06 (CAA) (1)	54.7	45.8	55.7	47.1	1.0	1.3	55.3	46.7	0.6	0.9
PT07 (CAA) (1)	54.5	45.6	55.5	46.9	1.0	1.3	55.2	46.6	0.7	1.0
PT08 (CAA) (1)	55.7	46.5	56.7	47.8	1.0	1.3	56.4	47.5	0.7	1.0
PT09 (CAA) (1)	57.7	48.0	58.7	49.3	1.0	1.3	58.4	49.0	0.7	1.0
PT10 (CAA) (1)	60.6	50.1	61.6	51.5	1.0	1.4	61.2	51.2	0.6	1.1
PT11 (CAA) (1)	62.2	50.6	63.3	51.9	1.1	1.3	63.9	52.6	1.7	2.0
PT38 (CAA) (1)	**72.5**	60.3	**73.5**	61.7	1.1	1.4	**73.3**	61.4	0.8	1.1
PT39 (CAA) (1)	**72.1**	60.6	**73.2**	62.0	1.0	1.3	**72.8**	62.4	0.7	1.8
PT40 (CAA) (1)	**71.8**	61.1	**72.8**	62.4	1.0	1.4	**72.7**	62.3	0.9	1.2
PT41 (CAA) (1)	**71.5**	60.8	**72.6**	62.2	1.0	1.4	**72.5**	62.1	1.0	1.3
State Nighttime Standard (NAC-1)	55	50	55	50	--	--	55	50	--	--
State Nighttime Standard (NAC-2)	70	65	70	65	--	--	70	65	--	--
State Nighttime Standard (NAC-3)	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	--	--	75	--	--	--

Bold numbers are above State nighttime standards.

Underlined numbers approach or exceed Federal Noise Abatement Criteria (NAC).

(R) – Residential; (C) – Commercial; (Ch) – Church; (CAA) – Common Activity Area; (I) – Industrial

* Number in "receptor" column is the number of residences and/or commercial/industrial buildings represented by each receptor.

-Additional points PT38-PT44 were added to analyze noise impacts on trail.

-Trail analysis differs from original analysis, because of where traffic in the model is beginning. Orginally traffic began at the north end of bridge, current trail analysis has traffic beginning at the south end of the bridge. However, only PT01 was significantly impacted.

TABLE 7 CONTINUED

Receptor*	Nightime Modeled Noise Levels (dBA) (6:00 TO 7:00 AM)									
	Existing (2013)		No Build (2035)		Difference Between Existing (2013) and No Build (2035)		Build (2035) with NO mitigation		Difference Between Existing (2013) and Build (2035)	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
PT42 (CAA) (1)	**71.5**	60.8	72.6	62.1	1.1	1.3	**72.5**	62.1	1.0	1.3
PT43 (CAA) (1)	**71.4**	60.5	72.4	61.9	1.0	1.4	**72.4**	61.9	1.0	1.4
PT44 (CAA) (1)	**70.3**	59.0	71.3	60.3	1.0	1.3	**71.3**	60.3	1.0	1.3
State Nighttime Standard (NAC-1)	55	50	55	50	--	--	55	50	--	--
State Nighttime Standard (NAC-2)	70	65	70	65	--	--	70	65	--	--
State Nighttime Standard (NAC-3)	80	75	80	75	--	--	80	75	--	--
Federal NAC (Activity Category B & C)	70	--	70	--	--	--	70	--	--	--
Federal NAC (Activity Category E)	75	--	75	--	--	--	75	--	--	--

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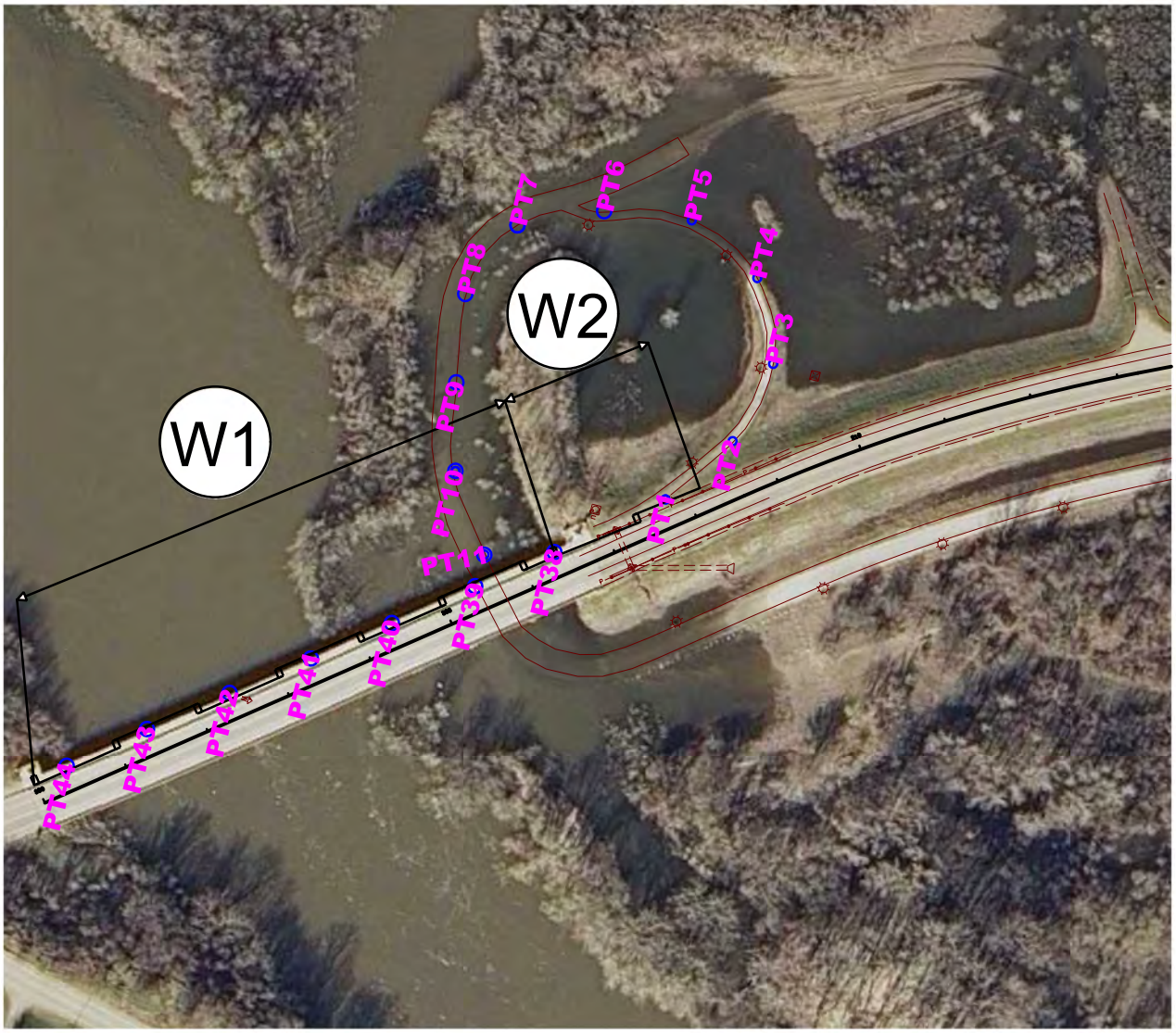
SCALE IN FEET

CASE 1

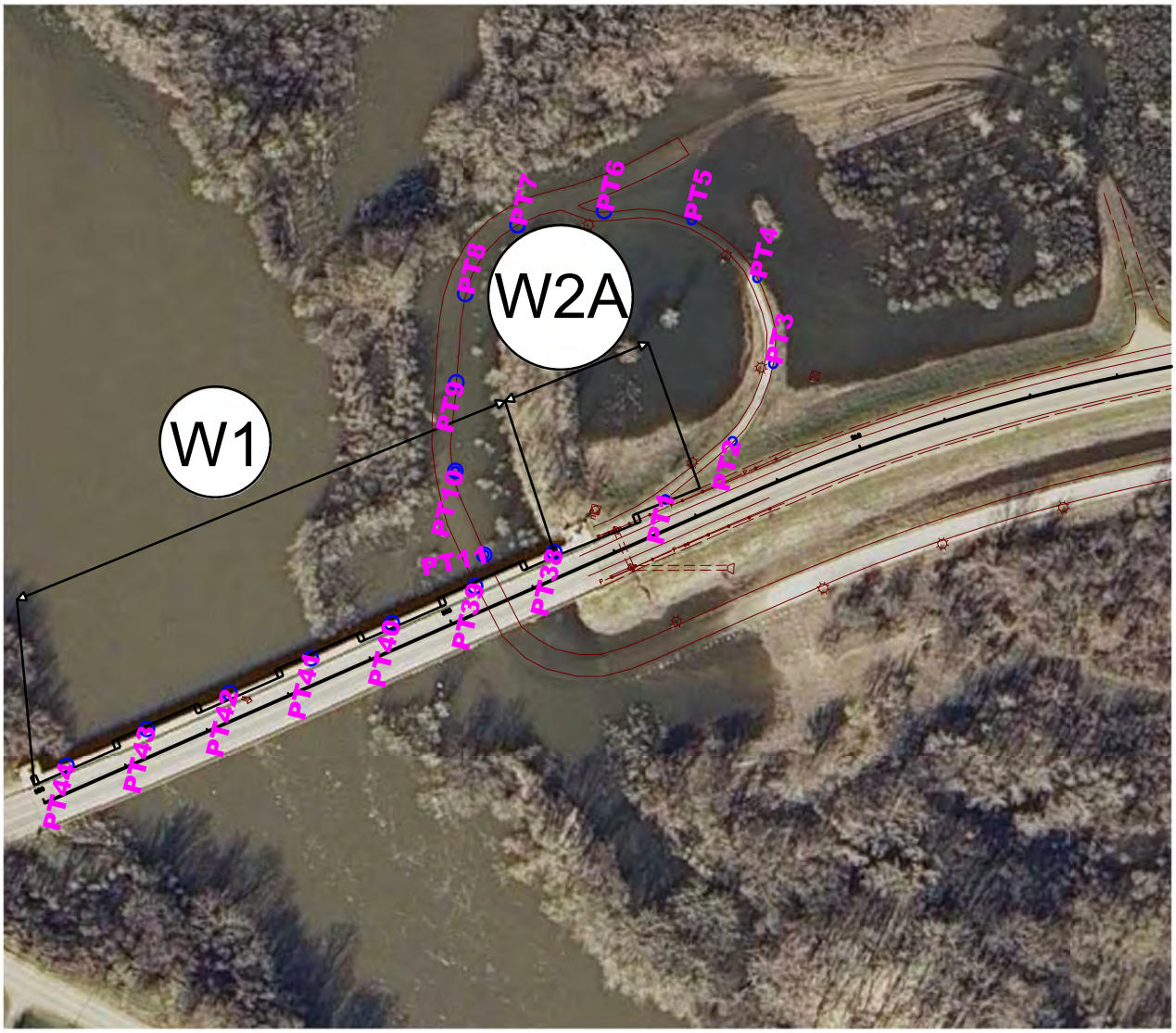


T.H. 22 Figure Revision
Saint Peter Receptor Locations
S.P. 4012-36

200

SCALE IN FEET

CASE 1A



T.H. 22 Figure Revision
Saint Peter Receptor Locations
S.P. 4012-36

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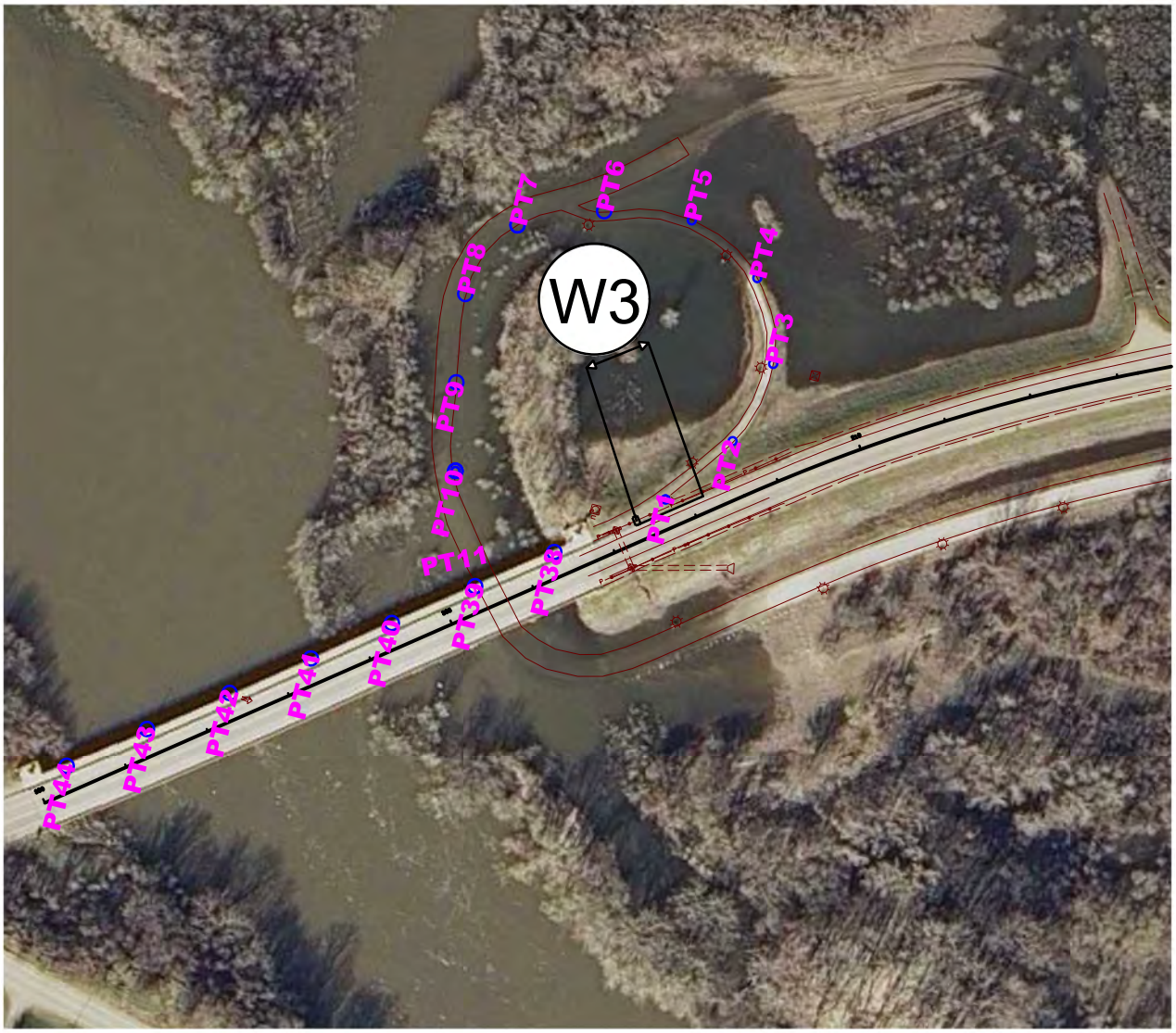
SCALE IN FEET

CASE 2

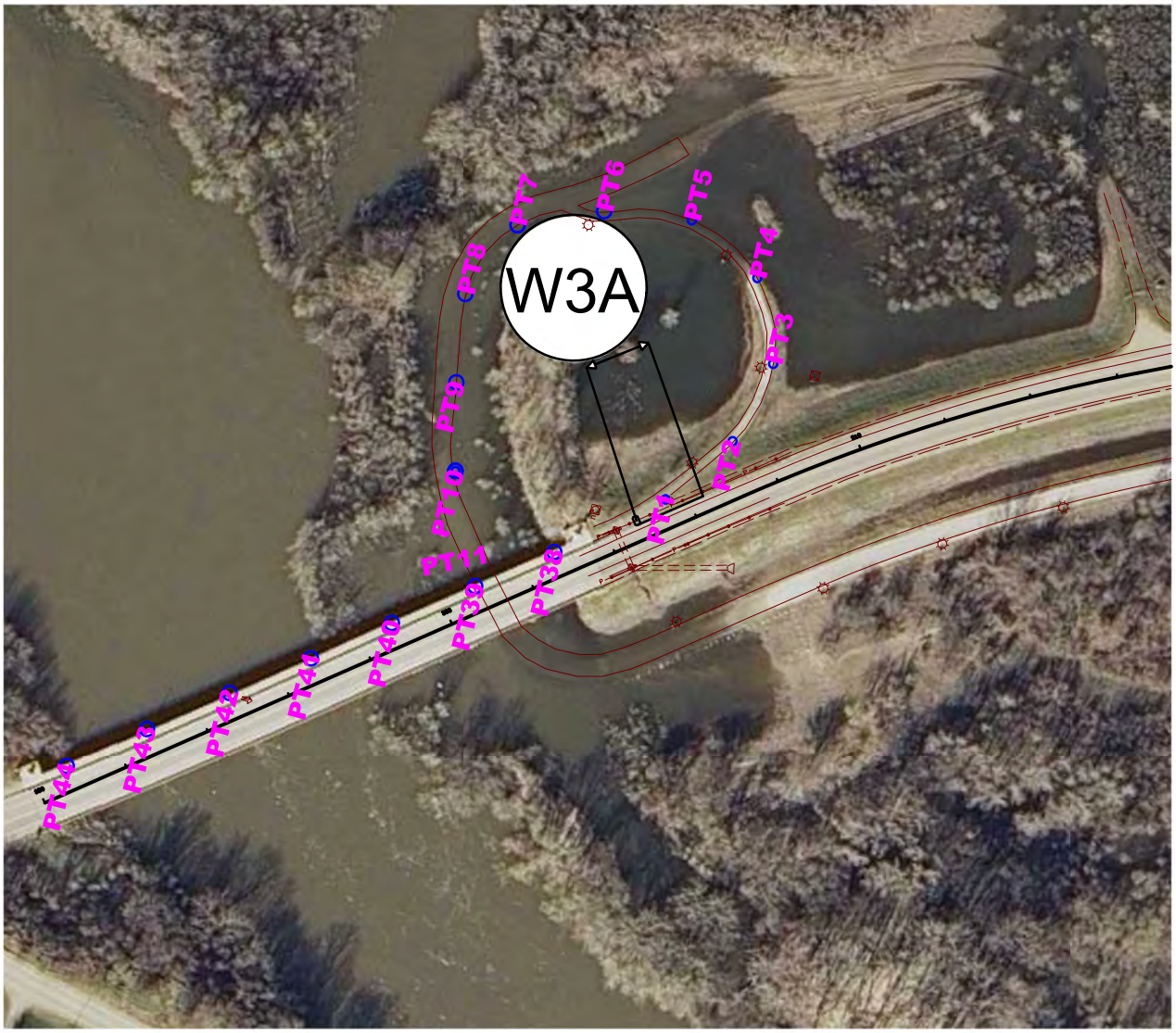


T.H. 22 Figure Revision
Saint Peter Receptor Locations
S.P. 4012-36

200

SCALE IN FEET

CASE 2A



T.H. 22 Figure Revision
Saint Peter Receptor Locations
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TABLE B-1
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
CASE 1: Modeled Barrier Walls W1 (10-foot tall) and W2 (20-foot tall) (Along West Side of S.B. T.H. 22)

4:00 to 5:00 PM	Daytime L10 Noise Levels (dBA)												
RECEPTORS	2035 Build with No Mitigation	2035 Build with 10-FOOT Wall W1 (680') AND 20-Foot Wall W2 (100')	Reduction (in dBA) with Wall W1 & W2	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
PT01 (CAA) (1)	**70.7**	61.7	9.0	1	1	1							
PT02 (CAA) (1)	67.2	71.2	-4.0	1	0	0							
PT03 (CAA) (1)	64.6	66.1	-1.5	1	0	0							
PT04 (CAA) (1)	60.9	61.1	-0.2	1	0	0							
PT05 (CAA) (1)	59.1	58.0	1.1	1	0	0							
PT06 (CAA) (1)	58.6	56.6	2.0	1	0	0							
PT07 (CAA) (1)	58.5	55.8	2.7	1	0	0	680'	240'	780'	680'	100'	240'	TOTAL
PT08 (CAA) (1)	59.7	56.7	3.0	1	0	0	$40,324	$770	$51,527	$544,000	$160,000	$4,548	$100,146.15
PT09 (CAA) (1)	61.8	58.9	2.9	1	0	0							
PT10 (CAA) (1)	64.8	62.8	2.0	1	0	0							
PT11 (CAA) (1)	67.6	67.5	0.1	1	0	0							
PT38 (CAA) (1)	**77.0**	62.0	15.0	1	1	1							
PT39 (CAA) (1)	**76.4**	61.9	14.5	1	1	1							
PT40 (CAA) (1)	**76.3**	61.7	14.6	1	1	1							
PT41 (CAA) (1)	**76.1**	59.3	16.8	1	1	1							
PT42 (CAA) (1)	**76.1**	58.9	17.2	1	1	1							
PT43 (CAA) (1)	**76.0**	58.8	17.2	1	1	1							
PT44 (CAA) (1)	**74.9**	57.7	17.2	1	1	1							
					8	8							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

TABLE B-2
NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)
CASE 1: Modeled Barrier Walls W1 (10-foot tall) and W2 (20-foot tall) (Along West Side of S.B. T.H. 22)

6:00 to 7:00 AM	Nighttime L10 Noise Levels (dBA)												
RECEPTORS	2035 Build with No Mitigation	2035 Build with 10-FOOT Wall W1 (680') AND 20-Foot Wall W2 (100')	Reduction (in dBA) with Wall W1 & W2	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
PT01 (CAA) (1)	67.2	58.1	9.1	1	1	1							
PT02 (CAA) (1)	63.7	67.7	-4.0	1	0	0							
PT03 (CAA) (1)	61.1	62.7	-1.6	1	0	0							
PT04 (CAA) (1)	57.5	57.7	-0.2	1	0	0							
PT05 (CAA) (1)	55.7	54.6	1.1	1	0	0							
PT06 (CAA) (1)	55.3	53.3	2.0	1	0	0							
PT07 (CAA) (1)	55.2	52.5	2.7	1	0	0	680'	240'	780'	680'	100'	240'	TOTAL
PT08 (CAA) (1)	56.4	53.3	3.1	1	0	0	$40,324	$770	$51,527	$544,000	$160,000	$4,548	$100,146.15
PT09 (CAA) (1)	58.4	55.4	3.0	1	0	0							
PT10 (CAA) (1)	61.2	59.2	2.0	1	0	0							
PT11 (CAA) (1)	63.9	63.5	0.4	1	0	0							
PT38 (CAA) (1)	**73.3**	58.6	14.7	1	1	1							
PT39 (CAA) (1)	**72.8**	57.8	15.0	1	1	1							
PT40 (CAA) (1)	**72.7**	57.8	14.9	1	1	1							
PT41 (CAA) (1)	**72.5**	55.9	16.6	1	1	1							
PT42 (CAA) (1)	**72.5**	55.5	17.0	1	1	1							
PT43 (CAA) (1)	**72.4**	55.4	17.0	1	1	1							
PT44 (CAA) (1)	**71.3**	54.2	17.1	1	1	1							
					8	8							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

TABLE B-1A
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
CASE 1A: Modeled Barrier Walls W1 (10-foot tall) and W2A (10-foot tall) (Along West Side of S.B. T.H. 22)

4:00 to 5:00 PM	Daytime L10 Noise Levels (dBA)												
RECEPTORS	2035 Build with No Mitigation	2035 Build with 10-FOOT Wall W1 (680') AND 10-Foot Wall W2A (100')	Reduction (in dBA) with Wall W1 & W2A	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
PT01 (CAA) (1)	**70.7**	63.9	6.8	1	1	0							
PT02 (CAA) (1)	67.2	71.2	-4.0	1	0	0							
PT03 (CAA) (1)	64.6	66.2	-1.6	1	0	0							
PT04 (CAA) (1)	60.9	61.2	-0.3	1	0	0							
PT05 (CAA) (1)	59.1	58.2	0.9	1	0	0							
PT06 (CAA) (1)	58.6	56.8	1.8	1	0	0							
PT07 (CAA) (1)	58.5	56.1	2.4	1	0	0	680'	240'	780'	780'	0'	240'	TOTAL
PT08 (CAA) (1)	59.7	56.9	2.8	1	0	0	$40,324	$770	$51,527	$624,000	$0	$4,548	$90,146.15
PT09 (CAA) (1)	61.8	59.0	2.8	1	0	0							
PT10 (CAA) (1)	64.8	62.6	2.2	1	0	0							
PT11 (CAA) (1)	67.6	67.1	0.5	1	0	0							
PT38 (CAA) (1)	**77.0**	60.8	16.2	1	1	1							
PT39 (CAA) (1)	**76.4**	59.9	16.5	1	1	1							
PT40 (CAA) (1)	**76.3**	59.8	16.5	1	1	1							
PT41 (CAA) (1)	**76.1**	59.3	16.8	1	1	1							
PT42 (CAA) (1)	**76.1**	58.9	17.2	1	1	1							
PT43 (CAA) (1)	**76.0**	58.8	17.2	1	1	1							
PT44 (CAA) (1)	**74.9**	57.7	17.2	1	1	1							
					8	7							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

TABLE B-2A
NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)
CASE 1A: Modeled Barrier Walls W1 (10-foot tall) and W2A (10-foot tall) (Along West Side of S.B. T.H. 22)

6:00 to 7:00 AM	Nighttime L10 Noise Levels (dBA)												
RECEPTORS	2035 Build with No Mitigation	2035 Build with 10-FOOT Wall W1 (680') AND 10-Foot Wall W2A (100')	Reduction (in dBA) with Wall W1 & W2A	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
PT01 (CAA) (1)	67.2	60.3	6.9	1	1	0							
PT02 (CAA) (1)	63.7	67.7	-4.0	1	0	0							
PT03 (CAA) (1)	61.1	62.8	-1.7	1	0	0							
PT04 (CAA) (1)	57.5	57.8	-0.3	1	0	0							
PT05 (CAA) (1)	55.7	54.8	0.9	1	0	0							
PT06 (CAA) (1)	55.3	53.5	1.8	1	0	0							
PT07 (CAA) (1)	55.2	52.8	2.4	1	0	0	680'	240'	780'	780'	0'	240'	TOTAL
PT08 (CAA) (1)	56.4	53.6	2.8	1	0	0	$40,324	$770	$51,527	$624,000	$0	$4,548	$90,146.15
PT09 (CAA) (1)	58.4	55.6	2.8	1	0	0							
PT10 (CAA) (1)	61.2	59.0	2.2	1	0	0							
PT11 (CAA) (1)	63.9	63.6	0.3	1	0	0							
PT38 (CAA) (1)	**73.3**	57.5	15.8	1	1	1							
PT39 (CAA) (1)	**72.8**	56.8	16.0	1	1	1							
PT40 (CAA) (1)	**72.7**	56.8	15.9	1	1	1							
PT41 (CAA) (1)	**72.5**	55.9	16.6	1	1	1							
PT42 (CAA) (1)	**72.5**	55.5	17.0	1	1	1							
PT43 (CAA) (1)	**72.4**	55.4	17.0	1	1	1							
PT44 (CAA) (1)	**71.3**	54.2	17.1	1	1	1							
					8	7							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

TABLE B-3
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
CASE 2: Modeled Barrier Wall W3 (20-foot tall) (Along West Side of S.B. T.H. 22)

4:00 to 5:00 PM	Daytime L10 Noise Levels (dBA)												
RECEPTORS	2035 Build with No Mitigation	2035 Build with 20-Foot Wall W3 (80')	Reduction (in dBA) with Wall W3	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
PT01 (CAA) (1)	**<u>70.7</u>**	61.2	9.5	1	1	1							
PT02 (CAA) (1)	67.2	67.8	-0.6	1	0	0							
PT03 (CAA) (1)	64.6	64.6	0.0	1	0	0							
PT04 (CAA) (1)	60.9	60.7	0.2	1	0	0							
PT05 (CAA) (1)	59.1	58.4	0.7	1	0	0							
PT06 (CAA) (1)	58.6	57.5	1.1	1	0	0							
PT07 (CAA) (1)	58.5	57.1	1.4	1	0	0	0'	240'	100'	0'	80'	240'	TOTAL
PT08 (CAA) (1)	59.7	59.1	0.6	1	0	0	$0	$770	$6,606	$0	$128,000	$4,548	$139,924.40
PT09 (CAA) (1)	61.8	61.0	0.8	1	0	0							
PT10 (CAA) (1)	64.8	64.7	0.1	1	0	0							
PT11 (CAA) (1)	67.6	67.5	0.1	1	0	0							
PT38 (CAA) (1)	**<u>77.0</u>**	76.9	0.1	1	0	0							
PT39 (CAA) (1)	**<u>76.4</u>**	76.3	0.1	1	0	0							
PT40 (CAA) (1)	**<u>76.3</u>**	76.3	0.0	1	0	0							
PT41 (CAA) (1)	**<u>76.1</u>**	76.1	0.0	1	0	0							
PT42 (CAA) (1)	**<u>76.1</u>**	76.1	0.0	1	0	0							
PT43 (CAA) (1)	**<u>76.0</u>**	76.0	0.0	1	0	0							
PT44 (CAA) (1)	**<u>74.9</u>**	74.9	0.0	1	0	0							
					1	1							

Bold numbers are above State daytime standards (L_{10}). <u>Underlined</u> numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

TABLE B-4
NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)
CASE 2: Modeled Barrier Wall W3 (20-foot tall) (Along West Side of S.B. T.H. 22)

6:00 to 7:00 PM	Nighttime L10 Noise Levels (dBA)												
RECEPTORS	2035 Build with No Mitigation	2035 Build with 20-Foot Wall W3 (80')	Reduction (in dBA) with Wall W3	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
PT01 (CAA) (1)	67.2	58.2	9.0	1	1	1							
PT02 (CAA) (1)	63.7	64.1	-0.4	1	0	0							
PT03 (CAA) (1)	61.1	61.1	0.0	1	0	0							
PT04 (CAA) (1)	57.5	57.3	0.2	1	0	0							
PT05 (CAA) (1)	55.7	55.0	0.7	1	0	0							
PT06 (CAA) (1)	55.3	54.1	1.2	1	0	0							
PT07 (CAA) (1)	55.2	53.6	1.6	1	0	0	0'	240'	100'	0'	80'	240'	TOTAL
PT08 (CAA) (1)	56.4	54.6	1.8	1	0	0	$0	$770	$6,606	$0	$128,000	$4,548	$139,924.40
PT09 (CAA) (1)	58.4	57.5	0.9	1	0	0							
PT10 (CAA) (1)	61.2	60.1	1.1	1	0	0							
PT11 (CAA) (1)	63.9	61.6	2.3	1	0	0							
PT38 (CAA) (1)	**73.3**	73.2	0.1	1	0	0							
PT39 (CAA) (1)	**72.8**	72.8	0.0	1	0	0							
PT40 (CAA) (1)	**72.7**	72.7	0.0	1	0	0							
PT41 (CAA) (1)	**72.5**	72.5	0.0	1	0	0							
PT42 (CAA) (1)	**72.5**	72.5	0.0	1	0	0							
PT43 (CAA) (1)	**72.4**	72.4	0.0	1	0	0							
PT44 (CAA) (1)	**71.3**	71.3	0.0	1	0	0							
					1	1							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

TABLE B-3A
NOISE MITIGATION COST EFFECTIVENESS RESULTS (DAYTIME)
CASE 2A: Modeled Barrier Wall W3 (10-foot tall) (Along West Side of S.B. T.H. 22)

4:00 to 5:00 PM	Daytime L10 Noise Levels (dBA)		Reduction (in dBA) with Wall W3A	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
RECEPTORS	2035 Build with No Mitigation	2035 Build with 10-Foot Wall W3A (80')											
PT01 (CAA) (1)	**70.7**	64.1	6.6	1	1	0							
PT02 (CAA) (1)	67.2	67.9	-0.7	1	0	0							
PT03 (CAA) (1)	64.6	64.7	-0.1	1	0	0							
PT04 (CAA) (1)	60.9	60.7	0.2	1	0	0							
PT05 (CAA) (1)	59.1	58.5	0.6	1	0	0							
PT06 (CAA) (1)	58.6	57.6	1.0	1	0	0							
PT07 (CAA) (1)	58.5	57.2	1.3	1	0	0	0'	240'	100'	80'	0'	240'	TOTAL
PT08 (CAA) (1)	59.7	58.1	1.6	1	0	0	$0	$770	$6,606	$64,000	$0	$4,548	N.A.
PT09 (CAA) (1)	61.8	60.1	1.7	1	0	0							
PT10 (CAA) (1)	64.8	63.8	1.0	1	0	0							
PT11 (CAA) (1)	67.6	65.4	2.2	1	0	0							
PT38 (CAA) (1)	**77.0**	76.9	0.1	1	0	0							
PT39 (CAA) (1)	**76.4**	76.4	0.0	1	0	0							
PT40 (CAA) (1)	**76.3**	76.3	0.0	1	0	0							
PT41 (CAA) (1)	**76.1**	76.1	0.0	1	0	0							
PT42 (CAA) (1)	**76.1**	76.1	0.0	1	0	0							
PT43 (CAA) (1)	**76.0**	76.0	0.0	1	0	0							
PT44 (CAA) (1)	**74.9**	74.9	0.0	1	0	0							
					1	0							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

TABLE B-4A
NOISE MITIGATION COST EFFECTIVENESS RESULTS (NIGHTTIME)
CASE 2A: Modeled Barrier Wall W3 (10-foot tall) (Along West Side of S.B. T.H. 22)

6:00 to 7:00 AM	Nighttime L10 Noise Levels (dBA)		Reduction (in dBA) with Wall W3A	Number of Residence or Commercial Establishments	Number of Benefited Reisdences or Commercial Establishments (1)	Design Goal Reduction > 7 dBA (2)	REMOVAL OF CONCRETE RAILING (LIN FT) ($59.30/LF)	REMOVAL OF GUARDRAIL (LIN FT) ($3.21/LF)	NEW CONCRETE BARRIER (LIN FT) ($66.06/LF)	10' TRANSPARENT NOISE BARRIER (LIN FT) ($800/LF)	20' TRANSPARENT NOISE BARRIER (LIN FT) ($1600/LF)	NEW GUARDRAIL (LIN FT) ($18.95/LF)	Cost / Benefited Receptor
RECEPTORS	2035 Build with No Mitigation	2035 Build with 10-Foot Wall W3A (80')											
PT01 (CAA) (1)	67.2	60.5	6.7	1	1	0							
PT02 (CAA) (1)	63.7	64.2	-0.5	1	0	0							
PT03 (CAA) (1)	61.1	61.2	-0.1	1	0	0							
PT04 (CAA) (1)	57.5	57.3	0.2	1	0	0							
PT05 (CAA) (1)	55.7	55.1	0.6	1	0	0							
PT06 (CAA) (1)	55.3	54.2	1.1	1	0	0							
PT07 (CAA) (1)	55.2	53.7	1.5	1	0	0	0'	240'	100'	80'	0'	240'	TOTAL
PT08 (CAA) (1)	56.4	54.6	1.8	1	0	0	$0	$770	$6,606	$64,000	$0	$4,548	N.A.
PT09 (CAA) (1)	58.4	56.5	1.9	1	0	0							
PT10 (CAA) (1)	61.2	60.1	1.1	1	0	0							
PT11 (CAA) (1)	63.9	61.7	2.2	1	0	0							
PT38 (CAA) (1)	**73.3**	73.2	0.1	1	0	0							
PT39 (CAA) (1)	**72.8**	72.8	0.0	1	0	0							
PT40 (CAA) (1)	**72.7**	72.7	0.0	1	0	0							
PT41 (CAA) (1)	**72.5**	72.5	0.0	1	0	0							
PT42 (CAA) (1)	**72.5**	72.5	0.0	1	0	0							
PT43 (CAA) (1)	**72.4**	72.4	0.0	1	0	0							
PT44 (CAA) (1)	**71.3**	71.3	0.0	1	0	0							
					1	0							

Bold numbers are above State daytime standards (L_{10}). Underlined numbers approach/exceed Federal Noise Abatement Criteria.

N/A = not applicable because none of the receptors adjacent to the modeled barrier meet the noise reduction design goal of at least 7 dBA.

(1) Number of benefited residences, commercial establishments, or industrial establishments with a minimum 5 dBA reduction.

(2) Noise barrier must meet MnDOT's noise reduction design goal of at least 7 dBA at a minimum of one benefited receptor behind each noise barrier.

(3) Barrier surface area does not include step down sections at barrier ends.

Appendix D

1996 Final Section 4(f) Evaluation

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MINNESOTA

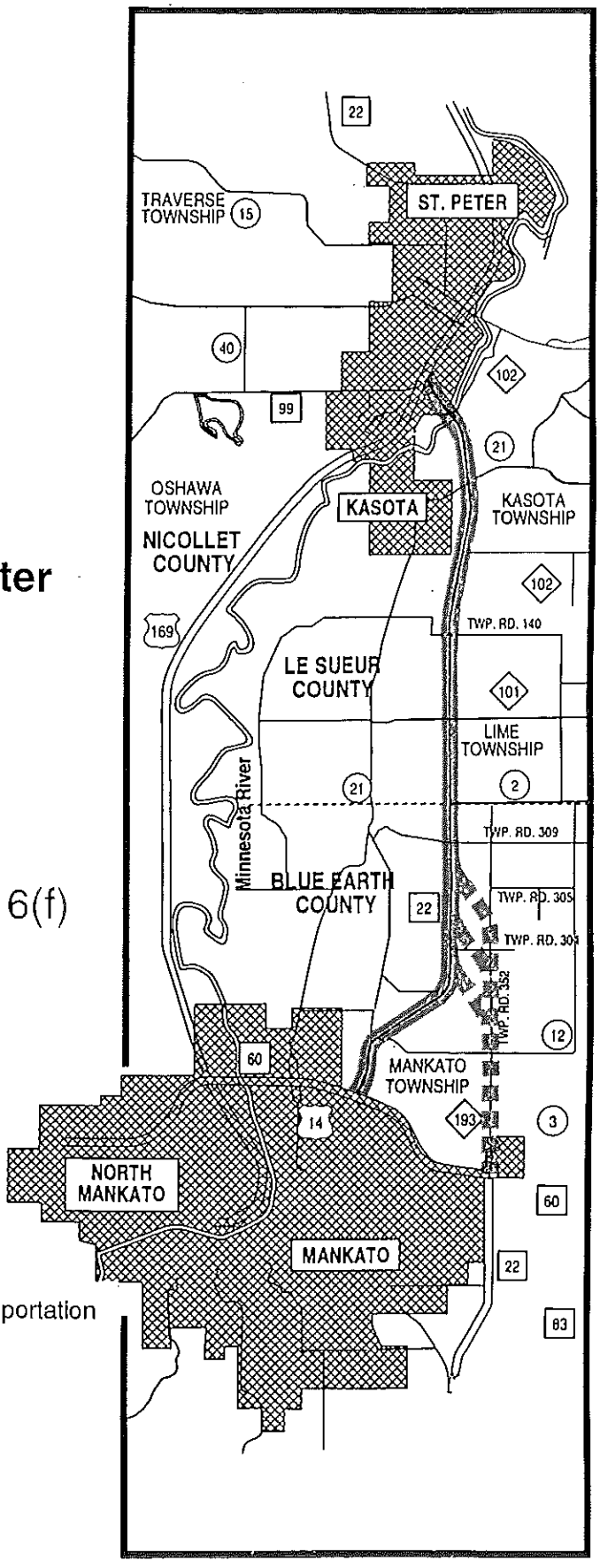
22

From Mankato to St. Peter

S.P. 0714-28 (T.H. 22)
S.P. 4012-29 (T.H. 22)
S.P. 4012-18 (T.H. 22)
S.P. 4012-20 (T.H. 22)

Final Section 4(f), Section 6(f) Evaluation

December 1996



MINNESOTA DEPARTMENT OF TRANSPORTATION

Prepared for:
Minnesota Department of Transportation
District 7 (Mankato)

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I. Proposed Action

Purpose and Requirements

The purpose of the following Section 4(f), Section 6(f) evaluation is to identify potentially affected publicly-owned properties, assess the impacts on each property and demonstrate that the project complies with public park land and historic requirements of the Federal Aid Highway Act of 1968.

The Federal Aid Highway Act of 1968 requires that special considerations be made for any Section 4(f) or Section 6(f) parcels which may be impacted by projects involving federal funds. Section 4(f) lands are described as

> *...publicly-owned land from public park, recreation area, or wildlife and waterfowl refuge of national, State or local significance as determined by the federal, State or local officials having jurisdiction thereof, or any land from an historical site of a national, State or local significance as so determined by such officials.*

Section 6(f) lands are any properties acquired or improved with the aid of the Land and Water Conservation funds (LAWCON).

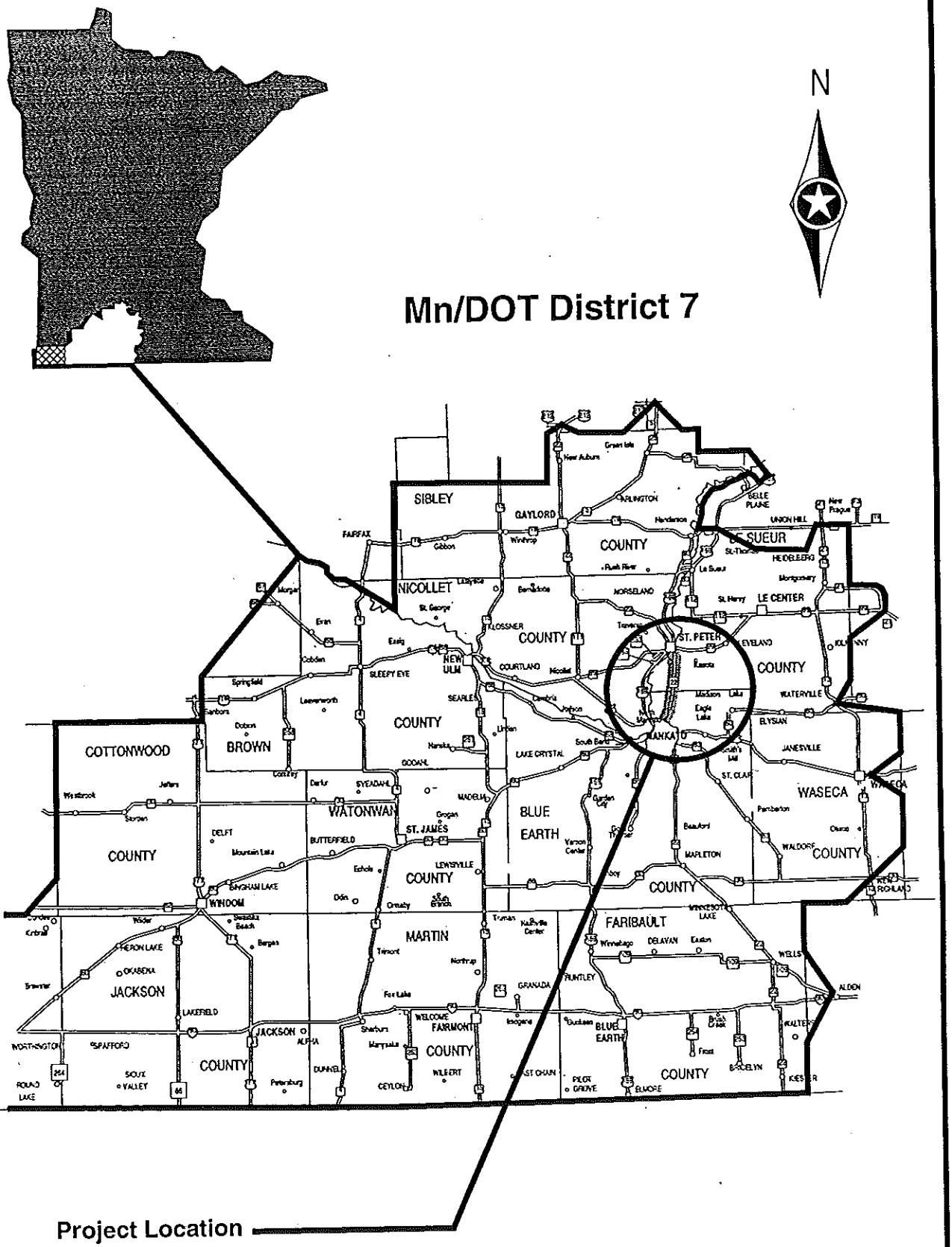
A Section 4(f) evaluation must be prepared for each location within a proposed project before the use of Section 4(f) land is approved (23CFR771.135).

The two publicly owned recreational areas that will be affected by this project are the Sakatah Singing Hills State Trail, owned by the Minnesota Department of Natural Resources (MnDNR), and Riverside Park, owned by the City of St. Peter. The proposed projects' construction and land conversions in these recreational areas are subject to 4(f)/6(f) evaluation and approvals. The Sakatah Trail was purchased and developed using LAWCON funding. Riverside Park was developed and improved using LAWCON funds.

Project Description

The proposed project involves the reconstruction of 14 kilometers (8.8 miles) of T.H. 22 from T.H. 14 in Mankato to T.H. 169 in St. Peter (see Figure 1, General Area Map). Project alternatives also considered the realignment of the southerly 3.2 kilometers (2± miles) of the highway near Mankato.

Included in the proposal is the replacement of the T.H. 22 bridge over the Minnesota River, the replacement of the railroad bridge over T.H. 22 just south of the river bridge, and the addition of a tunnel to separate T.H. 22 from the Department of Natural Resources Sakatah Trail as proposed in Alternative 3.



T.H. 22

From Mankato to St. Peter

General Area Map

Figure 1

Project and Need

The existing T.H. 22 roadway was constructed during 1929 and 1930 to design standards that existed at that time. The reconstruction of this highway will update this 65 year old facility to modern day standards. It will replace the existing deteriorated pavements and bridges, correct substandard sight distances and improve the roadway width, side slopes and crossroad intersections. This will help reduce the high accident rates and maintenance costs making it a safer, more comfortable roadway for the traveling public.

II. Section 4(f)/6(f) Properties

Sakatah Trail, Description and Usage

The Sakatah Singing Hills State Trail (Sakatah Trail) encompasses approximately 200 hectares (500 acres) of land that extends for about 64 kilometers (40 miles) between the cities of Mankato and Faribault. The majority of the trail's main treadway follows an abandoned Chicago and Northwestern Railroad line (see location Map Figure 2).

The trail is in various stages of development with some portions being surfaced with limestone, others with bituminous and others still unsurfaced. The treadway, when completed, will be an eight foot wide surfaced trail for bicycling and hiking in the summer and snowmobiling and cross country skiing in the winter. Portions of the trail are being developed with two separated treadways. This is the case where the proposed Alternative 3A will cross the trail.

The Sakatah Trail was purchased by the MnDNR using state funds and Federal Land and Water Conservation (LAWCON) funds. All leases, permits and easements in effect at the time the land was purchased are being renegotiated. The State of Minnesota may issue a lease on trail right-of-way for a period of ten years. Many leases, especially those for grain elevators, have already been extended. Additional leases or land conversions are subject to Section 6(f) of Public Law 94-422 when federal funds have been used to purchase or improve a facility such as this. There are no known historical, archaeological or cultural sites on Sakatah Trail property in the vicinity of the proposed project.

Sakatah Trail Legend

T.H. 22

From Mankato to St. Peter

Project Location Map

Figure 2

Riverside Park, Description and Use

Riverside Park encompasses approximately 119 hectares (295 acres). The park is located at the easterly edge of the City of St. Peter and lies generally between Trunk Highway (T.H.) 169 on the west and the Minnesota River on the east. The park's easterly border is also the St. Peter City border and the boundary between Nicollet and Le Sueur Counties. At its southerly edge, the park extends approximately 850 meters (2,800 feet) south of the existing T.H. 22 and its northerly boundary is just south of T.H. 99 (see Figure 2 Location Map and City Map/Riverside Park in Appendix).

The existing T.H. 22 passes through the southerly end of the park forming a boundary between two sections of the park. The Riverside Extension section, consisting of approximately 40 hectares (98 acres), lies directly southwest of T.H. 22 and the Riverside Nature section, having approximately 80 hectares (197 acres), is located directly northeast of T.H. 22.

A large part of Riverside Park lies in the floodplain of the Minnesota River. Nearly all of the area affected by the proposed T.H. 22 construction is in the river's floodplain. Because of the extensive wetland areas, poor drainage and frequent flooding in the southern area of the park where T.H. 22 passes, development in this area of the park is very restricted. This area is used primarily as a nature area.

The "Riverside Extension" section of the park is a nature area but is also used for hiking, launching canoes and fishing along the bank of the river.

The "Riverside Nature" section of the park is a nature area in its southern portion, while the northern portion near T.H. 99 has been developed for picnicking, camping, hiking, fishing and boat launching. There are 22 picnic tables, two open shelters, a restroom facility, 11 campsites and a boat launch and parking lot in this portion. The City of St. Peter has proposed a five year capital improvement plan for City park properties which includes Riverside Park. Work on this plan has been delayed indefinitely; therefore, it may not be completed for several years.

The entrance to the northern section of the park is via Park Row and Nassau Streets near T.H. 99. The entrances to the southern portion of the Riverside Nature section and to the Riverside Extension section is from existing T.H. 22.

The areas of the park that will be affected by the proposed T.H. 22 construction were purchased by the City of St. Peter in 1967 using City funding. Improvements were made using LAWCON funds.

There are no permits or leases associated with the park property that affect ownership. However, the title is subject to existing gas, electric and telephone easements that cross the property.

There are no known historical, archaeological or cultural sites in Riverside Park. The historical significance of the existing Minnesota River Bridge No. 4770 has recently been determined. The historical and architectural survey conducted for the proposed project identified this bridge as having potential for nomination to the National Register of historic properties. Further investigation and evaluation of the bridge has revealed that it is not eligible for the National Register. The SHPO has concurred in this finding.

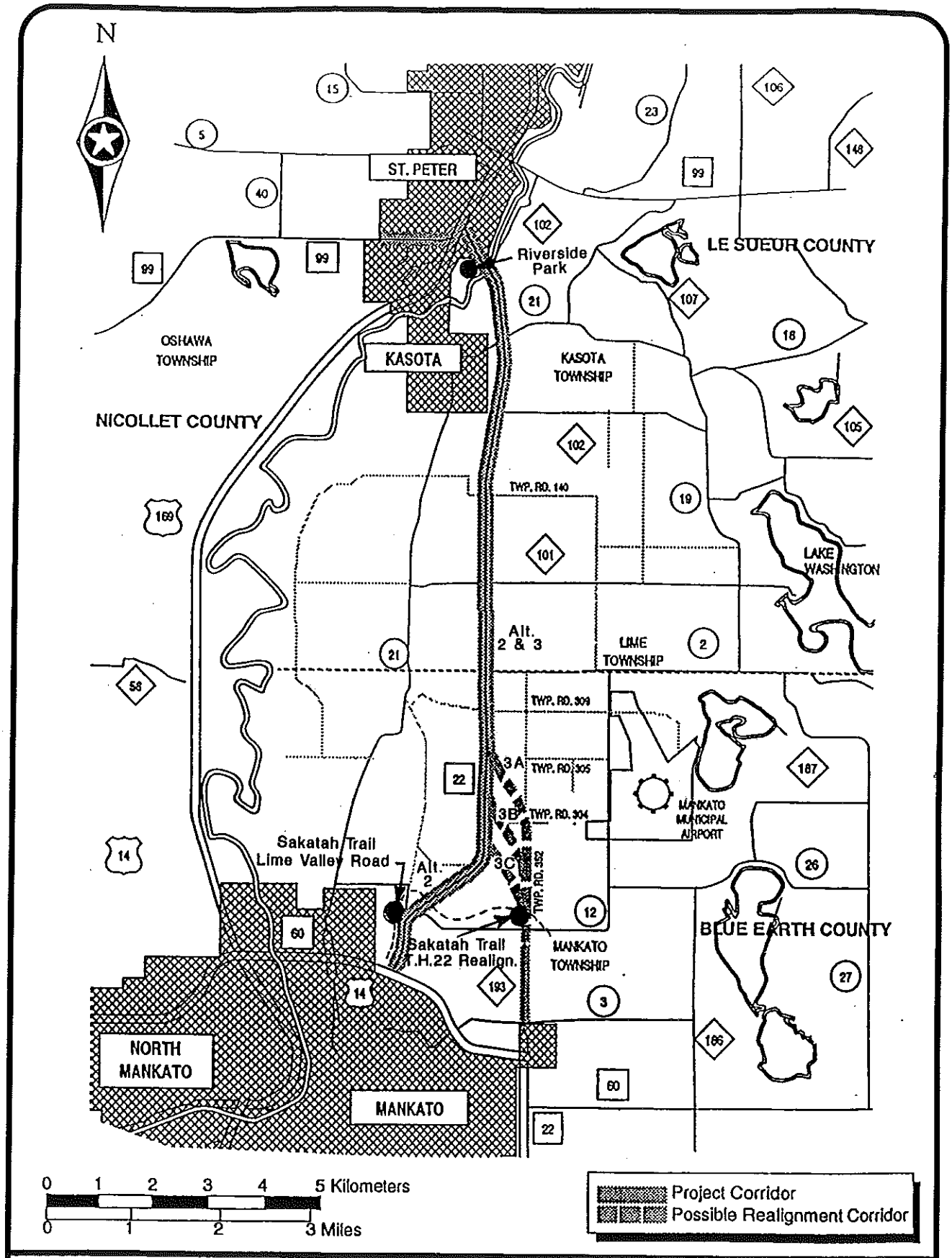
III. Impacts on Section 4(f)/6(f) Properties

In September 1996, MnDOT selected Alternative 3A as the preferred alternative (see page 12).

The proposed reconstruction of T.H. 22 will require the conversion of recreational lands for highway construction and right-of-way. As mentioned in Section II, two separate recreational facilities are involved; one is near the southerly end of the proposed project near the City of Mankato, the other at the northerly end in the City of St. Peter. These conversions will constitute 4(f) and 6(f) involvements.

Sakatah Trail

Near Mankato, land will be required from the Sakatah Singing Hills State Trail. With the construction of Alternative 3A, land will be required where the proposed realigned T.H. 22 would cross the Sakatah Trail. Here, approximately a 50 meter (160 foot) wide right-of-way width will be necessary for the highway fills and a tunnel to separate, vertically, the T.H. 22 roadway from the trail. T.H. 22 is proposed to pass over the existing trail where the MnDNR owns approximately 30 meters (100 feet) of trail right-of-way (see Map Figures 3 and 6A). Alternative 3A will require approximately 0.26 hectares (0.63 acres) of right-of-way for highway construction.

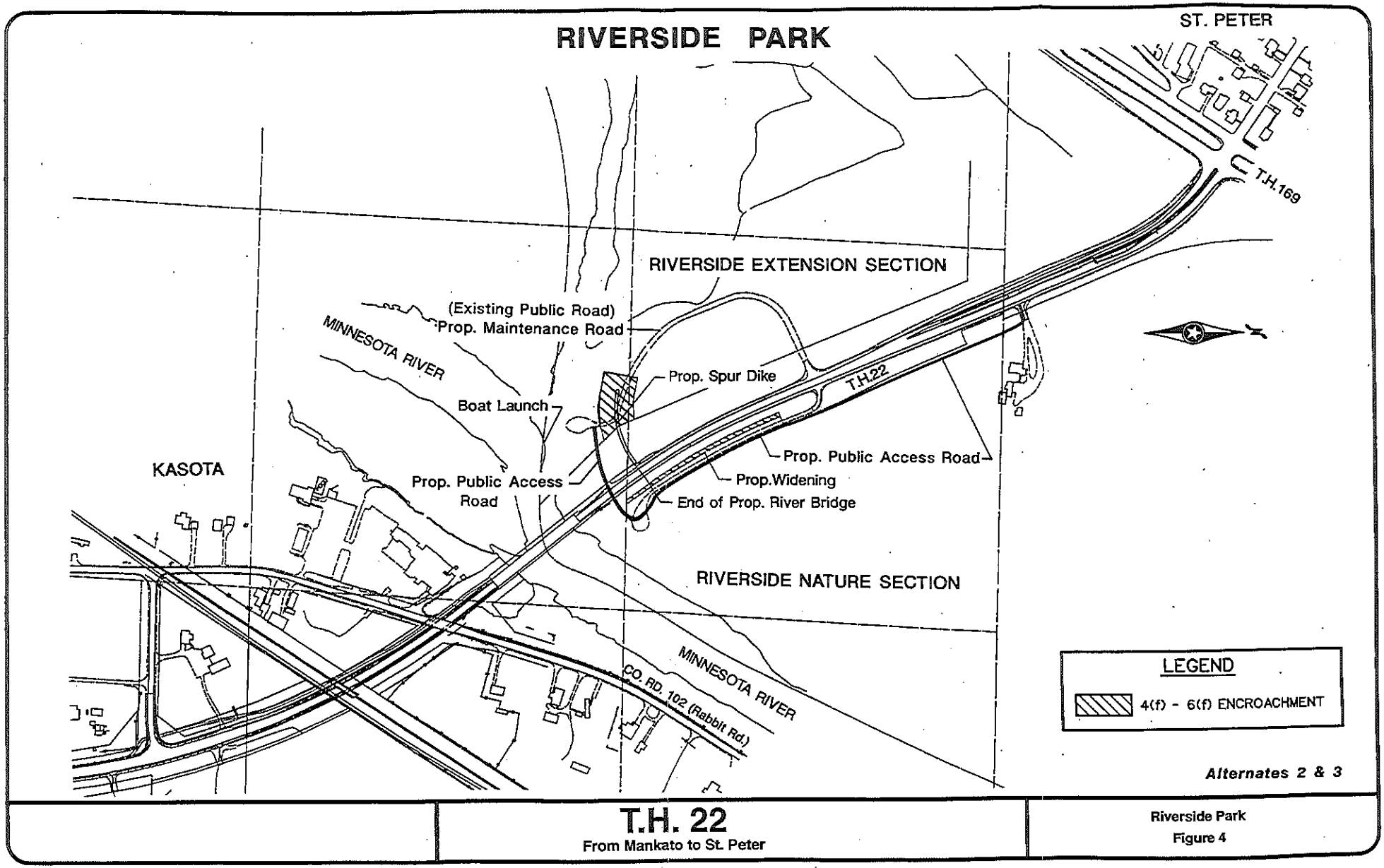


T.H. 22

From Mankato to St. Peter

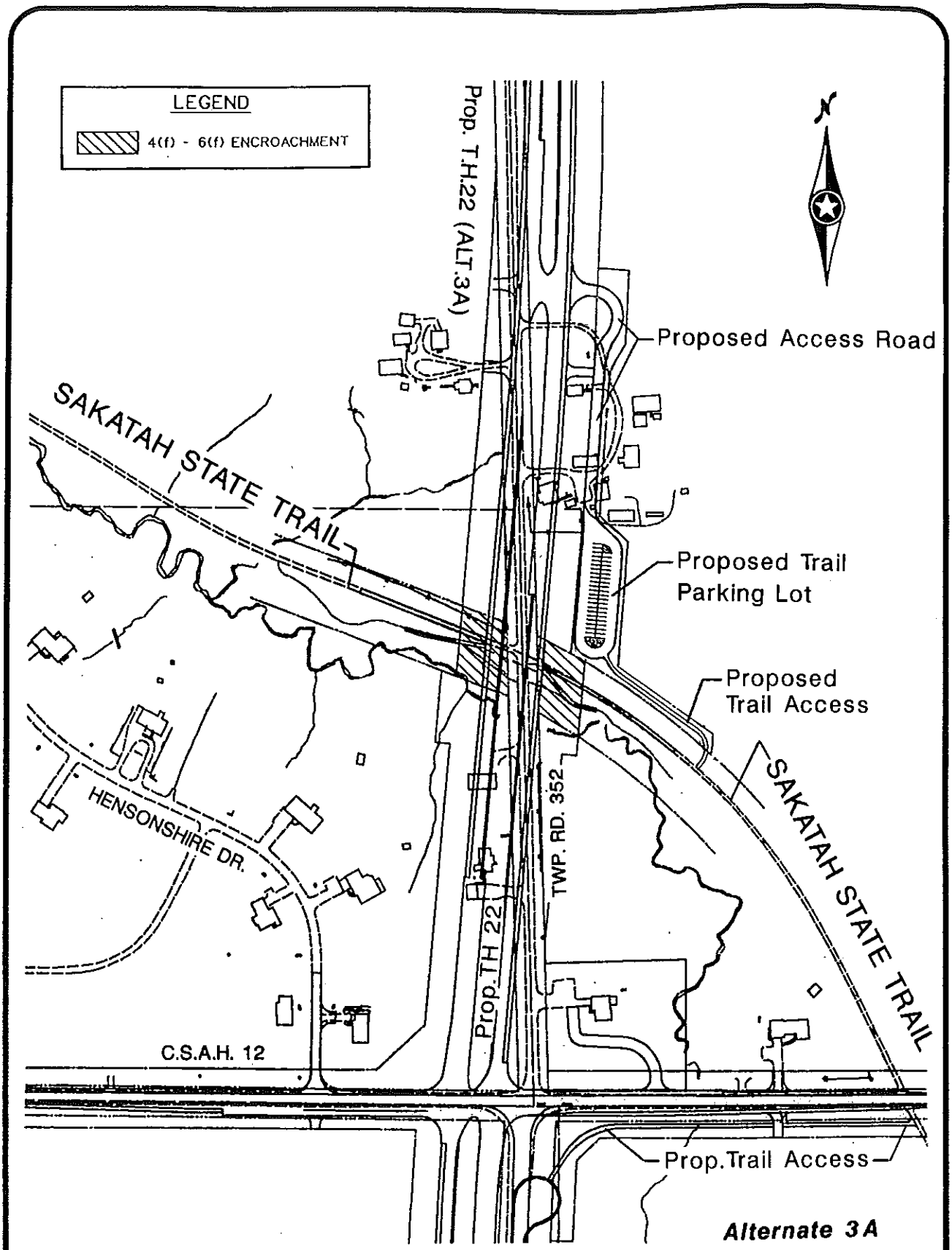
Section 4(f), 6(f) Impact Locations

Figure 3



T.H. 22
From Mankato to St. Peter

Riverside Park
Figure 4



T.H. 22
From Mankato to St. Peter

Sakatah Trail Crossing
Figure 6 A

Riverside Park

Near the northerly end of the proposed project, in the City of St. Peter, land will be required from Riverside Park. With the construction of any of the *BUILD* Alternatives 2, 3A, 3B and 3C, a total of approximately 0.28 hectares (0.7 acres) is required from the park for highway construction.

About 0.20 hectares (0.5 acres) in the Riverside Extension section of the park are required to construct a spur dike that will protect the northern abutment of the proposed new Minnesota River bridge during times of flooding. The spur dike construction will also affect a portion of a canoe launching area access road, a portion of which will become a City maintenance road.

About 0.08 hectares (0.2 acres) are also required for T.H. 22 roadway widening, a bicycle trail and ditch construction along T.H. 22 just north of the new river bridge. This work involves the Riverside Nature section of the park (see Figure 4).

Summary

No significant Sakatah Trail or Riverside Park impacts are expected. The proposed project will include several measures to minimize harm as listed in Section V.

IV. Project Alternatives and Avoidance Measures

Project Alternatives

The alternative courses of action that have been considered for this project include the *NO BUILD* and Alternatives 2, 3 and 4. Also considered was the rehabilitation of the existing roadway and bridges.

Alternative 1, the *NO BUILD* Alternative, means that no reconstruction would take place on T.H. 22. Therefore, there would be no impact to the 4(f)/6(f) properties in the vicinity. This alternative would do nothing to correct the substandard geometric conditions and structural deterioration that exist, it would not improve the high accident rate and would eventually require removal of the existing river bridge, thus shutting down this very important river crossing transportation corridor. A new river bridge could be considered again in the future under a different proposal.

Alternative 2 is the reconstruction of the existing T.H. 22, essentially on its existing alignment. This involves total reconstruction of the road with minor horizontal and vertical alignment changes to improve the substandard geometric conditions, sight distances and structural deterioration and deficiencies.

This alternative will affect 4(f)/6(f) properties both at the Sakatah Trail where it parallels Lime Valley Road near the City of Mankato and in Riverside Park in the City of St. Peter.

Alternative 3 (A, B, and C), is the same as Alternative 2 except that approximately 3.2 kilometers (2 miles) of the southern portion of T.H. 22 would be reconstructed on a new alignment approximately 3.2 kilometers (2 miles) east of the existing T.H. 22 southern segment. Three alignments (3A, 3B and 3C) were considered that would continue T.H. 22 directly north from its existing location south of T.H. 14 along County Road 193 and Township Road 352 before tying back into the existing T.H. 22 about 3 kilometers (2 miles) north of T.H. 14 (see Project Location Map, Figure 3).

All of these alignments require a new crossing of the Sakatah Trail because the trail runs perpendicular to the proposed highway. This alternative also impacts Riverside Park in the City of St. Peter the same as Alternative 2.

Table 1
Estimated Recreational Land Required
for Construction Alternatives
Area: Hectares (Acres)

Properties Impacted	Project Build Alternatives			
	2	3A	3B	3C
Sakatah Trail	0.82 (2.00)	0.26 (0.63)	0.23 (0.57)	0.45 (1.10)
Riverside Park Extension Section	0.20 (0.50)	same as Alt 2	same as Alt 2	same as Alt 2
Riverside Park Nature Section	0.08 (0.20)	same as Alt 2	same as Alt 2	same as Alt 2

Note: Alternative 3A is the preferred alternative.

The alternative of rehabilitating the existing roadway and bridges was also considered early in the project development process. This alternative was also eliminated from further consideration because of the numerous deficiencies and substandard conditions that exist all along the roadway. The original concrete pavement, which underlies the existing bituminous surface, has deteriorated to the point where resurfacing is only a temporary measure. The bridges have substandard horizontal and vertical clearances and extensive structural deterioration that makes them no longer practical or prudent to repair.

Avoidance Measures

At the Lime Valley Road realignment area discussed in Alternative 2, several other Lime Valley Road alignments were explored in an attempt to avoid the Sakatah Trail property. Because of the rugged terrain and great differences in elevation between Lime Valley Road and T.H. 22, there would need to be unacceptably steep grades on Lime Valley Road with all of the other alignments. The other alignments would also require wetland filling and up to 18 meter (60 foot) cuts and fills through the rugged terrain.

At the other 4(f) involvement areas, any of the *BUILD* alternatives would have affected 4(f)/6(f) properties at both the Sakatah Trail and at Riverside Park because both of these recreational facilities lie perpendicular to T.H. 22. It is not possible to find an alignment for T.H. 22 that would not have to cross the trail. Also it would not be feasible or prudent to relocate T.H. 22 to avoid Riverside Park. See City of St. Peter, Riverside Park map in the Appendix.

The proposed spur dike in the Riverside Extension section is essential to prevent erosion and to stabilize the new river bridge north abutment. The proposed roadway widening and ditch construction in the Riverside Nature section is necessary to provide safe shoulders and control drainage to the north of the new river bridge.

Design measures to minimize encroachment into the recreational properties offer some mitigation options. These design measures have been and will continue to be coordinated with the 4(f) property owners and agencies having jurisdiction.

Preferred Alternative

Alternative 3A has been selected as the preferred alternative for the project primarily for the following reasons:

1. The *NO BUILD* and Alternative 2 options do not adequately address the need to replace the deteriorating pavement, improve the safety of the corridor (specifically at the Lime Valley Road intersection), and meet the traffic growth projections for the area. A realignment alternative is needed to reduce congestion and improve the safety and overall quality of life for the traveling public and adjacent property owners.

2. Alternative 3A has the least impact to the farm fields since it follows an existing drainage ditch in the realigned area and minimizes impacts to the Sakatah Trail area. This alternate has no farmland severances. It has the same impacts as all other *BUILD* alternatives at Riverside Park.

3. Alternative 3B was determined to have too much of an impact with the severing of existing farm fields. This alternate severs 10.6 hectares (26.3 acres) from existing farms.

4. Alternative 3C has too large an impact to the Sakatah Trail area, has the most farm field severances and the greatest construction cost. This alternate severs 12.8 hectares (31.6 acres) from existing farms and would cost approximately 1.4 million dollars more than Alternates 3A and 3B.

V. Measures to Minimize Harm

Sakatah Trail

1. A tunnel will be constructed to vertically separate the new highway from the Sakatah Trail. The tunnel will have a 3.7m x 7.3m (12'x24') opening for trail users.

2. A parking lot with access to the trail will be purchased as replacement land and developed for trail users. Very little parking is currently available to Sakatah Trail users in the Mankato area. Therefore, this parking lot will enable greater use of the trail and provide a convenient trail access.

3. Areas disturbed by construction will be landscaped to blend with the surrounding vegetation.

4. A trail extension and connection will be made between the Sakatah Trail and an existing City bicycle/pedestrian trail in Mankato. This will be done in cooperation with the City of Mankato and the MnDNR.

5. Design plans have been and will continue to be coordinated with the MnDNR, the agency having ownership and jurisdiction.

Riverside Park

1. The spur dike will be landscaped to blend into the park's natural atmosphere, taking into consideration the effects of flood waters.

2. The new river bridge will have a bicycle/pedestrian path connecting both sides of the river. It also will be designed to facilitate a bicycle trail, snowmobile trail and car and pickup access under T.H. 22 between the two sections of Riverside Park.

3. The parking area and canoe launch area will not be directly affected by project construction. These facilities will, however, be reconstructed. The new access road will be extended to the canoe launch area.

4. Park areas disturbed by construction will be revegetated to blend with existing vegetation.

5. One public access road to the park will be provided along the east side of T.H. 22 near the "Bell" property. Right and left turning lanes will be constructed on Highway 22 at this access road intersection to improve access and safety.

6. The current park access road will become a maintenance access driveway into the south sections of the park for City equipment and will have a gate constructed by the City.

7. Provisions will be made for lighting on the bridge. The pedestrian walkway under the bridge may be lighted if flooding protection can be provided for the electrical equipment.

8. A connection between the pedestrian/bicycle path on the bridge to the bicycle trail under the bridge will be constructed.

9. The City of St. Peter will also support the purchase of replacement lands in the vicinity of the Sakatah Trail as additional Riverside Park mitigation.

VI. Coordination

MnDOT coordination meetings and telephone conversations have taken place regarding the 4(f)/6(f) lands that may be affected by the proposed T.H. 22 project. Meetings and field-walks with the Minnesota Department of Natural Resources included representatives from the Office of Planning, (LAWCON Coordination) and the Trails and Waterways Unit (Project Coordination and Area Supervision). Meetings with the City of St. Peter included representatives from the Planning, Public Works and Recreation Departments.

Prior to publication and review of the Draft 4(f)/6(f) Evaluation, agency representatives had expressed the following concerns relative to the T.H. 22 alternatives:

Sakatah Trail

1. *The design, length and width of the proposed tunnel in Alternative 3 should consider the aesthetics and safety relative to the trail user. The minimum opening for a tunnel is 3.7 meters (12 feet) vertically and 7.3 meters (24 feet) horizontally to accommodate a double trail treadway.*

   These items will be integrated into the design plans.

2. *Where construction impacts the Sakatah Trail, replanting of vegetation will be necessary.*

   This will be done.

3. *Replacement land sites. A possible parking area for trail users was discussed that could be built near the existing or realigned T.H. 22.*

   A parking lot will be constructed adjacent to the trail with access from proposed T.H. 22 (see Figure 6A).

Riverside Nature and Extension Park

At the spur dike and road widening areas there were five concerns:

1. *Spur dike needs to be landscaped.*

   This will be done with appropriate vegetation which considers the effects of flood waters.

2. *A grade separation or underpass for pedestrian traffic between the two portions of the park is desirable.*

   This will be a part of the design plans.

3. *The canoe launch parking area should be reconstructed.*

   This will be done.

4. *Park areas disturbed by construction should be revegetated.*

   This will be done to blend with existing vegetation.

5. *Provision should be made for a bicycle path to connect the river bridge crossing with the proposed river bridge underpass and the County Road to the east.*

   This is being done. See item 8 under Riverside Park measures to minimize harm.

Note: Coordination with the City of St. Peter goes back to 1988 when the City Council passed a resolution approving construction and maintenance agreements for the T.H. 22 project in Riverside Park (see Resolution in Appendix).

After publication and review of the Draft 4(f)/6(f) Evaluation, the following general comments were received from agency representatives. No comments were received on this document from the general public.

The U.S. Environmental Protection Agency responded to the Draft Section 4(f), Section 6(f) evaluation with the following conclusions:

> *"...Our Agency has no objections with implementation to one of (the realignment) alternatives, provided adequate mitigation can be provided for their additional social and environmental impacts."*

The U.S. Department of the Interior responded to the Draft Section 4(f), Section 6(f) as follows:

> *"The U.S. Department of the Interior concurs that there is no feasible and prudent alternative to the proposed project, if project objectives are to be met. The U.S. Department of the Interior also concurs with the proposed measures to minimize harm to Section 4(f) resources."*

The Minnesota Department of Natural Resources responded with the following comment:

> *"DNR Trails and Waterways staff have been working with MnDOT staff on a suitable Sakatah Trail Crossing design and a parking lot that MnDOT has agreed to build nearby for trail users. Coordination of design concepts is still in progress. We thank MnDOT for efforts at early coordination and cooperation among agencies to improve recreational opportunities."*

The City of St. Peter responded by passing Resolution No. 1996-222.

> *This resolution lists comments and suggestions for the proposed T.H. 22 improvement project within the City limits of St. Peter and Riverside Park."*

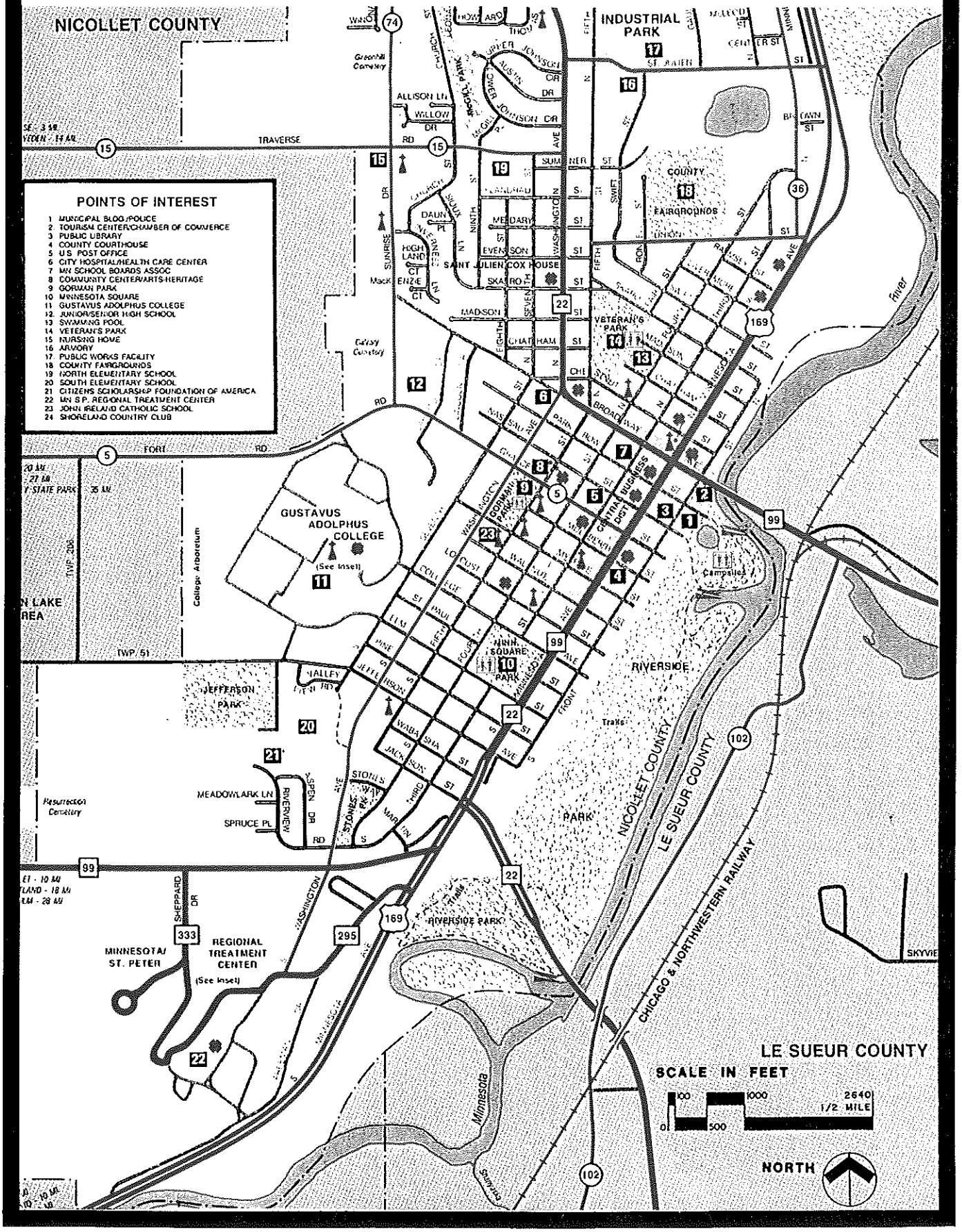
> **Note:** *These agency responses are included in the appendix to this document.*

VII. Conclusions

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from the Riverside Park and Sakatah Trail and that the proposed action includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use. Agreements with the recreational land owners and agencies having jurisdiction have been reached.

CITY OF ST. PETER

Riverside Park



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

B-19J

Lisa Bigham, Project Manager
Mn/DOT - Mankato District
501 South Victory Drive
P.O. Box 4039
Mankato, Minnesota 56002-4039

Dear Ms. Bigham:

We have reviewed the Environmental Assessment (EA) and Draft Section 4(f), Section 6(f) Evaluation for the proposed reconstruction of a 2-lane, 8.8 mile section of Trunk Highway (TH) 22, from TH 14 in Mankato to TH 169 in St. Peter. The proposed action will involve replacement of the bridge over the Minnesota River. Three of the build alternatives involve constructing a 4-lane segment, two miles in length, on a new alignment to avoid a jog that exists on TH 14. The project area is located in Blue Earth, LeSueur, and Nicollet Counties. We offer the following comments.

The purpose of this project is to reconstruct a 65-year old highway that has deteoriated to such a point that it can not be resurfaced again. The reconstruction will correct horizontal and vertical alignment deficiencies to improve substandard sight distances, provide for wider shoulders, flatter side slopes, the grading of drainage ditches, and left- and right-turn lanes where warranted. These improvements are needed to improve route safety and maintain or improve the existing level of service (LOS). According to information provided in the EA, the current accident rate of 2.4 per million vehicle miles traveled is twice the statewide average of 1.2 per million vehicle miles traveled for similar 2-lane rural roads. The severity rate of 4.5 is 55 percent higher than the statewide average. It is predicted that the current "C" LOS will drop to D and E by the year 2013 without the reconstruction. Based upon the above information, our Agency concurs with the purpose and need for this project.

This EA provides detailed information on four build alternatives in addition to the no-build. Three alternatives were dropped from further study due to the lack of need, significant adverse impacts, and incompatible land use. Of the four build alternatives under study, alternative 2 remains on the existing alignment. Alternatives 3A, 3B, and 3C provide for a 4-lane highway that follows a new southerly alignment in order to continue TH 22 directly north from its existing location south of TH 14.

Each of the build alternatives have similar environmental impacts with regards to

wetland and Section 4(f)/6f) impacts. Alternative 2 will impact 9.89 acres of wetland and 2.7 acres of Section 4(f)/6(f) lands. Alternative 3A will impact 11.98 acres of wetland and 1.33 acres of 4(f)/6(f) land. Alternative 3B will impact 10.03 acres of wetland and 1.27 acres of 4(f)/6(f) land. Alternative 3C will impact 10.87 acres of wetland and 1.80 acres of 4(f)/6(f) land. None of the alternatives will impact any endangered or threatened species or any historic or archeological resources.

Alternative 2 requires the least number of relocations, impacts the least amount of prime and unique farmland (over 32 acres less than the other alternatives), does not require any farm severances, and has significantly less receptors exceeding 3 dBA over existing daytime and nighttime noise levels. For these reasons, our Agency supports this alternative. However, there are additional benefits associated with a new alignment. According to the EA, a new alignment will lower the ramp to ramp movements between the TH 22 west junction, and the TH 22 east junction at County Road 193, thereby reducing undesirable vehicle conflicts and merging maneuvers between the two interchanges, and increasing safety. Our Agency has no objections with implementation to one of these alternatives, provided that adequate mitigation can be provided for their additional social and environmental impacts.

Several wetland mitigation sites in the project area have been identified in the EA. Mitigation will occur at a replacement ratio of 2:1. This is acceptable to us. The compensatory wetlands should be designed to replicate, as closely as possible, the types, functions, and values of the impacted wetlands. Where feasible, the compensatory wetlands should be provided by the process of restoration. If restoration proves infeasible, compensation should be provided by the process of creation. Additional information regarding the mitigation site should be provided to our Agency for review during the permit review process.

We appreciate the opportunity to provide comments on this EA. If you have any questions, or if we could be of further assistance, please contact Amy Nerbun at (312) 886-9861.

Sincerely,

Michael MacMullen, Federal Activities Program Manager
Office of Strategic Environmental Analysis

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER-96/373

JUL 12 1996

Mr. Allan R. Steger
Division Administrator
Federal Highway Administration
7th and Robert Streets, Suite 490
St. Paul, Minnesota 55104

Dear Mr. Steger:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental Assessment (DEA)/ Section 4(f)/6(f) Evaluation for the reconstruction of TH-22 between the cities of St. Peter and Mankato.

SECTION 4(f) EVALUATION COMMENTS

We concur that there is no feasible and prudent alternative to the proposed project, if project objectives are to be met. We also concur with the proposed measures to minimize harm to Section 4(f) resources.

SECTION 6(f) COMMENTS

As stated in the document, Land and Water Conservation Fund (L&WCF) assistance has been used by the State to acquire land for the Sakatah Trail (under projects 27-00572 and 27-00761) and to acquire and develop Riverside Park land in the city of St. Peter (project 27-001249). Under all of the "build" alternatives, land from within the Section 6(f) boundaries of both facilities would be required. We note from the subject documentation that early coordination with State and local officials concerning the impacts of the proposed highway improvements on the trail and the park has been accomplished. The National Park Service will consider any land conversion/replacement requests under Section 6(f) only after Section 4(f) approval of the proposed project by the Department of Transportation. Also, land conversion/replacement requests should be submitted through Mr. Dennis W. Asmussen, Director, Trails and Waterways Unit, Department of Natural Resources, 500 Lafayette Road, St. Paul, Minnesota 55155-4052, telephone 612-296-4822, fax 612-297-5475. Mr. Asmussen administers the L&WCF program in the State of Minnesota.

ENVIRONMENTAL ASSESSMENT COMMENTS

We find that the DEA does an adequate job in documenting fish and wildlife resources in the project area and the impacts to those resources associated with the various project alternatives. All of the "build" alternatives have similar levels of impacts to fish and wildlife resources. However, the Fish and Wildlife Service (FWS) recommends that Alternative 3C (the southerly realignment) <u>not</u> be selected due to the greater impacts of that alternative on waters, adjacent to the Sakatah State Trail, that are protected by the Department of Natural Resources.

The principle project impacts would be to wetlands occurring within the construction right-of-way. The FWS is satisfied with measures documented in the DEA to avoid and minimize direct wetland impacts. However, indirect wetland impacts could occur through the removal of wetland hydrology via road ditches and lowered culverts, or through improved drainage outlets for landowners adjacent to the highway right-of-way. We recommend that measures be taken to avoid or

minimize such indirect impacts by maintaining current culvert elevations, implementing appropriate ditch design and outlet control, and assuring that third parties do not outlet drainage facilities into the highway right-of-way without the proper review procedures and permits from the responsible public authority. Finally, the FWS recommends that unavoidable direct and indirect wetland impacts be fully mitigated though a plan acceptable to all reviewing agencies.

ENDANGERED SPECIES ACT COMMENTS

The bald eagle (Haliaeetus leucocephalus), a federally-threatened species, is known to breed in Blue Earth, LeSueur, and Nicollet counties. However, because of the location and type of activity proposed, this project is not likely to adversely affect any federally-listed or proposed threatened or endangered species or their critical habitat. This precludes the need for further action on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, if the project is modified or new information becomes available which indicates that listed species may be affected, consultation with the FWS should be reinitiated.

On project matters relating to fish and wildlife resources, coordination should continue with the Field Supervisor, U.S. Fish and Wildlife Service, 4101 East 80th Street, Bloomington, Minnesota 55425-1665 (telephone 612-725-3548, fax 612-725-3609).

SUMMARY COMMENTS

The Department of the Interior has no objection to Section 4(f) approval of this project by the Department of Transportation.

We appreciate the opportunity to provide these comments.

Sincerely,

Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc: Mr. James Denn
Commissioner, Minnesota Department
of Transportation
Transportation Building
395 John Ireland Boulevard
St. Paul, Minnesota 55156-1899

Ms. Lisa Bigham
Project Manager
Minnesota Department of Transportation
District 7
501 South Victory Drive, Box 4039
Mankato, Minnesota 56002

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-4040

July 29, 1996

Ms. Lisa Bigham, Project Manager
Mn/DOT - Mankato District
501 South Victory Drive
P.O. Box 4039
Mankato, MN 56002-4039

Re: TH 22 (S.P. 0714) & TH 99 (S.P. 5206-22) - Blue Earth, Le Sueur, and Nicollet Counties

Dear Ms. Bigham:

The Minnesota Department of Natural Resources (DNR) has completed a review of draft Environmental Assessment for Trunk Highway 22. We offer the following comments for your consideration.

DNR Trails and Waterways staff have been working with Mn/DOT staff on a suitable Sakatah Trail Crossing design and a parking lot that Mn/DOT has agreed to build nearby for trail users. Coordination of design concepts is still in progress. We thank Mn/DOT for efforts at early coordination and cooperation among agencies to improve recreational opportunities.

DNR has previously commented on this project in a letter from Tom Balcom dated August 24, 1993. Mn/DOT has taken some measures to reduce impacts, such as using the existing alignment for the bridge crossing of the Minnesota River. We also expressed concern about impacts to a maple-basswood forest located near this project. The forest has been displaced by the River Hills Mall and no longer exists.

The DNR recommends alternative 3b as it has fewer wetland impacts and would have less impact to wildlife habitat along the Sakatah Trail.

Alternative 3a causes the most concern in that it places the new road near a drainage ditch. While this would reduce the acres of farmland separated by the project, highway runoff would affect water volume and quality in the ditch. This could adversely affect receiving waters downstream.

We prefer to see restoration of wetlands for mitigation rather than creation of new wetlands. The likelihood of reestablishing wetland functions is much greater with restoration. We are pleased that restoration is being used in this project. We recommend that mitigation sites be field checked to determine if they are effectively drained. We also recommend that forested wetland types be replaced with like kind whenever possible.

We do not recommend preparation of an EIS for this project.

Thank you for the opportunity to review this draft environmental assessment document. If you require additional information from the DNR in regard to the project, please contact Gail Fox from my staff at (612) 296-0731.

Sincerely,

Gail Fox for

Thomas W. Balcom, Supervisor
Natural Resources Planning and Review Services

c: Cheryl Heide
Pete Otterson
Ellen Heneghan
Conrad Christianson
Brian McCann
Lynn Lewis - USFWS

940018-03
ER7:TH22&99.doc

CITY OF
Saint Peter
WHERE HISTORY & PROGRESS MEET

Department of
Public Works

July 25, 1996

Larry Filter, Design Engineer
Minnesota Department of Transportation
P. O. Box 4039
Mankato, Minnesota 56002

Dear Larry:

Thank you for answering my questions at the public information meeting MnDOT held in Kasota and providing a copy of the map of the highway in the park area. It was very helpful in explaining the project to the Parks & Recreation Advisory Board and the City Council. Enclosed is a resolution passed by the Saint Peter City Council which lists comments and suggestions for the proposed Highway #22 improvement project. The comments relate to the proposed improvements within the city limits of Saint Peter and Riverside Park in which the highway is located.

A map is also enclosed to help illustrate a couple of the comments.

One general question arose after the City Council passed the resolution. How will the flood plain area under the bridge be protected so an access between the two portions of the park can be maintained under the bridge? It appears the channel, if not specifically controlled, could relocate itself to the west end of the bridge cutting off the proposed access between the two portions of the park.

We look forward to working with you on the design of the project to develop a highway route and roadway which will safely handle the vehicular and bicycle traffic and improve the highway in relation to the park and park activities.

Sincerely,

Lewis G. Giesking

Lewis G. Giesking, Director of Public Works

LGG:bll
encl.

CITY OF SAINT PETER, MINNESOTA

RESOLUTION NO. 88-200

STATE OF MINNESOTA)
COUNTY OF NICOLLET)
CITY OF SAINT PETER)

A RESOLUTION APPROVING CONSTRUCTION AND MAINTENANCE EASEMENT AGREEMENTS FOR HIGHWAY 22 BRIDGE PROJECT AND RIVERSIDE PARK

WHEREAS, The Minnesota Department of Transportation is proposing to replace the bridge on Highway 22 across the Minnesota River in and adjacent to Riverside Nature Park and Riverside Extension Park, and;

WHEREAS, the construction of the bridge will include construction of a spur dike along the river in Riverside Extension Park and raising of the highway elevation west of the bridge requiring construction work on City owner park land.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SAINT PETER, MINNESOTA, THAT: the City Council, upon review endorses this project which improves the safety on Highway 22 and will improve this area of the park. The Saint Peter City Council hereby approves the development of a construction easement agreement and a maintenance easement agreement subject to the following stipulations:

1.) The spur dike be landscaped on the park side with trees and shrubs common to the area.

2.) A minimum eight foot by eight foot underpass be installed under the highway between Riverside Extension Park and Riverside Nature Park.

3.) The parking area and canoe launch areas be reconstructed west and south of the spur dike.

4.) All the areas of the park disturbed by the bridge construction be returned to the pre-construction state.

5.) Provisions be made for the bicycle trail to connect between the bridge and the underpass and the bridge and the County roadway to the east.

Adopted by the City Council of the City of Saint Peter, Minnesota, this 12th day of December, 1988.

William A. Wettergren
Mayor

ATTEST:

Cindy Underdahl
City Clerk

CITY OF SAINT PETER, MINNESOTA

RESOLUTION NO. 1996 - 222

STATE OF MINNESOTA)
COUNTY OF NICOLLET)
CITY OF SAINT PETER)

RESOLUTION CONFIRMING 1988 RESOLUTION AND FORWARDING COMMENTS TO THE MINNESOTA DEPARTMENT OF TRANSPORTATION RELATING TO THE HIGHWAY 22 BRIDGE PROJECT IN RIVERSIDE PARK

WHEREAS, the Minnesota Department of Transportation is proposing to replace the bridge on Highway 22 across the Minnesota River in and adjacent to Riverside Nature Park and Riverside Extension Park; and

WHEREAS, the construction of the bridge will include construction of a spur dike along the river in Riverside Extension Park and raising of the highway elevation west of the bridge requiring construction work on City owned park land; and

WHEREAS, the project scope has been revised to extend the Minnesota River bridge to the west to provide for flood water release adjacent to the main river channel and to raise top elevation of the highway west of the bridge.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SAINT PETER, NICOLLET COUNTY, MINNESOTA, THAT: the City Council approves this project which improves the safety on Highway 22 and will improve this area of the park. The City Council hereby approves the development of a construction easement agreement and a maintenance easement agreement subject to the following stipulations:

1. The area west of the spur dike be landscaped on the park side with trees and shrubs common to the area.

2. Provision be made under the westerly bridge span for a bicycle trail, snowmobile trail, and for car and pickup access between the two sections of the park.

3. The parking area and canoe launch areas be reconstructed west and south of the spur bike.

4. All of the areas of the park disturbed by the bridge construction be returned to the preconstruction state.

5. Only one general access to the park be provided at what is now the "Bell" property with a turning lane on the highway. The current park access east of the "Bell" property would be closed.

6. An access roadway be constructed from the "Bell" entrance along the north side of State Highway 22 to the existing turn-around, then southerly under the bridge to the existing canoe launch area. The park road in the south section of the park would be closed.

7. Provide a maintenance access driveway into the south sections of the park for large City equipment. The City would install a gate on the entrance.

8. Construct a connection between the pedestrian/bicycle section on the south side of the bridge to the bicycle trail which goes under the bridge.

9. Provisions should be made to install security lighting on the bridge for the pedestrian walkway and under the bridge over the proposed pathway.

10. The highway should be relocated so the intersection of Highway 22 and Highway 99 are the same intersection at Highway 169.

Adopted by the City Council of the City of Saint Peter, Nicollet County, Minnesota, this 22nd day of July, 1996.

Jerry K. Hawbaker
Mayor

ATTEST:

Daniel Jordet
City Administrator

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-40__

December 30, 1996

Ms. Lisa Bigham, Project Manager
MNDOT- Mankato District
501 S. Victory Drive, P.O. Box 4039
Mankato, MN 56002-4039

RE: S.P. 0714-28 (TH 22) Mankato to St. Peter
Section 4(f) and 6(f) Evaluation

Dear Ms. Bigham:

The Minnesota Department of Natural Resources (DNR) have been working with MNDOT staff throughout the development of this project, which will involve the realignment of TH 22, and crossing of the Sakatah Trail. The trail crossing and land conversion of a minor amount of recreational land (approximately 0.63 acres), for highway construction and right-of-way, constitutes a Section 4(f) and 6(f) impact.

Our Trails and Waterways staff had extensive input on a suitable TH 22/Sakatah Trail crossing design and parking lot for trail users. Our understanding of the proposed mitigation for Section 4(f) and 6(f) impacts to the Sakatah Trail include the following:

1) Trail crossing structure that is 12' high and 24' wide.
2) Parking lot with access from proposed TH 22, just north of the Sakatah Trail crossing.
   A. A second Section 4(f)/6(f) involvement is associated with this project at the Riverside Park, owned by the City of St. Peter. The Sakatah Trail parking lot will also be used for mitigation of the Riverside Park Section 6(f) impact. MNDOT will acquire land and turn it over to the DNR within one year of the land conversion associated with TH 22/Riverside Park.
3) Trail connection from the existing City of Mankato trail near Eastwood Industrial Center to the Sakatah Trail.

The proposed mitigation for Sakatah Trail Section 4(f) and 6(f) impacts associated with this project is fully acceptable to the DNR. Final approval, however, must be obtained from the National Park Service.

Sincerely,

Gordon Kimball
Trails and Waterways
500 Lafayette Road
St. Paul, MN 55155-4052
(612) 296-6693

CITY OF
Saint Peter
WHERE HISTORY & PROGRESS MEET

Office of
City Administrator

13 December 1996

Lisa Bigham, Project Manager
MnDOT - Mankato District
501 South Victory Drive PO Box 4039
Mankato, Minnesota 56002-4039

re: S.P. 0714-28 (TH22) Mankato to Saint Peter
Section 4(f) and 6(f) Evaluation

Dear Ms. Bigham:

The City of Saint Peter has worked with MnDOT staff throughout the development of the TH 22 project involving reconstruction of the highway with a new Minnesota River crossing at the south edge of Saint Peter. The new river crossing, as I understand it, necessitates acquisition of a minor amount of land (approximately 0.7 acres) from the City owned Riverside Park. This section of the project will constitute, so I am told, section 4(f) and 6(f) involvements. The City of Saint Peter has been allowed to review and comment on the new river crossing design, park entrances and park enhancements.

Our understanding of the proposed mitigation for section 4(f) impacts to Riverside Park include the following points:

1. The spur dike will be stabilized with rip rap along the river flow side and planted with vegetation on the park side to blend it into the park's natural atmosphere.
2. The new river bridge will have a walkway separated by jersey barrier along one side of the bridge which will be connected with a paved, bicycle navigable trail through the park down to the underpass.
3. The new river bridge will facilitate a paved trail, car and pickup truck access under TH 22 on both sides of Riverside park.
4. A new, paved access road will be constructed to the canoe launch area.
5. One paved public access road to the park will be provided, including a left turn lane, along the east side of TH 22 near the former Bell property.
6. Park areas disturbed by construction will be landscaped to blend with the existing vegetation.
7. A maintenance access driveway will be constructed directly from the highway into the south section of Riverside Park for City equipment access.
8. Provisions will be made for lighting on the bridge . The pedestrian walkway under the bridge will also have lighting provisions if floodproof lighting can be installed.

Lighting fixtures on the bridge will be consistent with the decorative lighting already installed in other City parks.

9. The proposed alternate 2, which includes a seating monument, for design of the west end of the bridge will be developed and the lighting on top of the seating monument will be consistent with that on the rest of the bridge. Lighting will be provided on the monument consistent with the "piers and abutments" sheet on the design concepts for the bridge rather than a stone ball, which will be a maintenance problem.

The City of Saint Peter acknowledges that the mitigation for section 6(f) impacts associated with both Riverside Park and the Sakatah Trail will be accomplished by MnDOT acquiring land adjacent to the Sakatah Trail near Mankato. This land will be used for a trail access. We understand that MnDOT will purchase approximately 0.7 acres of Riverside Park land from the City of Saint Peter and that no further monetary compensation will be made to the City for the section 6(f) impacts in Saint Peter.

The proposed mitigation for Riverside Park impacts associate with this project are acceptable to the City, although the City still expresses some concern about washout along the west bank of the river under the extended portion of the bridge as the river will flow unimpeded through this area where it has been constricted by a solid dike of roadway in the past.

Should you have questions or require further communication from us for this project, please feel free to contact me directly. Thank you for your willingness to listen and efforts to accommodate the City of Saint Peter during this project.

Sincerely,

Daniel ~~Jordet~~
City Administrator

cc: Lewis Giesking, Director of Public Works
Glenn Schreiner, SEH

Appendix E

City of Saint Peter Riverside Park Temporary Occupancy Concurrence Letter

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Minnesota Department of Transportation
District 1
1123 Mesaba Avenue
Duluth, MN 55811-2798
Office Tel: 218-725-2700
Fax: 218-725-2800

101 N Hoover Road
Virginia, MN 55792-3412
Office Tel: 218-742-1100
Fax: 218-749-7709

December 4, 2014

Todd Prafke
Saint Peter City Administrator
227 S. Front St.
Saint Peter, MN 56082

Subject: State Project (SP) 4012-36
Trunk Highway 22 (TH 22) Flood Mitigation Project
Temporary Impacts to Riverside Park

Dear Todd,

As part of an overall goal to reduce the frequency of roadway closures during flooding in Saint Peter, MnDOT is moving forward with construction of an overflow bridge structure and reconstruction of Highway 22 on the south side of Saint Peter. The project will raise the roadway 1 foot above the 100-year flood elevation from US Highway 169 to the Minnesota River Bridge.

Riverside Park is located adjacent to both sides of TH 22 in this project area. With this reconstruction project, the Riverside Park access road approach will be modified to tie into the newly raised TH 22 roadway.

As per the Federal Register Rules and Regulations 23 CFR 774.13(d), a temporary occupancy will not constitute a Section 4(f) use when all of the conditions listed below are satisfied:

- **Duration must be temporary, less than the time needed for construction of the project, and there should be no change in ownership of the land;**
  The duration of the work on the Riverside Park access road approach will take less time than the entire project. MnDOT will not acquire permanent right of way for improvements to the park access road.
- **Scope of the work must be minor, both the nature and the magnitude of the changes to the Section 4(f) property are minimal;**
  The proposed project is to raise the TH 22 profile above the Minnesota River100-year flood elevation and add a new overflow bridge structure to maintain the flowable area of the river and floodplain.
  The Riverside Park Access Road approach will also be regraded to allow for an entrance onto TH 22. The project work described below is a summary of what likely can be anticipated:
  - *Raise road embankment with the placement of fill material.*
  - *Repaving road surface and shoulders on the existing alignment.*
  - *Regrading side slopes in many areas. The work will remove narrow strips of trees from these slopes, leaving the landscape different than what currently exists in the*

area of the park. Although the landscape will be slightly altered, the highway will stay on the existing alignment.
  - *Construction of a bridge overflow structure to maintain the flowable area of the Minnesota River and associated floodplain.*

- **There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;**
  There are no anticipated permanent adverse physical impacts because the work that MnDOT is proposing is to reconstruct the roadway with the primary purpose of raising the roadway above the 100-year flood elevation to minimize future roadway closures and damage due to flooding. No interference with activities or purposes of the resource will occur.
- **The land being used must be fully restored, the property must be returned to a condition which is at least as good as that which existed prior to the project;**
  The proposed project includes regrading a portion of the Riverside Park Access Road in order to maintain its access with TH 22.
- **There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.**

Please review the attached map and indicate your concurrence with the work proposed, and that the above conditions are met, by signing below. Please forward a signed copy back to me for our records.

If you have questions regarding this matter, please contact me at your earliest convenience at (507) 304-6199. Thank you.

Sincerely,

Zachary Tess

Zachary Tess
Project Manager
MnDOT District 7

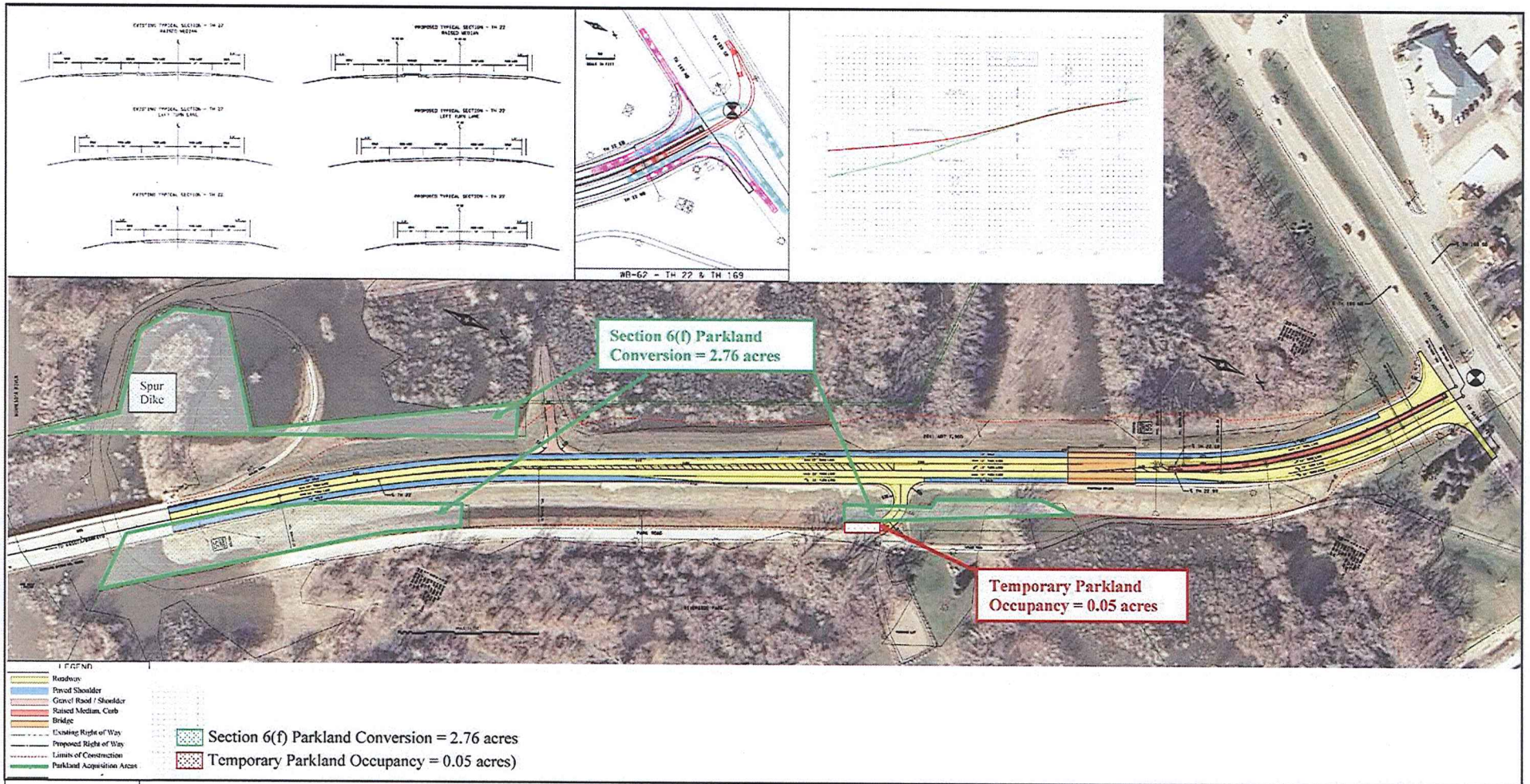
I concur that the proposed work constitutes a Temporary Occupancy of the Saint Peter Riverside Park.

Todd Prafke
City Administrator

12/04/14
Date

Attachments: Project Layout Map with temporary park impacts noted

Project Location Map



Highway 22 Flood Mitigation Project

Figure 1
Preliminary Layout and Parkland Impacts

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Appendix F

2010 US Census Data

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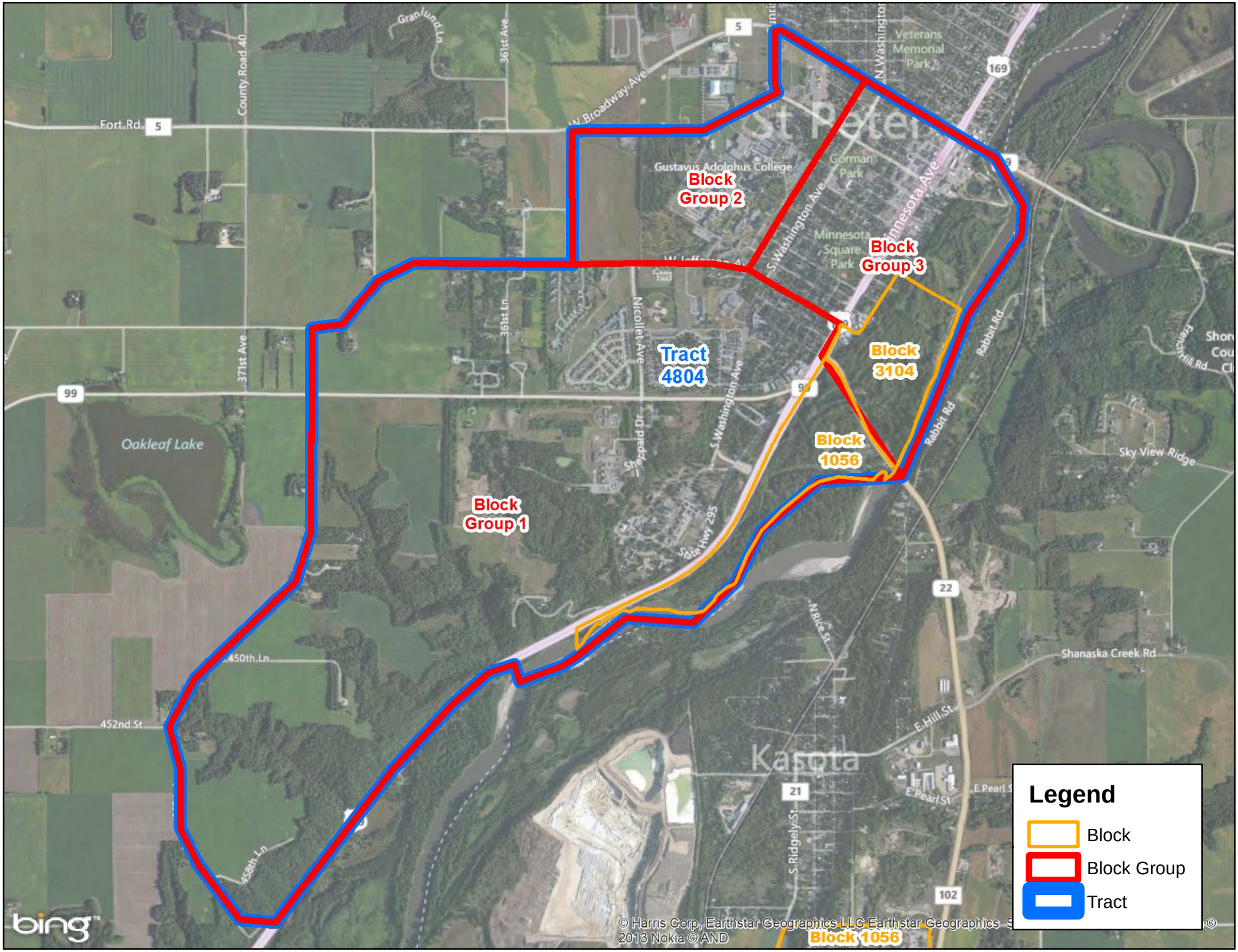
Block Group 2
Block Group 3
Tract 4804
Block 3104
Block 1056
Block Group 1
Block 1056
Legend
Block
Block Group
Tract
Oakleaf Lake
Kasota
St Peter
Gustavus Adolphus College
Veterans Memorial Park
Gorman Park
Minnesota Square Park
Fort Rd
County Road 40
361st Ave
361st Ln
371st Ave
Granlund Ln
W Broadway Ave
Nicollet Ave
S Washington Ave
Minnesota Ave
Rabbit Rd
Sky View Ridge
Shanaska Creek Rd
E Hill St
E Pearl St
S Ridgely St
N Rice St
State Hwy 295
Sheppard Dr
450th Ln
452nd St
458th Ln
5
99
169
22
21
102
bing
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Race Information

	Block 1056 Block Group 1		Block 3104 Block Group 3		Block Group 1 Tract4804		Block Group 3 Tract 4804		Tract 4804 (3Total Block Groups)		City of St Peter		Nicollet County		State of Minnesota	
					Number	Percent	Number	Percent	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Households				10	683	N/A	731	N/A	1471		3491		12,201	NA	2,347,201	NA
Population		0		23	2295	100.0%	1694	100.0%	5,925	100.00%	11,196	100.00%	32,727	100.00%	5,303,925	100.00%
White		0		23	1967	85.7%	1552	91.6%	5,245	88.52%	10,091	90.13%	30,666	93.70%	4,524,062	85.30%
Minorities	0		0		328	**14.3%**	142	**8.4%**	680	11.48%	1,105	9.87%	2,061	6.30%	779,863	14.70%
African American	0		0		165	**7.2%**	43	**2.5%**	248	4.19%	369	3.30%	667	2.04%	274,412	5.17%
AiAN	0		0		43	**1.9%**	6	**0.4%**	52	0.88%	64	0.57%	99	0.30%	60,916	1.15%
Asian	0		0		33	**1.4%**	19	1.1%	149	2.51%	180	1.61%	431	1.32%	214,234	4.04%
NHPI	0		0		0	0.0%	0	0.0%	0	0.00%	0	0.00%	1	0.00%	2,156	0.04%
Some other Race	0		0		54	**2.4%**	37	**2.2%**	106	1.79%	263	2.35%	397	1.21%	103,000	1.94%
Two or More Races	0		0		33	**1.44%**	37	**2.18%**	125	2.11%	229	2.05%	466	1.42%	125,145	2.36%
Hispanic Origin	0		0		178	**7.8%**	94	**5.5%**	315	5.32%	718	6.41%	1,226	3.75%	250,258	4.72%

X.X% Exceed County Average

Tract info				Block Group	County	State
SF1 - DP-1			Race	SF1 - QT-P5	SF1 - DP-1	SF1 - DP-1
SF1 - DP-1			Hispanic	SF1 - QT-P6	SF1 - DP-1	SF1 - DP-1
SF1 - DP-1			Household	SF1 - QT-P11	SF1 - DP-1	SF1 - DP-1

Poverty Information

	Census Tract 4804	St Peter Number	Nicollet County Number	State of Minnesota Number
Total Households	1,481	3,569	12,163	2,101,875
Total Families	825	2,150	8,157	1,365,845
Median household Income (2012 inflation-adjusted dollars)	**$52,835**	$50,279	$59,490	$59,126
Median family Income (2012 inflation-adjusted dollars)	**$65,045**	$63,663	$71,476	$74,032
per capita income in 2012 (dollars)	**$19,170**	$20,286	$26,343	$30,656
Percentage of families whose income in the past 12 months is below the poverty line	5.20%	12.8%	6.6%	7.2%
Percentage of people whose income in the past 12 months is below the poverty line	**21.60%**	22.9%	11.0%	11.2%

Census Tract Value that are LESS THAN the Income values or is GREATER THAN the Poverty Level

Tract Source for Poverty	ACS 5 Year Estimate 2008-2012- DP03
City Source for Poverty	ACS 5 Year Estimate 2008-2012- DP03
County Source for Poverty	ACS 5 Year Estimate 2008-2012- DP03
State Source for Poverty	ACS 5 Year Estimate 2008-2012- DP03