

ATTACHMENT 4

Wetland 2-Part Finding



Wetland Impact Assessment & Two-Part Finding Form

Project Description

S.P. Number: S.P. 8680-173

County: Wright County

Project Name: I-94 Reconstruction from TH 24 in Clearwater (17) to the CSAH 37 in Albertville

Watershed: Mississippi River- St. Cloud

HcPCi is in the final design stages for a 15-mile segment of I-94 between Monticello and Clearwater (SP 8680-173). The Environmental Assessment (EA) – including this Wetland Impact Assessment & Two-Part Finding Form (Form) – for SP 8680-173 was approved and signed by MnDOT on January 9, 2019 and by FHWA on January 10, 2019. MnDOT’s Negative Declaration of Impacts / Finding of Fact and Conclusion was issued April 12, 2019. The FHWA’s Finding of No Significant Impact (FONSI) was issued May 8, 2019.

During the design-build process, two Alternative Technical Concepts (ATC 2 and ATC 3) were proposed by HcPCi and conditionally approved by MnDOT on April 16, 2019 and April 26, 2019, respectively. The following is a revised Form documenting the impacts of the Proposed Alternative which improves the primary and secondary needs of the project above the previously approved Preferred Alternative within the EA.

The overall project includes the I-94 corridor from TH 24 in Clearwater to CSAH 37 in Albertville. The 24.2-mile corridor was divided into four segments where Segment 1 was from Clearwater to Hasty, Segment 2 was from Hasty to Monticello, Segment 3 was from Monticello to CSAH 18 and Segment 4 was from CSAH 18 to CSAH 37 in Albertville. While social, economic, and environmental impacts were evaluated for the entire corridor, the current construction project only includes Segments 1 and 2, which is reflected in this Form.

The project will include the addition of a third lane in both directions of I-94 between Clearwater and Albertville, in Wright County. Throughout Segments 1 and 2, bituminous overlay, unbonded concrete overlay (UBOL) and concrete pavement reconstruction would be used to improve the poor pavement condition. The Proposed Alternative would provide a bituminous overlay and widening of I-94 in Segment 1. A short section of reconstruction would be required in Segment 1 to transition the median width from Segment 2. In Segment 2, the Proposed Alternative would incorporate both reconstruction and UBOL, providing new concrete pavement.

Segments 1 and 2 from Clearwater to Monticello was programmed for construction during 2019 - 2021 as SP 8680-173 and was LET on May 23, 2019.

Purpose and Need

The purpose of this project is to provide a long-term solution for highway users by improving pavement conditions and freight movement, while enhancing traffic mobility on I-94 between Clearwater and Monticello. MnDOT has identified a number of factors justifying the need for the I-94 Albertville to Clearwater Improvement Project. The needs have been categorized by primary, secondary, and additional considerations. MnDOT recognizes that some of these needs may differ by segment.

Primary needs include the primary transportation problems of the project corridor. The primary needs that have been examined include:

- Improve poor pavement conditions: *Pavement conditions along segments of I-94 are deteriorating and reaching the end of their service life*
- Maintain freight mobility: *Two lanes in each direction must remain open during construction in order to maintain efficient traffic flow for freight and commuter traffic*

Secondary needs are other transportation problems that may be able to be addressed at the same time as primary needs. The secondary needs that have been examined include:

- Address geometric deficiencies that restrict traffic flow: *Traffic mobility is being compromised due to narrow inside shoulders.*
- Repair or replace degraded stormwater infrastructure: *Stormwater drainage infrastructure along the corridor has reached the end of its service life or needs maintenance*

Additional considerations are elements that are not central to the purpose and need of the project but are important criteria for evaluating build alternatives, including:

- Environmental considerations such as wetland impacts and right-of-way acquisition

Overview: Total Wetland Impacts

The EA/EAW addresses permanent wetlands impacts. Permanent wetland impacts result in a loss in the quantity, quality or biological diversity of a wetland and will not be restored to pre-project conditions and functions within 90 days of the impact occurrence. Temporary wetland impacts will be repaired, rehabilitated, or restored to existing conditions within 90 days of the impact occurrence. The regulatory agencies will determine whether an impact to an aquatic resource is permanent or temporary. Temporary impacts will be addressed through the permitting process.

Table 1. Total Permanent Impacts – Proposed Alternative

Type	Permanent Impacts (Acres or Square Feet ¹)
Wetland basins	0.378
Ditches with wetlands in the bottom (WCA* and USACE*)	0
Ditches with wetlands in the bottom (USACE only)	2.755
Other Aquatic Resources	0.077

*US Army Corps of Engineers ¹Wetland Conservation Act

Location of Wetlands in Project Area

A Level 1 Wetland Delineation was completed to identify wet ditches using a routine off-site delineation method.¹ This method was applied for safety reasons due to high traffic volumes. The boundaries of the digitized wet ditches were similar based on topographic relief and visual observations of similar vegetative communities and landscape position to nearby field delineated wet ditches. The digitized ditches were field verified during the summer of 2017. Only wet ditches within the median, including #25, #55, #56, and #58 were completed using the Level 1 method.

Level 2 Delineations were completed for wetlands with proposed permanent impacts. A Level 2 Delineation is based on a field survey of vegetation, soil, and hydrology characteristics, following procedures described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1, 1987) and in accordance with the methods identified in the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Interim Regional Supplements) as required by both the Minnesota Wetland Conservation Act and Section 404 of the Clean Water Act. All aquatic resources except wet ditches #25, #55, #56, and #58 were delineated using the Level 2 method.

Table 2. Aquatic Resource Overview

Type	Total Areas (Acres)
Wetland basins	4.49
Ditches with wetlands in the bottom (WCA and USACE)	0
Ditches with wetlands in the bottom (USACE only)	4.54
Other Aquatic Resources	0.80

¹ Level 1 methodology consisted of a desktop analysis utilizing aerial photography, National Wetland Inventory mapping, soil data, and topography, among other data sources.

PART 1: Avoidance Alternatives

This section presents the alternatives evaluation process, alternatives that were evaluated for the project but were rejected from further consideration, and alternatives that remain under consideration. Alternatives were developed and evaluated based on their ability to meet the project purpose and needs and perform across evaluation criteria (i.e. additional considerations). The proposed project maintains I-94 in its current alignment. No alternatives were evaluated that would relocate the freeway as this would have substantial social, environmental, and economic impacts.

Alternatives Considered but Rejected

A variety of build alternatives were developed that tried to meet the purpose and need of the project. In order to maintain two lanes of traffic in each direction during construction, temporary and permanent third lanes were investigated to determine feasible construction staging. As cost estimates were compared along with other design factors such as drainage infrastructure and future maintenance, it was clear that temporary construction lanes were not cost effective if extended along the entire corridor. Thus, the alternatives described here considered a permanent third travel lane in each travel direction, but differed based on the direction of the widening, whether to the inside (toward the median) or to the outside, and to the degree of roadbed disturbance (overlay vs full reconstruction).

No Build Alternative

The no-build alternative assumes I-94 remains as-is and pavement management continues as needed. This alternative would not maintain two lanes of traffic in each direction during maintenance activities. Lane closures result in major delays and back-ups causing unreliable travel times and inefficient mobility for freight traffic. It has been determined as described above that for this roadway segment, the RQI is below the terminal value and has reached the end of its service life. This alternative does not meet the full purpose of the project and needs of the I-94 corridor and was therefore rejected from further consideration.

Overlay Alternatives

Three alternatives were developed that would have maintained the current road alignment, conducted pavement rehabilitation via an unbonded concrete overlay, and constructed a new third lane. The third lane would have been constructed by building a consistent road base to the existing I-94 lanes and adding a concrete overlay to ensure the road profile was maintained across all travel lanes. The overlay options would have required some full reconstruction, specifically, lowering the road profile at bridges to account for the raised elevation resulting from the overlay. The overlay alternatives were initially considered low-cost options; however, through preliminary engineering and cost estimates, it was discovered they did not provide adequate drainage with a rural ditch section, did not allow room for standard inside shoulder widths, and required greater impacts to right of way needed and wetland impacts.

Alternative A: Overlay with Widening to the Inside

Alternative A would have added two 12-foot lanes, one eastbound and one westbound, to the inside of the existing road alignment. The alternative was dismissed because the resulting median would have been narrow, approximately 28 feet wide and less than 2 feet deep, providing limited width and flow capacity for drainage functions.

Alternative B: Overlay with Widening to the Outside

Alternative B would have added two 12-foot lanes, one eastbound and one westbound, to the outside of the existing road alignment. The alternative was dismissed for Segment 2 because the resulting environmental impacts to wetlands would have been higher than Alternative A because most wetlands are beyond the outside shoulder where widening would occur, and approximately 1.35 acres of temporary easements would be needed for construction. The alternative was viewed as viable in Segment 1 between TH 24 and CSAH 8 in Hasty because there were minor wetland impacts (less than 0.15 acres) and no right-of-way impacts.

Alternative C: Overlay with Widening to the Westbound Inside and Eastbound Outside

Alternative C was developed in response to the drainage issues of Alternative A and the environmental issues of Alternative B. It would have added two 12-foot lanes, one to the inside along the westbound direction and one to the outside of the eastbound direction. Environmental and drainage issues were still present, but to a lesser degree than Alternatives A and B. The alternative was viewed as the best overlay option but was eventually dismissed when considering the maintenance costs associated with an overlay life cycle of pavement.

Full reconstruction alternatives

Full reconstruction alternatives were developed with the understanding that they could result in a higher construction cost but result in a greater pavement life, meaning less future pavement rehabilitation costs. The reconstruction would allow roadway alignment shifts if needed to avoid or minimize some environmental impacts which would not be practical with overlay options.

Alternative E1: Full Reconstruction with 4-foot Paved Median Shoulder

Alternative E1 was identical to Alternative C in terms of the location of lane additions. This alternative, like overlay options A through C, would have allowed for a 4-foot median shoulder (5.5 feet usable width). In coordination with maintenance and emergency services entities, it was concluded that a 4-foot shoulder was not wide enough to avoid impacts to the inside lane of traffic during emergency and maintenance situations; therefore, this option was dismissed as it would not meet the maintain freight/traffic mobility needs of the project.

Alternative E2 Full Reconstruction with 10.5-foot Paved Median Shoulder

Alternative E2 would have resulted in a full reconstruction of the corridor, centered on the existing median. This reconstruction would have allowed for a 12-foot inside shoulder (including 1.5-foot aggregate) which would allow for all lanes of traffic to remain open, even during maintenance or emergency situations. The alternative was dismissed because the difference in environmental impacts would have been substantial (i.e. over 4 acres of wetland impact).

Alternatives Under Consideration

There are two “Build” alternatives considered, the *Preferred Alternative* (from the previously approved EA) and the *Proposed Alternative*.

Preferred Alternative

The Preferred Alternative would provide a bituminous overlay (UBOL was programmed for the future) of I-94 with widening to the outside between Clearwater and Hasty (Segment 1) and a full reconstruction of I-94 between Hasty and Monticello (Segment 2) as an urban section with a concrete median barrier. The overlay and reconstruction

would address the primary need of the project which is improving poor pavement condition. In both segments, an additional 12-foot travel lane would be added in each travel direction. The proposed typical section includes three 12-foot travel lanes, a 10-foot inside shoulder, and a 10-foot paved outside shoulder in each direction. The addition of a third travel lane would allow the corridor to maintain two travel lanes in each direction during construction in order to maintain traffic flow for freight and commuter traffic.

The Preferred Alternative proposed a continuous concrete median barrier for the length of Segment 2. Barrier would be placed 10 feet outside the nearest travel lane in either direction, as required per design standards. The rigid concrete barrier is necessary as no deflection into the opposing roadway can be permitted in the narrow median configuration.

The Preferred Alternative addresses a secondary need of the project by repairing or replacing degraded stormwater infrastructure. In Segment 1 the existing vegetated median ditch would be maintained, and drainage functions would remain largely unchanged. Culverts and aprons found to be degraded or not operating as intended would be modified or improved to restore functionality. In Segment 2, a continuous concrete median barrier would be constructed to separate the two travel directions. New storm sewer would replace the stormwater drainage function of the existing vegetated median ditch in Segment 2. A total of seven stormwater management areas would also be constructed.

The Preferred Alternative would have a total of 2.19 acres of permanent impacts to wetlands and wet ditches. This alternative would acquire 2.77 acres of right-of-way as permanent easement for two stormwater ponds.

Proposed Alternative

The Proposed Alternative would incorporate two methods of roadway construction to improve the primary and secondary needs of this project and achieve MnDOT's desire for a long-term solution for I-94. Throughout Segments 1 and 2, bituminous overlay, UBOL and concrete pavement reconstruction would be used to improve the poor pavement condition. The proposed typical section includes three 12-foot travel lanes, a 10-foot paved inside shoulder, and a 10-foot paved outside shoulder in each direction. The Proposed Alternative offers a median width of 60-66 feet with the majority of Segment 2 proposed as 66 feet. HTCB is proposed in the median a minimum of four feet from the paved shoulder edge and a minimum of eight feet from the median ditch bottom.

Drainage functions would remain largely unchanged in both Segments 1 and 2. In Segment 1, between Clearwater and Hasty, median ditch depths and widths will be maximized to the extent possible. In Segment 2, between Hasty and Monticello, the existing vegetated median ditch would be improved to have a minimum depth of 4-feet and a minimum bottom width of 8-feet to store and convey stormwater. Specific improvements per segment are detailed below.

The Proposed Alternative would provide a bituminous overlay and widening of I-94 in Segment 1, the same as the Preferred Alternative. A short section of reconstruction would be required in Segment 1 to transition the median width from Segment 2. A short reconstruction section would also be required under the Grover Avenue Bridge to maintain vertical clearance.

In Segment 2, the Proposed Alternative would incorporate both reconstruction and UBOL, providing new concrete pavement. An UBOL would be used for most of I-94 eastbound, except under overpasses where reconstruction would be completed to maintain the required vertical clearance. The eastbound roadway would remain on the existing alignment but would be widened to the outside shoulder to accommodate the third travel lane.

The majority of I-94 westbound would be reconstructed. The westbound roadway would be shifted outward by 6 feet

in areas of reconstruction accommodating a wider and deeper median ditch. This would also accommodate the third travel lane. UBOL would occur in areas of I-94 westbound where moisture susceptible soils have been identified to maintain the structure of the existing roadbed. This is primarily west of the Enfield Rest Area.

The Proposed Alternative would have a total of 3.133 acres of permanent impacts to wetlands and wet ditches. This alternative would also acquire 2.77 acres of right-of-way as permanent easement for two stormwater ponds.

PART 2: Minimization Measures

It was not feasible to completely avoid all wetland impacts resulting from this proposed improvement. Wetland impacts that are unavoidable have been minimized to the extent practicable without compromising design, contributing to the safe, reliable, and efficient use of I-94. To minimize wetland impacts with the Proposed Alternative, the following minimization measures have been used:

- 10 feet wide paved inside and outside shoulders (10.5 is standard).
- 1:4 reduced inslopes (1:6 is standard).
- 1:3 inslopes protected by guardrail at:
 - Wetland #2
 - Wetland #30
 - Wetland #32
- Profile adjustments at:
 - Wetland #2
 - Wetland #6
 - Wetland #9
- Roadway realignment minimizing wetland impacts at:
 - Wetland #9
 - Wetland #32
- Stormwater treatment areas have been designed to use existing stormwater best management practice (BMP) locations and avoid wetland impacts where possible. In total, 13 drainage areas between Clearwater and Monticello were evaluated for stormwater management. Areas were eliminated due to drainage limitations (i.e. not located in suitable location to receive stormwater runoff), insufficient right - of-way availability, or the presence of wetlands. Seven areas have been identified that met most or all of the siting criteria. In order to limit wetland impacts, two of these areas have been located in areas proposed for right-of-way acquisition.
- One of the remaining management areas is located in proximity to a wetlands #1, 1A and 2. Design efforts were made to avoid these impacts but, due to the current level of data available at this stage of design, the size of this pond could not be modified to avoid wetland while maintaining BMP functions. The size and orientation of the pond has been reduced to the extent possible. The location of the pond has been situated to avoid larger wetland impacts near Fish Creek.

Table 4 below identifies the anticipated wetland impacts for the proposed alternative concept. Anticipated impacts are based on Proposed Alternative construction limits. The Proposed Alternative is anticipated to result in 3.210 acres of permanent aquatic resource impacts, including: 0.378 acres of wetland impacts, 2.755 acres of wet ditch impacts, and 0.077 acres of tributary impacts. All impacts within construction limits are identified as permanent impacts. Temporary impacts during construction have been estimated at 0.024 acres to one wetland and will be included in the permit application review process with details on restoration plans.

Table 4. Wetlands within the Project Area (Level 1 Wetland Delineation)

Basin ID	Section, Township, Range	Circ 39	Wetland Type/ Existing Plant Community Type(s)	Basin Size (Acres)	Permitting Jurisdiction (USACE, DNR, WCA)	Size of Permanent Impact of the Proposed Alternative (Acres or SF)
Wetland #1	S7, T122N, R26N	2	Fresh (Wet) Meadow	0.01	USACE, WCA	0.011
Wetland #1A	S7, T122N, R26N	2	Fresh (Wet) Meadow	0.01	USACE, WCA	221 SF
Wetland #2	S7, T122N, R26N	3	Shallow Marsh	0.20	USACE, WCA	0.133
Wetland #6-2	S20, T122N, R26W	3	Shallow Marsh	0.52	USACE, WCA	18 SF
Wetland #9	S21, T122N, R26W	3	Shallow Marsh	0.50	USACE, WCA	0.048
Wetland #11	S21, T122N, R26W	2	Fresh (Wet) Meadow	0.03	USACE, WCA	95 SF
Wetland #14	S26, T122N, R26W	2	Fresh (Wet) Meadow	0.02	USACE, WCA	258 SF
Wetland #15-1	S26, T122N, R26W	3	Shallow Marsh	0.38	USACE, WCA	317 SF
Wetland #16	S26, T122N, R26W	3	Shallow Marsh	0.25	USACE, WCA	84 SF
Wetland #17	S2 T122N, R26W	3	Shallow Marsh	0.15	USACE, WCA	0.046
Wetland #30-1	S4, T121N, R25W	3	Shallow Marsh	0.31	USACE, WCA	351 SF
Wetland #30-2	S4, T121N, R25W	3	Shallow Marsh	0.31	USACE, WCA	0.027
Wetland #32-1	S3, T121N, R25W	3	Shallow Marsh	0.13	USACE, WCA	158 SF
Wetland #32-2	S3, T121N, R25W	3	Shallow Marsh	0.13	USACE, WCA	0.034
Wetland #33	S4, T121N, R25W	3	Shallow Marsh	0.05	USACE, WCA	399 sf
Wetland #34	S30, T122N, R25W	3	Shallow Marsh	0.01	USACE, WCA	72 SF
Wetland #36	S25, T122N, R26W	6	Shrub Carr	0.02	USACE, WCA	96 SF
Wetland #39B	S26, T122N, R26W	2	Fresh (Wet) Meadow	0.33	USACE, WCA	142 SF
Wetland #41	S26, T122N, R26W	2	Fresh (Wet) Meadow	0.28	USACE, WCA	0.022
Wetland #42	S26, T122N, R26W	6	Shrub Carr	0.10	USACE, WCA	122 SF
Wetland #44	S26, T122N, R26W	3	Shallow Marsh	0.40	USACE, WCA	111 SF
					Total Permanent Impacts:	0.378

Table 5. Ditches with Wetlands in the Bottom in the Project Area (Level 1 Wetland Delineation)

Ditch ID	Section, Township, Range	Circ 39	Wetland Type/ Existing Plant Community Type(s)	Basin Size (Acres)	Permitting Jurisdiction (USACE, DNR, WCA)	Size of Permanent Impact of the Proposed Alternative (Acres or Square Feet)
Wet Ditch #22	S21, T122N, R26W	3	Shallow Marsh	0.31	Incidental	0.033
Wet Ditch #23	S21, T122N, R26W	3	Shallow Marsh	0.10	Incidental	0.082
Wet Ditch #24	S21, T122N, R26W	3	Shallow Marsh	0.11	Incidental	0.060
Wet Ditch #25 - Median	S26, T122N, R26W	3	Shallow Marsh	0.02	Incidental	0.023
Wet Ditch #26A	S25, T122N, R26W	3	Shallow Marsh	0.14	Incidental	0.141
Wet Ditch #26B	S25, T122N, R26W	3	Shallow Marsh	0.01	Incidental	0.013
Wet Ditch #27	S25, T122N, R26W	2	Fresh (Wet Meadow)	0.05	Incidental	264 SF
Wet Ditch #37	S25 & 26, T122N, R26W	3	Shallow Marsh	0.09	Incidental	0.089
Wet Ditch #39A	S26, T122N, R26W	6	Shrub Carr	0.10	Incidental	0.047
Wet Ditch #40	S26, T122N, R26W	3	Shallow Marsh	0.09	Incidental	0.073
Wet Ditch #43	S26, T122N, R26W	3	Shallow Marsh	0.13	Incidental	0.127
Wet Ditch #45	S21, T122N, R26W	3	Shallow Marsh	0.04	Incidental	0.045
Wet Ditch #46	S21, T122N, R26W	3	Shallow Marsh	0.09	Incidental	0.086
Wet Ditch #50	S22, T122N, R26W	3	Shallow Marsh	0.23	Incidental	0.111
Wet Ditch #51	S22, T122N, R26W	3	Shallow Marsh	0.10	Incidental	0.102
Wet Ditch #52	S22, T122N, R26W	2	Fresh (Wet) Meadow	0.59	Incidental	0.024
Wet Ditch #53	S22, T122N, R26W	3	Shallow Marsh	0.17	Incidental	0.168
Wet Ditch #54-1	S22, T122N, R26W	3	Shallow Marsh	0.96	Incidental	0.083
Wet Ditch #54-2	S22, T122N, R26W	3	Shallow Marsh	0.96	Incidental	0.210
Wet Ditch #55 - Median	S22, T122N, R26W	3	Shallow Marsh	0.02	Incidental	0.023
Wet Ditch #56 - Median	S22, T122N, R26W	3	Shallow Marsh	0.08	Incidental	0.085
Wet Ditch #57	S22, T122N, R26W	3	Shallow Marsh	0.42	Incidental	0.407

Ditch ID	Section, Township, Range	Circ 39	Wetland Type/ Existing Plant Community Type(s)	Basin Size (Acres)	Permitting Jurisdiction (USACE, DNR, WCA)	Size of Permanent Impact of the Proposed Alternative (Acres or Square Feet)
Wet Ditch #58 - Median	S23, T122N, R26W	3	Shallow Marsh	0.12	Incidental	0.120
Wet Ditch #59	S23, T122N, R26W	3	Shallow Marsh	0.01	Incidental	0.012
Wet Ditch #60A	S26, T122N, R26W	3	Shallow Marsh	0.07	Incidental	0.052
Wet Ditch #60B-2	S26, T122N, R26W	3	Shallow Marsh	0.60	Incidental	0.502
Wet Ditch #61	S11, T121N, R25W	3	Shallow Marsh	0.03	Incidental	0.031
					Total Permanent Impacts:	2.755

Table 6. Other Aquatic Resources within the Project Area (Level 1 Wetland Delineation)

Resource ID	Section, Township, Range	Wetland Type/ Existing Plant Community Type(s)	Basin Size (Acres)	Permitting Jurisdiction (USACE, DNR, WCA)	Size of Permanent Impact of the Proposed Alternative (Acres or Square Feet)
Tributary #20-1	S7, T122N, R26W	Riverine	0.10	USACE	117 SF
Tributary #20-2	S7, T122N, R26W	Riverine	0.10	USACE	0.013
Tributary #20-3	S7, T122N, R26W	Riverine	0.10	USACE	0.060
Tributary #20-6	S7, T122N, R26W	Riverine	0.10	USACE	50 SF
				Total Permanent Impacts:	<i>0.077</i>

The location of each wetland impact is illustrated in Figure 7 of the EA.

COMPENSATION (REPLACEMENT/ENHANCEMENTS)

Applications for wetland permits are being coordinated with the appropriate agencies with wetland jurisdiction. Expected wetland mitigation needs are refined on a continual basis during early stages of project design, and therefore subject to change. The preferred method of wetland replacement is to use established, federally and state approved wetland bank credits. Efforts will be made to replace wetland losses within the bank service area of the wetland impact. The specific wetland compensation (bank credits) to be used will be determined through consultation with the US Army Corps of Engineers (USACE) and the MnDOT Office of Environmental Stewardship (OES) as the project proceeds.

For the USACE, ditches with wetland bottoms may be replaced at a different ratio, dependent on the following items:

- If a ditch bottom wetland is filled but a new ditch created (the ditch is shifted) no mitigation is typically required.
- If a ditch bottom wetland is filled but no new ditch is created mitigation may be required at a 1:1 ratio.

The minimum amount of wetland mitigation to be required is estimated at 0.378 acres at a 2:1 ratio or 0.756 acres. The project area is located in Bank Service Area 7.

CONCLUSION

Permanent wetland impacts for the Proposed Alternative are approximately 0.159 acres greater than the Preferred Alternative. Wetland impacts for the Proposed Alternative were vetted through detailed design effort and compared against the Preferred Alternative preliminary level of design detail when the EA/EAW was approved (January 10, 2019) and original permit application was submitted (January 24, 2019 with Revision March 10, 2019). Although it would incur more wetland impacts, the Proposed Alternative results in a lesser overall environmental impact.

As stated above, the Preferred Alternative provides a long-term improvement to the poor pavement condition with August 2020

new concrete pavement as both an UBOL and reconstruction. According to MnDOT's Office of Materials & Road Research publication Service Life and Reliability Analysis, the predicted life of concrete doweled (CD) Construction from new to a terminal RQI of 2.5 is 22 years. The predicted life of an UBOL is 35 years from new construction to reach an RQI of 2.5, or an addition of 13 years.

In addition to providing an improved service life of approximately 13 years, the UBOL pavement improvement inherently uses fewer natural resources. The improvement does not require removal of the existing roadbed and uses less aggregate in construction of the new roadway. This eliminates the associated trucking of materials which impacts area roadways and reduces use of materials from nearby pits or quarries.

For these reasons, the use of UBOL and reconstruction with the Proposed Alternative better satisfies a Primary Need to *Improve pavement condition* on this project than reconstruction only, as proposed by the Preferred Alternative.

Further, the Proposed Alternative and Preferred Alternative repair or replace degraded culverts and aprons along the project, meeting this Secondary Need for the project. However, the Proposed Alternative also provides the benefit of improving stormwater drainage. The Proposed Alternative retains a rural median width of 60-66 feet with the majority of Segment 2 being 66 feet, or the desirable width on rural freeways per MnDOT's design guidance (MnDOT Roadway Design Manual, Section 4-5.01). The wider, rural median design:

- increases capacity to convey stormwater over a storm sewer system in the Preferred Alternative and provides storage during high-intensity storm events while at the same time slowing the rate of runoff reaching stormwater basins by increasing the median width to 60-66 feet (with most being 66 feet).
- utilizes the median as a dry swale to reduce the runoff volume from lower intensity storms, reduce pollutants, and reduce peak runoff rates.

To utilize UBOL on the project and provide an equal or better pavement design life than reconstruction alone, widening to the outside is necessary where existing infrastructure capable of accommodating UBOL exists. Similarly, maximizing stormwater benefits and meeting desirable design criteria for a rural median width means widening to the outside is necessary. Inherent in this is an increase in a wetland impacts as they are primarily located in the ditches outside the existing I-94 travel lanes.

The advantages of the Proposed Alternative improve upon the Preferred Alternative when addressing the project's Primary and Secondary Needs. Considering this as well as economic, environmental, and other pertinent factors in accordance with Executive Order 11990, the Proposed Alternative is submitted for construction.

Based on the estimated 0.378 acres of permanent wetland basin impacts, 0.024 acres of temporary wetland basin impacts, 2.755 acres of permanent impacts to USACE only ditches with wetlands in the bottom, and 0.077 acres of permanent impacts to other aquatic resources as a result of the Proposed Alternative, it is anticipated that the project will qualify for a USACE Section 404 General Transportation permit. A final mitigation plan will be determined during the permit review process.

EXHIBITS

- See Figure 7 of the EA for delineated wetland boundaries and impact locations