

REPORT OF ACTION

PUBLIC WORKS PROJECTS EVALUATION COMMITTEE

Project No.: QR-25-B0

Type: Decision Document

Location: 12th Ave N & Red River

Date of Hearing: 1/26/2026

<u>Routing</u>	<u>Date</u>
City Commission	2/2/2026
PWPEC File	X
Project File	Eric Hodgson

The Committee reviewed the accompanying correspondence from Civil Engineer, Eric Hodgson, regarding the decision document for the 12th Avenue North Bridge Reconstruction Project No. QR-25-B0.

Preliminary engineering and design have progressed, and the Engineering team has evaluated the following alternatives and options for the project:

Alternatives

- "No Build"
- "Build – On Existing Alignment"
- "Build – Off Existing Alignment"

Options

- "Signalized Intersection"
- "Mini-roundabout" at the intersection of Elm and 12th Avenue

The "Build – On Existing Alignment" alternative has been removed from consideration by the Engineering team after its evaluation. At this time, the Project Review Committee recommends that the "Build – Off Existing Alignment" and "Mini-roundabout" alternative/option move forward as the selected alternative/option while we complete the NEPA document, which is a CatEx.

On a motion by Tim Mahoney, seconded by Susan Thompson, the Committee voted to recommend approval of the "Build – Off Existing Alignment" and "Mini-roundabout" alternative/option and proceed with the decision document.

RECOMMENDED MOTION

Concur with the recommendations of PWPEC and approve the "Build – Off Existing Alignment" and "Mini-roundabout" alternative/option.

PROJECT FINANCING INFORMATION:

Recommended source of funding for project: _____ N/A _____

	Yes	No
Developer meets City policy for payment of delinquent specials	N/A	
Agreement for payment of specials required of developer	N/A	
Letter of Credit required (per policy approved 5-28-13)	N/A	

COMMITTEE

	Present	Yes	No	Unanimous
				<input checked="" type="checkbox"/>
Tim Mahoney, Mayor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Nicole Crutchfield, Director of Planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Gary Lorenz, Fire Chief	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Brenda Derrig, City Administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ben Dow, Director of Operations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Tom Knakmuhs, City Engineer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Susan Thompson, Finance Director	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

ATTEST:



 Tom Knakmuhs, P.E.
 City Engineer

Final Decision Document

QR-25-B0

12th Ave N/15th Ave N Bridge Replacement
Fargo, North Dakota

January, 2026

 **HOUSTON**
engineering, inc.

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Fargo, North Dakota 58102
Ph. (701) 237-5065
www.houstoneng.com

**Red River
Bridge Replacement**
12th Ave. Fargo/
15th Ave. Moorhead

 **HOUSTON**
engineering, inc.



12th Ave N / 15th Ave N Bridge Replacement

12th Ave N / 15th Ave N from West of Elm St in Fargo, East to East of Bridgeview St in Moorhead

CERTIFICATION

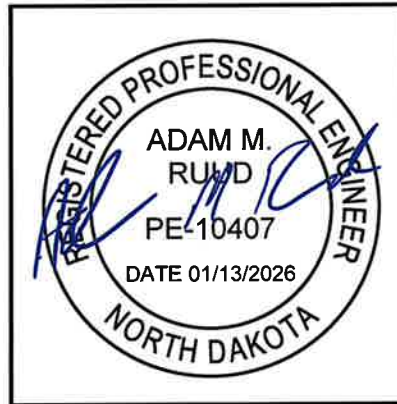


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- Appendix A Preliminary Opinion of Probable Cost
- Appendix B Preliminary Layout

1. Project Description

Highway: 12th Ave N (Fargo) / 15th Ave N (Moorhead)

Limits: West of Elm St N to East of Bridgeview St



Figure 1 – Project Location Map

2. Purpose of Project

The purpose of the proposed project is to provide a two-state river crossing of the Red River of the North at 12th Avenue North/15th Avenue North that maintains a continuous, year-round connection, meeting current design standards and the identified transportation goals of the Cities of Fargo & Moorhead. The project will raise the bridge above the post Fargo-Moorhead Area Diversion (FM Diversion) Project 100-year floodplain. The bridge serves as a critical two-state river crossing connecting North Dakota and Minnesota within the Fargo-Moorhead metropolitan area. The bridge was originally opened to traffic in 1988 as a privately operated toll bridge and is currently jointly owned by the cities of Fargo and Moorhead.

2.1. Need for Project

The need for the project is driven by operational deficiencies of the bridge in times of high-water events in which the river crossing needs to be closed. Currently the bridge is operationally impacted during less than 10-year flood events on the Red River. Deficiencies within the project limits also include pavement condition, and pedestrian facilities that do not comply with current ADA standards. While not a primary need for the project, opportunities exist to improve bicycle facilities across the bridge and also the intersection at Elm Street North/12th Avenue North if roadway reconstruction occurs.

2.2. Existing Conditions

The proposed project area is located along 12th Avenue North in Fargo, North Dakota, and 15th Avenue North in Moorhead, Minnesota, along the Red River. Residential developments, parking lots, transportation, pedestrian facilities, and recreation are the primary land uses within and directly adjacent to the project area. Recreational facilities nearby include Jack Williams Stadium and Mickelson Park and Softball Fields, Mickelson-Tricorn Bike Path, Trefoil Park, and Original Homestead Park.

The existing structure, National Bridge Inventory Structure No. FRGO31 (MN Bridge 14523), is an approximately 500-foot-long prestressed concrete bulb tee bridge that was built in 1987-1988. It is 40 feet wide and consists of two driving lanes, concrete curbs/barriers, metal railings, guardrail, a pedestrian sidewalk, lighting, and a chain link safety fence. The Mickelson-Tricorn shared-use path is present underneath the bridge running parallel to the west bank of the Red River.

12th Avenue North in Fargo, is a two-lane, urban collector with asphalt surfacing 12-foot driving lanes, pavement marking, curb and gutter, and a 100-foot westbound right turn lane at the Elm Street intersection. Utilities present in the area include sanitary sewer, watermain, and storm sewer. A shared-use path (as designated by the Metro COG Bike Map) is present along the north side of the roadway and a sidewalk is located south side of the roadway. A dedicated on-street bike lane is located west of Elm Street North. The intersection of 12th Avenue North with Elm Street North has existing all-way stop control, and pedestrian crossings on all legs.

15th Avenue North in Moorhead, is a two-lane, urban collector roadway, with asphalt surfacing and a width of 37 feet, pavement marking, curb and gutter, and storm sewer. A physically separated shared-use path (as designated by the Metro COG Bike Map) is present on the south side of the roadway. On-street bicycle facilities are not present.

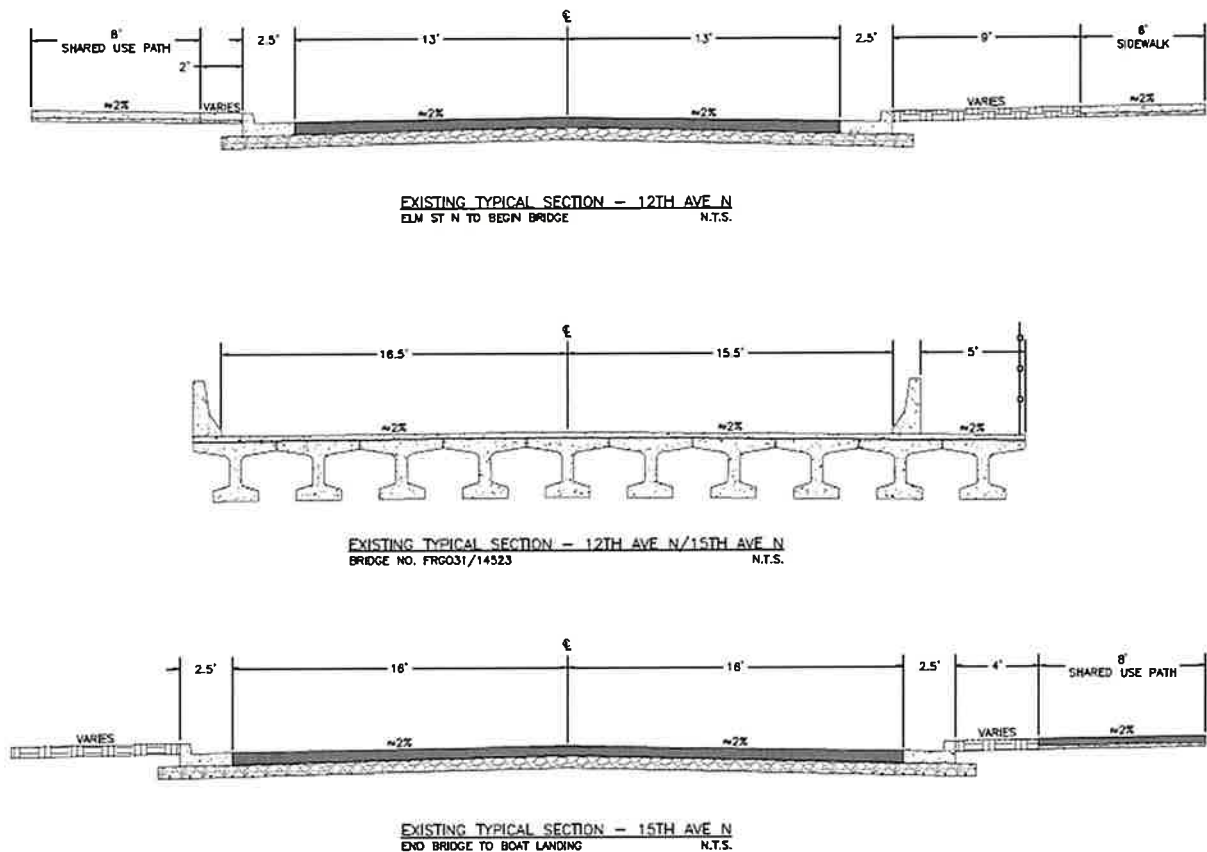


Figure 2 – Existing Typical Section

2.3. Deficiencies

Within the Fargo-Moorhead metropolitan area, there are only seven Red River crossings for vehicles. The 12th Avenue North bridge is currently in satisfactory structural condition. However, the existing bridge elevation is within the 100-year FEMA floodplain and has been closed seven times for a duration of up to 6 weeks each time during the last 16 years. Closures of the bridge due to flooding have occurred in both the spring and summer months. When the bridge closes, up to 10,000 vehicles per day must be detoured through downtown Fargo and Moorhead to either the 1st Avenue North, NP Avenue, or Main Avenue crossings, an approximate 3-mile detour, adding approximately 10-15 minutes to one-way travel times. This detour must also be utilized by the first responders and emergency service vehicles of the Red River Regional Dispatch Center, a joint venture of first responders that serve both Fargo and Moorhead. This detour greatly reduces the efficiency and effectiveness of the shared first responder network, including ambulance service.

The 2024 City of Fargo Transportation Plan identified the replacement of the 12th Avenue North bridge as a Street Priority Project. The primary goal as stated in the Plan would be to raise the bridge out of the future 100-year floodplain when the FM Diversion Project is completed. Additionally, the City of Fargo Go2030 Comprehensive Plan identified transportation linkage initiatives across the Red River and the Fargo-Moorhead Metropolitan Council of Governments (Metro COG) has included the project in its Fargo-Moorhead Metropolitan Transportation Plan². Because of the Metro's growing size, the Metro COG is now classified as a Transportation Management Area (TMA). With that designation, the Metro COG has developed a Congestion Management Process that is included in the Metropolitan Transportation Plan. The Congestion Management Process indicates a support for improving safety and system management in corridors with reliability issues and encouraging transportation projects that provide improved multi-modal access. The improvements associated with this project will align with the Travel Reliability, Peak Period Delay, and Network Connectivity objectives outlined in the Congestion Management Process.

The Pavement Condition Index (PCI) score within the 12th Avenue North and Elm Street intersection is 35 out of 100, or "Very Poor". The PCI score for 12th Avenue North between Elm Street and the existing bridge is 61 out of 100, or "Fair". Cracking and rutting can be seen throughout this area. Across the existing structure is a less than 5-foot clear sidewalk. Per Public Right of Way Accessibility Guidelines (PROWAG), where the clear width of a pedestrian access route is less than 60 inches, passing spaces shall be provided at intervals of 200 feet. The bridge does not meet current PROWAG requirements for sidewalk connections. Additionally, the 12th Avenue North/15th Avenue North bridge was identified as a bike network public priority project in the Fargo-Moorhead Metropolitan Bicycle and Pedestrian Plan (October 2022) and as a 'vision project' in the 2050 Fargo-Moorhead Metropolitan Transportation Plan.

A traffic operations report was completed for the project. The report indicated the current roadway geometry does not provide the capacity needed to meet the existing traffic demands, specifically at the intersection of 12th Avenue North and Elm Street North. The average daily traffic (ADT) volumes along the corridor are projected to increase from 9,661 to 10,180 vehicles per day by 2045. Under current conditions, the corridor operates at acceptable levels during the morning peak hour; however, there are deficiencies that appear in the operations during the evening peak hour at the intersection of 12th Avenue North and Elm Street North. These operational deficiencies are expected to worsen as the traffic within the corridor continues to grow and the capacity of the present intersection is inadequate to accommodate projected traffic volumes. While not a primary need for the project, if bridge improvements occur, there is an opportunity to improve the intersection of 12th Avenue North and Elm Street North concurrently with bridge improvements.

² Fargo-Moorhead Metropolitan Council of Governments (Metro COG) 2050 Metropolitan Transportation Plan. April 2025.
Hyperlink: [Metro2050_no_Appendix_r_202504.pdf](#). Accessed October 2025.

3. Description of Alternatives

3.1. Alternative A: No Build

This Alternative would maintain the existing bridge, roadway and pedestrian network in their existing condition. This Alternative does not meet the purpose and need of the project but provides a baseline from which to compare impacts of other alternatives.

3.2. Alternative B1: Bridge Replacement on Existing Alignment

This Alternative would raise the bridge above the 100-year water surface elevation along the existing alignment. However, after further consideration it was eliminated due to:

- additional right of way needed from raising the road
 - This alternative would require additional permanent right of way from the residential properties south of 15th Ave N in Moorhead.
- increased traffic impacts associated with settlement mitigation measures
 - This alternative would require the roadway to be closed while geotechnical settlement mitigation measures are performed on the elevated embankment. This would increase the duration traffic is impacted.
- additional temporary Section 4(f)/6(f) impacts
 - This alternative has a minor increase of Section 6(f) impacts at Jack Williams Stadium due to the alignment deflection angle.
- aesthetic view for adjacent properties
 - This alternative would construct the elevated roadway closer to the residential properties south of 15th Ave N in Moorhead.
- potential for noise impacts
 - Due to the alignment being closer to the residential properties south of 15th Ave N in Moorhead, it is anticipated this option would have the higher potential for noise impacts.
- potential costs of additional retaining walls needed to minimize right of way impacts
 - In order to reduce right of way impacts, additional retaining walls would be required east of the bridge on the south side of 15th Ave N in Moorhead.

3.3. Alternative B2: Bridge Replacement on Realignment

This Alternative would replace the existing bridge to maintain accessibility and normal operations during flood events. The bridge would be raised to maintain the low member at a minimum of 1' above the 100-year water surface elevation in the Red River with operation of the FM Diversion. The increased bridge height results in increased loading on the riverbank as well as potential settlement concerns that will require mitigation.

This alternative will realign the east end of the bridge approximately 100' north of the existing bridge. See Figure 3 for the realignment location.

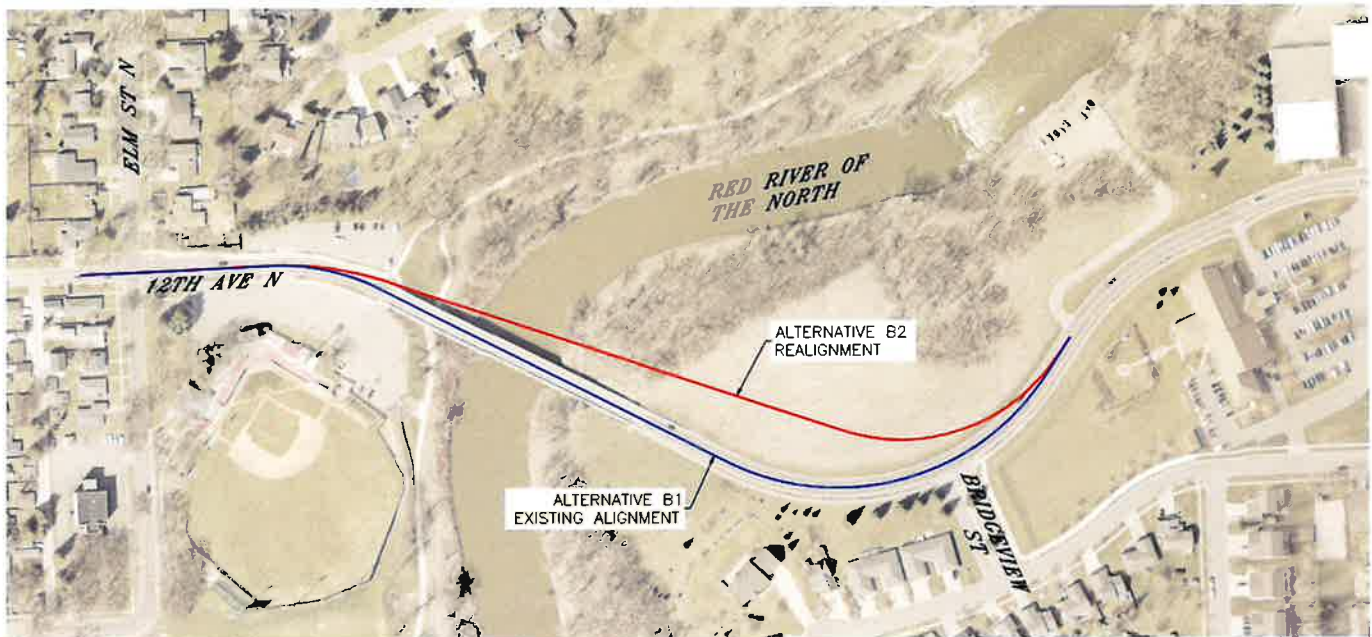


Figure 3 – Alignment Alternatives

Benefits of realigning the roadway to the north include:

- Separation from the existing roadway allowing for embankment placement and settlement mitigation measures, such as preloading, without impacting existing traffic.
- Separation from the residential neighborhood south of the roadway, minimizing impacts beyond the existing right-of-way. The area north of the realignment consists of river front where the realignment would not create additional impact.
- Reduces overall project costs by eliminating the need for retaining walls east of the bridge.

See Table 1 for a summary of impacts associated with each option.

Table 1 – Alignment Alternative Summary

Screening Criteria	Unit of Measure	No Build	Existing Alignment	Road Realignment
Meets Purpose and Need	Yes or No	No	Yes	Yes
Right-of-Way Impacts	Acres	0.00	0.45	0.13 – 0.15
Duration of Traffic Impact During Construction	Anticipated Level of Impact	NA	High	Medium
Pedestrian Improvements	Yes or No	No	Yes	Yes
Cultural Resource Impacts	Level of Impact	No	No	No
Section 4(f) Impacts	Level of Impact	No	Anticipated de minimis or net benefit	Anticipated de minimis or net benefit
Section 6(f) Impacts	Permanent Conversion, Yes or No	No	No permanent conversion	No permanent conversion
Permanent Aquatic Resource Impacts	Acres	0.00	0.00	0.09
Opinion of Probable Cost	Dollars	0	\$29,200,000 - \$31,800,000	\$26,300,000 - \$28,900,000

3.3.1. Geometry

The horizontal and vertical geometry of the 12th Ave N/15th Ave N will be designed to meet current City of Fargo, City of Moorhead, NDDOT and Minnesota Municipal State Aid standards. The design speed of the roadway will satisfy current standards for 30 mph, similar to existing conditions.

Horizontal Alignment:

West of the Red River, 12th Ave N/15th Ave N will generally maintain its current existing alignment to minimize impacts on the adjacent Fargo Parks properties immediately north and south of the roadway. East of the Red River, the alignment will be shifted north within a lot owned by the City of Moorhead.

Vertical Alignment:

To maintain the proposed bridge low member elevation 1' above the post FM Diversion operation 100-year water surface elevation, the bridge will be raised approximately 18.5' higher than it is today, as measured from the crown of the bridge at the current low point in the structure to the low point of the proposed structure. The high point of the bridge is anticipated to be approximately 6.5' higher than the 12th Ave N and Elm St intersection. The profile adjustment is anticipated to begin approximately 150' east of the 12th Ave N and Elm St intersection and continue east for approximately 1,400' to tie into high ground in Moorhead just east of Bridgeview St. See Appendix B for the preliminary layout.

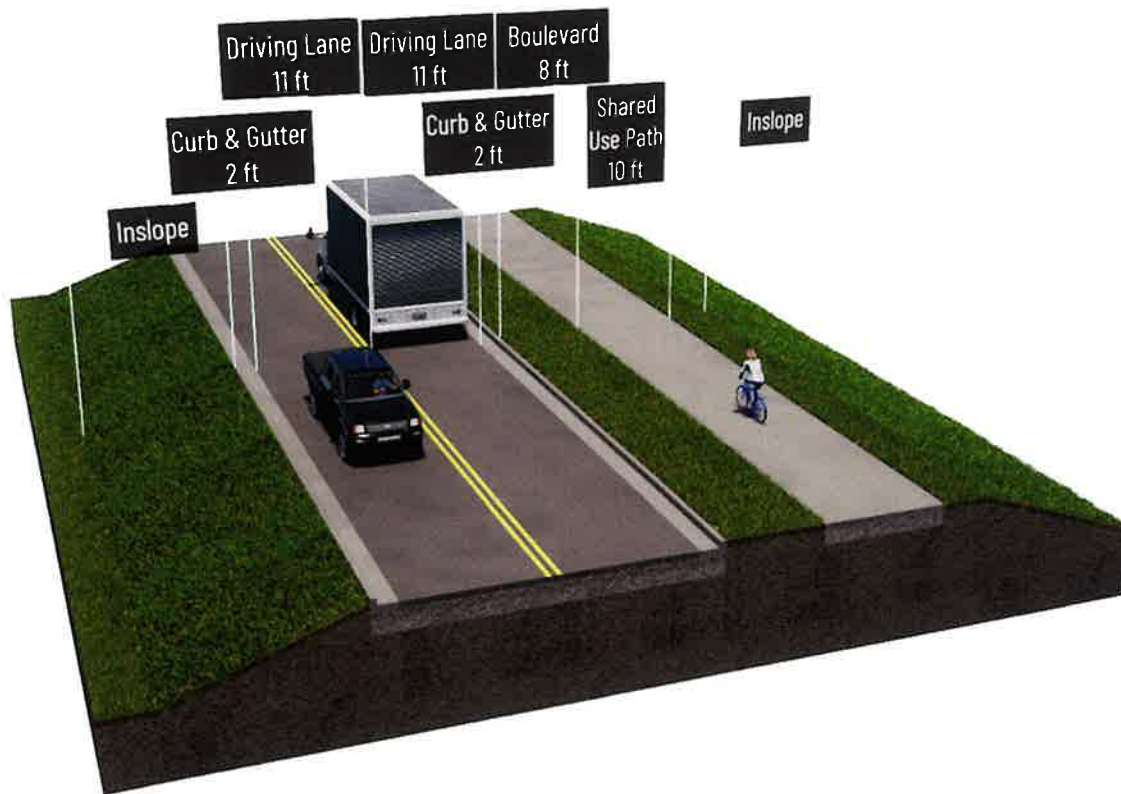
Typical Section:

The proposed roadway will consist of two driving lanes, one in both the eastbound and westbound directions. The driving lane widths will vary from 11' in Fargo and Moorhead outside of the bridge limits and 12' across the bridge. A 10' wide to 12' wide shared use path will also be constructed along the south side of the roadway connecting the existing shared use path network at Elm St to the existing path system in Moorhead. Within the City of Fargo, an additional 10' wide shared use path will be constructed along the north side of the roadway from Elm St to the existing shared use path that runs north/south along the Red River. A portion of the Red River shared use path will also be reconstructed under the bridge on the west side of the river.

Due to the increased elevation of the roadway, retaining walls will be constructed north and south of 12th Ave N from east of Elm St to the west end of the bridge in order to avoid permanent impacts and minimize temporary impacts to the adjacent Fargo Park District properties (Section 4(f) and Section 6(f) properties) as permanent impacts to Section 4(f) and Section 6(f) projects could significantly impact the project schedule. East of the bridge, traditional embankment sections are anticipated, reducing overall project costs compared to extending retaining walls further east. See Figure 4 for the proposed typical sections.



12th Ave N (in Fargo) Proposed Road Typical Section (Looking East)



15th Ave N (in Moorhead) Proposed Road Typical Section (Looking East)

Figure 4 – Proposed Road Typical Sections (Looking East)

3.3.2. Bridge

The proposed bridge is anticipated to be a 5 span steel girder bridge spanning the Red River. The overall length of the bridge is anticipated to be approximately 660' to 735' long in order to have slopes and substructure placement that will meet the minimum geotechnical factors of safety as well as account for required factors of safety during construction of the settlement mitigation measures. The final bridge length will be set as the design progresses. The bridge will be approximately 49' wide with two-12-foot driving lanes, four-foot shoulders and a twelve foot shared use path with barriers on each side, and separating the shared use path from the vehicular lanes. We expect that the piers on either side of the river will be fixed piers that will be designed to withstand lateral soil loads that will be placed on them. Due to geotechnical issues along the riverbank, the remaining two piers are expected to be "movable" style piers that can be reset to accommodate lateral movement of the soil.

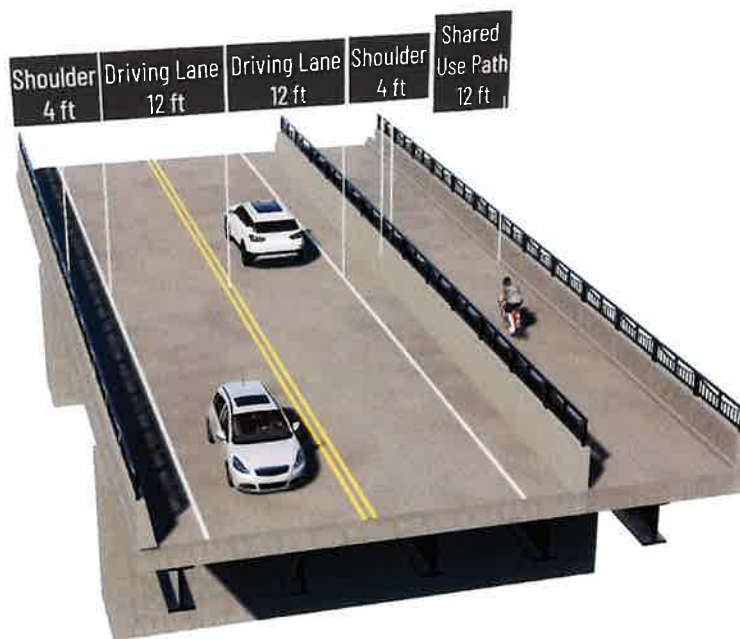


Figure 5 – Proposed Bridge Typical Section (Looking East)

3.3.3. Geotechnical

Construction near the Red River presents several unique challenges due to poor soil conditions. Braun Intertec has completed a preliminary evaluation of the proposed alignment and vertical profile to identify potential slope stability and settlement concerns. This evaluation was utilized to establish the proposed bridge length.

Due to the height of fill required to raise the roadway east of the Red River, long-term settlement of the roadway is a concern that will need to be addressed. Potential solutions considered include the use of light weight fills and preloading as well as extending the overall bridge length. Using full depth light weight fills is not anticipated to be feasible due to buoyancy concerns during flood events. Therefore, it is anticipated either preloading, some combination of preloading and some lightweight files, or extending the bridge will be required to mitigate long term settlement, pending a final detailed analysis. A potential benefit of this build alternative is the realignment of the roadway to the north will provide space to construct the potential preload and allow the embankment to settle without impacting traffic on the existing roadway.

The geotechnical investigation and recommendations are currently ongoing. Additional details will be incorporated into the environmental document and designs as the project progresses. For the range of cost estimates associated with this document, two settlement mitigation options were considered. The first option consists of a 5' surcharge over the proposed embankment elevation with wick drains. It is anticipated the wick drain and surcharge configuration can achieve required settlement within 9 to 12 months after construction of the settlement mitigation measures. The second option consists of extending the bridge approximately 75' to the east.

3.3.4. Hydraulics

It is understood that the FM Diversion Project will be operational in the spring of 2027, and the FEMA floodplain maps are anticipated to be revised in 2030. The bridge is being designed based on post-FM Diversion Project flood elevations, however since the design and anticipated construction will occur prior to the updated floodplain maps, the design must meet floodplain permitting requirements based on the effective floodplain and flood elevations. Therefore, the hydraulic analysis of the proposed bridge will consider both the effective Flood Insurance Study (FIS) model as well as the modeling completed for the FM Diversion Project.

As stated in the grant application, this project will raise the 12th Ave N/15th Ave N Red River crossing above the post-FM Diversion Project 100-year flood elevation, which is at elevation 897.1 (River Stage 37). To minimize the height of the crossing, the low member of the structure will be set to maintain 1-foot of separation above the post FM Diversion operation 100-year water surface elevation, or approximately 898.1 or higher. The 1-foot of vertical separation is typical to minimize the potential of ice and debris impacting the superstructure of the bridge. Note that the effective base flood elevation is at elevation 898.9 and the proposed crossing will also be evaluated utilizing the current effective model to ensure a no rise can be achieved.

Operation of the FM Diversion alone won't resolve the flooding issues associated with the existing bridge. The FM Diversion is designed to begin operating when the Red River flood stage reaches 37 feet, which has a 5-percent chance of occurring every year (20-year event). Once the FM Diversion begins to operate, it will maintain the 37-foot flood stage through the Fargo-Moorhead area up to the 100-year event. Additionally, the FM Diversion will hold the Red River to River Stage of 40 feet during a 500-year event, greatly reducing impacts of a catastrophic flood. See Figure 6 for a summary of the effect operation of the FM Diversion channel has on the water surface elevation at the 12th Ave N/15th Ave N crossing.

**12th Ave. N (Fargo)/15th Ave N (Moorhead)
Bridge Over the Red River
River Stages Relative to Proposed and Existing Bridges**

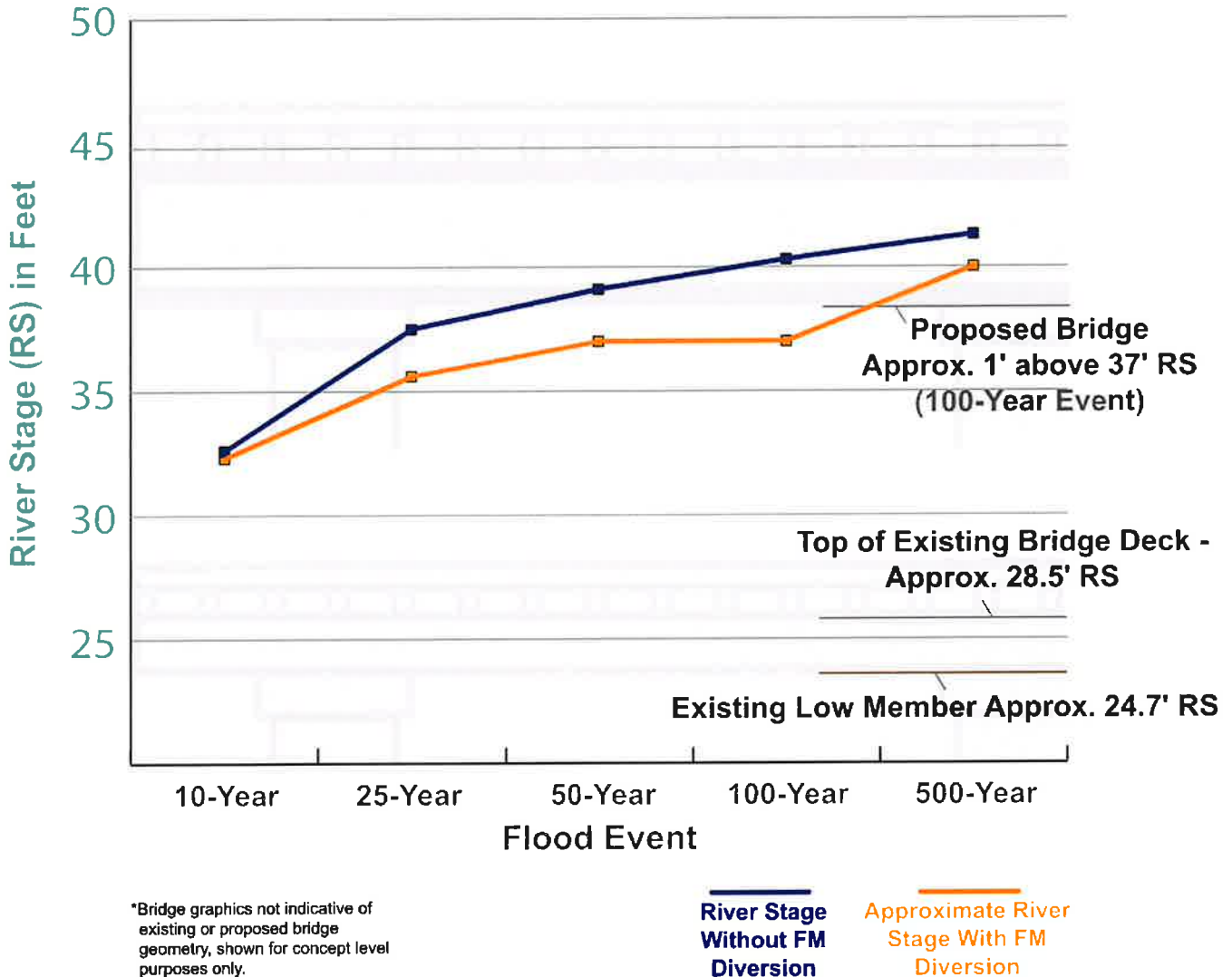


Figure 6 – River Stage Elevations

The proposed bridge configuration will also be incorporated into the current FIS hydraulic model to review potential upstream impacts. Utilizing the effective model is required for floodway and floodplain permitting. Within the hydraulic models, the existing bridge presents a significant blockage to river flows due to its low elevation. Based on our initial runs of the proposed bridge configuration, we are seeing no upstream or downstream impacts within the current FIS or FM Diversion models due to raising the structure and removing the blockage during flood events.

3.4. Elm St / 12th Ave N Intersection Options

A traffic operations study was completed to evaluate existing and future traffic conditions at the Elm St and 12th Ave N intersection and determine the Level of Service (LOS). Level of Service is a qualitative measure used to translate complex numerical performance into a simplified system that defines a traveler's perception of the quality of service provided by the facility. A letter grade, similar to a report card, ranging from A to F, is assigned based on various metrics such as speed, volume to capacity ratio, delay, stops and other criteria. See Table 2 for a summary of the general delays associated with each LOS.

Table 2 – Level of Service

LOS Designation	Signalized Intersection Avg Delay / Vehicle (Seconds)	Unsignalized Intersection Avg Delay / Vehicle (Seconds)	Description
A	0-10	0-10	Free Flowing / No Congestion
B	>10-20	>10-15	Stable Flow / Minimal Congestion
C	>20-35	>15-25	Stable Flow / Moderate Congestion
D	>35-55	>25-35	Approaching Unstable Flows / Increasing Congestion
E	>55-80	>35-50	Unstable Flows / Congested Conditions
F	>80	>50	Stop and Go / Volume Exceeds Capacity

The existing intersection consists of an all-way stop control resulting in an overall intersection Level of Service A during the AM peak hour and an overall intersection Level of Service D during the PM peak hour. Due to the forecasted traffic growth, traffic conditions with an all-way stop control are anticipated to continue to deteriorate, resulting in an overall intersection Level of Service C during the AM peak hour and an overall intersection Level of Service F during the PM peak hour in 2050. Additional intersection control options are being considered to provide efficient intersection operations in the future. Additional options considered include:

- Two-way stop control (North/South movements stop controlled)
- Mini Roundabout
- Signalized

The two-way stop control was eliminated from further consideration as it showed worse operations than the existing all-way stop control.

3.4.1. Mini Roundabout Control

A mini roundabout contains many of the same features as a traditional single lane roundabout. However, the footprint is significantly decreased as the geometry is developed to align with the turning movement needs of passenger vehicles as opposed to tractor-trailer combinations such as a WB-62. At this site, a traditional single lane roundabout would not be feasible due to right of way and property acquisitions. Larger vehicles are still able to navigate a mini-roundabout by traversing the mountable center island and occupying the majority of the intersection. Significant volumes of large vehicles are not anticipated within the intersection as 12th Ave N is currently designated as a no truck route within the City of Fargo. See Figure 7 for the proposed geometry associated with the mini-roundabout control.

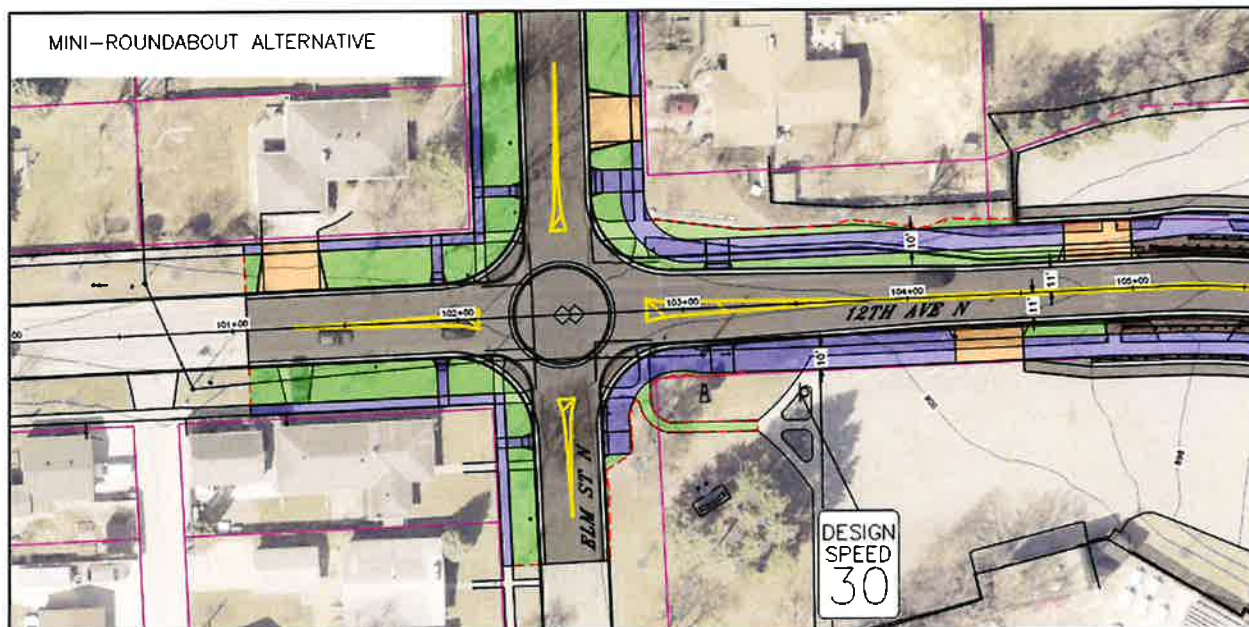


Figure 7 – Mini Roundabout Layout

3.4.1.1. Operation

A mini roundabout operates in the same manner as a traditional single lane roundabout. However, oversized vehicles can have a negative impact on the intersection as the turning movement will occupy the majority of the intersection. Based on the proposed geometry and limited oversized vehicles utilizing this intersection, oversized vehicle movements are not anticipated to affect the capacity of the roundabout. Based on the traffic operations analysis, the mini roundabout is expected to operate at an overall intersection Level of Service A during the AM and PM peak hour in 2050.

3.4.1.2. Impacts

The footprint of the mini roundabout is anticipated to fit within the existing right-of-way in the 12th Ave N and Elm St intersection, resulting in no additional right-of-way required to construct this intersection control option. There are also no wetlands or other aquatic resources that have been identified near the intersection.

The existing Fargo Park District property located north of 12th Ave N is considered a Section 4(f) property, while the property to the south, Jack Williams Stadium, is considered both Section 4(f) and Section 6(f). The mini roundabout option will not increase project impacts to either property.

3.4.1.3. *Opinion of Probable Cost*

The preliminary opinion of probable cost to construct Alternative B2 with mini roundabout intersection control is \$26,300,000 to \$27,800,000. The range of costs is due to the settlement mitigation options detailed under the Geotechnical section of this document.

3.4.2. Signalized Control

The traffic operations report for the signalized intersection option evaluated the need for additional turn lanes to improve signal timings and overall intersection operation. The report identified the need for left turn lanes at the following locations:

- 12th Ave Eastbound
- 12th Ave Westbound
- Elm St Southbound
- Elm St Northbound

The turn lane length was calculated based on the highest of the following three values:

- The 95th percentile queue of turning vehicles rounded up to the nearest 25 feet.
- The average queue distance of the adjacent through lane rounded up to the nearest 25 feet.
- Deceleration length plus minimum storage.

This evaluation resulted in recommended turn lane lengths of:

- 12th Ave Eastbound: 150'
- 12th Ave Westbound: 225'
- Elm St Southbound: 175'
- Elm St Northbound: 100'

The left turns overlap several driveways throughout the westbound, eastbound and southbound legs which will impact the overall operation of the intersection. See Figure 8 for the proposed signalized intersection configuration.

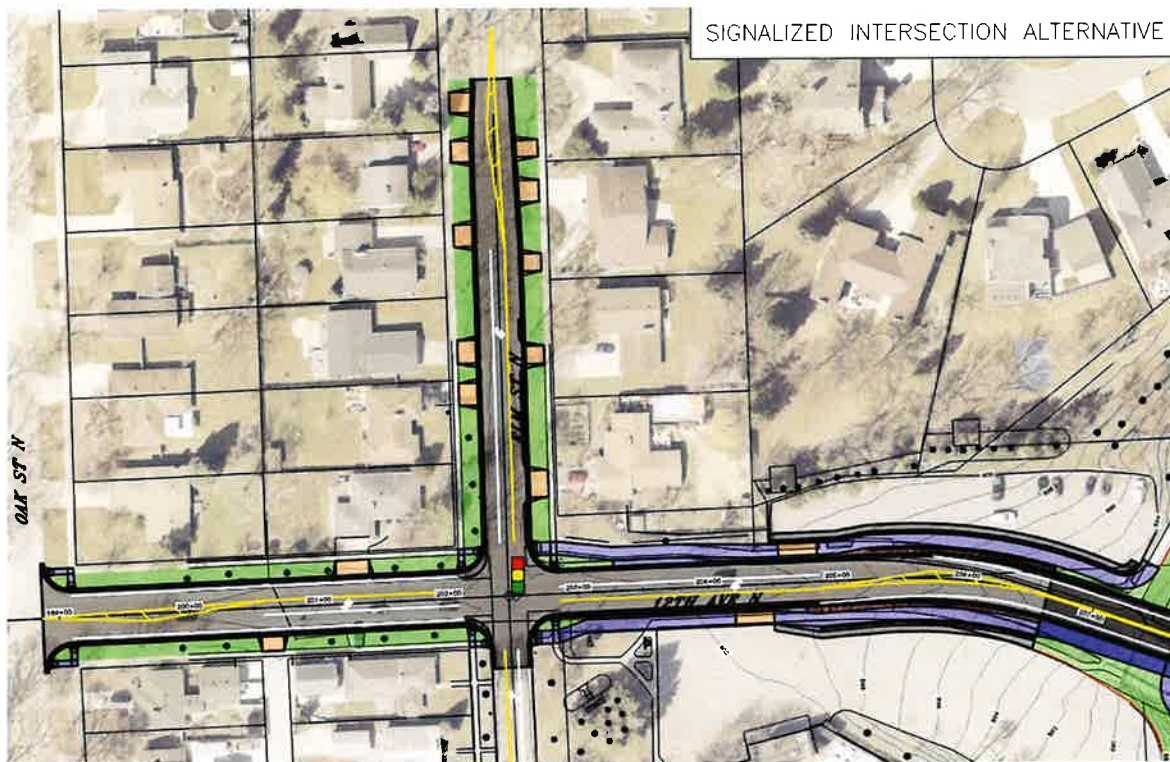


Figure 8 – Signalized Intersection Layout

3.4.2.1. Operation

The traffic operations report recommended signal heads for all four approach legs to consist of 4-section heads with flashing yellow arrow for left turn movements. Incorporating the recommended signal phasing and turn lanes a signalized intersection is expected to operate at an overall intersection Level of Service B during the AM and PM peak hour in 2050.

3.4.2.2. Impacts

The footprint of the signalized intersection is anticipated to be wider than the mini roundabout due to the required left turn lanes. This option would also extend the project limits north along Elm St approximately 500' to accommodate turn lane construction. The additional permanent right of way impacts are anticipated to be 0.02 acres. The acquired right of way is anticipated to be within Fargo Park District property, north of 12th Ave N.

There are no wetlands or other aquatic resources that have been identified near the intersection, so this option will not increase project impacts.

This option is anticipated to result in an increased impact to the Fargo Park District Section 4(f) property, north of 12th Ave N. To avoid Section 6(f) impacts south of 12th Ave N, the roadway will be shifted north to avoid permanent impacts to the Jack Williams stadium property.

3.4.2.3. Opinion of Probable Cost

The preliminary opinion of probable cost to construct Alternative B2 with signalized intersection control is \$27,400,000 to \$28,900,000. The range of costs is due to the settlement mitigation options detailed under the Geotechnical section of this document.

Table 3 – Comparison of Intersection Control Options

	All-Way Stop	Mini Roundabout	Signalized
2025 LOS (AM/PM)	A/D	A/A	B/B
2025 Average Delay (AM/PM)	9.5/30.1 seconds	4.1/4.7 seconds	14.0/15.2 seconds
2050 LOS (AM/PM)	C/F	A/A	B/B
2050 Average Delay (AM/PM)	19.5/128.3 seconds	6.1/6.2 seconds	18.9/18.8 seconds
Right-of-Way Impacts	-	0.13 acres	0.15 acres
Aquatic Resource Impacts	-	0.00 acres	0.00 acres
Section 4(f)/6(f) Impacts	-	No permanent Impacts Anticipated	Potential Permanent Section 4(f) Impacts Due to Turn Lanes
Preliminary Opinion of Probable Cost	-	\$26,300,000 - \$27,800,000	\$27,400,000 - \$28,900,000

Note:

1. All impacts shown are total anticipated impacts associated with Alternative B2 and the associated option.
2. The Opinion of Probable Cost represents the total anticipated project cost associated with each option.
3. Variation in total cost is due to settlement mitigation options being considered as detailed in the Geotechnical section of this document.
4. The signalized intersection control option will add approximately \$1.1 million to the total project cost compared to the mini roundabout option.

4. Executive Decisions

1. Do you concur with reconstruction and raising of the 12th Ave N/15th Ave N crossing?

Yes

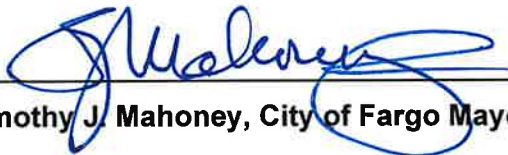
No

2. Which Elm St Intersection option should proceed with the project?

Option 1 – Mini Roundabout

Option 2 – Signalized

Amendments/Comments for Project No. QR-25-B0:



Dr. Timothy J. Mahoney, City of Fargo Mayor

2/2/2026

Date

APPENDICES

Appendix A
Preliminary Opinion of Probable Cost

12TH AVE BRIDGE RECONSTRUCTION - ALTERNATIVE B1 BRIDGE REPLACEMENT ON EXISTING ALIGNMENT

OPINION OF PROBABLE COST

12/12/2025

UNIT	ITEM	QUANTITY	UNIT COST	COST
L SUM	UTILITY RELOCATION	1	\$100,000.00	\$100,000.00
L SUM	CONTRACT BOND	1	\$190,000.00	\$190,000.00
ACRE	CLEARING & GRUBBING	1	\$25,000.00	\$21,250.00
LF	REMOVAL OF CURB & GUTTER	3638	\$13.00	\$47,294.00
TON	REMOVAL OF PAVEMENT	3983	\$20.00	\$79,660.00
LF	REMOVAL OF PIPE ALL TYPES AND SIZES	570	\$45.00	\$25,650.00
EA	REMOVAL OF MANHOLES	3	\$1,600.00	\$4,800.00
EA	REMOVAL OF CATCH BASIN	6	\$900.00	\$5,400.00
CY	COMMON EXCAVATION-TYPE A	1822	\$18.00	\$32,796.00
CY	TOPSOIL	1893	\$12.00	\$22,716.00
CY	BORROW EXCAVATION	14739	\$25.00	\$368,475.00
L SUM	EROSION CONTROL	1	\$90,000.00	\$90,000.00
CY	RIPRAP GRADE II	2423	\$120.00	\$290,760.00
TON	AGGREGATE BASE COURSE CL 5	3072	\$30.00	\$92,160.00
TON	SUPERPAVE FAA 43	1943	\$95.00	\$184,585.00
TON	PG 58S-34 ASPHALT CEMENT	117	\$550.00	\$64,350.00
SF	BRIDGE	31948	\$400.00	\$12,779,200.00
LF	RETAINING WALL	723	\$6,500.00	\$4,699,500.00
L SUM	MOBILIZATION	1	\$2,000,000.00	\$2,000,000.00
L SUM	TRAFFIC CONTROL	1	\$35,000.00	\$35,000.00
LF	PIPE CONC REINF 18IN CL III	1710	\$300.00	\$513,000.00
EA	MANHOLE 48IN	3	\$5,000.00	\$15,000.00
EA	INLET CATCH BASIN	16	\$7,500.00	\$120,000.00
LF	CURB & GUTTER-TYPE I	3296	\$60.00	\$197,760.00
LF	CURB & GUTTER MOUNTABLE-TYPE I	138	\$65.00	\$8,970.00
L SUM	PERMANENT SIGNING	1	\$5,000.00	\$5,000.00
SY	SIDEWALK CONCRETE 5IN	2546	\$75.00	\$190,950.00
SY	CONCRETE ISLAND PAVING	154	\$130.00	\$20,020.00
SY	DRIVEWAY CONCRETE	502	\$120.00	\$60,240.00
L SUM	PAVEMENT MARKINGS	1	\$18,000.00	\$18,000.00
LF	W-BEAM GUARDRAIL	358	\$55.00	\$19,668.00
EA	W-BEAM GUARDRAIL END TERMINAL	4	\$3,000.00	\$12,000.00
EA	LIGHTING SYSTEM A	1	\$350,000.00	\$350,000.00
CY	SURCHARGE EMBANKMENT	10382	\$8.00	\$83,056.00
CY	SURCHARGE REMOVAL	10382	\$5.00	\$51,910.00
LF	PREFABRICATED VERTICAL WICK DRAINS	321660	\$1.00	\$321,660.00
TON	SAND DRAIN	6825	\$20.00	\$136,490.56
SF	TEMPORARY RIGHT OF WAY	12000	\$0.50	\$6,000.00
SF	PERMANENT RIGHT OF WAY	19801	\$5.00	\$99,005.00
			SUBTOTAL	\$23,362,325.56
			25% CONTINGENCY	\$5,840,581.39
			TOTAL	\$29,202,906.94

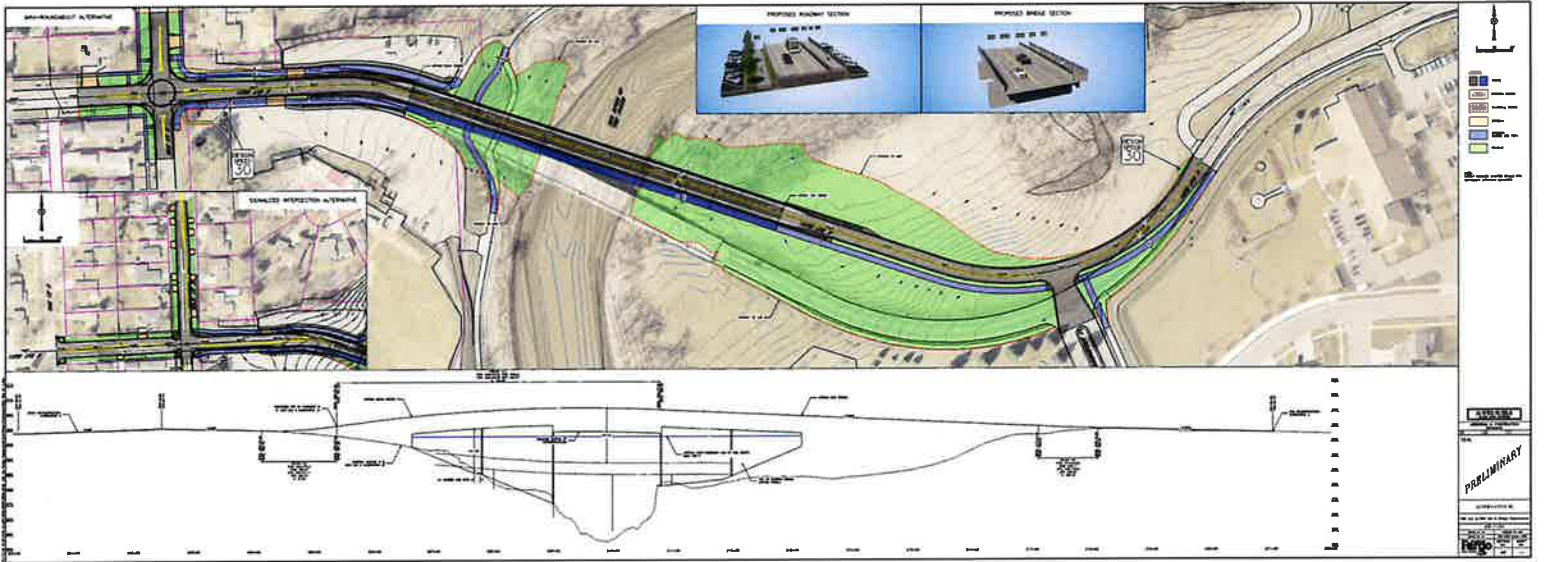
12TH AVE BRIDGE RECONSTRUCTION - ALTERNATE B2 BRIDGE REPLACEMENT ON REALIGNMENT WITH MINI ROUNDABOUT
OPINION OF PROBABLE COST
12/12/2025

UNIT	ITEM	QUANTITY	UNIT COST	COST
L SUM	UTILITY RELOCATION	1	\$100,000.00	\$100,000.00
L SUM	CONTRACT BOND	1	\$200,000.00	\$200,000.00
ACRE	CLEARING & GRUBBING	1.53	\$25,000.00	\$38,250.00
LF	REMOVAL OF CURB & GUTTER	3638	\$13.00	\$47,294.00
TON	REMOVAL OF PAVEMENT	3983	\$20.00	\$79,660.00
LF	REMOVAL OF PIPE ALL TYPES AND SIZES	570	\$45.00	\$25,650.00
EA	REMOVAL OF MANHOLES	3	\$1,600.00	\$4,800.00
EA	REMOVAL OF CATCH BASIN	6	\$900.00	\$5,400.00
CY	COMMON EXCAVATION-TYPE A	2204 - 2497	\$18.00	\$39,676.14 - \$44,946.00
CY	TOPSOIL	2792 - 2702	\$12.00	\$33,504.00 - \$32,424.00
CY	BORROW EXCAVATION	22404 - 18572	\$25.00	\$560,100.00 - \$464,300.00
L SUM	EROSION CONTROL	1	\$90,000.00	\$90,000.00
CY	RIPRAP GRADE II	2423 - 2786	\$120.00	\$290,760.00 - \$334,320.00
TON	AGGREGATE BASE COURSE CL 5	3126 - 3013	\$30.00	\$93,780.00 - \$90,390.00
TON	SUPERPAVE FAA 43	1953 - 1882	\$95.00	\$185,535.00 - \$178,790.00
TON	PG 58S-34 ASPHALT CEMENT	117 - 113	\$550.00	\$64,350.00 - \$62,150.00
SF	BRIDGE	31948 - 35623	\$400.00	\$12,779,200.00 - \$14,249,200.00
LF	RETAINING WALL	318	\$6,500.00	\$2,067,000.00
L SUM	MOBILIZATION	1	\$2,000,000.00	\$2,000,000.00
L SUM	TRAFFIC CONTROL	1	\$35,000.00	\$35,000.00
LF	PIPE CONC REINF 18IN CL III	1686	\$300.00	\$505,800.00
EA	MANHOLE 48IN	3	\$5,000.00	\$15,000.00
EA	INLET CATCH BASIN	16	\$7,500.00	\$120,000.00
LF	CURB & GUTTER-TYPE I	3405 - 3255	\$60.00	\$204,300.00 - \$195,300.00
LF	CURB & GUTTER MOUNTABLE-TYPE I	138	\$65.00	\$8,970.00
L SUM	PERMANENT SIGNING	1	\$5,000.00	\$5,000.00
SY	SIDEWALK CONCRETE 5IN	2784 - 2700	\$75.00	\$208,800.00 - \$202,500.00
SY	CONCRETE ISLAND PAVING	154	\$130.00	\$20,020.00
SY	DRIVEWAY CONCRETE	502	\$120.00	\$60,240.00
L SUM	PAVEMENT MARKINGS	1	\$18,000.00	\$18,000.00
LF	W-BEAM GUARDRAIL	358	\$55.00	\$19,668.00
EA	W-BEAM GUARDRAIL END TERMINAL	4	\$3,000.00	\$12,000.00
EA	LIGHTING SYSTEM A	1	\$350,000.00	\$350,000.00
CY	SURCHARGE EMBANKMENT	11851 - 8677	\$8.00	\$94,808.00 - \$69,416.00
CY	SURCHARGE REMOVAL	11851 - 8677	\$5.00	\$59,255.00 - \$43,385.00
LF	PREFABRICATED VERTICAL WICK DRAINS	372690 - 270630	\$1.00	\$372,690.00 - \$270,630.00
TON	SAND DRAIN	7945 - 5753	\$20.00	\$158,904.17 - \$115,063.06
ACRE	WETLAND MITIGATION	0.091	\$70,000.00	\$6,370.00
SF	TEMPORARY RIGHT OF WAY	6000	\$0.50	\$3,000.00
SF	PERMANENT RIGHT OF WAY	6065	\$5.00	\$30,325.00
			SUBTOTAL	\$21,013,109.31 - \$22,220,261.06
			25% CONTINGENCY	\$5,253,277.33 - \$5,555,065.26
			TOTAL	\$26,266,386.63 - \$27,775,326.32

**12TH AVE BRIDGE RECONSTRUCTION - ALTERNATE B2 BRIDGE REPLACEMENT ON REALIGNMENT WITH TRAFFIC SIGNAL
OPINION OF PROBABLE COST
12/12/2025**

UNIT	ITEM	QUANTITY	UNIT COST	COST
L SUM	UTILITY RELOCATION	1	\$100,000.00	\$100,000.00
L SUM	CONTRACT BOND	1	\$210,000.00	\$210,000.00
ACRE	CLEARING & GRUBBING	1.53	\$25,000.00	\$38,250.00
LF	REMOVAL OF CURB & GUTTER	4719	\$13.00	\$61,347.00
TON	REMOVAL OF PAVEMENT	4849	\$20.00	\$96,980.00
LF	REMOVAL OF PIPE ALL TYPES AND SIZES	775	\$45.00	\$34,875.00
EA	REMOVAL OF MANHOLES	4	\$1,600.00	\$6,400.00
EA	REMOVAL OF CATCH BASIN	8	\$900.00	\$7,200.00
CY	COMMON EXCAVATION-TYPE A	3204 - 3497	\$18.00	\$57,676.14 - \$62,946.00
CY	TOPSOIL	3065 - 2975	\$12.00	\$36,780.00 - \$35,700.00
CY	BORROW EXCAVATION	21804 - 17972	\$25.00	\$545,100.00 - \$449,300.00
L SUM	EROSION CONTROL	1	\$100,000.00	\$100,000.00
CY	RIPRAP GRADE II	2423 - 2786	\$120.00	\$290,760.00 - \$334,320.00
TON	AGGREGATE BASE COURSE CL 5	4264 - 4151	\$30.00	\$127,920.00 - \$124,530.00
TON	SUPERPAVE FAA 43	2907 - 2836	\$95.00	\$276,165.00 - \$269,420.00
TON	PG 58S-34 ASPHALT CEMENT	174 - 170	\$550.00	\$95,700.00 - \$93,500.00
SF	BRIDGE	31948 - 35623	\$400.00	\$12,779,200.00 - \$14,249,200.00
LF	RETAINING WALL	318	\$6,500.00	\$2,067,000.00
L SUM	MOBILIZATION	1	\$2,000,000.00	\$2,000,000.00
L SUM	TRAFFIC CONTROL	1	\$50,000.00	\$50,000.00
LF	PIPE CONC REINF 18IN CL III	2286	\$300.00	\$685,800.00
EA	MANHOLE 48IN	5	\$5,000.00	\$25,000.00
EA	INLET CATCH BASIN	20	\$7,500.00	\$150,000.00
LF	CURB & GUTTER-TYPE I	4286 - 4136	\$60.00	\$257,160.00 - \$248,160.00
L SUM	PERMANENT SIGNING	1	\$7,000.00	\$7,000.00
SY	SIDEWALK CONCRETE 5IN	2534 - 2450	\$75.00	\$190,050.00 - \$183,750.00
SY	DRIVEWAY CONCRETE	844	\$120.00	\$101,280.00
L SUM	PAVEMENT MARKINGS	1	\$30,000.00	\$30,000.00
LF	W-BEAM GUARDRAIL	358	\$55.00	\$19,668.00
EA	W-BEAM GUARDRAIL END TERMINAL	4	\$3,000.00	\$12,000.00
EA	LIGHTING SYSTEM A	1	\$350,000.00	\$350,000.00
EA	TRAFFIC SIGNAL SYSTEM	1	\$350,000.00	\$350,000.00
CY	SURCHARGE EMBANKMENT	11851 - 8677	\$8.00	\$94,808.00 - \$69,416.00
CY	SURCHARGE REMOVAL	11851 - 8677	\$5.00	\$59,255.00 - \$43,385.00
LF	PREFABRICATED VERTICAL WICK DRAINS	372690 - 270630	\$1.00	\$372,690.00 - \$270,630.00
TON	SAND DRAIN	7945 - 5753	\$20.00	\$158,904.17 - \$115,063.06
ACRE	WETLAND MITIGATION	0.091	\$70,000.00	\$6,370.00
SF	TEMPORARY RIGHT OF WAY	6000	\$0.50	\$3,000.00
SF	PERMANENT RIGHT OF WAY	6680	\$5.00	\$33,400.00
SUBTOTAL				\$21,887,738.31 - \$23,094,890.06
25% CONTINGENCY				\$5,471,934.58 - \$5,773,722.51
TOTAL				\$27,359,672.88 - \$28,868,612.57

Appendix B
Preliminary Layout



PRELIMINARY

