

MAY 3, 2019 | DRAFT
TECHNICAL MEMO #6
(IMPLEMENTATION PLAN)

Mn 220 N Corridor Study

Prepared for:



ALLIANT

1. Introduction

This memo is the sixth in a series of technical memos for the Mn 220 N (Mn 220) Corridor Study project.

2. Existing and Future Conditions

Refer to Technical Memorandum 1 for documentation of the existing and future conditions assessment.

3. Roadway Safety and Traffic Operation Analysis

Refer to Technical Memorandum 2 for documentation of the roadway safety and traffic operation characteristics.

4. Purpose and Need

Refer to Technical Memorandum 3 for documentation of the corridor study purpose and needs.

5. Alternatives Analysis and Evaluation

Refer to Technical Memorandum 4 for documentation of the preliminary alternatives development and evaluation.

6. Highest Ranked Improvement Alternatives

Refer to Technical Memorandum 5 for documentation of the highest ranked and feasible alternatives evaluation.

7. Implementation Plan

The highest ranked alternatives presented in the preceding Technical Memorandum 5 were identified based on input from the SRC, public participation process, requirements of the purpose and need, and the results of the technical analysis and evaluation. The highest ranked alternatives, summarized below, are anticipated to be feasible, consistent with the MTP, and meet the stated purposed and need.

Intersection Control, Safety and Mobility

- 23rd Street NW:
 - Highest ranked: roundabout
- 20th Street NW:
 - Highest ranked: maintain existing intersection control, traffic lanes and access configuration with roundabouts at 17th Street NW and 23rd Street NW
 - Alternative: convert to $\frac{3}{4}$ Access configuration if a traffic signal system were to ultimately be installed at 17th Street NW following detailed evaluation during preliminary design.

- 17th Street NW:
 - Highest ranked: roundabout
 - Alternative: traffic signal system
- 15th Street NE:
 - Highest ranked: maintain existing intersection control, traffic lanes and access configuration
 - Alternative: none
- 23rd Street NW to 140th Street SW segment:
 - Highest ranked: two lane rural roadway cross-section with turn lanes added at future development access intersections
 - Alternative: none
- 17th Street NW to 23rd Street NW segment:
 - Highest ranked: two lane divided roadway cross-section with roundabout alternatives
 - Alternative: extend four-lane segment to 20th Street
- 14th Street NW:
 - Highest ranked: replace traffic signal system
 - Alternative: none
- US 2:
 - Highest ranked: replace traffic signal system and improve intersection lane geometrics
 - Alternative: roundabout or displaced eastbound left turn movement
- 10th Street NE:
 - Highest ranked: maintain existing intersection control and access configuration and relocate utility boxes on the southwest corner to improve visibility
 - Alternative: $\frac{3}{4}$ access configuration
- 9th Street NE:
 - Highest ranked: maintain existing intersection control, traffic lanes and access configuration and relocate the lane drop to the south and improve the left turn lane alignment and definition
 - Alternative: none

Pedestrian Accessibility and Transit

- 17th Street NW: improve crosswalk on south leg and ADA accessibility
- Neighborhood connections: establish sidewalk connections at the six locations where connection gaps exist.
- Transit accessibility:
 - Provide transit stop signage, concrete pad and bench at four existing transit stops
 - Coordinate with Cities Area Transit (CAT) to reevaluate transit routes and service as future development occurs north of 23rd Street NW.

The implementation plan for the TH 220 N Corridor Study is intended to assist with the identification of key infrastructure improvements and prioritization timeline to address needs

within the study area. In most cases, implementation of individual improvement strategies is mutually exclusive; individual strategies could be constructed at any time. All improvements identified should be further evaluated during the design development phase and are subject to further environmental analysis and design requirements. To address the critical needs of the corridor, the implementation plan has been developed to prioritize the recommendations over near term (within 5 years), mid-term (2025 to 2034) and long term (2035-2045+) horizons. **Figure 7-1** illustrates the recommended components (highest ranked alternatives) of the near-term implementation plan. **Figure 7-2** illustrates the recommended components (highest ranked alternatives) of the mid-term and long-term implementation plan. It is noted, the implementation plan could be subject to change based on unforeseen traffic changes or funding sources that may unfold post the development of this plan.

7.1 Implementation Plan Cost

Table 7-1 documents the estimated construction and project design and administration costs for each recommended improvement. The costs have been estimated for the average year (mid-point of the timeframe) of expenditure and include a 3 percent per year inflation factor.

Near Term Improvements (2019-2024)

Location 1: Mn 220 at 17th Street NW

Improve pedestrian crosswalk with curb bump-outs, median island, crosswalk pavement markings, and signage.
Total Cost: \$71,600

Location 2: 10th St NE to 9th St NE

Improve southbound lane configuration. Relocate southbound lane drop south of 9th St NE beyond curve, and provide separated southbound left turn lane at 9th St NE.
Total Cost: \$25,300

Location 3: Mn 220 at US 2

Install sidewalk from northeast corner to Frontage road and ADA accessible connection.
Total Cost: \$8,200

Location 4: Mn 220 at 17th Street NE

Provide bus stop signage for bus stop on northeast corner.
Total Cost: \$700

Location 5: Mn 220 at 14th Street NE

Provide bus stop signage for bus stop on northeast corner.
Total Cost: \$700

Location 6: DeMers Avenue at 10th Street NE

Provide bus stop signage for bus stop on southeast corner.
Total Cost: \$700

Location 7: DeMers Avenue at 10th Street NW

Provide bus stop signage for bus stop on northwest corner.
Total Cost: \$700

Location 8: DeMers Avenue at 10th Street NW

Relocate utilities to improve corner visibility.
Total Cost: unknown, coordinate with utility owner.



Note:
 Construction costs reflect the highest feasible alternative and are estimated year of expenditure (YOE) with an assumed 3% inflation rate. YOE is assumed to be mid-point of improvement range. Engineering, Administration, Utilities and Inspection are assumed to be 25% of the construction cost.

Note: Highest-Ranked Alternatives are Illustrated.

Mn 220 N Corridor Study



Figure 7-1
Near Term Implementation Plan (2019-2024)

Mid Term Improvements (2025-2034)

Location 9: Mn 220 at 14th Street NW

Replace traffic signal system (install Flashing Yellow Arrows, improve phasing, coordination, etc.) and delineate eastbound/westbound lane configuration.
Total Cost: \$519,100

Location 10: Mn 220 at US 2

Intersection control and geometric improvements.
Total Cost: \$6,021,500

Location 11: 23rd Street NW to 140th Street SW

Construct left and right turn lanes as applicable at public street access as land develops.
Total Cost: TBD, construction scope and cost to be determined as part of development plan at future time.

Location 12: Upgrade Non-Compliant Pedestrian Ramps

Upgrade non-compliant pedestrian ramps (33 ramps on Mn 220 N Corridor).
Total Cost: ADA ramps are incorporated in full intersection improvements as applicable. Refer to the City of East Grand Forks ADA Transition plan for standalone pedestrian ramp upgrades.

Location 13: 20th Street NW (both sides) from 5th Avenue NW to Mn 220

Install sidewalks.
Total Cost: \$207,700

Location 14: 15th Street NE (north side) from Mn 220 to East of Frontage Road

Install sidewalk.
Total Cost: \$22,500

Long Term Improvements (2035-2045+)

Location 15: Mn 220 at 23rd Street NW

Intersection control improvements.
Total Cost: \$6,819,600

Location 16: Mn 220 at 17th Street NW

Intersection control improvements.
Total Cost: \$6,340,700

Location 17: 17th Street NW to 23rd Street NW

Rehabilitate pavement, convert to two-lane divided highway.
Total Cost: MnDOT maintenance and preservation.

Location 18: US 2 to 17th Street NW

Rehabilitate pavement, maintain four-lane divided highway.
Total Cost: MnDOT maintenance and preservation.

Location 19: Mn 220 (east side) from 20th Street NE to 23rd Street NE

Install sidewalks.
Total Cost: \$145,400

Location 20: 10th Street NW (both sides) from Terrace Drive to DeMers Avenue

Install sidewalks.
Total Cost: \$84,300

Location 21: 10th Street NW (both sides) from DeMers Avenue to 2nd Avenue NE

Install sidewalks.
Total Cost: \$78,500

Location 22: Mn 220 at 17th Street NE

Provide bus bench at bus stop on northeast corner.
Total Cost: \$7,000

Location 23: Mn 220 at 14th Street NE

Provide bus bench at bus stop on northeast corner.
Total Cost: \$7,000

Location 24: DeMers Avenue at 10th Street NE

Provide concrete pad, sidewalk access, and bus bench at bus stop on southeast corner.
Total Cost: \$8,700

Location 25: DeMers Avenue at 10th Street NW

Provide concrete pad, sidewalk access, and bus bench at bus stop on northwest corner.
Total Cost: \$8,700

Note: Construction costs reflect the highest feasible alternative and are estimated year of expenditure (YOE) with an assumed 3% inflation rate. YOE is assumed to be mid-point of improvement range. Engineering, Administration, Utilities and Inspection are assumed to be 25% of the construction cost.

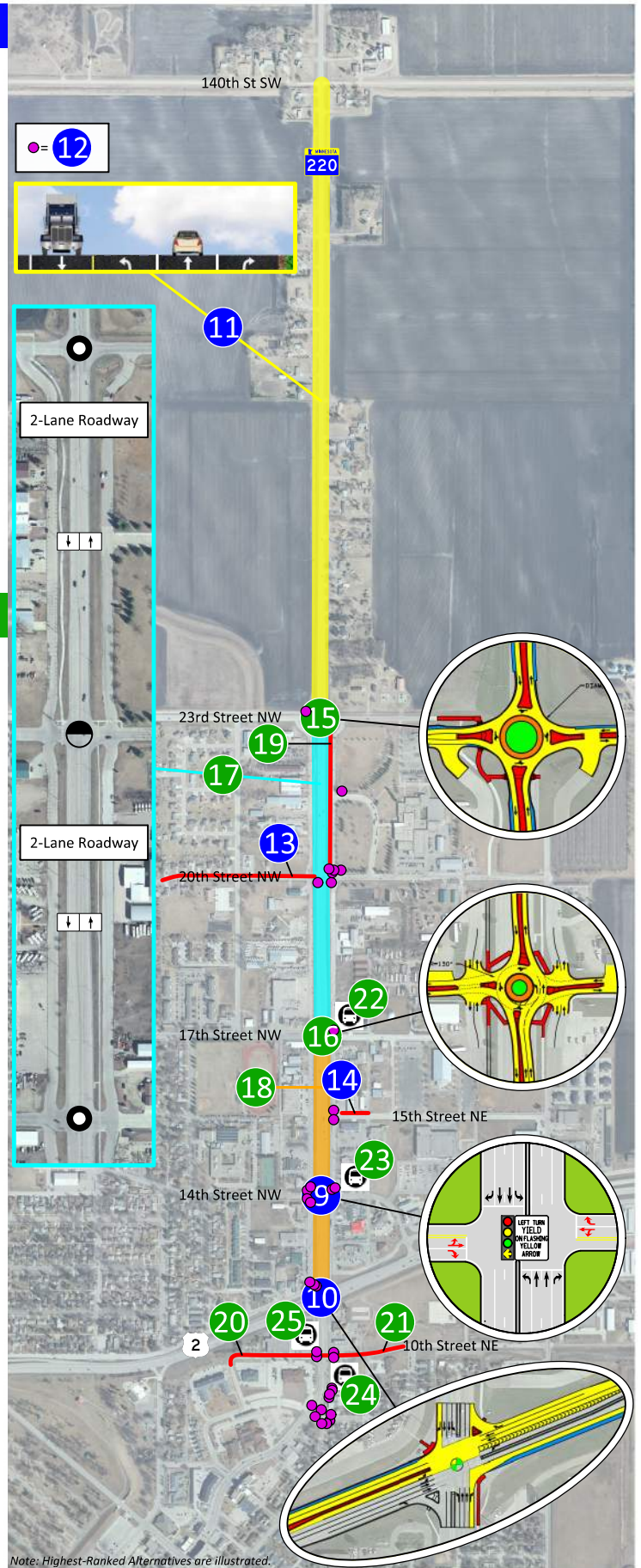


Table 7-1. Implementation Cost Summary - Near Term Improvements (2019 to 2024)

Project	Intersection / Roadway Segment / Project Identification	Improvement Description	Need	Construction Cost Year of Estimate (YOE) (1)	Administration, Engineering, Utilities, Inspection (2)	Total Cost	Phasing
1	Mn 220 at 17th Street NW	Improve pedestrian crosswalk	Existing level of stress 4 (uncomfortable), school access and desired crossing location	\$57,303	\$14,205	\$71,508	
2	10th Street NE to 9th Street NE	Southbound lane configuration improvements	Unclear lane designation and lane alignment along roadway curve	\$20,259	\$5,027	\$25,286	
3	(S-6) Sidewalk	Mn 220 at US 2 - NE Corner to Frontage Road and ADA accessible connection	Pedestrian accessibility and connection between Mn 220 and frontage road	\$6,556	\$1,639	\$8,195	
4	(T-1) Transit Shelter	Provide Bus Stop Signing at 17th Street NE Bus Stop	Pedestrian accessibility and transit improvement	\$500	\$125	\$625	
5	(T-2) Transit Shelter	Provide Bus Stop Signing at 14th Street NE Bus Stop	Pedestrian accessibility and transit improvement	\$500	\$125	\$625	
6	(T-3) Transit Shelter	Provide Bus Stop Signing at 10th Street NE bus stop (northbound direction)	Pedestrian accessibility and transit improvement	\$500	\$125	\$625	
7	(T-4) Transit Shelter	Provide Bus Stop Signing at 10th Street NE bus stop (southbound direction)	Pedestrian accessibility and transit improvement	\$500	\$125	\$625	
8	(M-1) Utility	Relocate utilities to improve corner visibility (SW corner of 10th Street)	Intersection visibility and safety	(3)			Coordinate with utility owner
Total				\$86,118	\$21,371	\$107,489	

(1) Construction costs are estimated year of expenditure (YOE) with an assumed 3% inflation rate. YOE assumed to be mid-point of improvement range

(2) Engineering, Administration, Utilities and Inspection are assumed to be 25% of the construction cost.

(3) Utility relocation scope and cost to be determined in coordination with utility owner

Table 7-1. Implementation Cost Summary - Mid Term Improvements (2025 to 2034)

Project	Intersection / Roadway Segment / Project Identification	Improvement Description	Need	Construction Cost Year of Estimate (YOE) (1)	Administration, Engineering, Utilities, Inspection (2)	Total Cost	Phasing
9	Mn 220 at 14th Street NW	Traffic signal replacement and design/operation improvements	Crash rate exceeds statewide average, signal replacement needed by 2028	\$415,270	\$103,818	\$519,088	
10	Mn 220 at US 2	Intersection Control and Geometric Improvements	Existing critical crash rate and mobility concern, traffic signal replacement needed by 2028	\$4,983,242	\$1,038,175	\$6,021,417	
11	23rd Street NW to 140th Street SW	Construct left and right turn lanes as applicable at public street access	Land use changes	(3)			As redevelopment and access need to Mn 220 occurs
12	Non-compliant Pedestrian Ramps	Upgrade non-compliant pedestrian ramps (33 ramps)	Pedestrian accessibility	(4)			Reconstruct in accordance with the East Grand Forks ADA transition plan (or concurrent with other
13	(S-2) Sidewalk	20th Street NW - both sides (5th Avenue NW to Mn 220)	Pedestrian accessibility and connection between Mn 220 and neighborhood	\$166,108	\$41,527	\$207,635	
14	(S-3) Sidewalk	15th Street NE - North side (Mn 220 to East of Frontage Road)	Pedestrian accessibility and connection between Mn 220 and neighborhood	\$17,995	\$4,499	\$22,494	
Total				\$5,582,615	\$1,188,019	\$6,770,634	

(1) Construction costs reflect the highest feasible alternative and are estimated year of expenditure (YOE) with an assumed 3% inflation rate. YOE assumed to be mid-point of improvement range

(2) Engineering, Administration, Utilities and Inspection are assumed to be 25% of the construction cost.

(3) Construction scope and cost to be determined as part of development plan at future time

(4) ADA ramps are incorporated in full intersection improvements as applicable. Refer to the City of East Grand Forks ADA Transition plan for stand alone pedestrian ramp upgrades

Table 7-1. Implementation Cost Summary - Long Term Improvements (2035 to 2045)

Project	Intersection / Roadway Segment / Project Identification	Improvement Description	Need	Construction Cost Year of Estimate (YOE) (1)	Administration, Engineering, Utilities, Inspection (2)	Total Cost	Phasing
15	Mn 220 at 23rd Street NW	Intersection Control Improvements	Intersection safety. Existing crash and severity rate concern	\$5,455,965	\$1,363,596	\$6,819,561	Coordinate with MnDOT pavement rehabilitation
16	Mn 220 at 17th Street NW	Intersection Control Improvements	Existing critical crash rate concern and mobility concern by 2045	\$5,071,907	\$1,268,721	\$6,340,628	Coordinate with MnDOT pavement rehabilitation
17	17th Street NW to 23rd Street NW	Pavement rehabilitation - two lane divided highway	Rehabilitation needed by 2033 and reconstruction required by 2058	(3)			
18	US 2 to 17th Street NW	Pavement rehabilitation - four lane divided highway	Rehabilitation needed by 2033 and reconstruction required by 2058	(3)			
19	(S-1) Sidewalk	Mn 220 - East side (20th Street NE to 23rd Street NE)	Pedestrian accessibility and connection between Mn 220 and neighborhood	\$116,268	\$29,067	\$145,336	Coordinate with 23rd Street NW intersection improvements
20	(S-4) Sidewalk	10th Street NW - both sides (Terrace Drive to Mn 220)	Pedestrian accessibility and connection between Mn 220 and neighborhood	\$67,436	\$16,859	\$84,295	
21	(S-5) Sidewalk	10th Street NE - both sides (Mn 220 to 2nd Avenue NE)	Pedestrian accessibility and connection between Mn 220 and neighborhood	\$62,785	\$15,696	\$78,481	
22	(T-1) Transit Stop	Provide bus bench at 17th Street NE bus stop	Pedestrian accessibility and transit improvement	\$5,581	\$1,395	\$6,976	
23	(T-2) Transit Stop	Provide bus bench at 14th Street NE bus stop	Pedestrian accessibility and transit improvement	\$5,581	\$1,395	\$6,976	
24	(T-3) Transit Stop	Provide concrete pad, sidewalk access and bus bench at 10th Street NE bus stop (northbound direction)	Pedestrian accessibility and transit improvement	\$6,917	\$1,729	\$8,646	
25	(T-4) Transit Stop	Provide concrete pad, sidewalk access and bus bench at 10th Street NE bus stop (southbound direction)	Pedestrian accessibility and transit improvement	\$6,917	\$1,729	\$8,646	
Total				\$10,799,356	\$2,700,188	\$13,499,544	

(1) Construction costs reflect the highest feasible alternative and are estimated year of expenditure (YOE) with an assumed 3% inflation rate. YOE assumed to be mid-point of improvement range

(2) Engineering, Administration, Utilities and Inspection are assumed to be 25% of the construction cost.

(3) MnDOT maintenance and preservation

7.2 Project Development

The next phase for each intersection improvement project identified in the implementation plan is to complete preliminary engineering, project scoping and environmental documentation (i.e., NEPA). The preliminary engineering and scoping reflect more detailed engineering and evaluation to determine project feasibility and to delineate any final alternatives. This phase also includes the transition into the development of relevant environmental documentation as appropriate. Once complete, the project will move to advanced project development involving actual final design and right of way acquisition as necessary. Smaller projects, such as sidewalks, pedestrian crosswalks, lane striping or traffic signal replacements could be advanced much quicker given they are expected to have minimal impacts.

7.3 Programming and Funding

To support the implementation plan, MnDOT, Polk County, the City of East Grand Forks and the GF-EGF MPO will seek support from available funding sources. The projects identified in the Mn 220 N Corridor Study may be programmed through the:

- **2045 Metropolitan Transportation Plan (MTP).** The 2045 MTP identifies a range of transportation project investments that preserve existing roads in a “state of good repair” along with livability and safety improvements over the next 25 years. Improvements identified in the 220 N Corridor Study should be adopted into, or amend previously identified improvements within, the 2045 MTP.
- **10-Year Capital Highway Investment Plan (CHIP).** The 10-year Capital Highway Investment Plan details MnDOT’s capital highway investments for the next ten years on the state highway network. The CHIP is updated yearly to remove projects that are currently being constructed, adjust timing of existing planned projects, and add new planned projects. The CHIP is currently programmed through 2028. Mid and long-term intersection projects identified in the implementation plan may be potential future CHIP candidates.
- **Transportation Improvement Program (TIP).** The TIP for the Grand Forks -East Grand Forks area lists the significant transportation system improvements to be implemented during the next four-year period. This plan can be modified at any time, consistent with the transportation plan. Projects identified in the TIP, will also be identified in the State Transportation Improvement Program (STIP).

Other key program funding sources may include:

- **Local Partnership Programs (LPP).** The LPP provides MnDOT trunk highway construction funding through a competitive selection process to local agencies for roadway improvement projects. The program selects projects that are initiated and administered by a local agency, involving a trunk highway, where MnDOT funds are utilized for part of the project to the mutual benefit of all partners. The program relies on the initiative of the local agencies and their commitment to making roadway improvements. Most projects, specifically the larger intersection improvement projects, identified in the implementation plan may be good candidates for the City of East Grand Forks to pursue through the LPP.
- **Northwest Area Wide Transportation Partnership (NWATP) City Sub-target Federal Funds.** This fund is awarded every 4 years (2018, 2022, etc.). Projects identified within the MTP are potential candidates for this funding. The City of East Grand Forks may elect to utilize a portion or all of these funds to projects identified in the implementation plan as available to help support the construction of larger intersection improvements. These funds are allocated at the time of this document; however, an amendment could be considered to reallocate funds to any projects identified herein.
- **City Local, Maintenance and Operation Funds.** The city currently expends resources to provide regular signing, pavement marking and other infrastructure improvements along the city streets. Components of the implementation plan, such as the transit stop signs, or sidewalk connections could be funded through this resource.
- **Transportation Alternatives Program (TAP).** This program provides funding for non-traditional transportation improvement projects. For Mn 220, this could include the construction of the crosswalk improvements at 17th Street NW.
- **Minnesota and Federal Safe Route to School (SRTS) Funds.** The city can submit eligible projects to compete for available SRTS funds. Specific improvements may include the sidewalk connections and crosswalk improvements.
- **Highway Safety Improvement Program (HSIP).** This program provides funding for safety improvement projects. Candidate projects need to address either systemic (proactive) or reactive (existing safety deficiencies). Projects that may qualify for this funding include the pedestrian improvement treatments such as the refuge islands or curb extensions, or larger scale intersection improvements (e.g., 17th Street NW or US 2 intersections exceeding critical crash rates) identified that are expected to improve the overall intersection safety for motorists and non-motorist users.
- **Other Minnesota and Federal Competitive Grant Programs.** Transportation improvement, bicycle, pedestrian and other multimodal grants can become available through MnDOT and Federal grant programs. Depending on the grants available at the time, any of the recommended project components could be eligible for funding.

The City of East Grand Forks and Polk County will be responsible for cost participation split equal to the number of approach legs of roadway ownership. It is anticipated that several of the projects may require additional local resources to advance projects or to construct within the timeframe identified in the Mn 220 N Corridor Study.