

# Grand Forks - East Grand Forks Metropolitan Planning Organization

## Agenda

### MPO EXECUTIVE POLICY BOARD

**WEDNESDAY, FEBRUARY 21<sup>ST</sup>, 2018 – 12:00 P.M.**

EAST GRAND FORKS CITY HALL TRAINING CONFERENCE ROOM

DeMers \_\_\_\_\_

Malm \_\_\_\_\_

Vein \_\_\_\_\_

Mock \_\_\_\_\_

Strandell \_\_\_\_\_

Grasser \_\_\_\_\_

Powers \_\_\_\_\_

Vetter \_\_\_\_\_

1. CALL TO ORDER
2. CALL OF ROLL
3. DETERMINATION OF A QUORUM
4. MATTER OF APPROVAL OF THE JANUARY 17<sup>TH</sup>, 2017 MINUTES OF THE MPO EXECUTIVE POLICY BOARD
5. MATTER OF APPROVAL OF THE DRAFT RFQ FOR EAST GRAND FORKS RIGHT-OF-WAY ADA TRANSITION PLAN..... KOUBA
6. MATTER OF APPROVAL OF AMENDMENT TO 2018-2021 MINNESOTA SIDE T.I.P. ....HAUGEN
7. MATTER OF FHWA/MN GUIDANCE ON INCORPORATING PERFORMANCE MEASURES INTO T.I.P. ....HAUGEN
8. MATTER OF PROPOSED AMENDMENT TO WORK PROGRAM TO UPDATE WASHINGTON STREET UNDERPASS ANALYSIS.....HAUGEN
9. MATTER OF APPROVAL OF 2019-2022 T.I.P. CANDIDATE PROJECTS FOR THE NORTH DAKOTA SIDE .....HAUGEN
  - a. Urban Grant
  - b. Urban Local
  - c. Urban Regional

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- 10. MATTER OF APPROVAL TO ADOPT SAFETY TARGETS .....HAUGEN
- 11. MATTER OF 2045 STREET/HIGHWAY ELEMENT UPDATE .....HAUGEN
  - a. Goals/Objectives
  - b. Future Bridge Scenarios
- 12. MATTER OF FUTURE NON-MOTORIZED BRIDGE BETWEEN DOWNTOWNS .....HAUGEN
- 13. OTHER BUSINESS
  - a. 2018 Annual Work Program Project Update
  - b. Bill Listing For 1/13/18 to 2/16/18 Period
- 14. ADJOURNMENT

ANY INDIVIDUAL REQUIRING A SPECIAL ACCOMMODATION TO ALLOW ACCESS OR PARTICIPATION AT THIS MEETING IS ASKED TO NOTIFY EARL HAUGEN, MPO EXECUTIVE DIRECTOR AT (701) 746-2660 OF HIS/HER NEEDS FIVE (5) DAYS PRIOR TO THE MEETING. ALSO, MATERIALS CAN BE PROVIDED IN ALTERNATIVE FORMATS: LARGE PRINT, BRAILLE, CASSETTE TAPE, OR ON COMPUTER DISK FOR PEOPLE WITH DISABILITIES OR WITH LIMITED ENGLISH PROFICIENCY (LEP) BY CONTACTING THE MPO EXECUTIVE DIRECTOR FIVE (5) DAYS PRIOR TO THE MEETING.

**PROCEEDINGS OF THE EXECUTIVE POLICY BOARD  
OF THE GRAND FORKS/EAST GRAND FORKS  
METROPOLITAN PLANNING ORGANIZATION  
Wednesday, January 17<sup>th</sup>, 2018 – 12:00 Noon  
East Grand Forks City Hall Training Conference Room**

**CALL TO ORDER**

Ken Vein, Chairman, called the January 17<sup>th</sup>, 2018, meeting of the MPO Executive Policy Board to order at 12:00 p.m.

**CALL OF ROLL**

On a Call of Roll the following members were present: Al Grasser, Jeannie Mock, Mike Powers, Clarence Vetter, Marc DeMers, Gary Malm, Warren Strandell, and Ken Vein.

Guest(s): Jane Williams, Grand Forks Engineering.

Staff: Earl Haugen, GF/EGF MPO Executive Director; Jairo Viafara, GF/EGF MPO Senior Planner; and Peggy McNelis, GF/EGF Office Manager.

**DETERMINATION OF A QUORUM**

Vein declared a quorum was present.

**MATTER OF APPROVAL OF THE DECEMBER 20<sup>TH</sup>, 2017, MINUTES OF THE MPO EXECUTIVE POLICY BOARD**

***MOVED BY MALM, SECONDED BY DEMERS, TO APPROVE THE DECEMBER 20<sup>TH</sup>, 2017, MINUTES OF THE MPO EXECUTIVE POLICY BOARD, AS PRESENTED.***

Vetter pointed out that there were some members of the board absent at the December 20<sup>th</sup>, 2017 meeting and they are not shown as such in the minutes.

***MOTION, SUBJECT TO INCLUSION OF LIST OF MEMBERS ABSENT, CARRIED UNANIMOUSLY.***

**MATTER OF APPROVAL OF THE 2019-2022 T.I.P. CANDIDATE PROJECTS FOR THE MINNESOTA SIDE**

Haugen reported that normally this would be the time that we would see the Minnesota Candidate projects for our T.I.P.; however, as noted in the staff report there are not MnDOT or Polk County projects. He said that, as a reminder, MnDOT does still have programmed improvements out at U.S.#2 and U.S.Bus#2 intersection in 2021, so there is that one MnDOT project, there just isn't anything for next year.

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Haugen commented that every four years East Grand Forks receives City Sub-Target funds, and 2018 they were to receive those funds and they originally had programmed a roundabout at Bygland and Rhinehart, but then decided to amend it out and delay it until 2022, which is when they are scheduled to receive the City Sub-Target funds again.

Haugen pointed out that included in the application for the roundabout at Bygland and Rhinehart; they have updated the nomination form that needs to be filled out, there wasn't too much information that needed to be changed on it, although they did update the cost estimate to reflect 2022 year of expenditure. He stated that in comparing this to the original 2018 estimate on the nomination form they are within \$6,000 of each other.

Haugen said that included in the packet was a more current concept drawing of the roundabout as well. He commented that it was originally scoped as a compact roundabout, meaning the diameter would be less than 90-feet; the current concept shows the diameter as being 120-feet, thus brought up to a more modern roundabout design concept.

Haugen stated that, again, this is the only application we have for consideration on the Minnesota side for candidate projects for the 2019-2022 T.I.P. He added that it is consistent with the MPOs transportation plans, and is our top priority.

Haugen said that both the Technical Advisory Committee and MPO staff recommend you approve it and forward it on to the A.T.P.

***MOVED BY VETTER, SECONDED BY DEMERS, TO APPROVE THE 2019-2022 T.I.P. CANDIDATE PROJECT FOR THE MINNESOTA SIDE AS BEING CONSISTENT WITH THE LONG RANGE TRANSPORTATION PLAN AND TO GIVE IT PRIORITY RANKING.***

***Voting Aye: Vein, Malm, DeMers, Vetter, Mock, and Grasser.***

***Voting Nay: Strandell and Powers.***

***Abstain: None.***

***Absent: None.***

**MATTER OF APPROVAL OF AMENDMENT #2 TO THE ANNUAL UNIFIED WORK PROGRAM**

Haugen reported that a while back staff informed the board that, due to some grant issues, the NDDOT utilized 2014 federal funding for most of our 2017 calendar year billings, and that then freed up our 2017 funds, thus we have requested our jurisdictions to nominate work activities for those 2017 funds.

Haugen stated that last month this body approved \$22,000 out of these available funds for the additional river crossings analysis. He said that this month the City of East Grand Forks is submitting a request for us to assist them with their ADA Right-of-Way Transition Plan.

Haugen commented that included in the packet is the amendment, with a total budgeted amount of \$50,000; with \$35,000 for possible consultant assistance on it. He pointed out that the actual write-up is highlighted in yellow on the table under Special Studies.

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Haugen reported that this is a requirement of ADA since its inception back in the early 1990s; however Minnesota and the Federal Highway Administration in Minnesota are placing greater emphasis on progression of making the right-of-way fully accessible for those with disabilities, and so they have given the Minnesota jurisdictions that receive federal transportation funds until the end of 2019 to have up-to-date transition plans established, so East Grand Forks is in the process of addressing their plan and are asking us for help with their right-of-way area. He added that East Grand Forks will, on their own, have to do their own buildings and other facilities, we will just be assisting them in their right-of-way.

Haugen stated that other MPOs across the State of Minnesota are also assisting their jurisdictions, so the dollar value is based more on what the FM/Cog and the City of Moorhead are doing together, jointly, on their ADA Right-of-Way Transition Plan. He said that if you look at the square mileage on both communities, East Grand Forks is roughly a third of that, and that is the same with the population figures, so we took a third of their contracted amount and used that as our budget scope for their study.

Haugen referred to the financial table, and pointed out that we are now, with this amendment and the previous amendment, budgeting \$100,000 of the \$300,000+ of the 2017 funds available, so we still have the capability of several additional studies that may come to us during the 2018 year, but we do need approval of this body to amend the work program to identify this work activity to be done so that next month we can move forward with a detailed scope-of-work, and then to decide if we want to pursue an RFP for the consultant selection, or because of the value we are budgeting we could go a different route if we want.

***MOVED BY VETTER, SECONDED BY POWERS, TO APPROVE AMENDMENT #2 TO THE 2018 UNIFIED PLANNING WORK PROGRAM SUBJECT TO PARTNER AGENCY REVIEW.***

Vein asked, there is money remaining, is there anything on the forefront of what additional studying may be needed in East Grand Forks this calendar year. Haugen responded that they aren't aware of anything pending on the East Grand Forks side. He added, however, that the funds that are available aren't only for Minnesota efforts, they are available for both sides of the river. Vein said, then, that we aren't seeing anything for either side at this point. Haugen commented that they did have some conversations, since we are doing the right-of-way transition plan for one side of the river, if the other side wants assistance or not. He said that he doesn't know if the Grand Forks City staff has considered that or not.

***Voting Aye: Vein, Strandell, Malm, DeMers, Vetter, Mock, Grasser, and Powers.***

***Voting Nay: None.***

***Abstain: None.***

***Absent: None.***

**MATTER OF APPROVAL OF DRAFT RFP FOR 2018 AERIAL PHOTOS**

Haugen reported that Ms. Kouba had to participate in a North Dakota Transit meeting so was unable to be here today to speak on this item, therefore he will do so.

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Haugen stated that every three years we do an update of our aerial photos. He said that this RFP follows a required format and is very similar to what we did three years ago. He referred to a map and pointed out the area that will be covered, adding that it isn't just the city-proper, as we do go out over our entire MPO study area.

Haugen commented that the amount we had budgeted in our work program is \$45,000, so we have \$42,000 for consultant costs.

Haugen reported that if we receive approval today we will still have to go through the NDDOT's qualification base selection process, which will allow us to have consideration of a final contract in March, and hopefully that will allow us to have the area flown prior to the trees leafing out in mid-April or early May, and then by fall we will get the final product from the vendor.

Vein asked if you want to do the photos when the leaves are off the trees, so you do it either early spring or late fall. Haugen responded that late fall is very tricky because most trees have different schedules for when they lose their leaves, but in the spring most trees don't yet have their leaves at the same time, so spring is the preferred time. He added that also try to do it with the least amount of snow being on the ground, and the least amount of flooding if there is any.

Powers asked how far south they will be flying. Haugen responded that it is essentially just past Merrifield Road, so we include all of the Merrifield corridor; a full mile and a half past Merrifield.

DeMers asked if there was any chance, and this may be for the county representatives, of coordinating this with the counties, do you know what the counties schedule are for their photogrammetry, because he is wondering if we want to see what the counties are doing, and what their schedules are because, obviously we have a limit as to what we are going to spend, but if we can do three projects at once maybe we could get a reduction in cost. Strandell commented that he doesn't know what Polk County's plan is, but he will find out. Haugen said that he believes that Ms. Kouba tried to coordinate this with our Technical Advisory Committee members, which include the county representatives. He added that at the Technical Advisory Committee meeting the Polk County Representative was not there, but the Grand Forks County Representative indicated that they were fine with this schedule, and this study area.

Haugen reported that the Technical Advisory Committee also had a lot of discussion about LiDAR, and whether or not we want to do that as well, but the consensus was that there are other resources available that provide LiDAR so we aren't going with that option. DeMers commented that this is a valuable resource, not just for the MPO, but a lot of other entities use it as well. Strandell stated that he knows that they haven't been able to get any final flood plain zoning LiDAR, for some reason it hasn't gotten approved, and he doesn't know where the hang-up is.

Vein asked if LiDAR is primarily for contour mapping. DeMers responded that it is for elevation. Vein stated that this already has LiDAR contour mapping. Strandell said that he doesn't know what kind of overlap there is. Vein explained that he was a part of the International Water Institute, who did the whole Red River Basin, south of the border, so LiDAR

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already exists for this area, he just doesn't know what level of accuracy they did, but that has been in place for years. Haugen commented that that was part of the Technical Advisory Committee's discussion; the fact that LiDAR exists already for most of the area. He said that they were told that Minnesota, just on the Minnesota side of course, a more recent LiDAR inventory in place; and he doesn't know how that addresses your flood plain map. Strandell said that this is just a subject that hasn't been on their table lately, or where it stands, other than that they haven't been able to get final word on flood plain elevations.

Haugen stated that of the jurisdictions that are part of the MPO, the East Grand Forks Water and Light were the ones that were expressing some interest on LiDAR, and after the Technical Advisory Committee meeting they now know where they can get some of their LiDAR resources instead of through this process, no one else was really expressing interest in LiDAR.

***MOVED BY DEMERS, SECONDED BY VETTER, TO APPROVE THE RFP FOR THE AERIAL IMAGERY PROJECT, AS PRESENTED.***

***Voting Aye: Vein, Strandell, Malm, DeMers, Vetter, Mock, Grasser, and Powers.***

***Voting Nay: None.***

***Abstain: None.***

***Absent: None.***

**MATTER OF 2045 STREET/HIGHWAY ELEMENT UPDATE**

Haugen stated that included in the packet is an update on where we are at in the process. He commented that most of the staff report is written for other people as it is commenting on the action you took at your last meeting, so some of it is just rehashing what this body took action on, but we did eliminate 17<sup>th</sup> Avenue South, so we did negotiate our revised scope-of-work, and got both A.T.A.C. and Kimley-Horn to that \$22,000.00 threshold.

Haugen stated that A.T.A.C. will be getting the travel demand model results and will give those results to Kimley-Horn, and then they will produce the traffic analysis, similar to the one we saw when we were discussing it.

Haugen commented that he expects to have this information available at our next Technical Advisory Committee and Executive Policy Board meetings.

Haugen stated that as part of this we should also have our 2030 and 2045 Traffic Analysis of where we are expecting growth in traffic and what issues it may cause us, so it won't just be river crossings for discussion.

Haugen said that, as you will recall, at the end of our meeting last month Mr. Malm reported on some discussion that the County Board had taken the previous day, particularly on the Grand Forks Merrifield Road area. He explained that, as noted in the draft minutes, which we just approved; there is a need for some clarification as to Mr. Malm's statement that the county is talking about setting aside 3 mills over an 8 year period to fund their side of a bridge at Merrifield. He said that when he talked to Mr. West about this, he indicated that it was really

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just discussion, and that he isn't aware of any direction given to him that he was to pursue these things, but instead he felt that he was just planting a seed as to what could be done and to just start a conversation about it, so it isn't as definitive as the minutes state, it is still being discussed, correct. Malm responded that that is correct.

Malm explained that at their County meeting yesterday someone questioned this, and he said that all Mr. West is doing is going out and finding out what the people want, and this is just one proposal, one suggestion and the committee said that they would think about doing it. He added that when he made the comment "taking the lead" it doesn't mean going ahead with anything specific, it means investigating with the other groups like Polk County, the States, etc.

Haugen commented that he did provide Mr. West with a copy of the Merrifield Bridge Feasibility Study Report that we have, so he has a fairly good understanding of the feasibility of a structure at that location.

Haugen reported that they have draft Goals and Objectives for review and comment. He said that they have had a lot of discussion about autonomous vehicles and some discussion on connected vehicles. He commented that, because of that, they weren't really covering those topics well in the Goals/Objectives/Standards so they are proposing adding the following language to Goal #6:

Objective #5: Consider advances in autonomous vehicles and connected vehicles technology in the transportation planning and programming processes.

Standards:

Participate in state and national autonomous vehicle and connected vehicle planning efforts.

Support implementation in autonomous vehicle and connected vehicle technology that collectively provide the increased transportation options for people and freight.

Recognize and address autonomous vehicles and connected vehicles changes at the local, regional, state and national level that influence the metro area's transportation system.

Haugen explained that the reason for adding this to Goal #6 is because Goal #6 already has discussion regarding our ITS Regional Architecture. He said that in 2019 the work program shows that we will be proposing updating our ITS Regional Architecture. He explained that the primary reason for this is because now the architecture is addressing connected vehicles and autonomous vehicles and we need to have it in place, so that is Objective #4; Objective #5 is the one that specifically talks about autonomous and connected vehicle technology. He pointed out that they are basically saying that we will keep as up-to-date with this as we can.

Haugen commented that they asked the Technical Advisory Committee for their comments, and he hopes to get them by Friday.

Haugen reported that next month we have been asked to make a decision on what we are doing for Safety Performance Targets, and we have had a lot of discussion about setting the target. He

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added that the other half of that is the programming and what it means if we are setting targets, how that might or might not impact the programming.

Haugen stated that they were not able to schedule; that originally at the Technical Advisory Committee we talked about having both States come and provide us some dialogue on the safety target and programming side of it, but our Technical Advisory Committee schedule didn't coincide with other people's schedules so we are still trying to figure it all out. He added that tomorrow the MPOs are meeting with MnDOT to talk about safety target setting and programming so we will try to get it nailed down a bit more. He said that there are no set meetings at this time with the NDDOT, so we are trying to understand that programming side of this, but he thinks we have a good understanding of what each States targets are, so if we decide to do targets at the local level, what those could be so we are just trying to get that last piece of information as to whether or not impact programming, and if it does is it negative or positive.

Haugen commented that you will be asked at next month's meeting if you want to establish your own local targets or if you just want to use the States targets on the safety side.

Haugen reported that just to expand on not just safety targets, but they are working with both State DOTs on obtaining the data for the other target levels as well. He explained that PM2 (performance measure 2) are bridge and pavement conditions; and PM3 (performance measure 3) are travel time reliabilities for vehicles, and specifically for freight vehicles. He said that they are still working on these data sets, and are moving forward, but they are still struggling a bit to get an understanding of how the safety program side is changing, or may change due to not having the safety targets in place.

Information only.

**OTHER BUSINESS**

a. 2018 Annual Work Program Project Update

Grasser stated that he is wondering if, the bridge element that we are now doing, does that warrant a sub-topic within the 2045 Street/Highway Plan work activity; should it be a sub-target as far as its completion date and work activities. He said that he is still trying to make sure that he has in his head all the pieces that go into the Long Range Transportation Plan, and all those different components that have to come together at the end.

Grasser said that one other comment he has is that maybe some of the things that are shown on this update, such as the GIS, Corridor Preservation, and other on-going activities that we don't have anything targeted, is it really useful, or can they be dropped off.

Vein said that right now Mr. Grasser has two different questions, one on the bridge part of the 2045 Street and Highway Plan, is that correct. Grasser responded that that would be one of them that came to his mind when we were talking about it because it is talking about that special element.

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Vein asked if the completion dates are separate between the bridge portion of the project and the total Street and Highway Plan project. Haugen responded that conceivably yes, if you wanted to make a decision that you are either not going to try to fund any bridges by 2045 but you have the analysis, then that could be done early in the process and then by the time we get to the final 2045 plan we no longer are trying to identify or wrestle with the bridge issue, so in that sense, yes; but if you want to go the opposite direction we would probably wrestle with that until the end of the 2045 Street and Highway Element.

Vein said that he knows that this has come out as a specific issue, the bridges, and what are we going to do with it probably has more interest than maybe the overall plan does. Grasser stated that from his perspective he thinks we need to have something a little more targeted and focused there because right now it is just the traffic analysis part, right, so he doesn't want us to lose track of this thing eighteen months from now and he thinks the issue is going to float back up among the City Councils, so he doesn't think we will be able to have our best foot forward if we continue to not have any answers, so he would like to see it shown as a sub-target.

Vein commented that if we wait until the very end and go in a different direction we may have to revise the plan depending on where those bridges would be, so it would seem to be an important sub-set to know earlier before you finish the final plan. Haugen responded that staffs intent is, after the February meeting, assuming that we have the results from this added scope, and after the board has had a chance to review them and get comfortable with them, we would have another joint meeting to present that data to everyone, and the hope would be that we can further narrow down locations so that way if we need to go to the next step of further analysis, he hopes that we aren't still studying all four locations.

Vein asked if the joint meeting would be like the one we had earlier with the various entities. Haugen responded it would be like that. Vein said, though, that any motion made at that meeting would still come from the MPO. Haugen responded that that is correct. He added that we would try to make sure that we capture both County Commissions because of this recent action that the Grand Forks County is leading for this specific site, so we would try to make sure that both county commissions are aware of, and invited to this meeting.

Grasser said, then, that it might be that the data portion of this contract would be available in the next 30 to 60 days, correct. Haugen responded that that is correct. Grasser stated that, again, whatever the dates are he thinks it would be good to have them because then we all have the same frame of mind as to what the timeframe is. Vein added that he thinks it would be nice to get that resolved sooner rather than later anyway.

Consensus was to add the bridge portion of the study as a sub-target and to remove the on-going activities.

b. Bill Listing For 12/16/17 to 1/12/18 Period

Haugen reported that the list of bills for the December 16, 2017 to January 12, 2018 period was included in the packet.

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c. Federal Government Shut-Down

Haugen reported that you are probably hearing things about a possible federal government shut-down this Friday. He stated that it is sounding rather “iffy” on whether or not they will accomplish a resolution, but from the MPO operations perspective, it won’t impact us, per-say, but there is potential impact to other federal highway and federal transit programs depending on how long the shut-down is.

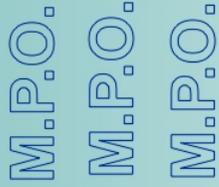
**ADJOURNMENT**

***MOVED BY MALM, SECONDED BY DEMERS, TO ADJOURN THE JANUARY 17<sup>TH</sup>,  
2017, MEETING OF THE MPO EXECUTIVE POLICY BOARD AT 12:35 P.M.***

***MOTION CARRIED UNANIMOUSLY.***

Respectfully submitted,

Peggy McNelis,  
Office Manager



## Grand Forks - East Grand Forks Metropolitan Planning Organization

### **MPO Staff Report** **Technical Advisory Committee: February 14, 2018** **MPO Executive Board: February 21, 2018**

**RECOMMENDED ACTION: Approval of the Request for Quotes for the East Grand Forks ADA Transition Plan.**

Matter of the RFQ for East Grand Forks ADA Transition Plan.

#### **Background:**

The Americans with Disabilities Act (ADA) became Federal Law on January 26, 1992. The Act comprises five titles prohibiting discrimination against disabled persons within the United States. Title II of the ADA requires state and local governments to make programs, services, and activities accessible to persons with disabilities. It also established physical access requirements for public facilities, including pedestrian and transit oriented facilities.

Although the ADA required transitions plans to be developed to inform everyone how the full access was going to be done, very few agencies have prepared nor maintain these required transition plans. FHWA-MN and MnDOT placed renewed emphasis on progress towards ADA compliance, particularly within the public right of way. In order for the agencies requesting federal transportation funds to be programmed in the TIP, a ADA transition plan must be done.

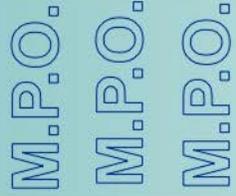
The City and the MPO has put together a RFQ to have a firm do the necessary work to prepare a Transition Plan for the City. Although typically, the MPO utilizes the qualification based selection process, due to the low budget and based upon recent results and in compliance with NDDOT guidance, the MPO will seek quotes from pre-qualified consultants. Therefore, costs will be one of the selection criteria. The plan will take nine months for the final plan to be completed and a consultant budget of \$35,000.

#### **Findings and Analysis:**

- UPWP identifies the completion of the East Grand Forks Transition Plan.

#### **Support Materials:**

- Draft RFQ



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**Request for Quotes  
for  
Transportation Planning Services**

**East Grand Forks ADA Transition Plan**

**March 2018**

**REQUEST FOR QUOTES  
FOR  
TRANSPORTATION PLANNING SERVICES**

The Grand Forks – East Grand Forks Metropolitan Planning Organization (MPO) requests quotes from qualified consultants for the following project:

East Grand Forks ADA Transition Plan

Criteria will be used to analyze technical submittals from responding consultants. Upon completion of technical ranking, the MPO will enter into contract negotiations with the top ranked firm. The MPO reserves the right to reject any or all submittals. This project has a budget of \$35,000 dollars.

All quotes received by **March 23, 2018** at Noon at the MPO Office will be given equal consideration. Minority, women-owned, and disadvantaged business enterprises are encouraged to participate. Quotes should be shipped to ensure timely delivery to:

**Teri Kouba**  
**Senior Planner**  
**Grand Forks – East Grand Forks MPO**  
**600 DeMers Ave.**  
**East Grand Forks, Minnesota 56721**  
[teri.kouba@theforksmpo.org](mailto:teri.kouba@theforksmpo.org)  
Phone: 218/399/3372 (M-W-F) or 701/746/2656 (T-Th)

Once submitted, the quotes become the property of MPO.

## I. Requirements

### A. *Selection Committee*

The technical quotes will be reviewed by the Selection Committee, which may include staff from local municipalities and multi-jurisdictional bodies as follows:

- ADA Title II Coordinator
- City Administrator
- Public Works
- MPO Staff

Once the written quotes are received, the Selection Committee will meet to rank the quotes. Firms may be asked to expand upon particular points in their written quotes and should be prepared to do so.

### B. *Disadvantaged Business Enterprise*

In the performance of this agreement, the contractor shall cooperate with MPO in meeting its goals with regard to the maximum utilization of disadvantaged business enterprises, and will use its best efforts to ensure that such business enterprises shall have the maximum practical opportunities to compete for subcontract work under this agreement.

#### 1. Policy

It is the policy of the Department of Transportation that disadvantaged business enterprises as defined in 49 CFR Part 23, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this Agreement. Consequently, the DBE requirements of 49 CFR Part 23 applies to this Agreement.

#### 2. DBE Obligation

The MPO and contractor agree to ensure that disadvantaged business enterprises as defined in 49 CFR Part 23 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds provided under or pursuant to this Agreement. In this regard, the contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 23 to ensure that disadvantaged business enterprises have the maximum opportunity to compete for and perform contracts. The contractor shall not discriminate on the basis of race, creed, color, national origin, age, or sex in the award and performance of DOT-assisted contracts.

### C. *Equal Employment Opportunity*

In connection with this proposal and any subsequent contract, the consultant shall not discriminate against any employee or applicant for employment because of race, color, creed, religion, national origin, disability, sex, or status regarding public assistance. The consultant will take action to ensure that its employees are fairly treated during employment without regard to their race, color, creed, religion, national origin, disability, sex, or status regarding public assistance. Such actions shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising, layoff or termination; rate of pay or other forms of compensation; and selection for training, including internship and/or apprenticeship. The consultant further agrees to insert a similar provision in all subcontracts, except subcontract for standard commercial supplies or raw materials. The consultant will furnish all necessary information and reports and will permit access to its books, records, and accounts by the MPO and/or its representatives including state and federal agencies, for purposes of investigation to ascertain compliance with non-discrimination provisions or any resultant contract.

### D. *Ownership, Publication, Reproduction, and Use of Materials*

All work products of the contractor which result from this contract are the exclusive property of MPO, local

partners, and its federal/state grantor agencies. No material produced in whole or part under this agreement shall, during the life of this agreement, be subject to copyright in the United States or in any other country. Permission and approval must be obtained from the MPO before any report, handbook, cassettes, manual, interim data, or results are published. Draft copies of all deliverables must be prepared by the consultant and reviewed and approved by the MPO before publication. The consultant, subject to the approval by the MPO, shall have the authority to publish, disclose, distribute, and otherwise use in whole and part, any reports, data, or other materials prepared under this agreement.

***E Records, Access, and Audits***

The consultant shall maintain complete and accurate records with respect to allowable costs incurred and manpower expended under this contract. All such records shall be maintained on a generally accepted accounting basis and shall be clearly identified and readily accessible. The consultant shall provide free access to the representatives of MPO, the US Department of Transportation, and the Comptroller General of the United States at all proper times to such data and records, and their right to inspect and audit all data and records of the Consultant relating to his performance under the contract; and to make transcripts there from as necessary to allow inspection of all work data, documents, proceedings, and activities related to this contract for a period of three (3) years from the date of the final payment under this contract.

***F Conflicts of Interest***

No official or employee of the MPO, state, or any other governmental instrumentality who is authorized in his official capacity to negotiate, accept, or approve, or to take part in negotiating, accepting, or approving any contract or subcontract in connection with a project shall have, directly or indirectly, any financial or other personal interest in any such contract or subcontract. No engineer, attorney, appraiser, inspector, or other person performing services for the MPO, state, or a governmental instrumentality in connection with a project shall have, directly or indirectly, a financial or other personal interest other than his employment or retention by the MPO, state, or other governmental instrumentality, in any contract or subcontract in connection with such project. No officer or employee of such person retained by the MPO, state, or other governmental instrumentality shall have, directly or indirectly, any financial or other personal interest in a project unless such interest is openly disclosed upon the public records of the MPO, the NDDOT, the MnDOT, or such other governmental instrumentality, and such officer, employee, or person has not participated in such acquisition for and in behalf of the state.

***G. Eligibility of Proposer, Non-procurement, Debarment and Suspension Certification; and Restriction on Lobbying***

The consultant is advised that his or her signature on this contract certifies that the company/agency will comply with all provisions of this agreement, as well as applicable federal and state laws, regulations, and procedures. Moreover the consultant affirms its compliance with the federal Debarment and Suspension Certification and the Federal Restrictions on Lobbying.

***H Subcontracting***

The contractor may, with prior approval from the MPO, subcontract as necessary to accomplish the contract objectives. Subcontracts shall contain all applicable provisions of this agreement, and copies of the subcontract must be filed with the MPO.

***I Assignments***

The contractor shall not assign or transfer the contractor's interest in this agreement without the express written consent of the MPO.

***J Procurement - Property Management***

The Contractor shall adhere to 2 CFR 200 when procuring services, supplies, or equipment, which are incorporated into this agreement by reference and are available from NDDOT.

***K Termination***

The right is reserved by either party to terminate this agreement with or without cause at any time if the recipient does not comply with the provisions of this agreement or its attachments.

If the MPO terminates this agreement, it reserves the right to take such action as it deems necessary and appropriate to protect the interests of the MPO, and its state/federal grantor agencies. Such action may include refusing to make any additional reimbursements of funds and requiring the return of all or part of any funds that have already been disbursed.

***L Amendments***

The terms of this agreement shall not be waived, altered, modified, supplemented, or amended in any manner whatsoever, except by written instrument signed by the parties.

***M Civil Rights***

The contractor will comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (78 STAT. 252), the regulation of the Federal Department of Transportation, 49 CFT, Part 21, and Executive Order 11246.

The contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin. The contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during their employment without regard to their race, religion, color, sex, age, handicap, or national origin. Such actions shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or advertising, layoff or termination, rates of pay, or other forms of compensation, and selection for training, including apprenticeship. Furthermore, the contractor agrees to insert a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

***N Civil Rights - Noncompliance***

If the contractor fails to comply with the federal or state civil rights requirements of this contract, sanctions may be imposed by the FHWA or the NDDOT as may be appropriate, including, but not limited to:

1. Withholding of payments to the contractor under the contract until the contractor complies, or
2. Cancellation, termination, or suspension of the contract, in whole or in part.

***O Energy Efficiency***

The contractor shall comply with the standards and policies relating to energy efficiency which are contained in the North Dakota Energy Conservation Plan issues in compliance with the Energy Policy & Conservation Act, Public Law 94-163, and Executive Order 11912.

***P Handicapped***

The contractor shall ensure that no qualified handicapped individual, as defined in 29 USE 706(7) and 49 CFR Part 27 shall, solely by reason of this handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity that receives or benefits from the assistance under this agreement.

***Q EPA Clean Act and Clean Water Acts***

The contractor shall comply with the Clean Air Act, 42 U.S.C. 1857; the Clean Water Act, 33 U.S.C. 1251; EPA regulations under 40 CFR Part 15, which prohibits the use of nonexempt federal contracts, grants, or loans of facilities included on the EPA List of Violating Facilities, and Executive Order 11738.

***R Successors in Interest***

The provisions of this agreement shall be binding upon and shall ensure to the benefit of the parties hereby, and their respective successors and assigns.

***S Waivers***

The failure of the MPO or its local state/federal grantors to enforce any provisions of this contract shall not constitute a waiver by the MPO or its state/federal grantors of that or any other provision.

**T Notice**

All notices, certificates, or other communications shall be sufficiently given when delivered or mailed, postage prepaid, to the parties at their respective places of business as set forth below or at a place designated hereafter in writing by the parties.

**U Hold Harmless**

The contractor shall save and hold harmless the MPO, its officer, agents, employees, and member units of government, and the State of North Dakota and Minnesota and the NDDOT and MnDOT, its officers, agents, employees, and members from all claims, suits, or actions of whatsoever nature resulting from or arising out of the activities of the contractor or its subcontractors, agents, or employees under this agreement. It is hereby understood and agreed that any and all employees of the contractor and all other persons employed by the contractor in the performance of any of the services required or provided for under this agreement shall not be considered employees of the MPO, its member units of government, the NDDOT, or the MnDOT and that any and all claims that may arise under the Worker’s Compensation Act on behalf of said employees while so engaged and any and all claims by any third parties as a consequence of any act or omission on the part of said contractor’s employees while so engaged in any of the services to be rendered under this agreement by the contractor shall in no way be the obligation or responsibility of the MPO or its member units of government.

**V Compliance with Federal Regulations**

The contractor is advised that his or her signature on this contract certifies that its firm will comply with all provisions of this agreement as well as applicable federal and state laws, regulation, and procedures. Moreover, the contractor affirms its compliance with the federal Debarment and Suspension Certification and the federal Restrictions on Lobbying.

**II. PRELIMINARY PROJECT SCHEDULE**

**A. Consultant Selection**

Request Quotes from Pre- Qualified Firms	February 28, 2018
Receive Quotes	March 23, 2018
Selection Committee Activity:	
Review Quotes	March 28, 2018
Select Finalist	March 28, 2018
Contract Negotiations Completed	March 29, 2018
MPO Policy Board Approval of Consultant Selection and Contract	April 18, 2018

**B. Project Development**

Notice to Proceed	April 25, 2018
First full Draft Report Submittal	October 25, 2018
Final Report Submittal	January 25, 2019

**III EVALUATION CRITERIA & PROCESS**

The MPO in close coordination with members of the Selection Committee will evaluate the quotes based on, but not

limited to, the following criteria and their weights:

**A. Nature of the project (20 points)**

1. Does the firm show an understanding of the scope of work?

**B. Proximity of consultant to project (10 points)**

**C. Past Performance (20 points)**

1. Does the firm routinely deliver desired products in a timely manner?
2. Does the consultant routinely demonstrate initiative, efficient use of time and resources, and reliability in completing their projects?

**D. Capability of consultant to produce the required services (25 points)**

1. What are the technical and professional skills of each team member?
2. What will be the assigned role each member will play?

**E. Ability to meet budget requirements (25 points)**

1. Can the team members devote the time and resources necessary to successfully complete this project?

Each quote will be evaluated on the above criteria by the Selection Committee. The Committee will determine which firm would best provide the services requested. The qualifying firm chosen by the Selection Committee will enter into a contract and fee negotiation based on the cost proposal.

**The MPO is an Equal Opportunity Employer.**

**IV TERMS AND CONDITIONS**

- A. The MPO reserves the right to reject any or all quotes, or to award the contract to the next most qualified firm if the successful firm does not execute a contract within forty-five (45) days after the award of the proposal.
- B. The MPO reserves the right to request clarification of information submitted and to request additional information of one or more applicants.
- C. Any quote may be withdrawn up until the date and time set for the opening of the quotes. Any quotes not so withdrawn shall constitute an irrevocable offer, for a period of 90 days, to provide to the MPO the services set forth in the attached specifications, or until one or more of the quotes have been approved by the MPO Policy Board.
- D. If, through any cause, the firm shall fail to fulfill in timely and proper manner the obligations agreed to, the MPO shall have the right to terminate its contract by specifying the date of termination in a written notice to the firm at least ninety (90) working days before the termination date. In this event, the firm shall be entitled to just and equitable compensation for any satisfactory work completed.
- E. Any agreement or contract resulting from the acceptance of a proposal shall be on forms either supplied by or approved by the MPO and shall contain, as a minimum, applicable provisions of the Request for Qualifications. The MPO reserves the right to reject any agreement that does not conform to the Request for Qualification and any MPO requirements for agreements and contracts.
- F. The firm shall not assign any interest in the contract and shall not transfer any interest in the same without prior written consent of the MPO.

**V. QUOTE FORMAT AND CONTENT**

Quotes shall include the following sections at a minimum:

1. Summary of Proposed Technical Process/Planning Process
2. Description of Similar Projects
3. Project Staff Information including breakdown of estimated staff hours by each staff class per task
4. References
5. DBE/MBE Participation
6. Cost Quotes

## **VI. Cost Quotes/Negotiations**

### **1. Cost Quotes**

Submit a cost quote for the project work activities. Cost quotes will be separated from technical proposal. Cost Quotes shall be based on hourly “not to exceed” amount. Cost quotes must be prepared using the format provided in Appendix B. Attached to the Cost Quote the Certification of Indirect Rate Form also provided in Appendix B.

### **2. Contract Negotiations**

The MPO will negotiate a price for the project after the Selection Committee completes its final ranking of the consultants. Negotiation will begin with the most qualified consultant. If the MPO is unable to negotiate a fair and reasonable contract for services with the highest ranking firm, negotiations will be formally terminated, and will begin with the next most qualified firm. This process will continue until a satisfactory contract has been negotiated.

The MPO reserves the right to reject any, or all, submittals.

## **VII. BACKGROUND AND SCOPE OF WORK**

### **Purpose**

The Americans with Disabilities Act (ADA) became Federal Law on January 26, 1992. The Act comprises five titles prohibiting discrimination against disabled persons within the United States. Title II of the ADA requires state and local governments to make programs, services, and activities accessible to persons with disabilities. It also established physical access requirements for public facilities, including pedestrian and transit oriented facilities. In order for the City of East Grand Forks (the City) to comply with the changes in the Act and guidance from the State of Minnesota, the City must manage efficiently the removal of barriers. The City will also need to identify and prioritize activities to remove these barriers.

The City under Title II of the ADA is required to conduct a Self-Evaluation of the public Right of Way (ROW) and to formulate and carry out a transition plan (§35.105). The Self-Evaluation plan requested will be limited to assuring that the City meets mandated needs of providing access to pedestrian and transit modes of travel. This project consists of identifying intersections, pedestrian crossings, and on-street transit facilities within the City that do not meet current ADA access guidelines and developing a plan to bring these areas into compliance. The scope of this project will center on updates to the public ROW. Non-ROW issues will be done internally.

The Self-Evaluation of the public ROW will be a comprehensive assessment of policies, procedures, and transportation elements to identify and correct barriers that limit otherwise qualified persons with disabilities from accessing and using pedestrian facilities,

The City is seeking qualified professional firms and individuals experienced in the evaluation and development of program and accessibility plans to submit a Request for Quotes to provide consulting services to produce the City’s ADA Self-Evaluation of the public ROW and Transition Plan for pedestrian access routes and public ROW. Additional actions may be included as the Consultant deems appropriate based on their experience. All actions related to this project must conform to standards and specifications of the Americans with Disabilities Act.

## **Project Tasks**

Outlined below is the scope of work that will guide development of this project. The MPO and City has included the following scope of work to provide Consultants insight into the project intent, context, coordination, responsibilities, and other elements to help facilitate project development.

At minimum, the consultant shall be expected to establish detailed analysis, recommendations and/or deliverables for the following tasks:

### **Task 0- Project Management**

This task involves activities required to manage the project including staff, equipment, and documentation. It also includes the preparation of progress reports, documenting travel and expense receipts, and preparing and submitting invoices. It is imperative to consider the public and keep it informed of the planning activities and outcomes using strategies that include the use of the internet and social media. Maintaining a project website or providing information to the MPO and the City for posting on its website will be required. This task also includes monthly progress meeting with the Client, the preparation of meeting agendas, and taking and reporting meeting minutes.

### **Task 1- Policy Review**

The Consultant will assist City and MPO staff in identifying all necessary documents and materials to conduct a self-evaluation and audit process. Review and evaluation of City policies, programs, facilities, public right-of-ways, and activities to identify issues which may be discriminatory to people with disabilities. Policy documents will include those City policy documents that affect the public. The Consultant shall make recommendations for policy changes or for enacting new policies.

The Consultant shall review and evaluate current City policies, programs and practices in order to identify issues, which may be discriminatory to people with disabilities and their ability to use pedestrian and transit facilities within the City. The review will include City policy documents that affect the public. The review should also evaluate the current level of program accessibility, including eligibility requirements, participation requirements, facilities used, staffing, transportation, communication, grievance procedures and emergency procedures.

### **Task 3- Self-Evaluation of the public ROW and Transition Plan**

The Consultant shall develop the comprehensive ADA Self-Evaluation of the public ROW and Transition Plan based upon the results of the barrier assessments, policy review, and City and MPO staff guidance. The Transition Plan shall include all requisite information to comply with Title II of the ADA for such a plan, including, but not limited to the following:

- Methodology for the Self-Evaluation of existing barriers to accessibility;
- Summary of the findings of the Self-Evaluation of facilities, policies, programs, and practices;
- Summary of the ADA Transition Plans from MnDOT and Polk County;
- Identify barriers and provide recommendations of mediation measures to correct deficiencies and the prioritization of barrier remediation;
- Cost estimates of remediation measures;
- Implementation schedule that includes short-, mid-, and long-term efforts for remediation;
- Procedures for periodically reviewing and updating the Transition Plan.

All activities will be vetted through the Project Review Committee and the public.

### **Task 4- Management System**

Establish an actively managed tracking system database to update barrier removals as they are performed by City staff and to provide a medium for monitoring and updating the progress. The Consultant will provide training, as needed, to City and MPO staff in the use, maintenance, and update of the proposed management system.

All database files shall be the property of the MPO and electronic files shall be submitted in a non-proprietary format.

### **Task 5- Public Involvement**

The Consultant shall propose and lead a process for interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the Self-Evaluation of the public ROW and

development of the transition plan. The process may involve surveys, workshops, or other such methods as proposed by the Consultant. The consultant must involve individuals with disabilities in the evaluation of sites, as required by Title II.

Additional efforts in this area will include a City Council presentation regarding the importance of ADA, the results of the Self-Evaluation, presenting the Access Audit reports and any recommendations offered by the evaluation.

#### **Task 6- Time Frame**

The City seeks to have the results of this study completed within nine (9) months after the issuance of the Notice to Proceed. If the Consultant deems this unreasonable based on prior experience, a suitable completion date shall be clearly identified and an explanation given as to why the preferred date would be unrealistic.

### **A. Consultant Responsibilities**

1. Policy changes and new policy recommendations.
2. Sidewalk and curb ramp survey and report.
3. Establishment of Management System for sidewalks and curb ramps.
4. Self-Evaluation of the public ROW and Transition Plan

### **B. Project Deliverables**

- Sidewalk and Curb Ramp Survey report
- Policy review and recommendations
- Management system
- Self-Evaluation of the public ROW and Transition Plan
  - The final product will show recommendations of the Transition Plan.

1. A first full draft report by noon, October 25, 2017 (10 full draft copies)
2. An approved final report January 25, 2017 (25 full copies)

One electronic copy of the approved final reports will be delivered to the Grand Forks-East Grand Forks MPO in PDF format. The electronic copies should be complete and in order such that additional copies of either document could be printed on-demand. In addition, electronic copies of any pertinent working papers and software either during the project or at its conclusion will be delivered to the MPO.

### **C. Estimated Project Budget**

The MPO has budgeted \$35,000 to compensate the selected consultant to complete the scope of work as identified.

### **D. Other Requirements**

The consultant will update the Project Manager on an on-going basis, along with a written monthly progress report which will clearly reflect progress, timeliness, and budget expenditures. The monthly progress report will be required with the submission of each invoice.

## **VIII. INFORMATION AVAILABLE FOR CONSULTANT**

### **A. General Information**

The following resource data / information is available for the project:

2015 Aerial Photography

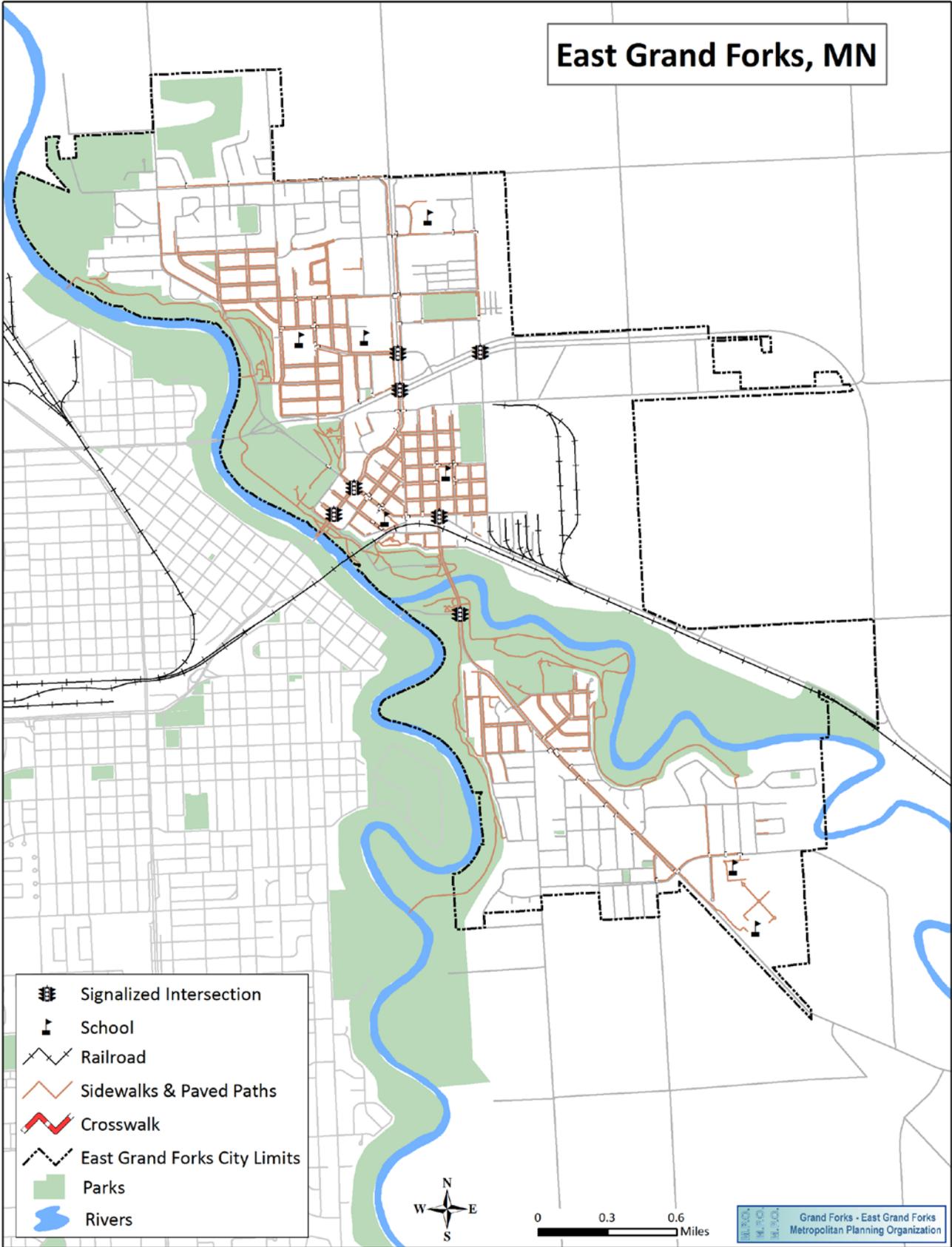
Grand Forks/East Grand Forks Long Range Transportation 2040 Plan

Digital Zoning and Land Use Maps

Various City Shapefiles

## **IX. MAP OF PROJECT AREA – next page**

# East Grand Forks, MN



**APPENDIX A**  
**ATTACHMENTS 1 & 2**

**DEBARMENT OR SUSPENSION CERTIFICATION**

The Participant, \_\_\_\_\_ (name of firm) certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph two (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause of default.

**THE PARTICIPANT, CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. 3801 ET SEQ. ARE APPLICABLE THERETO.**

\_\_\_\_\_  
(Signature of Authorized Official)

Date

\_\_\_\_\_  
(Title of Authorized Official)

CERTIFICATION  
OF  
RESTRICTION ON LOBBYING

I \_\_\_\_\_, hereby certify  
on behalf of

(Name and title of grantee official)

\_\_\_\_\_ that:

(Name of grantee)

- (1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, US Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

By \_\_\_\_\_  
(Signature of Authorized Official)

\_\_\_\_\_  
(Title of authorized official)

**APPENDIX B COST QUOTE FORM**

**(Include completed cost form in a separate Page labeled  
“COST FORM - Vendor Name”  
and submit with technical proposal as part of overall response.)**

**COST QUOTE FORM**

The cost estimated should be based on a not to exceed cost as negotiated in discussion with the most qualified contractor.  
Changes in the final contract amount and contract extensions are not anticipated.

**REQUIRED BUDGET FORMAT  
Please Use Audited DOT Rates Only  
East Grand Forks ADA Transition Plan**

<b>1. Direct Labor</b>	<b>Hours</b>	<b>X</b>	<b>Rate</b>	<b>=</b>	<b>Total</b>
Name, Title, Function	0.00	X	0.00	=	0.00
		X			
		X			
		X			
2. Overhead					
3. General & Administrative Overhead					
4. Subcontractor Costs					
5. Materials and Supplies Costs					
6. Travel Costs					
7. Fixed Fee					
8. Miscellaneous Costs					
<b>Total Cost</b>					

## Certification of Final Indirect Costs

Firm Name: \_\_\_\_\_

Proposed Indirect Cost Rate: \_\_\_\_\_

Date of Proposal Preparation (mm/dd/yyyy): \_\_\_\_\_

Fiscal Period Covered (mm/dd/yyyy to mm/dd/yyyy): \_\_\_\_\_

The undersigned, certify that I have reviewed the proposal to establish final indirect cost rates for the fiscal period as specified above and to the best of my knowledge and belief:

1. All costs included in this proposal to establish final indirect cost rates are allowable in accordance with the cost principles of the Federal Acquisition Regulations (FAR) of title 48, Code of Federal Regulations (CFR), part 31.
2. This proposal does not include any costs which are expressly unallowable under the cost principles of the FAR of 48 CFR 31.

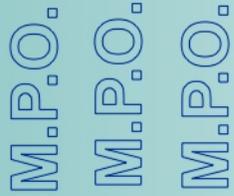
All known material transactions or events that have occurred affecting the firm's ownership, organization and indirect cost rates have been disclosed.

Signature: \_\_\_\_\_

Name of Certifying Official (**Print**): \_\_\_\_\_

**Title** \_\_\_\_\_

Date of Certification (mm/dd/yyyy): \_\_\_\_\_



## Grand Forks - East Grand Forks Metropolitan Planning Organization

### **MPO Staff Report** **Technical Advisory Committee: February 14, 2018** **MPO Executive Board: February 21, 2018**

**RECOMMENDED ACTION: Recommend the approval of FY2018 MN Side TIP amendment to the MPO Executive Board.**

Matter of the Public Hearing on FY2018 MN Side TIP Amendment.

**Background:** After the MPO adopts a four year TIP, amendments may need to be process when a project cost estimate changes significantly or the scope of the project changes or federal programs have announced funding awards.

The City of East Grand Forks is requesting to amend the project scope for the reconstruction of Rhinehart to affect less length of street reconstruction, resulting in a reduction in cost. The change is due to the possibly larger impact the FY2022 roundabout may have on Rhinehart; hence, the City does not want to construct new in 2018 and then possibly remove it in 2022 for the roundabout. With the cost change, the City seeks to use these funds to make ADA compliance items along 17<sup>th</sup> Ave N. between River Road and Central Avenue. The total dollars are not affected; therefore, the fiscal constraint is not compromised.

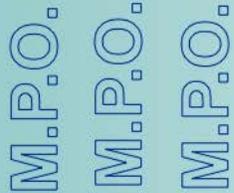
The attached proposed project amendment shows the new modified project. Also attached is the public hearing notice (being held at the TAC meeting) that was published concerning this proposed amendment.

#### **Findings and Analysis:**

- Project modifications have been identified.
- The proposed project is consistent with the MPO Long Range Transportation Plan.
- A Public Hearing is scheduled for February 14th at the TAC meeting; written comments are being accepted until 11:00 am, February 14th.
- These amended project does not impact funds in the TIP so fiscal constraint is maintained.

#### **Support Materials:**

- Copy of Public Hearing Notice.
- Copy of Amendment



## Grand Forks - East Grand Forks Metropolitan Planning Organization

### **PUBLIC HEARING**

The Grand Forks – East Grand Forks Metropolitan Planning Organization (MPO) will hold a public hearing on proposed amendment to the MPO’s 2018-2021 Minnesota side Transportation Improvement Program (TIP). The TIP lists all transportation improvement projects needing federal action programmed to be completed between the years 2018 to 2021. The TIP also incorporates the local transit operator’s Program of Projects (POP). The hearing will be held in Training Room of East Grand Forks City Hall, 600 DeMers Ave, East Grand Forks MN. The hearing will begin at 1:30 PM on February 14, 2018. The public is encouraged to attend.

A copy of the proposed amendment is available for review and comment weekdays between 8:00 a.m. and 5:00 p.m. at the MPO Offices in Grand Forks City Hall and East Grand Forks City Hall. Comments on the proposed amendment can be submitted to either MPO office until 11:00 AM on February 13<sup>th</sup>.

For further information, contact Mr. Earl Haugen at 701/746/2660. The GF-EGFMPO will make every reasonable accommodation to provide an accessible meeting facility for all persons. Appropriate provisions for the hearing and visually challenged or persons with limited English Proficiency (LEP) will be made if the meeting conductors are notified 5 days prior to the meeting date, if possible. To request language interpretation, an auxiliary aid or service (i.e., sign language interpreter, accessible parking, or materials in alternative format) contact Earl Haugen of GF-EGFMPO at 701-746-2660. TTY users may use Relay North Dakota 711 or 1-800-366-6888. Materials can be provided in alternative formats: large print, Braille, cassette tape, or on computer disk for people with disabilities or with LEP by Earl Haugen of GF-EGFMPO at 701-746-2660. TTY users may use Relay North Dakota 711 or 1-800-366-6888.

(Please publish ASAP)

(Please submit bill to MPO 746-2660)

# Request for Council Action

Date: January 4, 2018

To: East Grand Forks City Council, Mayor Steve Gander, President Mark Olstad, Council Vice President Chad Grassel, Council Members: Clarence Vetter, Henry Tweten, Marc Demers, Tim Riopelle and Mike Pokrzywinski.

Cc: File

From: Steve Emery, P.E.

RE: Rhinehart Drive Construction  
2018 Assessment Job No. 2  
Street and Pedestrian Improvements

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## Background:

As part of the City's Federal project for this year the current plan is to do a complete reconstruction of Rhinehart Drive from 6<sup>th</sup> St SE to Bygland Road. However, as we have continued to work with Alliant Engineering on some preliminary design for a future roundabout at Bygland Rd and Rhinehart Drive, there is a good potential for a fair amount of reconstruction / realignment of Rhinehart Drive. (See Attached drawing). With the potential for reconstruction work on Rhinehart Drive we are recommending for your consideration, that in lieu of a complete reconstruction project at this time that we just complete a Mill and Overlay. The estimated price reduction for just construction is estimated at approximately \$266,000.00. A change in scope of work would require us to complete an amendment to the Project Memorandum that was approved by MNDOT in 2017. Also, with the change in scope of work on Rhinehart Drive and wanting to maximize the use of the \$860,000 in Federal grant dollar (80/20) we need to have approximately \$1,100,000 in construction costs. Therefore, we are recommending adding a project area. The project area would be along 17<sup>th</sup> St NW from Highway 220 to River Road NW. The project would consist of bringing the handicap ramps along the corridor into compliance with current ADA Standards which would tie together well with the ADA Transition plan which the City and MPO are currently looking to develop. The project may also include filling in some gaps in the sidewalk system along the corridor.

In summary the project options would be as such:

- 1.) Multi – Use Trail Highway 2:** This project would consist of construction of an 8' multi-use trail in the Median between Highway 220 and the frontage road from 20<sup>th</sup> St NW to Highway 2.
- 2.) Greenway Boulevard Reconstruction & Sidewalk Improvements:** This project would consist of reconstruction of the center median along Greenway Boulevard in select locations to improve access to and from 12<sup>th</sup> Ave SE and 13<sup>th</sup> Ave SE. The project would also include construction of a sidewalk from Bygland Road to Rhinehart Drive along the south side of Greenway Boulevard.

- 3.) **Bygland Road and 13<sup>th</sup> St SE:** This project would include pedestrian safety Improvements at this intersection.
- 4.) **Rhinehart Drive Reconstruction:** This project would consist of a Mill and Overlay on the Bituminous Pavement section adjacent to the Minnesota or Point Bridge.
- 5.) **1<sup>st</sup> Ave SE Mill and Overlay:** This project would consist of a Mill and Overlay on the Bituminous Pavement section adjacent to the Minnesota or Point Bridge.
- 6.) **17<sup>th</sup> St NW:** This project would consist of bringing the handicap ramps along 17<sup>th</sup> St NW into compliance with current ADA Standards. The project may also include filling in some gaps in the sidewalk system along the corridor.

The following is the estimated project costs for the above options:

<b>PROPOSED BUDGET</b>	<b>Construction Cost</b>	<b>Engineering, Admin &amp; Legal</b>
Option 1:	\$336,776.00	\$76,540.00
Option 2:	\$296,087.00	\$67,292.00
Option 3:	\$225,000.00	\$56,250.00
Option 4:	\$83,038.00	\$18,872.00
Option 5:	\$25,000.00	\$6,250.00
Option 6	\$215,777.00	\$55,045.00
Subtotal	\$1,181,678.00	\$280,249.00

**PROPOSED FUNDING**

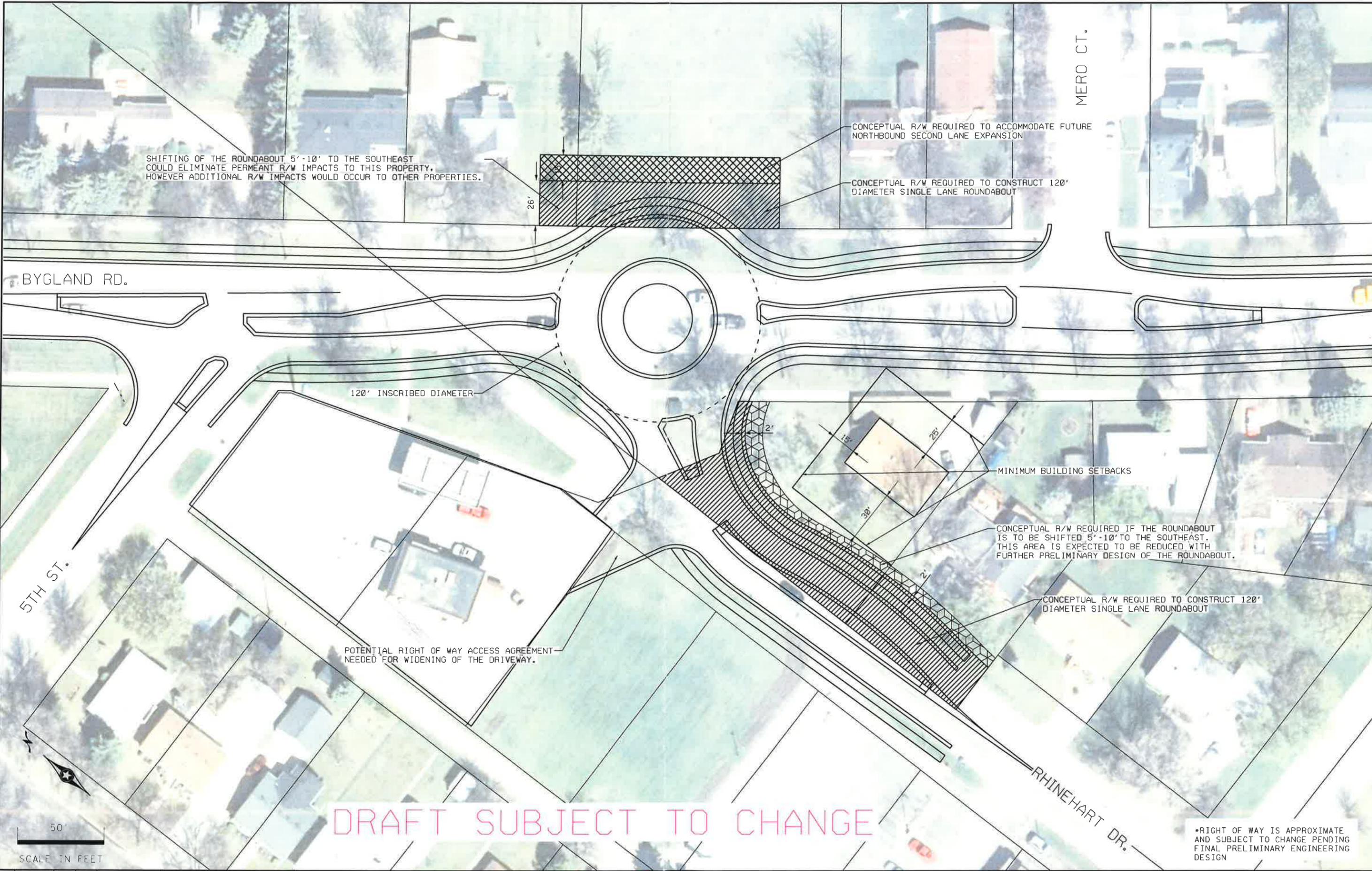
Federal Subtarget	\$860,000.00	(80% Federal / 20% Local)
TRLF Bonds	\$68,020.00	
City / State Aid Funds	\$533,907.00	
Total	\$1,461,927.00	

**Recommendation:**

Authorize WSN to proceed with change in scope of work on Rhinehart Drive and Amend the Project Memorandum (PM). Authorize WSN to include in amended PM the additional project area on 17<sup>th</sup> St NW.

**Enclosures:**

Rhinehart Drive Roundabout Drawing.  
17<sup>th</sup> St NW Project Area Map



DRAFT SUBJECT TO CHANGE

\*RIGHT OF WAY IS APPROXIMATE AND SUBJECT TO CHANGE PENDING FINAL PRELIMINARY ENGINEERING DESIGN

9:11:16 AM  
 12/12/2017  
 ..\Projects\2016\160036\DESIGN\A\format\lives\NST\October\_2017\ROW\_Acquisition\_11.on Exhibit

NO	DATE	DWN	CKD	REVISIONS



I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 LICENSE # 52

DRAFT COPY    DRAFT COPY

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_ SHEETS



0 125 250

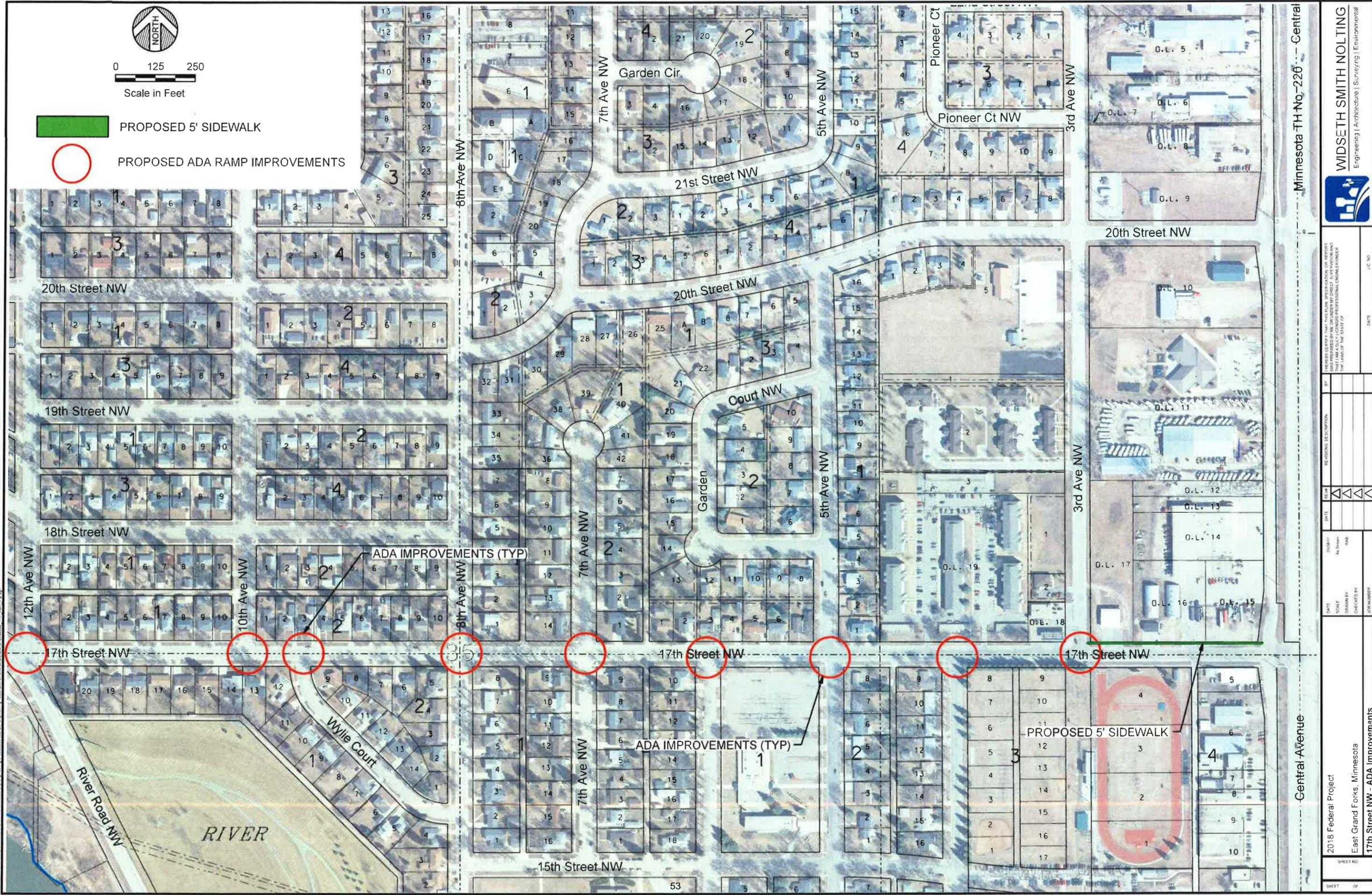
Scale in Feet



PROPOSED 5' SIDEWALK



PROPOSED ADA RAMP IMPROVEMENTS



Minnesota TH No. 220 - Central

**WIDSETH SMITH NOLTING**  
Engineering | Architecture | Surveying | Environmental



MINNESOTA STATE BOARD OF PROFESSIONAL ENGINEERS  
I HAVE REVIEWED THIS PLAN, SPECIFICATIONS, OR REPORT  
AND I AM A QUALIFIED LICENSED PROFESSIONAL ENGINEER  
IN THE STATE OF MINNESOTA.  
DATE: \_\_\_\_\_

NO.	REVISION DESCRIPTION	DATE	BY

DATE	SCALE	DRAWN BY	CHECKED BY	JOB NUMBER

2018 Federal Project  
East Grand Forks, Minnesota  
**17th Street NW - ADA Improvements**

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

Central Avenue

**GRAND FORKS - EAST GRAND FORKS METROPOLITAN PLANNING ORGANIZATION**

**TRANSPORTATION IMPROVEMENT PROGRAM**

**FISCAL YEARS 2018-2021**

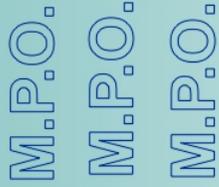
URBAN AREA	PROJECT LOCATION	FACILITY	PROJECT DESCRIPTION	ESTIMATED COST (THOUSANDS) AND SOURCE OF FUNDING					STAGING	ANNUAL ELEMENT	FUTURE EXPENDITURES			
	RESPONSIBLE AGENCY	CLASSIFICATION								2018	2019	2020	2021	
PROJECT NUMBER	PROJECT TYPE	FUNDING STATUS		TOTAL	FEDERAL	STATE	OTHER	LOCAL	Operations					
				FUNDING SOURCE					CONSTR.					
									TOTAL					
East Grand Forks #7	East Grand Forks	Rhinehart Dr	reconstruct the segment of Rhinehart Drive between Bygland Dr and 6th St SE. Includes a sidewalk. <b>Amended to reduce the length and cost</b>	REMARKS: Other is Municipal State Aid  <b>Amended February 2018</b>										
	East Grand Forks	Collector							Operations					
	Reconstruction	Discretionary	Project # 119-129-002 covers several projects as individually listed	TOTAL	FEDERAL	STATE	OTHER	LOCAL	P.E.	19.00				
										R.O.W.				
									CONSTR.	83.00				
									TOTAL	102.00				
East Grand Forks #8	East Grand Forks	Bygland Dr.	construct/install pedestrian safety improvement at the intersection with 13th St SE.	REMARKS: Other is Municipal State Aid										
	East Grand Forks	Minor Arterial							Operations					
	Safety	Discretionary	Project # 119-129-002 covers several projects as individually listed	TOTAL	FEDERAL	STATE	OTHER	LOCAL	P.E.	57.00				
										R.O.W.				
									CONSTR.	225.00				
									TOTAL	282.00				
East Grand Forks #9	East Grand Forks	Greenway Bvl	install sidewalk/safe route to school along Greenway Bvl and modify the median to allow more vehicular access	REMARKS: Other is Municipal State Aid										
	East Grand Forks	Collector							Operations					
	Construction	Discretionary	Project # 119-129-002 covers several projects as individually listed	TOTAL	FEDERAL	STATE	OTHER	LOCAL	P.E.	64.00				
										R.O.W.				
									CONSTR.	300.00				
									TOTAL	364.00				

**GRAND FORKS - EAST GRAND FORKS METROPOLITAN PLANNING ORGANIZATION**

**TRANSPORTATION IMPROVEMENT PROGRAM**

**FISCAL YEARS 2018-2021**

URBAN AREA	PROJECT LOCATION	FACILITY	PROJECT DESCRIPTION	ESTIMATED COST (THOUSANDS) AND SOURCE OF FUNDING					STAGING	ANNUAL ELEMENT	FUTURE EXPENDITURES			
	RESPONSIBLE AGENCY	CLASSIFICATION								2018	2019	2020	2021	
PROJECT NUMBER	PROJECT TYPE	FUNDING STATUS		TOTAL	FEDERAL	STATE	OTHER	LOCAL	Operations					
				FUNDING SOURCE					CONSTR.					
									TOTAL					
East Grand Forks #12a	East Grand Forks	17th Str NW	Upgrade right of way facilities along 17th Str. NW between River Road and Central Ave.	REMARKS:										
	East Grand Forks	Major Collector		Operations										
				Capital										
				P.E.	56.00									
	Construction	Discretionary		TOTAL	FEDERAL	STATE	OTHER	LOCAL	R.O.W.					
				271.00	172.60		98.40		CONSTR.	215.00				
				FUNDING SOURCE					TOTAL	271.00				
			Intentionally left blank	REMARKS:										
				TOTAL	FEDERAL	STATE	OTHER	LOCAL	Operations					
									Capital					
									P.E.					
									R.O.W.					
									CONSTR.					
									TOTAL					
			Intentionally left blank	REMARKS:										
				TOTAL	FEDERAL	STATE	OTHER	LOCAL	Operations					
									Capital					
									P.E.					
									R.O.W.					
									CONSTR.					
									TOTAL					



## Grand Forks - East Grand Forks Metropolitan Planning Organization

### **MPO Staff Report** **Technical Advisory Committee: February 14, 2018** **MPO Executive Board: February 21, 2018**

**RECOMMENDED ACTION: Approval of the Request for Quotes for the East Grand Forks ADA Transition Plan.**

Matter of the RFQ for East Grand Forks ADA Transition Plan.

#### **Background:**

The Americans with Disabilities Act (ADA) became Federal Law on January 26, 1992. The Act comprises five titles prohibiting discrimination against disabled persons within the United States. Title II of the ADA requires state and local governments to make programs, services, and activities accessible to persons with disabilities. It also established physical access requirements for public facilities, including pedestrian and transit oriented facilities.

Although the ADA required transitions plans to be developed to inform everyone how the full access was going to be done, very few agencies have prepared nor maintain these required transition plans. FHWA-MN and MnDOT placed renewed emphasis on progress towards ADA compliance, particularly within the public right of way. In order for the agencies requesting federal transportation funds to be programmed in the TIP, a ADA transition plan must be done.

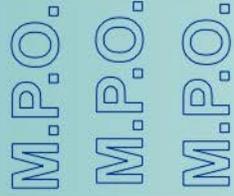
The City and the MPO has put together a RFQ to have a firm do the necessary work to prepare a Transition Plan for the City. Although typically, the MPO utilizes the qualification based selection process, due to the low budget and based upon recent results and in compliance with NDDOT guidance, the MPO will seek quotes from pre-qualified consultants. Therefore, costs will be one of the selection criteria. The plan will take nine months for the final plan to be completed and a consultant budget of \$35,000.

#### **Findings and Analysis:**

- UPWP identifies the completion of the East Grand Forks Transition Plan.

#### **Support Materials:**

- Draft RFQ



# Grand Forks - East Grand Forks Metropolitan Planning Organization

## **Grand Forks – East Grand Forks Metropolitan Planning Organization**

### **Request for Quotes for Transportation Planning Services**

## **East Grand Forks ADA Transition Plan**

**March 2018**

**REQUEST FOR QUOTES  
FOR  
TRANSPORTATION PLANNING SERVICES**

The Grand Forks – East Grand Forks Metropolitan Planning Organization (MPO) requests quotes from qualified consultants for the following project:

East Grand Forks ADA Transition Plan

Criteria will be used to analyze technical submittals from responding consultants. Upon completion of technical ranking, the MPO will enter into contract negotiations with the top ranked firm. The MPO reserves the right to reject any or all submittals. This project has a budget of \$35,000 dollars.

All quotes received by **March 23, 2018** at Noon at the MPO Office will be given equal consideration. Minority, women-owned, and disadvantaged business enterprises are encouraged to participate. Quotes should be shipped to ensure timely delivery to:

**Teri Kouba**  
**Senior Planner**  
**Grand Forks – East Grand Forks MPO**  
**600 DeMers Ave.**  
**East Grand Forks, Minnesota 56721**  
[teri.kouba@theforksmpo.org](mailto:teri.kouba@theforksmpo.org)  
Phone: 218/399/3372 (M-W-F) or 701/746/2656 (T-Th)

Once submitted, the quotes become the property of MPO.

## I. Requirements

### A. *Selection Committee*

The technical quotes will be reviewed by the Selection Committee, which may include staff from local municipalities and multi-jurisdictional bodies as follows:

- ADA Title II Coordinator
- City Administrator
- Public Works
- MPO Staff

Once the written quotes are received, the Selection Committee will meet to rank the quotes. Firms may be asked to expand upon particular points in their written quotes and should be prepared to do so.

### B. *Disadvantaged Business Enterprise*

In the performance of this agreement, the contractor shall cooperate with MPO in meeting its goals with regard to the maximum utilization of disadvantaged business enterprises, and will use its best efforts to ensure that such business enterprises shall have the maximum practical opportunities to compete for subcontract work under this agreement.

#### 1. Policy

It is the policy of the Department of Transportation that disadvantaged business enterprises as defined in 49 CFR Part 23, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this Agreement. Consequently, the DBE requirements of 49 CFR Part 23 applies to this Agreement.

#### 2. DBE Obligation

The MPO and contractor agree to ensure that disadvantaged business enterprises as defined in 49 CFR Part 23 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds provided under or pursuant to this Agreement. In this regard, the contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 23 to ensure that disadvantaged business enterprises have the maximum opportunity to compete for and perform contracts. The contractor shall not discriminate on the basis of race, creed, color, national origin, age, or sex in the award and performance of DOT-assisted contracts.

### C. *Equal Employment Opportunity*

In connection with this proposal and any subsequent contract, the consultant shall not discriminate against any employee or applicant for employment because of race, color, creed, religion, national origin, disability, sex, or status regarding public assistance. The consultant will take action to ensure that its employees are fairly treated during employment without regard to their race, color, creed, religion, national origin, disability, sex, or status regarding public assistance. Such actions shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising, layoff or termination; rate of pay or other forms of compensation; and selection for training, including internship and/or apprenticeship. The consultant further agrees to insert a similar provision in all subcontracts, except subcontract for standard commercial supplies or raw materials. The consultant will furnish all necessary information and reports and will permit access to its books, records, and accounts by the MPO and/or its representatives including state and federal agencies, for purposes of investigation to ascertain compliance with non-discrimination provisions or any resultant contract.

### D. *Ownership, Publication, Reproduction, and Use of Materials*

All work products of the contractor which result from this contract are the exclusive property of MPO, local

partners, and its federal/state grantor agencies. No material produced in whole or part under this agreement shall, during the life of this agreement, be subject to copyright in the United States or in any other country. Permission and approval must be obtained from the MPO before any report, handbook, cassettes, manual, interim data, or results are published. Draft copies of all deliverables must be prepared by the consultant and reviewed and approved by the MPO before publication. The consultant, subject to the approval by the MPO, shall have the authority to publish, disclose, distribute, and otherwise use in whole and part, any reports, data, or other materials prepared under this agreement.

***E Records, Access, and Audits***

The consultant shall maintain complete and accurate records with respect to allowable costs incurred and manpower expended under this contract. All such records shall be maintained on a generally accepted accounting basis and shall be clearly identified and readily accessible. The consultant shall provide free access to the representatives of MPO, the US Department of Transportation, and the Comptroller General of the United States at all proper times to such data and records, and their right to inspect and audit all data and records of the Consultant relating to his performance under the contract; and to make transcripts there from as necessary to allow inspection of all work data, documents, proceedings, and activities related to this contract for a period of three (3) years from the date of the final payment under this contract.

***F Conflicts of Interest***

No official or employee of the MPO, state, or any other governmental instrumentality who is authorized in his official capacity to negotiate, accept, or approve, or to take part in negotiating, accepting, or approving any contract or subcontract in connection with a project shall have, directly or indirectly, any financial or other personal interest in any such contract or subcontract. No engineer, attorney, appraiser, inspector, or other person performing services for the MPO, state, or a governmental instrumentality in connection with a project shall have, directly or indirectly, a financial or other personal interest other than his employment or retention by the MPO, state, or other governmental instrumentality, in any contract or subcontract in connection with such project. No officer or employee of such person retained by the MPO, state, or other governmental instrumentality shall have, directly or indirectly, any financial or other personal interest in a project unless such interest is openly disclosed upon the public records of the MPO, the NDDOT, the MnDOT, or such other governmental instrumentality, and such officer, employee, or person has not participated in such acquisition for and in behalf of the state.

***G. Eligibility of Proposer, Non-procurement, Debarment and Suspension Certification; and Restriction on Lobbying***

The consultant is advised that his or her signature on this contract certifies that the company/agency will comply with all provisions of this agreement, as well as applicable federal and state laws, regulations, and procedures. Moreover the consultant affirms its compliance with the federal Debarment and Suspension Certification and the Federal Restrictions on Lobbying.

***H Subcontracting***

The contractor may, with prior approval from the MPO, subcontract as necessary to accomplish the contract objectives. Subcontracts shall contain all applicable provisions of this agreement, and copies of the subcontract must be filed with the MPO.

***I Assignments***

The contractor shall not assign or transfer the contractor's interest in this agreement without the express written consent of the MPO.

***J Procurement - Property Management***

The Contractor shall adhere to 2 CFR 200 when procuring services, supplies, or equipment, which are incorporated into this agreement by reference and are available from NDDOT.

***K Termination***

The right is reserved by either party to terminate this agreement with or without cause at any time if the recipient does not comply with the provisions of this agreement or its attachments.

If the MPO terminates this agreement, it reserves the right to take such action as it deems necessary and appropriate to protect the interests of the MPO, and its state/federal grantor agencies. Such action may include refusing to make any additional reimbursements of funds and requiring the return of all or part of any funds that have already been disbursed.

***L Amendments***

The terms of this agreement shall not be waived, altered, modified, supplemented, or amended in any manner whatsoever, except by written instrument signed by the parties.

***M Civil Rights***

The contractor will comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (78 STAT. 252), the regulation of the Federal Department of Transportation, 49 CFT, Part 21, and Executive Order 11246.

The contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin. The contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during their employment without regard to their race, religion, color, sex, age, handicap, or national origin. Such actions shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or advertising, layoff or termination, rates of pay, or other forms of compensation, and selection for training, including apprenticeship. Furthermore, the contractor agrees to insert a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

***N Civil Rights - Noncompliance***

If the contractor fails to comply with the federal or state civil rights requirements of this contract, sanctions may be imposed by the FHWA or the NDDOT as may be appropriate, including, but not limited to:

1. Withholding of payments to the contractor under the contract until the contractor complies, or
2. Cancellation, termination, or suspension of the contract, in whole or in part.

***O Energy Efficiency***

The contractor shall comply with the standards and policies relating to energy efficiency which are contained in the North Dakota Energy Conservation Plan issues in compliance with the Energy Policy & Conservation Act, Public Law 94-163, and Executive Order 11912.

***P Handicapped***

The contractor shall ensure that no qualified handicapped individual, as defined in 29 USE 706(7) and 49 CFR Part 27 shall, solely by reason of this handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity that receives or benefits from the assistance under this agreement.

***Q EPA Clean Act and Clean Water Acts***

The contractor shall comply with the Clean Air Act, 42 U.S.C. 1857; the Clean Water Act, 33 U.S.C. 1251; EPA regulations under 40 CFR Part 15, which prohibits the use of nonexempt federal contracts, grants, or loans of facilities included on the EPA List of Violating Facilities, and Executive Order 11738.

***R Successors in Interest***

The provisions of this agreement shall be binding upon and shall ensure to the benefit of the parties hereby, and their respective successors and assigns.

***S Waivers***

The failure of the MPO or its local state/federal grantors to enforce any provisions of this contract shall not constitute a waiver by the MPO or its state/federal grantors of that or any other provision.

**T Notice**

All notices, certificates, or other communications shall be sufficiently given when delivered or mailed, postage prepaid, to the parties at their respective places of business as set forth below or at a place designated hereafter in writing by the parties.

**U Hold Harmless**

The contractor shall save and hold harmless the MPO, its officer, agents, employees, and member units of government, and the State of North Dakota and Minnesota and the NDDOT and MnDOT, its officers, agents, employees, and members from all claims, suits, or actions of whatsoever nature resulting from or arising out of the activities of the contractor or its subcontractors, agents, or employees under this agreement. It is hereby understood and agreed that any and all employees of the contractor and all other persons employed by the contractor in the performance of any of the services required or provided for under this agreement shall not be considered employees of the MPO, its member units of government, the NDDOT, or the MnDOT and that any and all claims that may arise under the Worker’s Compensation Act on behalf of said employees while so engaged and any and all claims by any third parties as a consequence of any act or omission on the part of said contractor’s employees while so engaged in any of the services to be rendered under this agreement by the contractor shall in no way be the obligation or responsibility of the MPO or its member units of government.

**V Compliance with Federal Regulations**

The contractor is advised that his or her signature on this contract certifies that its firm will comply with all provisions of this agreement as well as applicable federal and state laws, regulation, and procedures. Moreover, the contractor affirms its compliance with the federal Debarment and Suspension Certification and the federal Restrictions on Lobbying.

**II. PRELIMINARY PROJECT SCHEDULE**

**A. Consultant Selection**

Request Quotes from Pre- Qualified Firms	February 28, 2018
Receive Quotes	March 23, 2018
Selection Committee Activity:	
Review Quotes	March 28, 2018
Select Finalist	March 28, 2018
Contract Negotiations Completed	March 29, 2018
MPO Policy Board Approval of Consultant Selection and Contract	April 18, 2018

**B. Project Development**

Notice to Proceed	April 25, 2018
First full Draft Report Submittal	October 25, 2018
Final Report Submittal	January 25, 2019

**III EVALUATION CRITERIA & PROCESS**

The MPO in close coordination with members of the Selection Committee will evaluate the quotes based on, but not

limited to, the following criteria and their weights:

**A. Nature of the project (20 points)**

1. Does the firm show an understanding of the scope of work?

**B. Proximity of consultant to project (10 points)**

**C. Past Performance (20 points)**

1. Does the firm routinely deliver desired products in a timely manner?
2. Does the consultant routinely demonstrate initiative, efficient use of time and resources, and reliability in completing their projects?

**D. Capability of consultant to produce the required services (25 points)**

1. What are the technical and professional skills of each team member?
2. What will be the assigned role each member will play?

**E. Ability to meet budget requirements (25 points)**

1. Can the team members devote the time and resources necessary to successfully complete this project?

Each quote will be evaluated on the above criteria by the Selection Committee. The Committee will determine which firm would best provide the services requested. The qualifying firm chosen by the Selection Committee will enter into a contract and fee negotiation based on the cost proposal.

**The MPO is an Equal Opportunity Employer.**

**IV TERMS AND CONDITIONS**

- A. The MPO reserves the right to reject any or all quotes, or to award the contract to the next most qualified firm if the successful firm does not execute a contract within forty-five (45) days after the award of the proposal.
- B. The MPO reserves the right to request clarification of information submitted and to request additional information of one or more applicants.
- C. Any quote may be withdrawn up until the date and time set for the opening of the quotes. Any quotes not so withdrawn shall constitute an irrevocable offer, for a period of 90 days, to provide to the MPO the services set forth in the attached specifications, or until one or more of the quotes have been approved by the MPO Policy Board.
- D. If, through any cause, the firm shall fail to fulfill in timely and proper manner the obligations agreed to, the MPO shall have the right to terminate its contract by specifying the date of termination in a written notice to the firm at least ninety (90) working days before the termination date. In this event, the firm shall be entitled to just and equitable compensation for any satisfactory work completed.
- E. Any agreement or contract resulting from the acceptance of a proposal shall be on forms either supplied by or approved by the MPO and shall contain, as a minimum, applicable provisions of the Request for Qualifications. The MPO reserves the right to reject any agreement that does not conform to the Request for Qualification and any MPO requirements for agreements and contracts.
- F. The firm shall not assign any interest in the contract and shall not transfer any interest in the same without prior written consent of the MPO.

**V. QUOTE FORMAT AND CONTENT**

Quotes shall include the following sections at a minimum:

1. Summary of Proposed Technical Process/Planning Process
2. Description of Similar Projects
3. Project Staff Information including breakdown of estimated staff hours by each staff class per task
4. References
5. DBE/MBE Participation
6. Cost Quotes

## **VI. Cost Quotes/Negotiations**

### **1. Cost Quotes**

Submit a cost quote for the project work activities. Cost quotes will be separated from technical proposal. Cost Quotes shall be based on hourly “not to exceed” amount. Cost quotes must be prepared using the format provided in Appendix B. Attached to the Cost Quote the Certification of Indirect Rate Form also provided in Appendix B.

### **2. Contract Negotiations**

The MPO will negotiate a price for the project after the Selection Committee completes its final ranking of the consultants. Negotiation will begin with the most qualified consultant. If the MPO is unable to negotiate a fair and reasonable contract for services with the highest ranking firm, negotiations will be formally terminated, and will begin with the next most qualified firm. This process will continue until a satisfactory contract has been negotiated.

The MPO reserves the right to reject any, or all, submittals.

## **VII. BACKGROUND AND SCOPE OF WORK**

### **Purpose**

The Americans with Disabilities Act (ADA) became Federal Law on January 26, 1992. The Act comprises five titles prohibiting discrimination against disabled persons within the United States. Title II of the ADA requires state and local governments to make programs, services, and activities accessible to persons with disabilities. It also established physical access requirements for public facilities, including pedestrian and transit oriented facilities. In order for the City of East Grand Forks (the City) to comply with the changes in the Act and guidance from the State of Minnesota, the City must manage efficiently the removal of barriers. The City will also need to identify and prioritize activities to remove these barriers.

The City under Title II of the ADA is required to conduct a Self-Evaluation of the public Right of Way (ROW) and to formulate and carry out a transition plan (§35.105). The Self-Evaluation plan requested will be limited to assuring that the City meets mandated needs of providing access to pedestrian and transit modes of travel. This project consists of identifying intersections, pedestrian crossings, and on-street transit facilities within the City that do not meet current ADA access guidelines and developing a plan to bring these areas into compliance. The scope of this project will center on updates to the public ROW. Non-ROW issues will be done internally.

The Self-Evaluation of the public ROW will be a comprehensive assessment of policies, procedures, and transportation elements to identify and correct barriers that limit otherwise qualified persons with disabilities from accessing and using pedestrian facilities,

The City is seeking qualified professional firms and individuals experienced in the evaluation and development of program and accessibility plans to submit a Request for Quotes to provide consulting services to produce the City’s ADA Self-Evaluation of the public ROW and Transition Plan for pedestrian access routes and public ROW. Additional actions may be included as the Consultant deems appropriate based on their experience. All actions related to this project must conform to standards and specifications of the Americans with Disabilities Act.

## **Project Tasks**

Outlined below is the scope of work that will guide development of this project. The MPO and City has included the following scope of work to provide Consultants insight into the project intent, context, coordination, responsibilities, and other elements to help facilitate project development.

At minimum, the consultant shall be expected to establish detailed analysis, recommendations and/or deliverables for the following tasks:

### **Task 0- Project Management**

This task involves activities required to manage the project including staff, equipment, and documentation. It also includes the preparation of progress reports, documenting travel and expense receipts, and preparing and submitting invoices. It is imperative to consider the public and keep it informed of the planning activities and outcomes using strategies that include the use of the internet and social media. Maintaining a project website or providing information to the MPO and the City for posting on its website will be required. This task also includes monthly progress meeting with the Client, the preparation of meeting agendas, and taking and reporting meeting minutes.

### **Task 1- Policy Review**

The Consultant will assist City and MPO staff in identifying all necessary documents and materials to conduct a self-evaluation and audit process. Review and evaluation of City policies, programs, facilities, public right-of-ways, and activities to identify issues which may be discriminatory to people with disabilities. Policy documents will include those City policy documents that affect the public. The Consultant shall make recommendations for policy changes or for enacting new policies.

The Consultant shall review and evaluate current City policies, programs and practices in order to identify issues, which may be discriminatory to people with disabilities and their ability to use pedestrian and transit facilities within the City. The review will include City policy documents that affect the public. The review should also evaluate the current level of program accessibility, including eligibility requirements, participation requirements, facilities used, staffing, transportation, communication, grievance procedures and emergency procedures.

### **Task 3- Self-Evaluation of the public ROW and Transition Plan**

The Consultant shall develop the comprehensive ADA Self-Evaluation of the public ROW and Transition Plan based upon the results of the barrier assessments, policy review, and City and MPO staff guidance. The Transition Plan shall include all requisite information to comply with Title II of the ADA for such a plan, including, but not limited to the following:

- Methodology for the Self-Evaluation of existing barriers to accessibility;
- Summary of the findings of the Self-Evaluation of facilities, policies, programs, and practices;
- Summary of the ADA Transition Plans from MnDOT and Polk County;
- Identify barriers and provide recommendations of mediation measures to correct deficiencies and the prioritization of barrier remediation;
- Cost estimates of remediation measures;
- Implementation schedule that includes short-, mid-, and long-term efforts for remediation;
- Procedures for periodically reviewing and updating the Transition Plan.

All activities will be vetted through the Project Review Committee and the public.

### **Task 4- Management System**

Establish an actively managed tracking system database to update barrier removals as they are performed by City staff and to provide a medium for monitoring and updating the progress. The Consultant will provide training, as needed, to City and MPO staff in the use, maintenance, and update of the proposed management system.

All database files shall be the property of the MPO and electronic files shall be submitted in a non-proprietary format.

### **Task 5- Public Involvement**

The Consultant shall propose and lead a process for interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the Self-Evaluation of the public ROW and

development of the transition plan. The process may involve surveys, workshops, or other such methods as proposed by the Consultant. The consultant must involve individuals with disabilities in the evaluation of sites, as required by Title II.

Additional efforts in this area will include a City Council presentation regarding the importance of ADA, the results of the Self-Evaluation, presenting the Access Audit reports and any recommendations offered by the evaluation.

#### **Task 6- Time Frame**

The City seeks to have the results of this study completed within nine (9) months after the issuance of the Notice to Proceed. If the Consultant deems this unreasonable based on prior experience, a suitable completion date shall be clearly identified and an explanation given as to why the preferred date would be unrealistic.

### **A. Consultant Responsibilities**

1. Policy changes and new policy recommendations.
2. Sidewalk and curb ramp survey and report.
3. Establishment of Management System for sidewalks and curb ramps.
4. Self-Evaluation of the public ROW and Transition Plan

### **B. Project Deliverables**

- Sidewalk and Curb Ramp Survey report
- Policy review and recommendations
- Management system
- Self-Evaluation of the public ROW and Transition Plan
  - The final product will show recommendations of the Transition Plan.

1. A first full draft report by noon, October 25, 2017 (10 full draft copies)
2. An approved final report January 25, 2017 (25 full copies)

One electronic copy of the approved final reports will be delivered to the Grand Forks-East Grand Forks MPO in PDF format. The electronic copies should be complete and in order such that additional copies of either document could be printed on-demand. In addition, electronic copies of any pertinent working papers and software either during the project or at its conclusion will be delivered to the MPO.

### **C. Estimated Project Budget**

The MPO has budgeted \$35,000 to compensate the selected consultant to complete the scope of work as identified.

### **D. Other Requirements**

The consultant will update the Project Manager on an on-going basis, along with a written monthly progress report which will clearly reflect progress, timeliness, and budget expenditures. The monthly progress report will be required with the submission of each invoice.

## **VIII. INFORMATION AVAILABLE FOR CONSULTANT**

### **A. General Information**

The following resource data / information is available for the project:

2015 Aerial Photography

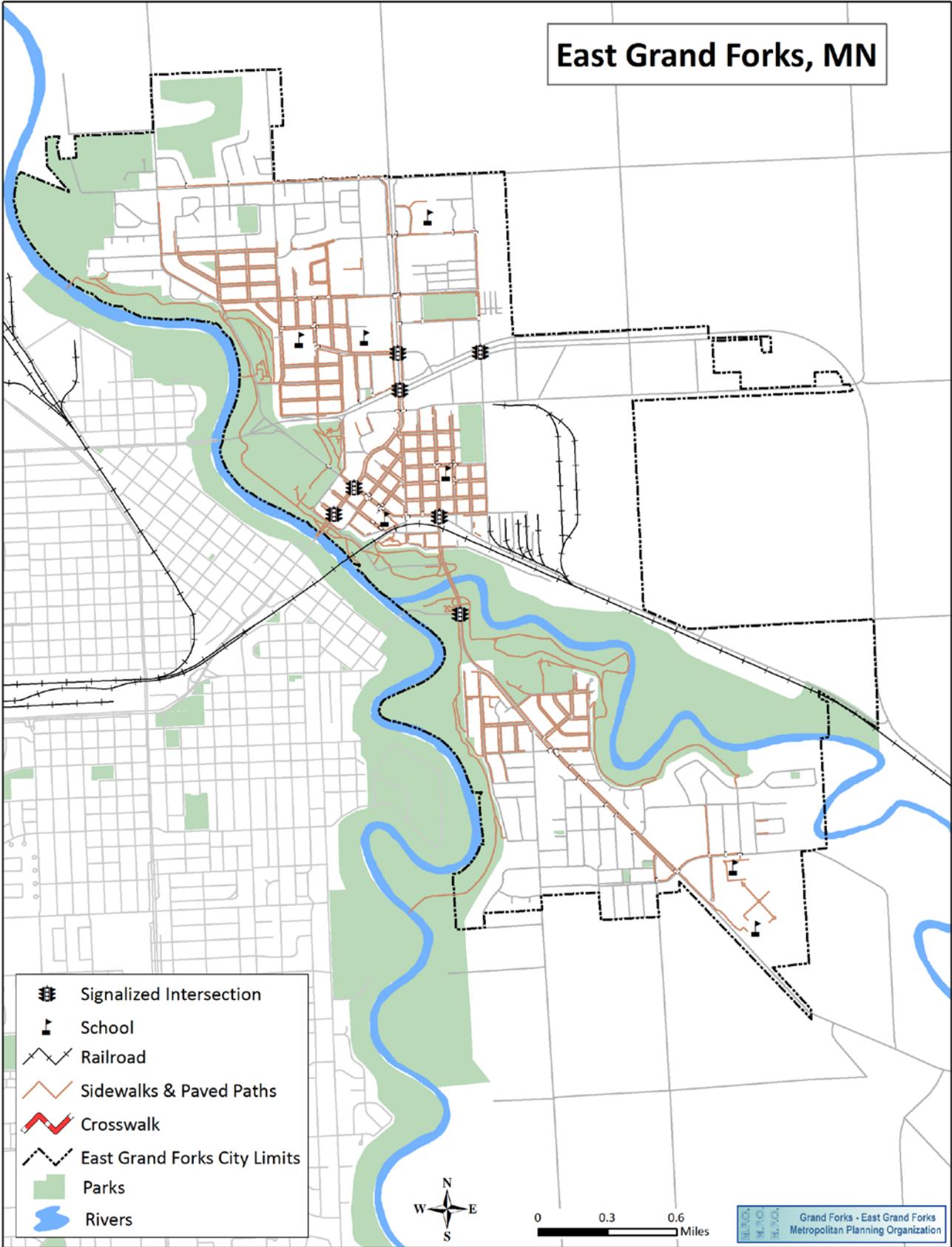
Grand Forks/East Grand Forks Long Range Transportation 2040 Plan

Digital Zoning and Land Use Maps

Various City Shapefiles

## **IX. MAP OF PROJECT AREA – next page**

# East Grand Forks, MN



**APPENDIX A**  
**ATTACHMENTS 1 & 2**

**DEBARMENT OR SUSPENSION CERTIFICATION**

The Participant, \_\_\_\_\_ (name of firm) certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph two (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause of default.

**THE PARTICIPANT, CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. 3801 ET SEQ. ARE APPLICABLE THERETO.**

\_\_\_\_\_  
(Signature of Authorized Official)

Date

\_\_\_\_\_  
(Title of Authorized Official)

CERTIFICATION  
OF  
RESTRICTION ON LOBBYING

I \_\_\_\_\_, hereby certify  
on behalf of

(Name and title of grantee official)

\_\_\_\_\_ that:

(Name of grantee)

- (1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, US Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

By \_\_\_\_\_  
(Signature of Authorized Official)

\_\_\_\_\_  
(Title of authorized official)

**APPENDIX B COST QUOTE FORM**

**(Include completed cost form in a separate Page labeled  
 "COST FORM - Vendor Name"  
 and submit with technical proposal as part of overall response.)**

**COST QUOTE FORM**

The cost estimated should be based on a not to exceed cost as negotiated in discussion with the most qualified contractor.  
 Changes in the final contract amount and contract extensions are not anticipated.

**REQUIRED BUDGET FORMAT  
 Please Use Audited DOT Rates Only  
 East Grand Forks ADA Transition Plan**

<b>1. Direct Labor</b>	<b>Hours</b>	<b>X</b>	<b>Rate</b>	<b>=</b>	<b>Total</b>
Name, Title, Function	0.00	X	0.00	=	0.00
		X			
		X			
		X			
2. Overhead					
3. General & Administrative Overhead					
4. Subcontractor Costs					
5. Materials and Supplies Costs					
6. Travel Costs					
7. Fixed Fee					
8. Miscellaneous Costs					
<b>Total Cost</b>					

## Certification of Final Indirect Costs

Firm Name: \_\_\_\_\_

Proposed Indirect Cost Rate: \_\_\_\_\_

Date of Proposal Preparation (mm/dd/yyyy): \_\_\_\_\_

Fiscal Period Covered (mm/dd/yyyy to mm/dd/yyyy): \_\_\_\_\_

The undersigned, certify that I have reviewed the proposal to establish final indirect cost rates for the fiscal period as specified above and to the best of my knowledge and belief:

1. All costs included in this proposal to establish final indirect cost rates are allowable in accordance with the cost principles of the Federal Acquisition Regulations (FAR) of title 48, Code of Federal Regulations (CFR), part 31.
2. This proposal does not include any costs which are expressly unallowable under the cost principles of the FAR of 48 CFR 31.

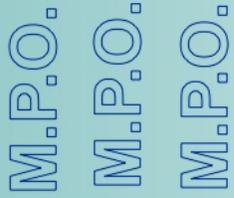
All known material transactions or events that have occurred affecting the firm's ownership, organization and indirect cost rates have been disclosed.

Signature: \_\_\_\_\_

Name of Certifying Official (**Print**): \_\_\_\_\_

**Title** \_\_\_\_\_

Date of Certification (mm/dd/yyyy): \_\_\_\_\_



# Grand Forks - East Grand Forks Metropolitan Planning Organization

## MPO Staff Report MPO Executive Board: February 21, 2018

**RECOMMENDED ACTION: Approve Proposed Amendment #3 to 2018 Unified Planning Work Program for Washington Underpass Structure Study.**

Matter of the Amendment #3 2018 UPWP.

**Background:** The MPO amended its 2018 Work Program to conduct traffic analysis of potential future Red River Crossings, extend the Near Southside Neighborhood Study into 2018, and to assist East Grand Forks complete an ADA ROW Transition Plan. At that time, staff also indicated that some additional CPG funding was available. The funds, which totaled \$250,000 of federal, was amended into the budget, of which \$60,000 was allocated to the additional work.

During the review of candidate projects to program in the next TIP, the Washington St Underpass has been preliminarily programmed for 2023. There is still a bit of uncertainty whether the underpass could be delayed. The NDDOT is going to initiate the project development process earlier than normal because of this and also because working with the railroad and likely property purchase. So normally the study of the structure would take place during the project development stage.

However, the current FY2018 appropriations are being authorized in short-term continuing resolutions. So the “flow” of federal funds into the State is tight. Therefore, there is a recommendation to have the MPO use its federal planning funds to begin this Study, which in a sense, starts the project development process. This allows the analysis to get underway possibly quicker. It is possible that the MPO will finance part of this and then when NDDOT is in position can take over the study and finish the project development.

The proposed work activity will be to retain a consultant to assist NDDOT, City and MPO staff conduct an analysis of the structure as we did in the 2011 Study with some added activities and to engage the public in setting priorities. The proposed budget is \$64,000 (\$12,000 existed so the added budget amount is \$52,000) and NDDOT and Grand Forks providing the local match. The consultant budget is \$70,000 from the MPO funds; a larger project scope maybe identified for project development activities that are beyond the MPO funding ability. That would leave \$138,000 of the original \$250,000, and this amount is going to increase.

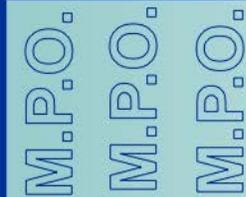
### **Findings and Analysis:**

- The MPO is required to prepare a Unified Planning Work Program.
- The activities are to occur over a two year period of 2017-2018.
- Amendment is necessary for 2018 Activities.
- Additional CPG funds are available to add activities to the Work Program.
- NDDOT and City of Grand Forks are expected to provide the local match.

### **Support Materials:**

- Draft 2018 UPWP Amendment #3

# 2017-2018 UNIFIED PLANNING WORK PROGRAM



Grand Forks - East Grand Forks  
Metropolitan Planning Organization

Grand Forks – East Grand Forks  
**Metropolitan Planning  
Organization**

**AMENDMENT #3**

*Prepared By*

**Grand Forks – East Grand Forks  
Metropolitan Planning Organization  
February 2018**

**The signature below constitutes the official adoption of the Amendment #3 to 2017-2018 Unified Planning Work Program (UPWP) by the Grand Forks – East Grand Forks Metropolitan Planning Organization (MPO). The Amendment #3 was approved the MPO Executive Policy Board at its \_\_\_\_\_, 2018, meeting.**

\_\_\_\_\_  
**Ken Vein, Chairman**  
Grand Forks – East Grand Forks MPO

\_\_\_\_\_  
**Date**

## **300.5 SPECIAL STUDIES**

### **Additional Studies are being identified**

#### **OBJECTIVES:**

- 300.51 MAP-21/FAST Implementation: To participate in the implementation of the new transportation reauthorization bill.
- 300.52 EGF ADA ROW Transition Plan: 2018 – To assist East Grand Forks complete the required ADA ROW Transition Plan
- 300.53 School Safety Study: 2017/18– To work with Safe Kids, cities and local school districts to develop strategies to improve safety in and around middle schools.
- 300.54 Technical Assistance: ~~To provide technical assistance to the Cities of Grand Forks and East Grand Forks in areas related to transportation planning.~~ **To update the Washington Underpass Structural Analysis from the 2011 Study including to create an opinion of timing until replacement should be done and include updating the cost estimate.**

#### **PROPOSED WORK:**

- 300.51 MAP21/FAST Implementation: Staff activities as necessary to keep involved with the process of implementing the transportation bill. Experience has shown that reauthorization requires significant staff time. Involvement also means maintaining an understanding of issues, participating with either state department of transportation efforts regarding implementation.
- With passage of FAST continuing MAP21 performance based planning and programming, final regulations are being promulgated to implement this major shift in MPO activities. By the end of this UPWP, the MPO will need to be fully compliant with FAST in its planning and programming documents.
- 300.52 EGF ADA ROW Transition Plan: 2018 – TheFHWA-MN and MnDOT have placed an emphasis on having the required ADA ROW Transition Plans brought up to compliance; they have indicated a desire to freeze agencies from receiving FHWA funds if this doesn't occur by 2019. The MPO will assist with the portion of the Transition Plan that addresses the right of way. The MPO will investigate the current status/compliance of the facilities within the ROW, develop a plan of action to obtain compliance, engage the community in setting priorities, and ensure the City is able to continue to received FHWA funds. The MPO staff, with assistance from a consultant, will complete the work. East Grand Forks staff will prepare the

needed portions of the ADA Transition Plan outside the ROW (i.e., public buildings, etc.)

300.53 School Safety Study: 2017/18 – The MPO, Cities and School District have been working with the SAFE KIDS Coalition to identify safety improvements at local middle schools. Each year, a number of schools will be studied to evaluate current traffic circulation and pedestrian safety conditions, identify safety issues, and recommend improvements to address the identified issues.

**300.54** Technical Assistance: ~~This task allows for work to be done on various studies requested throughout the annual program year. Unidentified requests will be approved on a priority basis after evaluation of resource commitment. It is envisioned that formal proposals will be required prior to approval.~~ ***This task will update the information from the MPO 2011 Study of the Washington Street Underpass. Funds have been preliminarily programmed to replace the structure in 2023. However, due to the significant costs, a revisit of the condition of the structure is being done to confirm replacement in 2023 is proper.***

***The scope may include project development activities that will be clearly identified as not MPO eligible. This can allow the project to proceed on schedule with a partnership of MPO planning funds and NDDOT project development funds. While this is new to the Forks MPO, it has been used elsewhere in the state and has proven to be quite successful.***

***The funding shown is an estimate of the MPO eligible portion; the remaining budget is identified in another document.***

**PRODUCTS:**

300.51 Undetermined.  
300.52 EGF ROW ADA Transition Plan  
300.53 School Safety Study – 2017/8  
**300.54** ***Washington Underpass Study - 2018.***

**COMPLETION DATE:**

300.51 As needed.  
300.52 December 31, 2018  
300.53 December 31, 2017/18  
**300.54** **December 31, 2018**

**GRAND FORKS-EAST GRAND FORKS  
FUNDING SOURCE SUMMARY  
2018 ANNUAL WORK PROGRAM**

	FUNDING SOURCES				BUDGETED AMOUNTS			
	Fed/St	St/Loc*	Total	%	Fed/St	St/Loc*	Total	%
CPG 2018**	\$610,000	\$141,500	\$751,500	98%	\$610,000	\$141,500	\$751,500	100.0
CPG Previous Year***	\$250,000	\$62,500	\$312,500	0%	\$132,800	\$33,200	\$166,000	54%
Minnesota State Funding*	\$11,000	\$2,750	\$13,750	2%	\$11,000	\$2,750	\$13,750	100.0
<b>TOTAL</b>	<b>\$871,000</b>	<b>\$206,750</b>	<b>\$1,077,750</b>	<b>100.0</b>	<b>\$753,800</b>	<b>\$177,450</b>	<b>\$931,250</b>	<b>100.0</b>

- \* Minnesota State Money is used for match for federal funds reducing local match.
- \*\* Contains ND CPG and MN CPG
- \*\*\* FY2017 CPG funds

**GRAND FORKS – EAST GRAND FORKS  
COST ALLOCATION  
2018 ANNUAL WORK PROGRAM**

Fund	Amount	Percent
Consolidated Planning Grant	\$753,800	80%
MN State	\$11,000	1.4%
Local Match to MN State	\$2,750	0.3%
Other Local Match	\$177,450	18.5%
<b>TOTAL</b>	<b>\$931,250</b>	<b>100%</b>

**GRAND FORKS - EAST GRAND FORKS**

**2018 ANNUAL WORK PROGRAM**

**AMENDMENT #3**

ACTIVITY	FUNDING SOURCE			STAFF						
	FED/STATE	STATE/LOCAL	TOTAL	Ex. Dir FTE=1.0	Planner FTE=1.0	Planner FTE=1.0	Office Man FTE=1.0	Intern FTE=1.0	TOTAL Staff Hrs	Consultant Cost
<b>100.0 PROGRAM ADMINISTRATION</b>										
100.1 General Administration	24,000	6,000	30,000	160	35	40	290		525	
100.2 UPWP Development	9,600	2,400	12,000	50	10	10	155		225	
100.3 Financial Management	9,600	2,400	12,000	25			225		250	
100.4 Facilities and Overhead	\$14,400	\$3,600	18,000							
<b>200.0 PROGRAM SUPPORT AND COORDINATION</b>										
200.1 Interagency Coordination	28,800	7,200	36,000	50	110	50	550		760	
200.2 Pub. Info. & Cit. Part.	16,000	4,000	20,000	134	20	25	135		314	
200.3 Education/Training & Travel	16,000	4,000	20,000	130	65	50	50		295	
200.4 Equipment	\$12,000	\$3,000	15,000							
<b>300.0 PLANNING AND IMPLEMENTATION</b>										
300.1 Transportation Plan Update & Imp.	206,000	51,450	257,450	485	435	590	25	0	1535	\$135,000
Amendment #1	16,800	4,200	21,000							\$21,000
ATAC	28,000	7,000	35,000							\$35,000
300.2 Corridor Planning	144,800	36,200	181,000							
carryover 300.20 US2/US81 Skewed Intersectio	48,000	12,000	60,000	100	75	40	120	0	335	\$45,000
300.20a Near Southside Study	32,000	8,000	40,000	70						\$35,000
300.21 ATAC Traffic Count	21,600	5,400	27,000	20	5	10		0		\$25,000
300.22 Corridor Preservation	4,000	1,000	5,000			120				
300.23 Aerial Photo Update	39,200	9,800	49,000		140					\$42,000
300.3 TIP and Annual Element	17,600	4,400	22,000	220			80	0	300	
300.4 Land Use Plan	8,000	2,000	10,000			160			160	
300.5 Special Studies	139,200	37,600	176,800							
300.51 FAST Implementation	15,200	6,600	21,800	160	90	90	30		370	
300.52 EGF ROW ADA Transition	40,000	10,000	50,000	20	125	50	20	250		\$35,000
300.53 School Safety Study	20,000	5,000	25,000	90		135		0		
300.54 Washington Underpass Study	64,000	16,000	80,000	30						\$70,000
300.6 Plan Monitoring, Review & Evaluatio	28,000	7,000	35,000							
300.61 Monitoring & Surveillance Annu	16,000	4,000	20,000	10	10	200	25	250	495	
300.62 Data Collection	12,000	3,000	15,000		105	100	30	400	635	
300.7 GIS Development & Application	32,000	8,000	40,000	10	555	100	25	750	1440	
<b>TOTAL</b>	<b>753,800</b>	<b>177,450</b>	<b>931,250</b>	<b>\$158,326</b>	<b>\$83,346</b>	<b>\$86,543</b>	<b>\$73,310</b>	<b>\$19,800</b>	<b>\$421,325</b>	<b>\$443,000</b>
				1764	1780	1770	1760	1650	8724	

\* Minnesota and North Dakota State Funding will be used for local match.



## Grand Forks - East Grand Forks Metropolitan Planning Organization

### MPO Staff Report

**MPO Technical Advisory Committee: February 14, 2018**

**MPO Executive Board: February 21, 2018**

**RECOMMENDED ACTION: Make a Recommendation on the Urban Grant, Regional and Urban Program Candidate Projects for the FY2019-2022 TIP as Being Consistent with the Long Range Transportation Plan and Give Priority Ranking**

Matter of List of Urban Grant, Regional and Urban Program Candidate Projects for 2019-2022 TIP.

**Background:** The MPO and NDDOT formally solicited candidate projects for the 2019-22 TIP/STIP. The solicitation is two months behind normal schedule; the major delay due to the finalization of the Urban Grants Program. We have informally advised our local agencies that a solicitation would be forthcoming and to begin preparing project paperwork. In order for the MPO to give both the local agencies as much time as possible yet still allow MPO staff to “vet” the candidate projects, the project submittal deadline to the MPO was February 6th.

**These candidate projects are being processed with many unknown outcomes of FAST. It is very possible that significant changes may occur to these projects as more information and decisions are made through implementation of FAST. In short, any action of these projects is subject to change. Particularly with FAST emphasis on “State of Good Repair” and on National Highway System (NHS) Routes, the impacts of at least these two areas may cause changes. This Report will identify the candidate projects as either being on the NHS and/or as “State of Good Repair”**

A separate report for each of the three programs is attached.

#### **Findings and Analysis:**

- The MPO must annually prepare a Transportation Improvement Program
- TIP eligible projects with the MPO Area must be submitted to the MPO for its consideration
- The projects submitted are being considered as being consistent with the Long Range Transportation Plan with the understanding that as FAST is implemented this determination is subject to change.
- The projects should be given high priority ranking.

#### **Support Materials:**

- Individual reports on each of the three programs.

# Urban Grant Program Application

## Coversheet

**LPA**

City of Grand Forks

**Contact Person**

Allen R. Grasser, PE

**Title**

City Engineer

**Address**

255 N 4<sup>th</sup> St. P.O. Box 5200 Grand Forks, ND 58206

**Telephone**

701-746-2640

**Email**

agrasser@grandforksgov.com

**Project Name**

University Ave Phase 1 - Medians

**LPA Applicant Signature (Highest Elected Official)****NDDOT District Engineer Signature if project is located on/impacts a State Highway****Date Submitted**

2/6/2018

**Application Attachment Checklist (check all that have been attached)**

Relevant excerpts from adopted plans     Map(s) depicting project location     Cross Section of Roadway/facility

Pictures, Graphics, and/or other visual aids     Relevant supporting data

Other Attachments (describe)

Click here to enter text.

**Information in this Box is for NDDOT to Complete**

Date Received \_\_\_\_\_

Is this Project Title 23 Code of Federal Regulation Eligible including location on a federal aid route?

Yes       No

## General Project Information

**Project Description (including location and scope of work for which funding is requested)**

**Project Location: University Ave (N Columbia Rd to English Coulee) (0.5 mile)**

**Project Scope: Remove the existing medians and install new medians with decorative pavement, and decorative median dividers.**

**Total Project Cost**

\$1,006,000

**Amount of Grant Funds Requested (cannot exceed 80% of total project cost)**

\$737,526

## Competitive Criteria

- 1. Community Need for Project:** Explain why the project is needed including appropriate detail. Include any 100% locally funded components of the project that are part of the overall project or other planned projects that may compliment this project. Documentation of information to support the need such as relevant data, existing and if appropriate projected conditions, and any related analysis through studies or reports would be appropriate to identify in this section. Attachments such as but not limited to: maps, pictures, other graphics; and supporting data demonstrating the need for the project is encouraged.

The proposed project would remove the existing median on University Ave from N Columbia Rd to Stanford Rd and install a new decorative median, as well as install ornamental median dividers. University Ave provides a direct access from the University of North Dakota (UND) to the Grand Forks downtown area.

This corridor has previously been studied for traffic calming measures and ways to reduce pedestrian/vehicle conflicts in 2002 by the Grand Forks/East Grand Forks MPO. In this report there were suggested actions to address these conflicts, such measures included; extending the medians along University Ave to the extension of Stanford Rd, Medians should be closed using 1/8 mile intersections spacing from Princeton St to Columbia Rd, and pedestrian sidewalks should be consolidated from 18 to 12 marked crosswalks.

UND has hired JLG Architects to develop a Coulee to Columbia master plan. In this plan are a number of features which were previously discussed in the MPO report. These include a number of features including: ornamental street lighting, wayfinding signage, installing planter medians with decorative fencing to reduce the number of pedestrians crossing not at a crosswalk, planters, benches, garbage cans, and other items.

This corridor has a federal aid project to mill and overlay the existing asphalt surface from N 3<sup>rd</sup> St to State St programmed for 2019, with construction likely to occur in 2020. The mill and overlay project is also anticipated to bring the curb ramps up to ADA compliance and restripe the existing bikelanes and sharrows along the corridor. In anticipation for this project and to rejuvenate this corridor the City of Grand Forks in conjunction with UND would offer the proposed project to compliment the mill and overlay project. The proposed project would include removing the existing medians and install new medians with decorative pavement, decorative median dividers, and pigmented imprinted concrete crosswalks. This work would ideally be completed in 2019 ahead of the rehabilitation work scheduled in an attempt to accomplish the work outside of the schools normal school year and minimize traffic impacts to the surrounding neighborhood. By completing the concrete work ahead of the programmed mill and overlay, it will allow the avoidance of patching a new asphalt surface.

2. **Community Impact of Project:** Describe how the project will offer significant long term value to the community specifically in addressing the following program objectives (a-f):

**a) Preserve existing transportation assets**

The proposed project is anticipated to preserve the existing transportation assets by providing new medians with decorative dividers. In conjunction with the programmed mill and overlay project, the overall life of the pavement will be extended and enhanced.

**b) Ensure safety of all users of the transportation system**

Previous studies have identified a large number of pedestrians crossing University Ave. Currently there are pedestrians who cross at locations without crosswalks, or cross the street diagonally to walk in the shortest path to travel from one location to another. By installing the decorative median dividers, it is anticipated that the number of pedestrians not utilizing crosswalks will be reduced and allow drivers to more readily anticipate where pedestrians will cross. This in conjunction with removing unnecessary crosswalks will remove a number of pedestrian/vehicle conflict points. Installation of pigmented imprinted concrete crosswalks is anticipated to increase the awareness of the crosswalks.

**c) Improve multi-modal transportation options such as walking, bicycling, and public transportation**

Installation of decorative median and dividers will increase vibrancy of the corridor and enhance the experience for non-motorized users using the sidewalks, multiuse paths, bike lanes, and shared lanes (sharrows). Installation of pigmented imprinted concrete crosswalks.

**d) Enhance the economic vitality of the area by providing transportation assets that support: revitalization efforts; development of vacant or underutilized parcels within existing urban areas; and/or redevelopment of established portions of communities**

As part of UND's Coulee to Columbia Master Plan, there are a number of buildings located along this corridor that will likely be renovated, removed, or removed and replaced. This plan has also identified other improvements along this corridor to further enhance the transportation assets for the revitalization efforts. The proposed project will provide support toward those revitalizing efforts.

**e) Support economically sustainable growth, lessening the need for outward expansion of community transportation infrastructure and associated services**

By improving the vibrancy of this portion of the University Ave corridor it will likely encourage more individuals to walk or bike for commuting and for recreational purposes. This will likely also support utilizing the existing bike lanes and sharrows for individuals to travel from UND to downtown Grand Forks.

3. **Consistency with an LPA Associated Plan:** Document linkage between the proposed project and a publicly accepted/adopted plan(s) and/or public involvement process. Clear linkage should be demonstrated between the proposed project and the associated public acceptance/support which would include documenting the reference(s) in the plan and/or public involvement process. Relevant excerpts from such documents are encouraged to attach with the application. Examples of publicly accepted/adopted plans might include but are not limited to: Community Comprehensive Plan; Downtown Master Plan; Neighborhood/Subarea/Corridor Plan; Bicycle/Pedestrian Plan; Housing Plan; Long Range Transportation Plan; Transit Development Plan; and/or Renaissance Zone Plan. A stand-alone public involvement process which demonstrates community support for the specific project is also acceptable and should be documented in the application.

See attached excerpts from the following:

The Grand Forks/East Grand Forks Metropolitan Planning Organization 2002 University Ave Traffic Calming Study.  
University of North Dakota Coulee to Columbia Master Plan

4. **Project Support of Urban Core/Central Business District:** Projects which directly support the urban core/central business district (CBD) will be given preferential consideration. Identify the project location and how it will support the urban core/CBD. (Attach 8.5" x 11" or 11" x 17" color map depicting project location in relation to urban core/CBD if applicable to the project type)

University Ave provides direct access between the University of North Dakota and Grand Forks downtown area. By making this corridor more visually appealing it could draw additional traffic along this corridor between Grand Forks largest employer and the downtown area improving the cohesion between UND and the downtown.

5. **Projects that Maximize the Return on Investment from Public Funds:** Projects which can demonstrate a positive private return on investment of public funds will be given preferential consideration. Examples of this may include but not be limited to increased retail sales, new jobs, and/or new dwelling units anticipated as a direct result of the proposed project.

[Click here to enter text.](#)

## Existing Conditions

(information requested in this section may not be appropriate for all project types)

### Functional Classification of Roadway

Minor Arterial

### Current AADT (including source)

2015 6,048-7,346 2015 NDDOT Count (Columbia Rd to Stanford Rd)

### Forecasted AADT (including source)

2040 6,610-7,530 MPO Long Range Transportation Plan

### Posted or Statutory Speed Limit

University Ave (Stanford Rd to Princeton St) 25mph

University Ave (Princeton St to N Columbia Rd) 20mph

### Cross Section of Roadway (attach graphics depicting current dimensions and key roadway elements)

Divided two lane roadway with bike lanes and no parking, see attachment for cross section

### Pavement rating or condition

Average PCI 80 Average IRI 235

### Year of Last Federal Investment at this Location

2020 NDDOT Project number TBD University Ave (N 3<sup>rd</sup> St to State St) 2" Mill & Overlay (PROGRAMMED)

2009 NDDOT Project number SU-6-986(090)094 University Ave (N 3<sup>rd</sup> St to State St) Seal Coat

2002 NDDOT Project number SU-6-986(064)067 University Ave (N 21<sup>st</sup> St to N 42<sup>nd</sup> St)

2" Mill & Overlay N 21<sup>st</sup> St to State St PCC Grinding

### When was the current section built?

University Ave N Columbia Rd to Princeton St 1920

University Ave Princeton St to State St 1936 widened 1969

University Ave State St to N 42<sup>nd</sup> St 1969

**Year last surfaced or received maintenance?**

2020 2" Mill & Overlay (PROGRAMMED)

2009 Seal coat

2002 2" Mill & Overlay/PCC Grinding

**Lighting**

Yes, 250W HPS, 40' tall davit arm poles, staggered on both sides of the road, installed in 1971

**Crash Rate or Number of Crashes?**

57 crashes in 2014-2016, two of which were crashes involving pedestrians

**Other Known Safety Concerns?**

There are a number of crosswalks along this corridor which are closely spaced (100-150' apart). This leads to an increased number of conflict points between motorized and non-motorized traffic.

**Intersections (how many, type, control, etc.)**

N Columbia Rd – four way signalized intersection

Cornell St – four way intersection two way stop control (on Cornell)

Hamline St, Cambridge St, Centennial Dr, Harvard St, Oxford St, Princeton St – three way intersection, stop sign on sidestreet

Driveway access – 3 driveways

**Is parking allowed and what type?**

No parking allowed on University Ave between N Columbia Rd and the English Coulee

**Are there any bridges, box culverts, etc. within the project corridor?**

Yes, located at the English Coulee, Pedestrian Underpass, and box culvert underneath

**What is the condition of the existing sanitary sewer, storm sewer, and water lines?**

Sanitary sewer was installed in 1960

Storm sewer was installed in 1950 N Columbia Rd to English Coulee, 1969 English Coulee to Stanford Rd

Water main was installed in 1974

**Are there any Access points to adjoining property that present a special concern?**

No

**Bicycle/Pedestrian, and Public Transportation Accommodations (Sidewalk, shared use paths, bicycle lanes)?**

Existing bike lanes on University Ave N Columbia Rd to N 42<sup>nd</sup> St, there are sidewalks on both sides of the roadway and multiple crosswalks to cross University Ave.

**Is there an existing transit or other public transportation facility located within the project limits?**

Yes, there are currently three bus stops located on University Ave between N Columbia Rd and Stanford Rd

**Do any school buses, transit buses, other multi-modal vehicles, etc. use this route?**

Yes, City Area Transit has routes 2, 4, 6, 8, and Night, UND bus service has Red, Blue, Green, Purple and Night Routes, school buses for Lake Agassiz Elementary School, Valley Middle School, and Central High School

**Does a RRX or RR facility exist within the project limits?**

No,

**Other existing conditions that are not listed identified above?**

[Click here to enter text.](#)

## Proposed Improvements

(information requested in this section may not be appropriate for all project types)

### What are the proposed Improvements (specific scope of work)?

The proposed project would remove the existing median on University Ave from N Columbia Rd to Stanford Rd and install a new decorative median, install ornamental median dividers, and install pigmented imprinted concrete at crosswalks. The During project development the crosswalks will be reevaluated and compared to the 2002 study to validate crosswalk location and to see if certain crosswalks can be eliminated to reduce the number of conflict points without severely impacting non-motorized traffic. There is an engineer already onboard to study access points onto University Ave which may be closed or full access reduced to a  $\frac{3}{4}$  intersection to further reduce conflict points along this corridor.

### Proposed Length

2400 Linear Feet

### Proposed Cross Section (attach graphics depicting current dimensions and key roadway elements)

No change to roadway cross section, see attachment for typical cross section

### Proposed Surfacing Type

N/A

### Proposed Lighting, if applicable

N/A

### Proposed Traffic Control changes

N/A

### Proposed Safety Improvements

An ornamental median divider is anticipated to encourage non-motorized traffic to utilize the crosswalks. This will allow vehicles and bicycles on the roadway to better determine where non-motorized traffic will more likely be crossing the road. By closing extraneous crosswalks and potentially reducing intersections from full to  $\frac{3}{4}$  intersections or closing off access to underutilized roads entirely, will reduce the number of conflict points along the corridor. Crosswalks are anticipated to be replaced with a pigmented imprinted concrete to provide visual indications to drivers that a crosswalk is present.

### Proposed Intersection Improvements

Intersections improvements are currently being studied by an engineer; these could include reducing access from full to a  $\frac{3}{4}$  intersection or closing off access to underutilized side streets.

### Proposed Traffic Calming Measures

The ornamental median divider is anticipated to act as a vertical visual traffic calming measure. The pigmented imprinted concrete crosswalks are anticipated to provide motorists visual cues better indicating the location of crosswalks.

### Will parking be allowed and type?

No

### Will any bridges, box culverts, etc. be built/replaced within the project corridor and how will they be modified?

No

**Will any private utilities, water lines, sanitary sewer, and/or storm sewer lines need to be replaced or worked on with this project or potentially in the recent future (identify year)? Have private utilities been coordinated with?**

No

**Are there any access points along the project corridor that need to be addressed for mobility or safety concerns?**

No, however an engineer is currently studying various access points along the corridor to see if certain underutilized access points can be closed or have access reduced in order to reduce conflict points.

**Will a Sidewalk or shared use path be installed or replaced?**

No, however the crosswalks are anticipated to be replaced with pigmented and imprinted concrete

**What ADA improvements will need to be made on this project?**

No, ADA improvements to existing curb ramps to remain will be made with the programmed Mill and Overlay project in 2020. Locations of new crosswalks and curb ramps will be installed to ADA compliance.

**Do any special accommodations need to be made for school buses, public transportation, other multi-modal vehicles, etc. on this route?**

No additional accommodations will be required

**Proposed Railroad Crossing Work**

No

**Other Proposed Improvements**

[Click here to enter text.](#)

## Environmental/Cultural Issues on the proposed Projects

Identify *Yes, No, or Unknown* for each environmental/cultural issue. If *Yes*, provide a brief description of the issue in the *Comments* box.

**Agricultural, Archeological sites, and/or Historical sites**

Yes, there are a number of properties on the historic register adjacent to the proposed project on University Ave. No impact to these properties is anticipated. These properties include:

2808 University Ave, 2820 University Ave, 2901 University Ave, 2912, University Ave, 3051 University Ave, 3233 University Ave, 3300 University Ave, 3301 University Ave, 3303 University Ave, and 3333 University Ave.

**Lakes, waterways, floodplains Wetland**

Yes, English Coulee, the proposed project will not have any impacts on the English Coulee

**Stormwater management**

No

**Hazardous materials sites**

No

**Hazardous materials on existing structure**

No

**Upland habitat**

No

**Endangered/threatened/migratory species**

No

**Section 4(f)** (Refers to the use of publicly owned park and recreational lands, wildlife and waterfowl refuges, and significant historical or archeological sites in transportation project development.)

No

**Section 6(f)** (Refers to Land and Water Conservation Fund (LWCF) Act - the conversion to other use of lands or facilities acquired with LWCF Act funds and requires replacement of used land with lands of equal value and use.)

No

**Through/adjacent to tribal land**

No

**Additional comments on Environmental/Cultural Issues section**

The proposed project is within the footprint of the existing roadway

**Miscellaneous Issues of Proposed Improvements**

**Construction Restrictions (*migratory bird, local events, etc.*)**

No

**Right-of-Way Required (parcels, owners, relocations, etc.)** (NOTE: It is recommended that local funds be used to acquire right-of-way on the LPA system.)

No

**Proposed Traffic Control during Construction**

Delineator Drums around construction areas, with flagging and detours as needed

**Ineligible Project Items**

None

**Additional comments on Miscellaneous Issues section**

[Click here to enter text.](#)

## Cost Estimate

Itemized Project Cost Estimate (For roadway projects this might include things like preliminary engineering, right-of-way, utilities, construction, construction engineering, bridges, and miscellaneous. For other types of projects include relevant items. Rows can be added as to the following table as necessary).

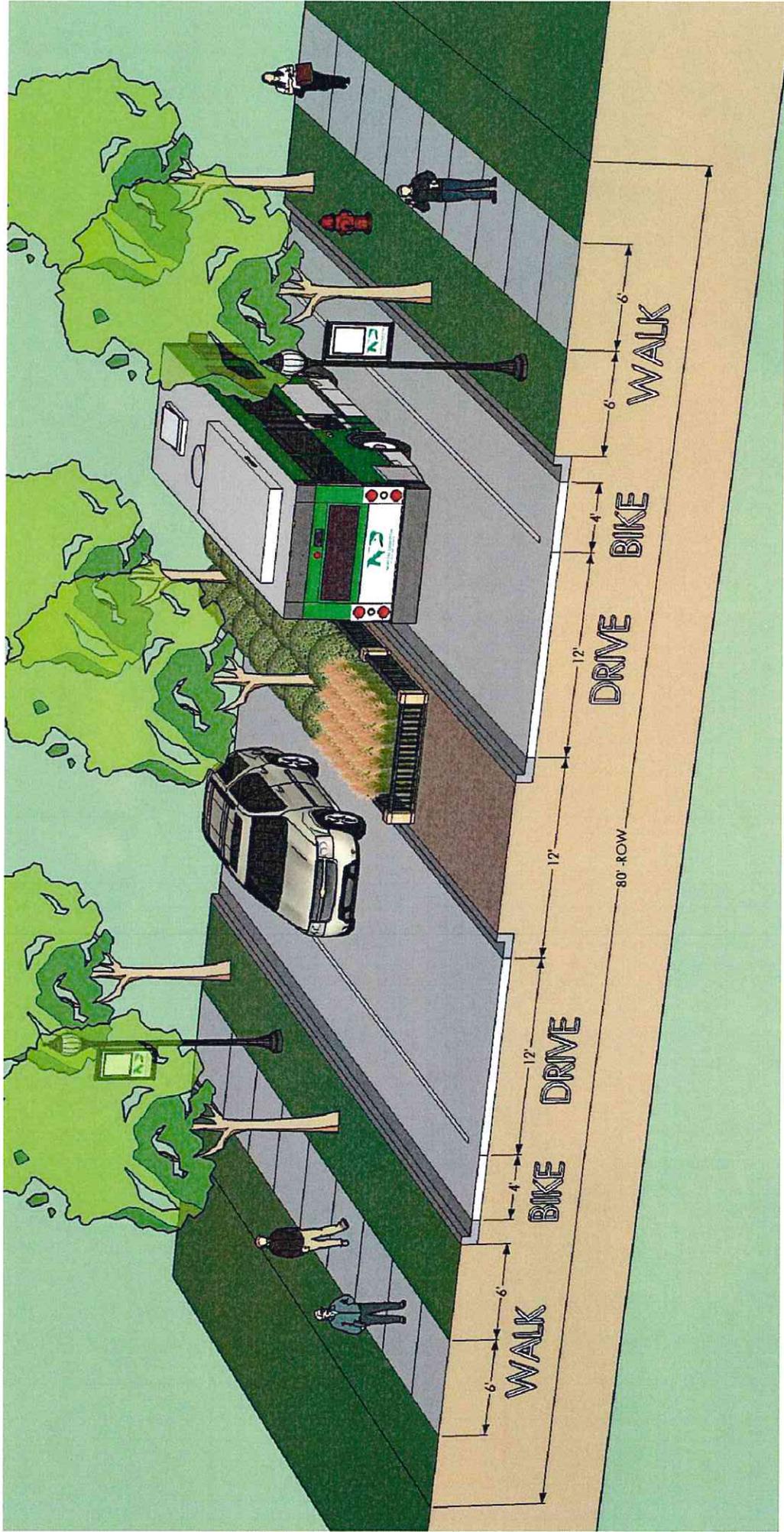
Item	Total	Federal	State	Local
Contract Bond	\$6,700	\$5,360		\$1,340
Remove Concrete Pavement-existing median or pavement 12' wide, does NOT incld C&G	\$30,000	\$24,000		\$6,000
Remove concrete Pavement-at new crosswalks	\$7,250	\$5,800		\$1,450
Common Excavation Type B	\$15,000	\$12,000		\$3,000
Aggregate Base Course CI 5	\$25,200	\$20,160		\$5,040
Concrete Pavement Repair – Full Depth Doweled	\$12,500	\$10,000		\$2,500
Mobilization	\$35,000	\$28,000		\$7,000
Flagging	\$31,500	\$25,200		\$6,300
Traffic Control Signs	\$1,800	\$1,440		\$360
Type III Barricade	\$2,375	\$1,900		\$475
Delineator Drums	\$2,240	\$1,792		\$448
Geosynthetic Material Type R1	\$8,550	\$6,840		\$1,710
Curb & Gutter Type 1	\$48,000	\$38,400		\$9,600
Pigmented Imprinted Concrete – median	\$156,000	\$124,800		\$31,200
Pigmented Imprinted Concrete – crosswalks	\$37,700	\$30,160		\$7,540
Concrete Median Nose Paving	\$18,000	\$14,400		\$3,600
Median Dividers – precast walls on frost proof foundations; mixed with decorative fencing	\$400,000	\$320,000		\$80,000
Design Engineering (~10%)	\$84,092.50	\$0		\$84,092.50
Construction Engineering (~10%)	\$84,092.50	\$67,274.00		\$16,818.50
Totals	\$1,006,000	\$737,526	\$0	\$268,474

**What is the source of the local funds?**

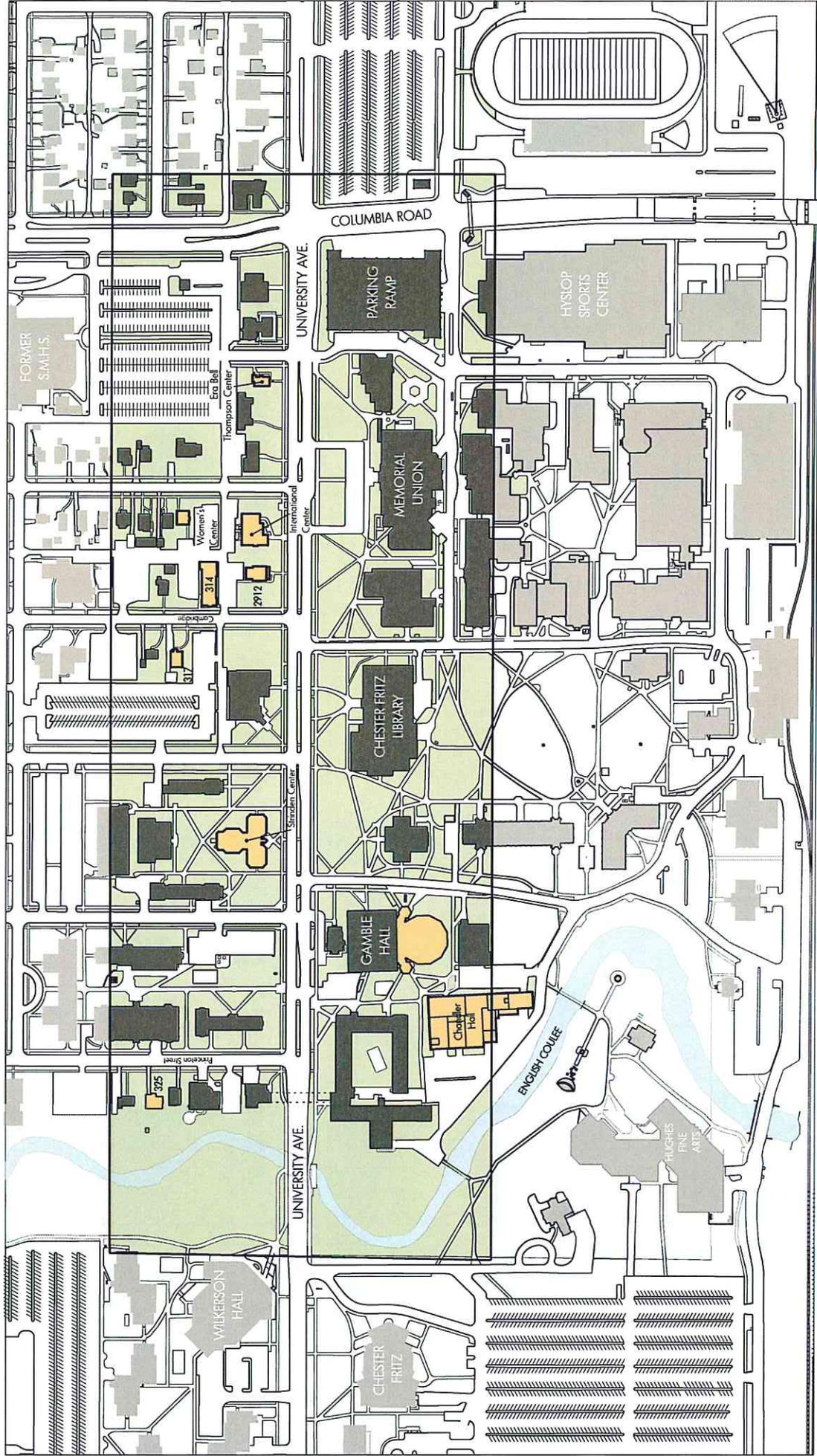
The University of North Dakota



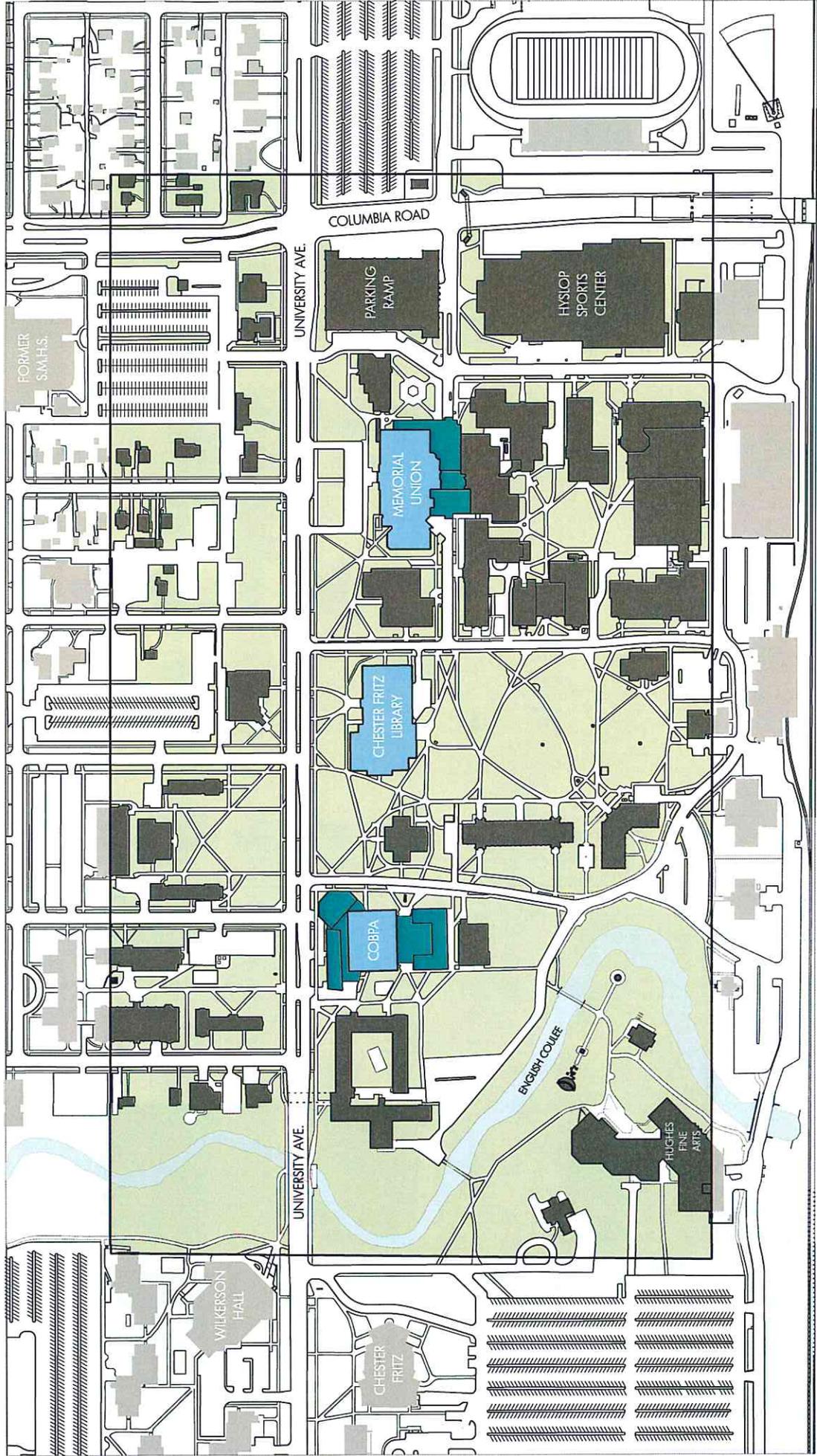
COULEE TO COLUMBIA RENDERING  
UND COULEE TO COLUMBIA MASTER PLAN



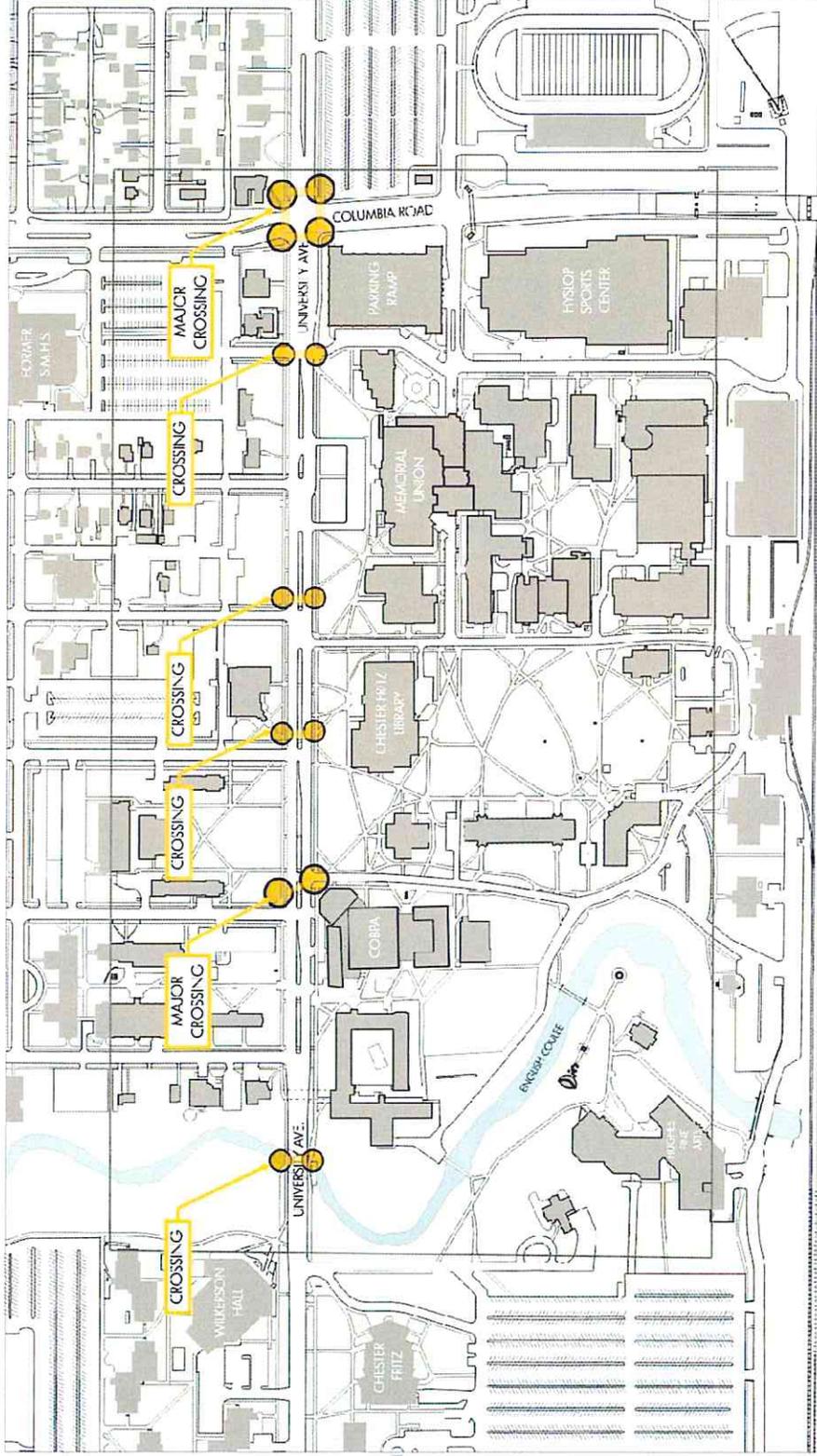
TYPICAL RIGHT OF WAY SECTION  
 UND COULEE TO COLUMBIA MASTER PLAN



# PROPOSED DEMOLITION PLAN UND COULEE TO COLUMBIA MASTER PLAN



**FUTURE SITE PLAN  
UND COULEE TO COLUMBIA MASTER PLAN**



PEDESTRIAN CROSSINGS  
UND COULEE TO COLUMBIA MASTER PLAN

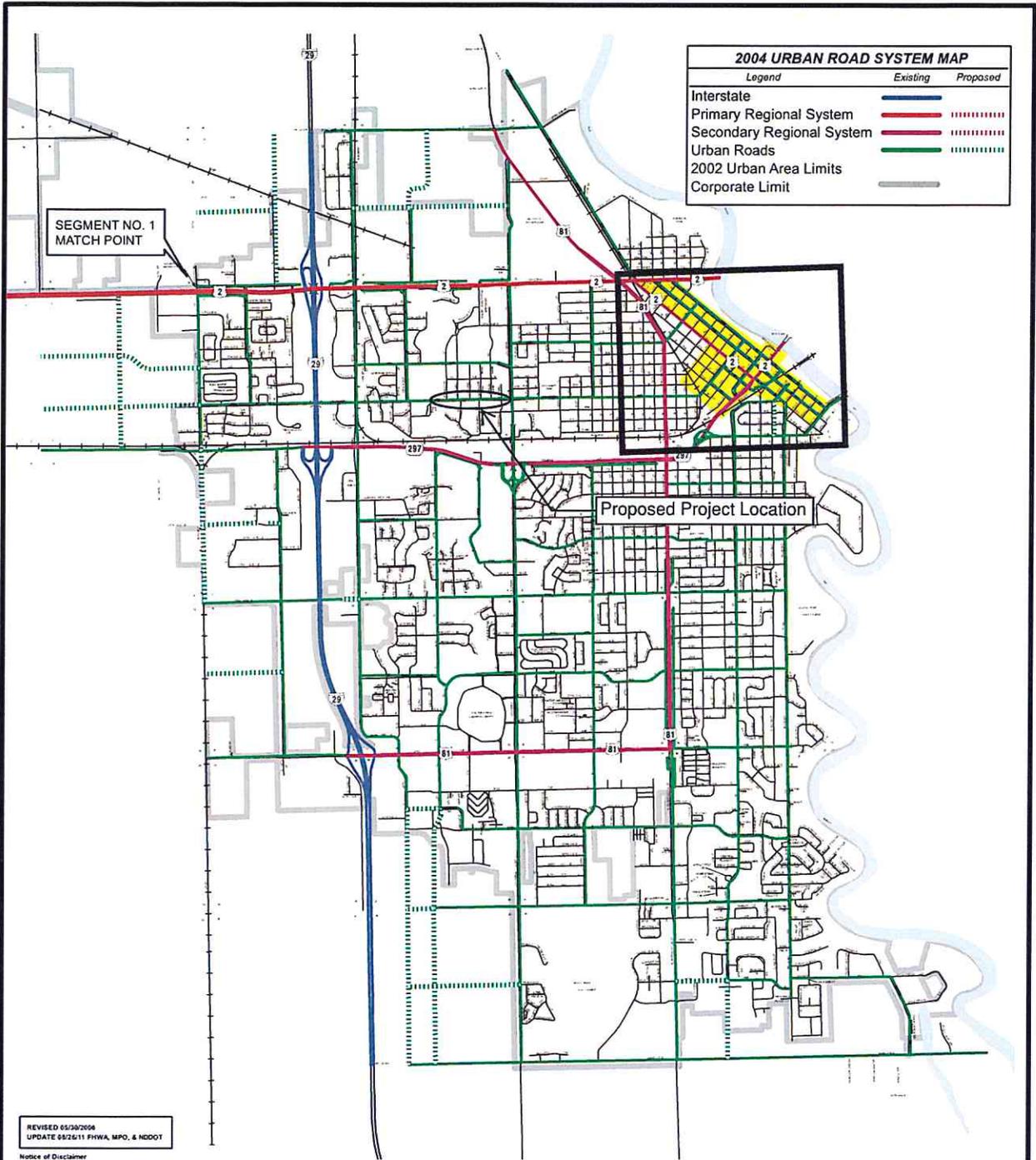
## Executive Summary

The GF-EGF MPO retained the engineering services of Howard R. Green Company to perform a traffic calming study on University Avenue between Columbia Road and Stanford Road. The study included identifying deficiencies relating to traffic volumes, vehicle speeds, and pedestrian and vehicle conflicts, identifying potential traffic calming techniques, and evaluating the effects of these devices on traffic circulation. During the summer of 2002, a mill and overlay project is scheduled for University Avenue, and this would provide an opportunity to apply some traffic calming techniques, if the MPO, City and the University agree on an implementation plan.

A detailed analysis of traffic operations, safety, and speed indicated that all of these values are within the range considered to be typical for minor arterial roadways in the Grand Forks Area. However, the evaluation indicated limited gaps for pedestrians and inconsistency in crosswalk placement and design. University Avenue is expected to act as a minor arterial and accommodate a large number of pedestrians. The following suggested actions relieve conflicts created by the interaction between these two uses.

- Median should be extended along University Avenue to the south extension of Stanford Road to create continuity of design throughout the corridor. The median should taper into a three-lane section to 42<sup>nd</sup> Street to provide a refuge for left turning vehicles.
- Medians should be closed using one-eighth mile intersection spacing from Princeton Street to Columbia Road. Left turn lanes should be created (similar to the one at Harvard Street) for eastbound to northbound traffic at Columbia Road, Hamline Street, and Princeton Street and for westbound to southbound traffic on Yale Drive and Stanford Road.
- Pedestrian crosswalks should be consolidated from eighteen to twelve marked crosswalks. To assist in pedestrian compliance, sidewalks extending from the curb should be removed at all locations without a crosswalk.
- Crosswalk signage and marking should be placed in a consistent manner throughout the corridor. All crosswalks should be striped in a manner consistent with the *Manual on Uniform Traffic Control Devices*. One crosswalk ahead





REVISED 05/20/2004  
 UPDATE 08/26/11 FHWA, MPO, & NDDOT

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**DRAFT PROGRAM FOCUS AREA**



  
 2004  
 URBAN ROADS SYSTEM  
 2010 POPULATION 52,838  
**GRAND FORKS**  
 GRAND FORKS COUNTY  
 NORTH DAKOTA  
 PREPARED BY  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING AND PROGRAMMING DIVISION  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 SCALE  
 0 1750 3500 7000 Feet

GRAND FORKS, NORTH DAKOTA  
 F:\PLANNING\GIS\Shore\_Nelson\MXDS\2017\Likely\DownTownArea\_Urban\_Grand Forks.mxd



2019 BASE PROJECT EAST CAMPUS

Spec No.	Code	Description	Unit	Qty	Unit Cost	Cost	Notes
103	100	Contract Bond	LS	1	\$ 6,700	\$ 6,700	Approx 0.8% of construction cost
201	370	Removal of Trees	EA	0	\$ 650.00	\$ -	
202	114	Remove concrete pavement - existing median or pavement, 12' wide, does NOT incl C&G	SY	1200	\$25.00	\$ 30,000	1.33 SY per LF of median; assumes 1/3 will be removed
202	114	Remove concrete pavement - at new crosswalks	SY	290	\$25.00	\$ 7,250	
202	130	Remove Curb and Gutter	LF	0	\$9.00	\$ -	Partial, selective removal
203	102	Common Excavation - Type B	CY	600	\$25.00	\$ 15,000	0.5 CY per SY of median; high unit cost due to small equipment and scope
203	119	Topsoil - Imported	CY	0	\$18.00	\$ -	No permanent landscaping
253	200	Hydraulic mulch	SY	0	\$5.00	\$ -	No permanent landscaping
302	121	Aggregate Base Course - Class 5	CY	600	\$42.00	\$ 25,200	12" thick, 0.5 CY per SY of median
570	650	Concrete Pavement Repair - Full Depth-Doweled	SY	100	\$125.00	\$ 12,500	
702	100	Mobilization	LSUM	1	\$35,000	\$ 35,000	
704	100	Flagging	MHR	750	\$42.00	\$ 31,500	using 1/5 of NHU-6-297-(008) 000
704	1000	Traffic Control Signs	UNIT	900	\$2.00	\$ 1,800	using 1/5 of NHU-6-297-(008) 000
704	1052	Type III Barricade	EA	25	\$95.00	\$ 2,375	using 1/5 of NHU-6-297-(008) 000
704	1060	Delineator Drums	EA	80	\$28.00	\$ 2,240	using 1/5 of NHU-6-297-(008) 000
709	151	Geosynthetic Material Type R1	SY	1800	\$4.75	\$ 8,550	1.5 SY per SY of median
748	140	Curb and Gutter Type I - each side of median island	LF	1200	\$40.00	\$ 48,000	Partial, selective removal
750	30	Pigmented Imprinted Concrete - median paving	SY	1200	\$130.00	\$ 156,000	12' wide, 12 SF (1.33 sy) per LF of median
750	30	Pigmented Imprinted Concrete - crosswalk paving	SY	290	\$130.00	\$ 37,700	
750	200	Concrete Median Paving	SY	0	\$130.00	\$ -	Costs included in 750-30
750	210	Concrete Median Nose Paving	SY	120	\$150.00	\$ 18,000	6@ 20 SY each, excludes radiused ends
770	0020	Concrete Foundation - matches with Ornamental (Pedestrian) lights	EA	0	\$1,100.00	\$ -	Not included in 770 4090 below
770	0210	Cable Trench (Type 1)	LF	0	\$5.00	\$ -	
770	0330	2 inch dia rigid conduit	LF	0	\$7.20	\$ -	
770	0504	Underground conductor (No. 4 RHW/USE, Cu)	LF	0	\$1.90	\$ -	
770	0605	Underground conductor (No. 6 THW Grd)	LF	0	\$1.35	\$ -	
770	0745	Feedpoint - Type IV	EA	0	\$10,000.00	\$ -	Reduces to 1 if East and West are concurrent
772	2145	Pedestrian crossing signals	EA	0	\$55,000.00	\$ -	ND DOT AABP 2017 (Nov 01, 2017) Item 772 2145
770	4090	Ornamental (Pedestrian) Light Standards - 16' aluminum poles, 16" dia decorative base, 150' spacing each side of Univ Ave on	EA	0	\$3,000.00	\$ -	Holophane CHA 16 SSJ 12 P07 ABG BK pole; assumes new feed points for tie-in to existing electrical infrastructure along University Avenue; matches precedent established at Campus Road Bridge
770	4493	Ornamental (Pedestrian) Light Fixture - LED Luminaries, 150' spacing each side of Univ Ave on 75' stagger	EA	0	\$2,000.00	\$ -	Holophane GVD2 P30 50K AS M BK 3 N S BK F Luminaire; assumes new feed points for tie-in to existing electrical infrastructure along University Avenue; matches precedent at Campus Road Bridge
970	SP	Median dividers - precast walls on frost-proof foundations; mixed with decorative fencing	LF	1000	\$400.00	\$ 400,000	
		Bus stops - site constructed or full custom pre-fab; no heating, includes decorative aprons and \$8,000 site furnishing allowance	EA	0	\$68,000.00	\$ -	Basis of design pricing JLG report p 49; can range up to \$150k; to match p 48 of JLG report



2019 BASE PROJECT EAST CAMPUS

Spec No.	Code	Description	Unit	Qty	Unit Cost	Cost	Notes
		Campus entry corners @ Univ Ave and Columbia Road - 16' pier, 64 LF fencing, 6 monument piers, 710 SF decorative pavement 115 LF decorative landscape wall, 18 shrubs, 360 SF of perennial beds	EA	0	\$245,000	\$	Basis of design pricing pp 52-53 of JLG report
		Campus entry @ Univ Ave and Columbia Road - 16' monument pier at opposing corner	EA	0	\$30,000	\$	Basis of design pricing is p 52 of JLG report
		Street art/pavement art at crossings	EA	0	\$50,000	\$	
		Building identification signage - masonry and stone, ground lighting; frost-depth footings	EA	0	\$18,000.00	\$0	Basis of design pricing is p 44 of JLG report
		Pedestrian crossing monuments - 8' tall, masonry and stone	EA	0	\$18,000.00	\$0	2 @ ea crossing, 4 crossings per p 55 of JLG report, 2 included at Univ Park; campus entry included elsewhere; basis of design pricing is p 32 of JLG report
		Pedestrian crossing landscaping	EA	0	\$11,000.00	\$0	Basis of design pricing p 56 of JLG report; decorative pavement, concrete landscape edging, perennial beds, perennial shrubs
		Temporary planters - molded, custom, intersection name embossed	EA	0	\$4,800.00	\$0	Basis of design pricing is p 34 of JLG report
		Street sign poles - aluminum, decorative, with cross arms, no lights, EMS; 2 at each crossing	EA	0	\$6,500.00	\$0	Basis of design pricing is p 43 of JLG report
		Benches - custom	EA	0	\$4,800.00	\$0	Basis of design pricing is p 36 of JLG report
		Trash receptacles - custom, style to match benches, paired with recycle bins	EA	0	\$2,200.00	\$0	Basis of design pricing is pp 36, 37, 39 of JLG report
		Recycle bins - custom, style to match benches, paired with trash receptacles	EA	0	\$2,200.00	\$0	Basis of design pricing is p 39 of JLG report

**PROJECT TOTAL \$837,815**

	Proposed Cost Share		
	Federal %	Local %	Local \$
Construction Cost	80%	20%	\$670,252.00 \$167,563.00
Design Engineering (~10%)	0%	100%	\$0.00 \$84,092.50
Construction Engineering (~10%)	80%	20%	\$67,274.00 \$16,818.50
<b>Total</b>			<b>\$737,526.00 \$268,474.00</b>

% Total Project 73% 27%

# Urban Grant Program Application

## Coversheet

**LPA**

City of Grand Forks

**Contact Person**

Allen R. Grasser, PE

**Title**

City Engineer

**Address**

255 N 4<sup>th</sup> St. P.O. Box 5200 Grand Forks, ND 58206

**Telephone**

701-746-2640

**Email**

agrasser@grandforksgov.com

**Project Name**

University Ave Phase 2 – Pedestrian Street Lights, Bus Shelters, Planters, Benches, Garbage & Recycling Bins

**LPA Applicant Signature (Highest Elected Official)**



**NDDOT District Engineer Signature if project is located on/impacts a State Highway**

\_\_\_\_\_

**Date Submitted**

2/6/2018

**Application Attachment Checklist (check all that have been attached)**

Relevant excerpts from adopted plans     Map(s) depicting project location     Cross Section of Roadway/facility

Pictures, Graphics, and/or other visual aids     Relevant supporting data

Other Attachments (describe)

[Click here to enter text.](#)

**Information in this Box is for NDDOT to Complete**

Date Received \_\_\_\_\_

Is this Project Title 23 Code of Federal Regulation Eligible including location on a federal aid route?

Yes       No

## General Project Information

**Project Description (including location and scope of work for which funding is requested)**

**Project Location: University Ave (N Columbia Rd to Stanford Rd) (0.7 mile)**

**Project Scope: Installation of ornamental pedestrian lighting, replacing the existing bus shelters, replacing the existing pedestrian flashing beacons, installing benches, trash cans, recycling bins, and planters.**

**Total Project Cost**

\$1,091,000

**Amount of Grant Funds Requested (cannot exceed 80% of total project cost)**

\$799,760

## Competitive Criteria

1. **Community Need for Project:** Explain why the project is needed including appropriate detail. Include any 100% locally funded components of the project that are part of the overall project or other planned projects that may compliment this project. Documentation of information to support the need such as relevant data, existing and if appropriate projected conditions, and any related analysis through studies or reports would be appropriate to identify in this section. Attachments such as but not limited to: maps, pictures, other graphics; and supporting data demonstrating the need for the project is encouraged.

The proposed project would include installation of ornamental pedestrian lighting, replacing the existing bus shelters, replacing the existing pedestrian flashing beacons, installing benches, trash cans, recycling bins, and planters. University Ave provides a direct access from the University of North Dakota (UND) to the Grand Forks downtown area.

UND has hired JLG Architects to develop a Coulee to Columbia master plan. In this plan are a number of features which were previously discussed in the MPO report. These include a number of features including: ornamental street lighting, wayfinding signage, installing planter medians with decorative fencing to reduce the number of pedestrians crossing not at a crosswalk, planters, benches, garbage cans, and other items.

This corridor has a federal aid project to mill and overlay the existing asphalt surface from N 3<sup>rd</sup> St to State St programmed for 2019, with construction likely to occur in 2020. The mill and overlay project is also anticipated to bring the curb ramps up to ADA compliance and restripe the existing bikelanes and sharrows along the corridor. In anticipation for this project and to rejuvenate this corridor the City of Grand Forks in conjunction with UND would offer the proposed project to compliment the mill and overlay project. The proposed project would include installation of ornamental pedestrian lighting, replacing the existing bus shelters, installing benches, trash cans, recycling bins, and planters.

2. **Community Impact of Project:** Describe how the project will offer significant long term value to the community specifically in addressing the following program objectives (a-f):
  - a) **Preserve existing transportation assets**

The proposed project will update the existing street lighting system which was originally constructed in 1971 with a new feedpoint, conduit and cable to the street lighting system, this will allow for easier maintenance in the future by allowing city electrical staff to pull new cable for the existing street lights in the future.

- c) **Improve multi-modal transportation options such as walking, bicycling, and public transportation**  
Installation of planters, additional pedestrian lighting, and improved bus shelters will increase vibrancy of the corridor and enhance the experience for non-motorized users using the sidewalks, multiuse paths, bike lanes, shared lanes (sharrows), and public transit.
- d) **Enhance the economic vitality of the area by providing transportation assets that support: revitalization efforts; development of vacant or underutilized parcels within existing urban areas; and/or redevelopment of established portions of communities**  
As part of UND's Coulee to Columbia Master Plan, there are a number of buildings located along this corridor that will likely be renovated, removed, or removed and replaced. This plan has also identified other improvements along this corridor to further enhance the transportation assets for the revitalization efforts. The proposed project will provide support toward those revitalizing efforts.
- e) **Support economically sustainable growth, lessening the need for outward expansion of community transportation infrastructure and associated services**  
By improving the vibrancy of this portion of the University Ave corridor it will likely encourage more individuals to walk, bike, or use public transit for commuting and for recreational purposes. This will likely also support utilizing the existing bike lanes and sharrows for individuals to travel from UND to downtown Grand Forks.

3. **Consistency with an LPA Associated Plan:** Document linkage between the proposed project and a publicly accepted/adopted plan(s) and/or public involvement process. Clear linkage should be demonstrated between the proposed project and the associated public acceptance/support which would include documenting the reference(s) in the plan and/or public involvement process. Relevant excerpts from such documents are encouraged to attach with the application. Examples of publicly accepted/adopted plans might include but are not limited to: Community Comprehensive Plan; Downtown Master Plan; Neighborhood/Subarea/Corridor Plan; Bicycle/Pedestrian Plan; Housing Plan; Long Range Transportation Plan; Transit Development Plan; and/or Renaissance Zone Plan. A stand-alone public involvement process which demonstrates community support for the specific project is also acceptable and should be documented in the application.

See attached excerpts from the following:

University of North Dakota Coulee to Columbia Master Plan

4. **Project Support of Urban Core/Central Business District:** Projects which directly support the urban core/central business district (CBD) will be given preferential consideration. Identify the project location and how it will support the urban core/CBD. (Attach 8.5" x 11" or 11" x 17" color map depicting project location in relation to urban core/CBD if applicable to the project type)

University Ave provides direct access between the University of North Dakota and Grand Forks downtown area. By making this corridor more visually appealing it could draw additional traffic along this corridor between Grand Forks largest employer and the downtown area improving the cohesion between UND and the downtown.

5. **Projects that Maximize the Return on Investment from Public Funds:** Projects which can demonstrate a positive private return on investment of public funds will be given preferential consideration. Examples of this may include but not be limited to increased retail sales, new jobs, and/or new dwelling units anticipated as a direct result of the proposed project.

[Click here to enter text.](#)

## Existing Conditions

(information requested in this section may not be appropriate for all project types)

### Functional Classification of Roadway

Minor Arterial

### Current AADT (including source)

2015 6,048-7,346 2015 NDDOT Count (Columbia Rd to Stanford Rd)

### Forecasted AADT (including source)

2040 6,610-7,530 MPO Long Range Transportation Plan

### Posted or Statutory Speed Limit

University Ave (Stanford Rd to Princeton St) 25mph

University Ave (Princeton St to N Columbia Rd) 20mph

### Cross Section of Roadway (attach graphics depicting current dimensions and key roadway elements)

divided two lane roadway with bike lanes and no parking, see attachment for cross section

### Pavement rating or condition

Average PCI 80 Average IRI 235

### Year of Last Federal Investment at this Location

2020 NDDOT Project number TBD University Ave (N 3<sup>rd</sup> St to State St) 2" Mill & Overlay (PROGRAMMED)

2009 NDDOT Project number SU-6-986(090)094 University Ave (N 3<sup>rd</sup> St to State St) Seal Coat

2002 NDDOT Project number SU-6-986(064)067 University Ave (N 21<sup>st</sup> St to N 42<sup>nd</sup> St)

2" Mill & Overlay N 21<sup>st</sup> St to State St PCC Grinding

### When was the current section built?

University Ave N Columbia Rd to Princeton St 1920

University Ave Princeton St to State St 1936 widened 1969

### Year last surfaced or received maintenance?

2020 2" Mill & Overlay (PROGRAMMED)

2009 Seal coat

2002 2" Mill & Overlay/PCC Grinding

### Lighting

Yes, 250W HPS, 40' tall davit arm poles, staggered on both sides of the road, installed in 1971

### Crash Rate or Number of Crashes?

67 crashes in 2014-2016, two of which involved pedestrians

### Other Known Safety Concerns?

There are a number of crosswalks along this corridor which are closely spaced (100-150' apart). This leads to an increased number of conflict points between motorized and non-motorized traffic.

### Intersections (how many, type, control, etc.)

N Columbia Rd – four way signalized intersection

Cornell St – four way intersection two way stop control (on Cornell)

Hamline St, Cambridge St, Centennial Dr, Harvard St, Oxford St, Princeton St, Yale Dr, Stanford

Rd – three way intersection, stop sign on sidestreet

Driveway access – 6 driveways

**Is parking allowed and what type?**

No parking allowed on University Ave between N Columbia Rd and Stanford Rd

**Are there any bridges, box culverts, etc. within the project corridor?**

Yes, located at the English Coulee, Pedestrian Underpass, and box culvert underneath

**What is the condition of the existing sanitary sewer, storm sewer, and water lines?**

Sanitary sewer was installed in 1960

Storm sewer was installed in 1950 N Columbia Rd to English Coulee, 1969 English Coulee to Stanford Rd

Water main was installed in 1974

**Are there any Access points to adjoining property that present a special concern?**

No

**Bicycle/Pedestrian, and Public Transportation Accommodations (Sidewalk, shared use paths, bicycle lanes)?**

Existing bike lanes on University Ave N Columbia Rd to N 42<sup>nd</sup> St, and sidewalk on both sides of the road

**Is there an existing transit or other public transportation facility located within the project limits?**

Yes, there are currently three bus stops located on University Ave between N Columbia Rd and Stanford Rd

**Do any school buses, transit buses, other multi-modal vehicles, etc. use this route?**

Yes, City Area Transit has routes 2, 4, 6, 8, and Night, UND bus service has Red, Blue, Green, Purple and Night Routes, school buses for Lake Agassiz Elementary School, Valley Middle School, and Central High School

**Does a RRX or RR facility exist within the project limits?**

No,

**Other existing conditions that are not listed identified above?**

[Click here to enter text.](#)

**Proposed Improvements**

(information requested in this section may not be appropriate for all project types)

**What are the proposed Improvements (specific scope of work)?**

The proposed project would include installation of ornamental pedestrian lighting, replacing the pedestrian beacons, replacing the existing bus shelters, installing benches, trash cans, recycling bins, and planters.

**Proposed Length**

3600 Linear Feet

**Proposed Cross Section (attach graphics depicting current dimensions and key roadway elements)**

No change to roadway cross section, see attachment for typical cross section

**Proposed Surfacing Type**

N/A

**Proposed Lighting, if applicable**

Ornamental Pedestrian lighting spaced 150' with a 75' stagger, this includes replacing the existing feedpoint, and running new conduit and cable

**Proposed Traffic Control changes**

N/A

**Proposed Safety Improvements**

Additional pedestrian street lighting will make non-motorized traffic more visible to other users. Replacement of the existing flashing pedestrian beacons will improve the reliability of the system.

**Proposed Intersection Improvements**

N/A

**Proposed Traffic Calming Measures**

N/A

**Will parking be allowed and type?**

No

**Will any bridges, box culverts, etc. be built/replaced within the project corridor and how will they be modified?**

No

**Will any private utilities, water lines, sanitary sewer, and/or storm sewer lines need to be replaced or worked on with this project or potentially in the recent future (identify year)? Have private utilities been coordinated with?**

No

**Are there any access points along the project corridor that need to be addressed for mobility or safety concerns?**

No

**Will a Sidewalk or shared use path be installed or replaced?**

No

**What ADA improvements will need to be made on this project?**

No, ADA improvements will be made with the programmed Mill and Overlay project

**Do any special accommodations need to be made for school buses, public transportation, other multi-modal vehicles, etc. on this route?**

No additional accommodations will be required

**Proposed Railroad Crossing Work**

No

**Other Proposed Improvements**

[Click here to enter text.](#)

**Environmental/Cultural Issues on the proposed Projects**

Identify *Yes, No, or Unknown* for each environmental/cultural issue. If *Yes*, provide a brief description of the issue in the *Comments* box.

**Agricultural, Archeological sites, and/or Historical sites**

Yes, there are a number of properties on the historic register adjacent to the proposed project on University Ave. No impact to these properties is anticipated. These properties include:

**2808 University Ave, 2820 University Ave, 2901 University Ave, 2912, University Ave, 3051 University Ave, 3233 University Ave, 3300 University Ave, 3301 University Ave, 3303 University Ave, and 3333 University Ave**

**Lakes, waterways, floodplains Wetland**

Yes, English Coulee, the proposed project will not have any impacts on the English Coulee

**Stormwater management**

No

**Hazardous materials sites**

No

**Hazardous materials on existing structure**

No

**Upland habitat**

No

**Endangered/threatened/migratory species**

No

**Section 4(f)** (Refers to the use of publicly owned park and recreational lands, wildlife and waterfowl refuges, and significant historical or archeological sites in transportation project development.)

No.

**Section 6(f)** (Refers to Land and Water Conservation Fund (LWCF) Act - the conversion to other use of lands or facilities acquired with LWCF Act funds and requires replacement of used land with lands of equal value and use.)

No

**Through/adjacent to tribal land**

No

**Additional comments on Environmental/Cultural Issues section**

N/A

**Miscellaneous Issues of Proposed Improvements**

**Construction Restrictions (*migratory bird, local events, etc.*)**

No

**Right-of-Way Required (parcels, owners, relocations, etc.)** (NOTE: It is recommended that local funds be used to acquire right-of-way on the LPA system.)

No

**Proposed Traffic Control during Construction**

Delineator Drums around construction areas, with flagging and detours as needed

**Ineligible Project Items**

None

**Additional comments on Miscellaneous Issues section**

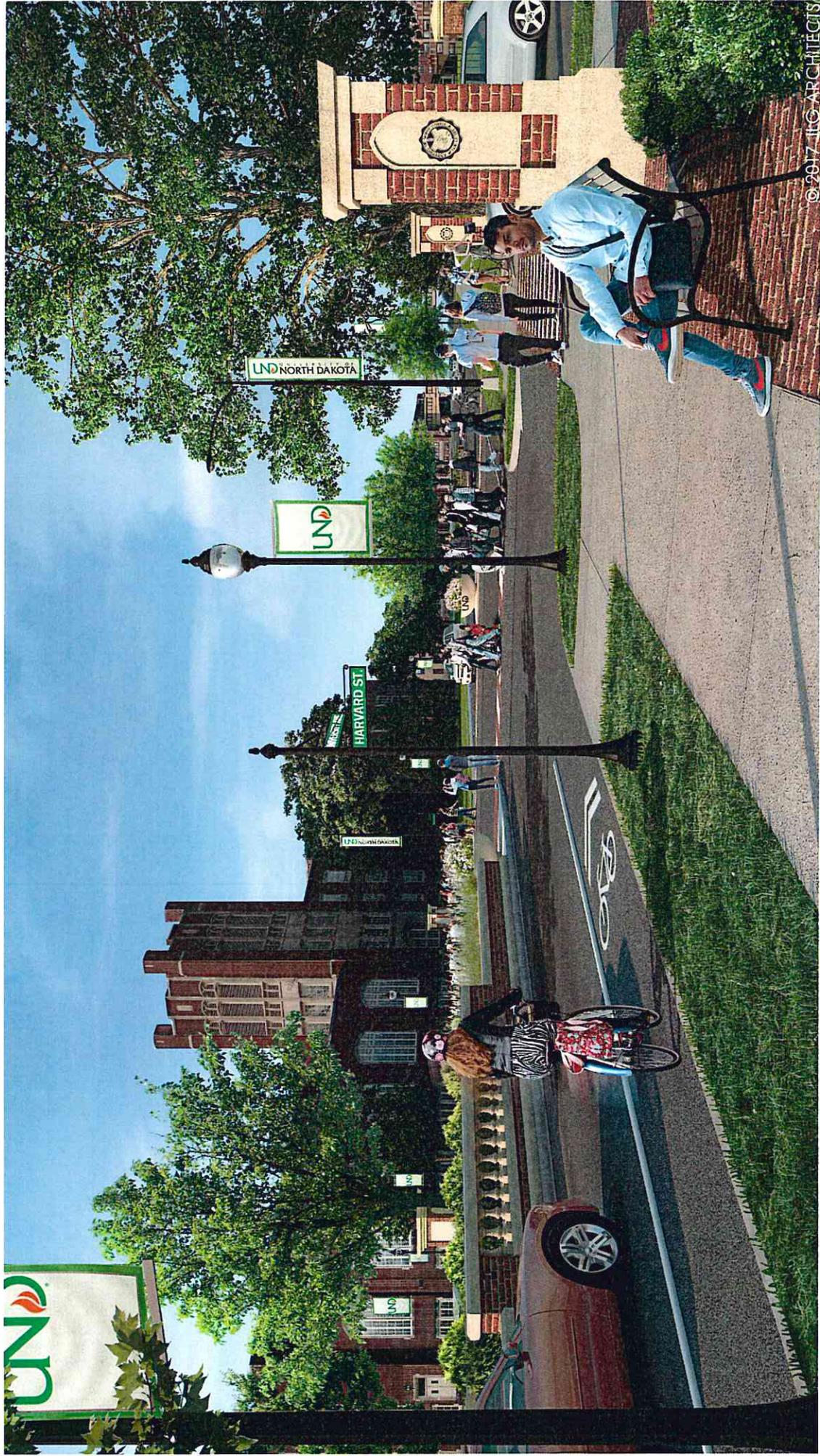
## Cost Estimate

**Itemized Project Cost Estimate (For roadway projects this might include things like preliminary engineering, right-of-way, utilities, construction, construction engineering, bridges, and miscellaneous. For other types of projects include relevant items. Rows can be added as to the following table as necessary).**

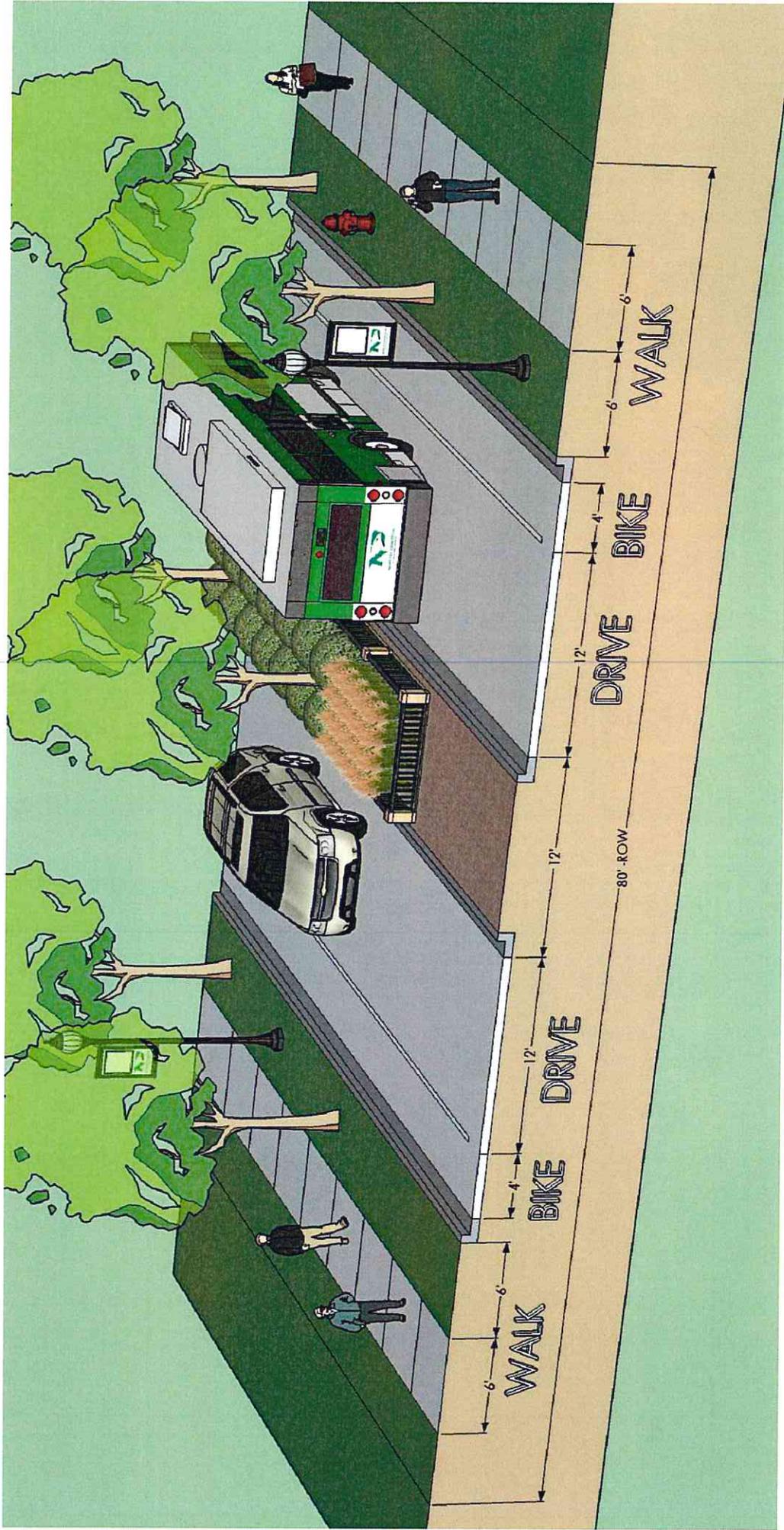
Item	Total	Federal	State	Local
Contract Bond	\$7,300	\$5,840		\$1,460
Topsoil - Imported	\$2,700	\$2,160		\$540
Hydraulic Mulch	\$900	\$720		\$180
Mobilization	\$35,000	\$28,000		\$7,000
Flagging	\$21,000	\$16,800		\$4,200
Traffic Control Signs	\$800	\$640		\$160
Type III Barricade	\$475	\$380		\$95
Delineator Drums	\$560	\$448		\$112
Concrete Foundations - matches with Ornamental (Pedestrian Lights)	\$37,400	\$29,920		\$7,480
Cable Trench (Type 1)	\$25,500	\$20,400		\$5,100
2 inch ridged conduit	\$5,400	\$4,320		\$1,080
Underground conductor (No 4 RHW/USE cu)	\$21,470	\$17,176		\$4,294
Underground Conductor (No 6 THW Grd)	\$7,695	\$6,156		\$1,539
Feedpoint Type IV	\$20,000	\$16,000		\$4,000
Pedestrian crossing signals	\$165,000	\$132,000		\$33,000
Ornamental (Pedestrian) Light Standards - 16' aluminum poles, 16" dia decorative base, 150' spacing each side of University Ave	\$102,000	\$81,600		\$20,400
Ornamental (Pedestrian) Light Fixture - LED luminaires, 150' spacing each side of University Ave 75' stagger	\$68,000	\$54,400		\$13,600
Bus Stops - site constructed of full custom pre-fab, no heating, includes decorative aprons and \$8,000 site furnishing allowance	\$204,000	\$163,200		\$40,800
Temporary planters - molded custom intersection name embossed	\$57,600	\$46,080		\$11,520
Street sign poles - aluminum decorative with cross arms no lights EMS 2 at each crossing	\$52,000	\$41,600		\$10,400
Benches custom	\$38,400	\$30,720		\$7,680
Trash receptacles - custom style to match benches, paired with recycle bins	\$17,600	\$14,080		\$3,520
Recycle bins - custom style to match benches paired with trash receptacles	\$17,600	\$14,080		\$3,520
Design Engineering (~10%)	\$91,300.00	\$0		\$91,300.00
Construction Engineering (~10%)	\$91,300.00	\$73,040.00		\$18,260.00
<b>Totals</b>	<b>\$1,091,000</b>	<b>\$799,760</b>	<b>\$0</b>	<b>\$291,240</b>

**What is the source of the local funds?**

The University of North Dakota



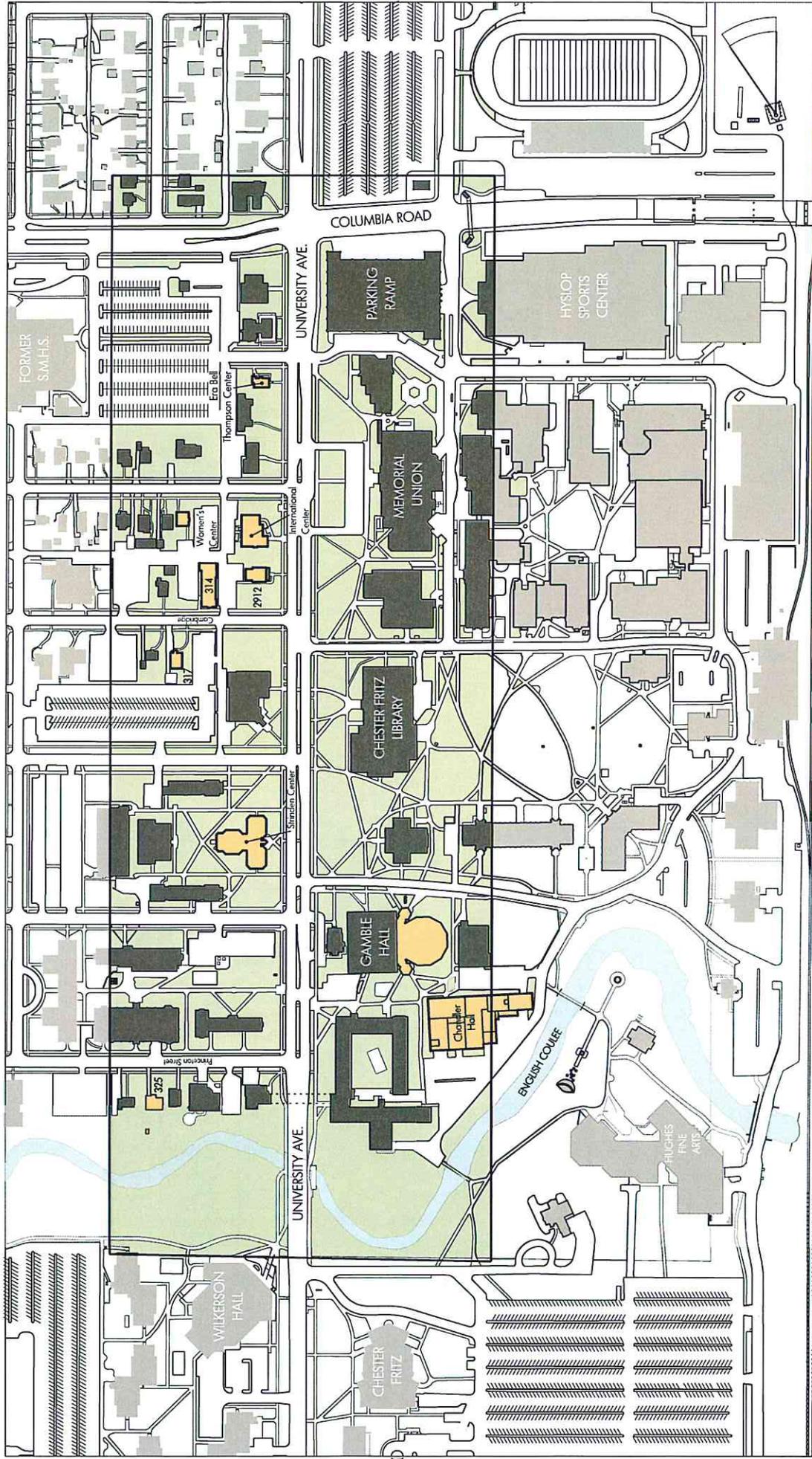
COULEE TO COLUMBIA RENDERING  
UND COULEE TO COLUMBIA MASTER PLAN



TYPICAL RIGHT OF WAY SECTION  
 UND COULEE TO COLUMBIA MASTER PLAN

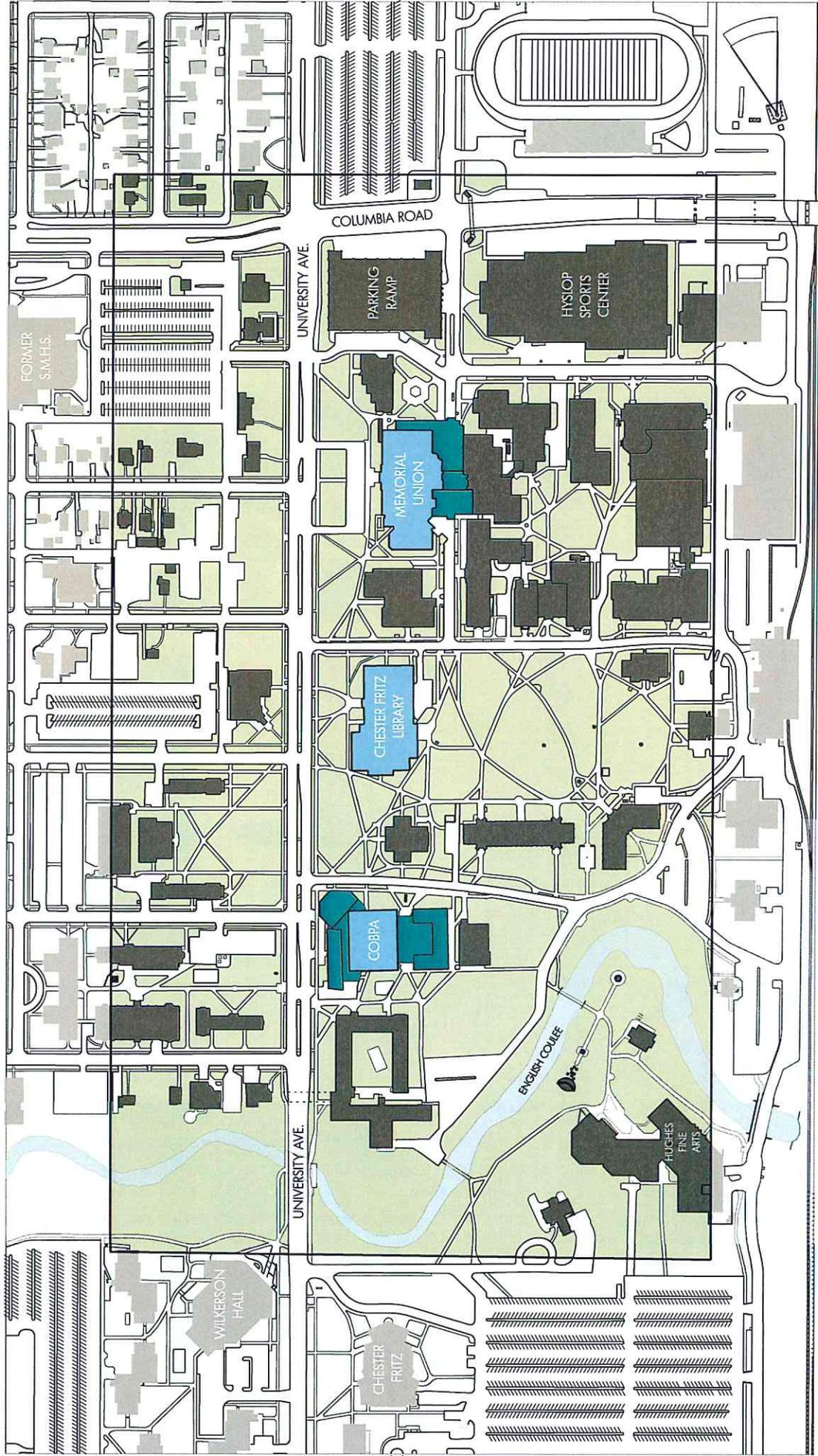


BUS SHELTERS  
UND COULEE TO COLUMBIA MASTER PLAN

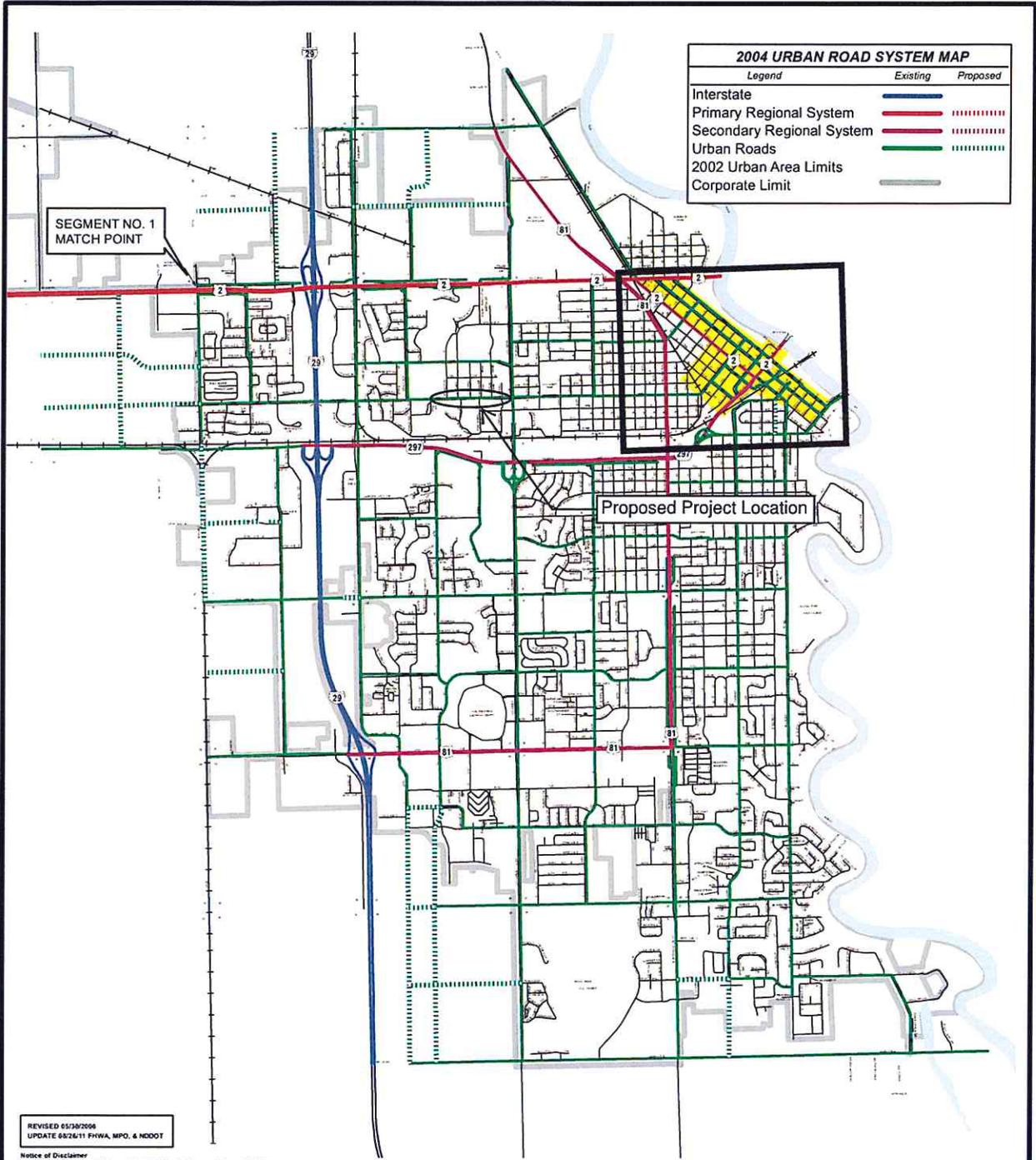


- EXISTING BUILDING
- PROPOSED DEMOLITION

# PROPOSED DEMOLITION PLAN UNIVERSITY OF COLUMBIA



# FUTURE SITE PLAN UND COULEE TO COLUMBIA MASTER PLAN



2004 URBAN ROAD SYSTEM MAP		
Legend	Existing Proposed	
Interstate		
Primary Regional System		
Secondary Regional System		
Urban Roads		
2002 Urban Area Limits		
Corporate Limit		

REVISED 05/30/2006  
UPDATE 08/26/11 FHWA, MPO, & NDDOT

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**DRAFT PROGRAM FOCUS AREA**



  
 2004  
 URBAN ROADS SYSTEM  
 2010 POPULATION 52,838  
**GRAND FORKS**  
 GRAND FORKS COUNTY  
 NORTH DAKOTA  
PREPARED BY  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING AND PROGRAMMING DIVISION  
IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 SCALE  
 0 1,750 3,500 7,000  
 Feet

F:\PLANNING\Steve\_Nelson\MXD\2011\DownArea\_Urban\_Grand Forks.mxd  
 GRAND FORKS, NORTH DAKOTA

City of Grand Forks University Avenue Medians  
 East Campus - Columbia Road to English Coulee (2500 LF)  
 19 January 2018



2020 BASE PROJECT EAST CAMPUS

Spec No.	Code	Description	Unit	Qty	Unit Cost	Cost	Notes
103	100	Contract Bond	LS	1	\$ 7,300	\$ 7,300	Approx 0.8% of construction cost
201	370	Removal of Trees	EA	0	\$ 650.00	\$ -	
202	114	Remove concrete pavement - existing median or pavement, 12' wide, does NOT incl C&G	SY	0	\$25.00	\$ -	1.33 SY per LF of median; assumes 1/3 will be removed
202	114	Remove concrete pavement - at new crosswalks	SY	0	\$25.00	\$ -	
202	130	Remove Curb and Gutter	LF	0	\$9.00	\$ -	Partial, selective removal
203	102	Common Excavation - Type B	CY	0	\$25.00	\$ -	0.5 CY per SY of median; high unit cost due to small equipment and scope
203	119	Topsoil - Imported	CY	150	\$18.00	\$ 2,700	No permanent landscaping
203	200	Hydraulic mulch	SY	180	\$5.00	\$ 900	No permanent landscaping
302	121	Aggregate Base Course - Class 5	CY	0	\$42.00	\$ -	12" thick, 0.5 CY per SY of median
570	650	Concrete Pavement Repair - Full Depth-Doweled	SY	0	\$125.00	\$ -	
702	100	Mobilization	L SUM	1	\$35,000	\$ 35,000	
704	100	Flagging	MHR	500	\$42.00	\$ 21,000	using 1/5 of NHU-6-297-(008) 000
704	1000	Traffic Control Signs	UNIT	400	\$2.00	\$ 800	using 1/5 of NHU-6-297-(008) 000
704	1052	Type III Barricade	EA	5	\$95.00	\$ 475	using 1/5 of NHU-6-297-(008) 000
704	1060	Deliminator Drums	EA	20	\$28.00	\$ 560	using 1/5 of NHU-6-297-(008) 000
709	151	Geosynthetic Material Type R1	SY	0	\$4.75	\$ -	1.5 SY per SY of median
748	140	Curb and Gutter Type 1 - each side of median island	LF	0	\$40.00	\$ -	Partial, selective removal
750	30	Pigmented Imprinted Concrete - median paving	SY	0	\$130.00	\$ -	12' wide, 12 SF (1.33 sy) per LF of median
750	30	Pigmented Imprinted Concrete - crosswalk paving	SY	0	\$130.00	\$ -	
750	200	Concrete Median Paving	SY	0	\$130.00	\$ -	Costs included in 750-30
750	210	Concrete Median Nose Paving	SY	0	\$150.00	\$ -	6@ 20 SY each, excludes radiused ends
770	0020	Concrete Foundation - matches with Ornamental (Pedestrian) lights	EA	34	\$1,100.00	\$ 37,400	Not included in 770 4090 below
770	0210	Cable Trench (Type 1)	LF	5100	\$5.00	\$ 25,500	
770	0330	2 inch dia rigid conduit	LF	750	\$7.20	\$ 5,400	
770	0504	Underground conductor (No. 4 RHW/USE, Cu)	LF	11300	\$1.90	\$ 21,470	
770	0605	Underground conductor (No. 6 THW Grd)	LF	5700	\$1.35	\$ 7,695	
770	0745	Feedpoint - Type IV	EA	2	\$10,000.00	\$ 20,000	Reduces to 1 if East and West are concurrent
772	2145	Pedestrian crossing signals	EA	3	\$55,000.00	\$ 165,000	ND DOT AABP 2017 (Nov 01, 2017) Item 772 2145
770	4090	Ornamental (Pedestrian) Light Standards - 16' aluminum poles, 16" dia decorative base, 150' spacing each side of Univ Ave on	EA	34	\$3,000.00	\$ 102,000	Holophane CHA 16 S51 12 P07 ABG BK pole; assumes new feed points for tie-in to existing electrical infrastructure along University Avenue; matches precedent established at Campus Road Bridge
770	4493	Ornamental (Pedestrian) Light Fixture - LED Luminares, 150' spacing each side of Univ Ave on 75' stagger	EA	34	\$2,000.00	\$ 68,000	Holophane GVD2 P30 50K AS M BK 3 N S BK F luminaire; assumes new feed points for tie-in to existing electrical infrastructure along University Avenue; matches precedent at Campus Road Bridge
970	SP	Median dividers - precast walls on frost-proof foundations; mixed with decorative fencing	LF	0	\$400.00	\$ -	
		Bus stops - site constructed or full custom pre-fab; no heating, includes decorative aprons and \$8,000 site furnishing allowance	EA	3	\$58,000.00	\$ 204,000	Basis of design pricing JLG report p 49; can range up to \$150k to match p 48 of JLG report



2020 BASE PROJECT EAST CAMPUS

Spec No.	Code	Description	Unit	Qty	Unit Cost	Cost	Notes
	EA	Campus entry corners @ Univ Ave and Columbia Road - 16' pier, 64 LF fencing, 6 monument piers, 710 SF decorative pavement 115 LF decorative landscape wall, 18 shrubs, 360 SF of perennial beds	EA	0	\$245,000	\$	Basis of design pricing pp 52-53 of JLG report
	EA	Campus entry @ Univ Ave and Columbia Road - 16' monument pier at opposing corner	EA	0	\$30,000	\$	Basis of design pricing is p 52 of JLG report
	EA	Street art/pavement art at crossings	EA	0	\$50,000	\$	
	EA	Building identification signage - masonry and stone, ground lighting; frost-depth footings	EA	0	\$18,000.00	\$0	Basis of design pricing is p 44 of JLG report
	EA	Pedestrian crossing monuments - 8' tall, masonry and stone	EA	0	\$18,000.00	\$0	2 @ ea crossing, 4 crossings per p 55 of JLG report, 2 included at Univ Park; campus entry included elsewhere; basis of design pricing is p 32 of JLG report
	EA	Pedestrian crossing landscaping	EA	0	\$11,000.00	\$0	Basis of design pricing p 56 of JLG report; decorative pavement, concrete landscape edging, perennial beds, perennial shrubs
	EA	Temporary planters - molded, custom, intersection name embossed	EA	12	\$4,800.00	\$57,600	Basis of design pricing is p 34 of JLG report
	EA	Street sign poles - aluminum, decorative, with cross arms, no lights, EMS; 2 at each crossing	EA	8	\$6,500.00	\$52,000	Basis of design pricing is p 43 of JLG report
	EA	Benches - custom	EA	8	\$4,800.00	\$38,400	Basis of design pricing is p 36 of JLG report
	EA	Trash receptacles - custom, style to match benches, paired with recycle bins	EA	8	\$2,200.00	\$17,600	Basis of design pricing is pp 36, 37, 39 of JLG report
	EA	Recycle bins - custom, style to match benches, paired with trash receptacles	EA	8	\$2,200.00	\$17,600	Basis of design pricing is p 39 of JLG report

PROJECT TOTAL \$908,400

	Proposed Cost Share		
	Federal %	Local %	Local \$
Construction Cost	80%	20%	\$726,720.00
Design Engineering (~10%)	0%	100%	\$0.00
Construction Engineering (~10%)	80%	20%	\$73,040.00
<b>Total</b>			<b>\$799,760.00</b>

% Total Project 73% 27%

## PROJECT SCOPING WORKSHEET

DATE: January 17, 2018

PRIORITY# 2021- URP

City: Grand Forks

Street: N Columbia Rd (Columbia Rd Overpass to University Ave)

County: Grand Forks

Length: ~1,300 ft

**Proposed Improvement: Reconstruction of N Columbia Rd from the Columbia Rd Overpass to approximately 300' north of University Ave. This project will likely also include realignment of Columbia Rd on the north side of University Ave to ease the jog in the alignment. The traffic signals are anticipated to either be rehabilitated or replaced, street lights are anticipated to be replaced. The storm sewer underneath this segment of Columbia Rd is anticipated to be replaced and sized to meet current design standards. The pedestrian underpass will need to be evaluated to determine if it is still warranted, and if rehabilitation is needed.**

Cost Estimates Breakdown (in \$1,000)							
Alternate	PE	R/W	Utility	Constr.	Bridges	Misc.	Total
				\$4,756		\$1,488	\$6,244

Present Road: Surface Width? 54'-76' back of curb-back of curb    Surface Type? Concrete

On Street Parking Allowed? No    Present: (No) One Side Both Sides Angle Parallel  
 Proposed: (No) One Side Both Sides Angle Parallel

<b>Proposed Improvements</b>		
ADT Present: 13,760 - 18,230	Yr: 2013	Travel Way Width : 24' x 2
ADT Design: 24,660	Design year: 2040	No. of Lanes: 4 Lane
Design Speed: 25mph		Roadway Width: 54'-76'
Maximum Curve: TBD	Min. R/W Width:	
Maximum Grade: 2%		

### Right of Way

Will Additional ROW or easement be acquired? No ROW acquisition by: N/A  
Has any ROW easements been acquired since 7-1-72: No ROW Condemnation by: N/A  
Est. No. of occupied family dwelling to be displaced? None  
Est. No. business to be displaced? None

### Impacts

Will there be any additional Impacts (Cultural and Environmental Resources): No  
Will there be any taking of any right-of-way from any public parkland (4F) or schools (6F): No  
Airports: No Public Hearings:  
Environmental Classification (Cat-Ex, EA, EIS): Documented Cat-Ex  
Transportation Enhancements: None  
Intermodal: Modify existing bike path crossings  
Pedestrian Needs: Realign and modify existing ADA curb ramps

### Railroads Crossings

RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
-	-	-	-	-	-	-

### Purpose and Need Statement:

1. N Columbia Rd was originally constructed in 1983. According to record drawings, the cross section is currently 8" of concrete on 12" of lime treated subgrade. Maintenance has included annual crack sealing and asphalt patching of potholes.
2. There are a total of four through lanes for north and south bound traffic. There are right and left turn lanes at major intersections. Through lanes are approximately 12' wide, and right and left turn lanes are approximately 12'.
3. There are numerous shattered slabs throughout the proposed length of the project as well as cracking faulting, and asphalt patching. In a recent pavement condition study the Pavement Condition Index (PCI) in this segment ranged from 37-69, with an average of 52. The International Roughness Index (IRI) ranged from 380-657, with an average of 527. A recent field inspection of the project location indicated that if a concrete panel replacement project were to be done in 2017, approximately 40% of the panels would be marked for replacement in addition to grinding the pavement to improve the ride quality.
4. There currently exists a jog in the alignment of N Columbia Rd on the north side of University Ave. This is particularly noticeable for southbound traffic.
5. There are existing driveways and access points which will need to be considered when realigning N Columbia Rd.

6. There are existing sidewalks and shared use paths adjacent to the proposed project. This project would include updating ADA ramps to compliance. In addition, the existing pedestrian underpass will need further inspection to determine additional work for rehabilitation or if it should be removed.
7. The existing storm sewer was originally installed in either 1955 or 1980 and appears to be undersized based on current standards. It will likely need to be replaced during the project.
8. The existing water lines which cross N Columbia Rd were installed in 1993 and 2000. No replacement or maintenance is anticipated. The existing sanitary sewer consists of a force main which was installed in 1960. From what information is available this pipe is in satisfactory condition and there is no known maintenance or replacement needs for this force main.
9. There are street lights on both sides of the road, and in the existing median. These street lights are believed to be 40' tall steel poles with davit arms and 250W High Pressure Sodium fixtures, which are believed to be American Electric Lighting No. 115\_25S\_R3\_DG or an equivalent thereof.
10. Within the Proposed project there are two traffic signals located at the intersections of 2<sup>nd</sup> Ave N & N Columbia Rd and University Ave & N Columbia Rd. Both of these signals are believed to have been originally constructed in 1983. Neither of these intersections appear on the 2016 High Crash Report from NDDOT. No additional turn lanes appear to be needed at this time.

Remarks:

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City Engineer: Allen N. Green

Date: 1/17/18

**Note: Please attach a map showing location and extent of the project.**

**Preliminary Engineer's Estimate  
Pavement Reconstruction on N Columbia Rd (Overpass to University)**

**Updated: 12/1/2016**

9" Concrete on 18" Salvage Base with Fabric

SPEC	CODE	ITEM	UNIT	UNIT PRICE	QUANTITY	ITEM COST
103	100	CONTRACT BOND	L SUM	\$ 27,600.00	1	\$ 27,600.00
702	100	MOBILIZATION	L SUM	\$ 276,000.00	1	\$ 276,000.00
704		TRAFFIC CONTROL	LSUM	\$ 138,000.00	1	\$ 138,000.00
		EROSION CONTROL	LSUM	\$ 56,000.00	1	\$ 56,000.00
202	114	REMOVAL OF CONCRETE PAVEMENT	SY	\$ 8.00	9,040	\$ 72,320.00
202	130	REMOVAL OF CURB & GUTTER	LF	\$ 5.00	3,025	\$ 15,125.00
202		REMOVAL OF PIPES ALL TYPES AND SIZES	LF	\$ 20.00	1,540	\$ 30,800.00
202		REMOVAL OF MANHOLES	EA	\$ 400.00	3	\$ 1,200.00
202		REMOVAL OF INLETS	EA	\$ 300.00	10	\$ 3,000.00
202		REMOVAL OF FOUNDATIONS - ALL SIZES	EA	\$ 1,000.00	8	\$ 8,000.00
203		TOPSOIL	CY	\$ 10.00	170	\$ 1,700.00
203		TOPSOIL IMPORTED	CY	\$ 20.00	60	\$ 1,200.00
203		COMMON EXCAVATION	CY	\$ 10.00	9,220	\$ 92,200.00
251	300	SEEDING CLASS III	ACRE	\$ 2,500.00	0.56	\$ 1,400.00
253	201	HYDRAULIC MULCH	ACRE	\$ 6,000.00	0.56	\$ 3,360.00
302	101	SALVAGE BASE COURSE	CY	\$ 45.00	4,600	\$ 207,000.00
550		9IN NON-REINF CONCRETE PAVEMENT CL AE	SY	\$ 85.00	8,136	\$ 691,560.00
550		9IN REINF CONCRETE PAVEMENT CL AE	SY	\$ 100.00	904	\$ 90,400.00
708		GEOSYNTHETIC MATERIAL TYPE R1	SY	\$ 2.00	10,885	\$ 21,770.00
714		PIPE CONC REINF 12IN CL III	LF	\$ 70.00	505	\$ 35,350.00
714		PIPE CONC REINF 18IN CL III	LF	\$ 80.00	165	\$ 13,200.00
714		PIPE CONC REINF 24IN CL III	LF	\$ 90.00	870	\$ 78,300.00
714		UNDERDRAIN PIPE PVC PERFORATED 4IN	LF	\$ 10.00	400	\$ 4,000.00
722		MANHOLE 60IN	LF	\$ 400.00	30	\$ 12,000.00
722		INLET-TYPE 1	EA	\$ 4,000.00	10	\$ 40,000.00
722		ADJUST GATE VALVE BOX	EA	\$ 500.00	5	\$ 2,500.00
722	6240	ADJUST UTILITY APPURTENANCE	EA	\$ 750.00	4	\$ 3,000.00
748	140	CURB & GUTTER-TYPE I	LF	\$ 30.00	3,025	\$ 90,750.00
750	100	SIDEWALK CONCRETE 4IN	SY	\$ 65.00	200	\$ 13,000.00
750	105	SIDEWALK CONCRETE BIKEWAY	SY	\$ 60.00	140	\$ 8,400.00
750	200	CONCRETE MEDIAN PAVING	SY	\$ 70.00	200	\$ 14,000.00
750	210	CONCRETE MEDIAN NOSE PAVING	SY	\$ 150.00	4	\$ 600.00
750		DRIVEWAY CONCRETE	SY	\$ 80.00	50	\$ 4,000.00
750	2115	DETECTABLE WARNING PANELS	SF	\$ 40.00	200	\$ 8,000.00
754		SIGNING	LSUM	\$ 25,000.00	1	\$ 25,000.00
762	118	STRIPING	LSUM	\$ 80,000.00	1	\$ 80,000.00
		UNDERPASS WORK	LSUM	\$ 100,000.00	1	\$ 100,000.00
770		2IN RIDGID CONDUIT	LF	\$ 10.00	5,000	\$ 50,000.00
770		UNDERGROUND CONDUCTOR NO4 TYPE RHW	LF	\$ 1.50	600	\$ 900.00
770		UNDERGROUND CONDUCTOR NO6 TYPE RHW	LF	\$ 1.00	1,400	\$ 1,400.00
770		FEEDPOINT TYPE IV PAD MOUNTED	EA	\$ 10,000.00	2	\$ 20,000.00
770		LTD STD 6FT MA 40FT MT HT BREAKAWAY	EA	\$ 3,000.00	18	\$ 54,000.00
770		LED LUMINAIRE	EA	\$ 1,000.00	22	\$ 22,000.00
770		REMOVE LIGHT STANDARDS	EA	\$ 1,000.00	18	\$ 18,000.00
772		TEMPORARY TRAFFIC SIGNALS	EA	\$ 60,000.00	2	\$ 120,000.00
772		REVISE TRAFFIC SIGNAL SYSTEM-SITE 1	EA	\$ 300,000.00	1	\$ 300,000.00
772		REVISE TRAFFIC SIGNAL SYSTEM-SITE 2	EA	\$ 300,000.00	1	\$ 300,000.00
772	9200	IT SYSTEM	L SUM	\$ 100,000.00	1	\$ 100,000.00

Subtotal \$ 3,257,035.00

2021 Subtotal (Inflated at 4%/year) \$ 3,962,700.00

20% Contingency \$ 793,300.00

Estimated Construction Costs \$ 4,756,000.00

15% Preliminary Engineering \$ 714,000.00

15% Construction Engineering \$ 714,000.00

Testing \$ 60,000.00

Estimated Project Costs \$ 6,244,000.00

1300 = Length of Utility  
\$ 3,658 = Cost per foot

Federal Share

80% Construction Costs \$ 3,804,800.00

80% Construction Engineering \$ 571,200.00

\$ 4,376,000.00

City Share

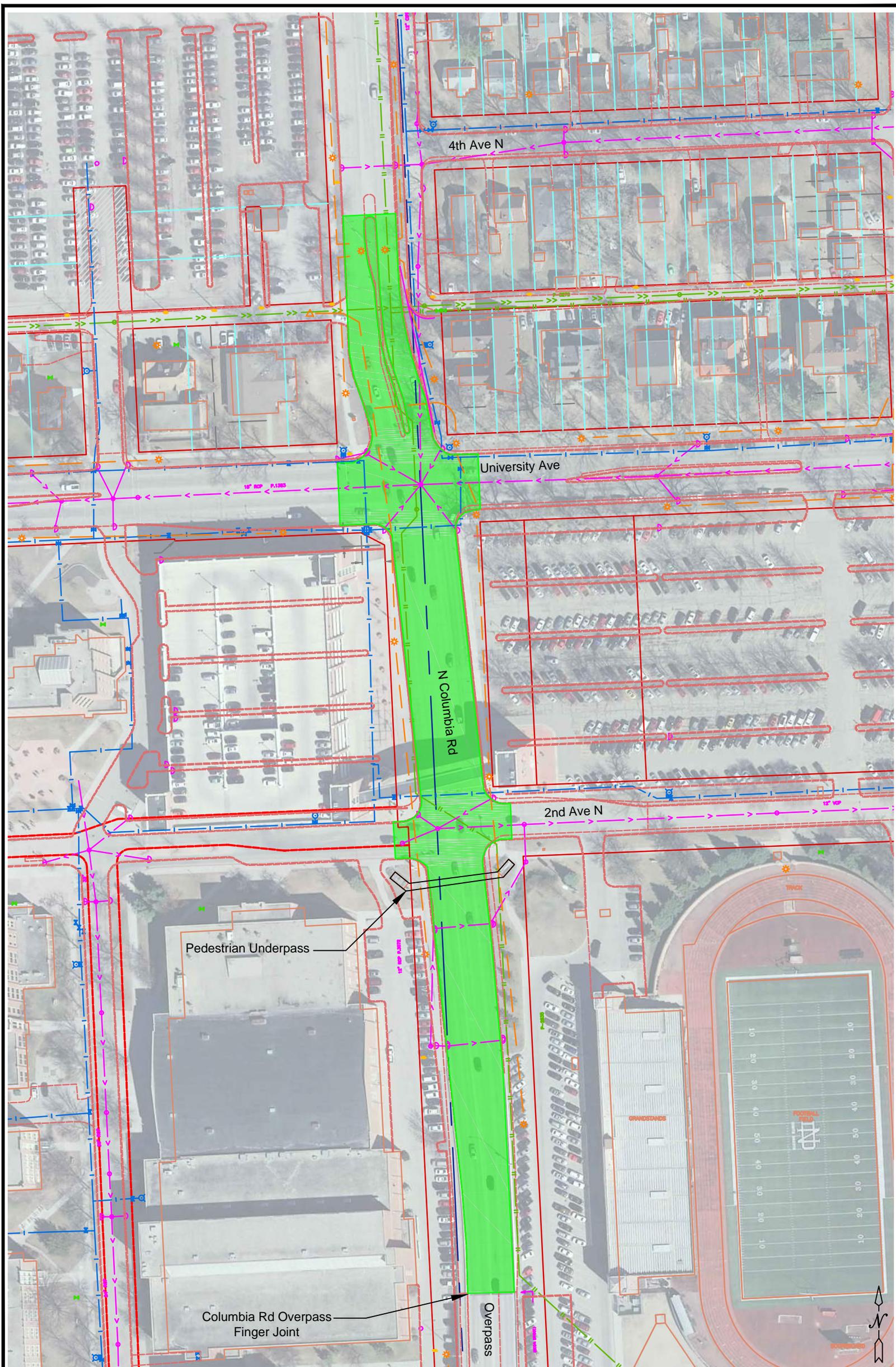
20% Construction Costs \$ 951,200.00

100% Preliminary Engineering \$ 714,000.00

20% Construction Engineering \$ 142,800.00

100% Testing \$ 60,000.00

\$ 1,868,000.00



Pedestrian Underpass

Columbia Rd Overpass  
Finger Joint

Overpass



CITY OF  
GRAND FORKS  
ENGINEERING  
DEPARTMENT

N Columbia Rd Reconstruction  
(Overpass to University Ave)

DATE  
12/1/2016

CITY PROJECT  
7578

SCALE  
NTS

PAGE  
1 of 1

# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

## Adjust Scoring Categories (Use TAB key to navigate.)

Category	Description	Weights	Points
<input type="checkbox"/> 1	Economic Vitality Support the economic vitality through enhancing the economic competitiveness of the metropolitan area by giving people access to	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 2	Security Increase security of the transportation system for motorized and nonmotorized uses.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 3	Accessibility and Mobility Increase the accessibility and mobility options to people and freight by providing more transportation choices.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 4	Environmental/Energy/QOL Protect and enhance the environment, promote energy conservation, and improve quality of life by valuing the unique	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 5	Integration and Connectivity Enhance the integration and connectivity of the transportation system, across and between modes for people and freight, and	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 6	Efficient System Management Promote efficient system management and operation by increasing collaboration among federal, state, local government to better	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 7	System Preservation Emphasize the preservation of the existing transportation system by first targeting federal funds towards existing infrastructure to spur	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 8	Safety Increase safety of the transportation system for motorized and nonmotorized uses.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 9	Local/Regional Factors Factors of local or regional importance	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No
1=Yes

Project Number

Project Name

### Category 1 Economic Vitality

<i>Support the economic vitality through enhancing the economic competitiveness of the metropolitan area by giving people access to jobs, education services as well as giving</i>		Assign score 0 or 1
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	0
C	Provides new access to jobs and opportunities	1
D	Improves connection to terminal (air, multimodal) on the last mile or two access	0
E	Located on arterial street	1

### Category 2 Security

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		Assign score 0 or 1
A	Installs equipment that improves the security of the transportation infrastructure	1
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinate/improves special events management plans	0

### Category 3 Accessibility and Mobility

<i>Increase the accessibility and mobility options to people and freight by providing more transportation choices.</i>		Assign score 0 or 1
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Implements local access control regulations	0
C	Enhances accessibility and mobility for all modes	1
D	Address existing LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to local businesses	0

### Category 4 Environmental/Energy/QOL

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life by valuing the unique qualities of all communities - whether urban, suburban, or rural.</i>		Assign score 0 or 1
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	1
C	Decreases fuel consumption which will reduce greenhouse gas	1
D	Avoids or minimize impacts to wetlands/natural habitats/cultural/historic resource	1
E	Incorporates innovative stormwater management techniques	1
F	Promotes nonmotorized travel	1

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
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Project Number

Project Name

N Columbia Rd (Overpass to University Ave) 2021

### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system, across and between modes for people and freight, and housing, particularly affordable housing located close to</i>		<b>Assign score 0 or 1</b>
A	Reduces excessive travel delays	0
B	Improves direct travel trips between regional major generators	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	0

### Category 6 Efficient System Management

<i>Promote efficient system management and operation by increasing collaboration among federal, state, local government to better target investments and improve accountability..</i>		<b>Assign score 0 or 1</b>
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system by first targeting federal funds towards existing infrastructure to spur revitalization, promote urban landscapes and</i>		<b>Assign score 0 or 1</b>
A	Utilize pavement management system results	1
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	0
E	Contributes to better system maintenance	1

### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Address locations identified as high crash locations in LRTP or corridor studies o	0
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
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**Project  
Number**

**Project  
Name**

N Columbia Rd (Overpass to University Ave) 2021

### Category 9 Local/Regional Factors

<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	1
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0



Railroads Crossings						
RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
BNSF Glasston 062501A	1	1 Concrete	2	0-25MPH	Gates, Flashing Lights, Signs	Same

### Purpose and Need Statement For Regional Projects

By 2022 there are anticipated to be 23 signalized intersections on the non-regional system in the City of Grand Forks. Of these, over 40% of the signalized intersections will be over 20 years old by 2022, and over 20% will be at least 35 years old by this time. This project is intended to rehabilitate the aging traffic signals on the non-regional system as needed on a signal by signal basis. This can include replacement of aged conduit and cable, upgrading pedestrian push buttons, replacement of outdated video detection and emergency detection equipment, replacing outdated controller cabinets and associated hardware, replacing aging fiber optic cable, signal heads and installation of new back plates with retroreflective borders. In the older signal systems this can also include rehabilitating the signal poles and mast arms by, sandblasting them free of paint, primer, scale, rust, etc to a clean bare metal surface and applying a fresh coat of epoxy primer and paint. The rehabilitation of these signals will prolong the life of these signals systems, and reduce the downtime and maintenance of signals caused by deteriorating connections, and aging equipment.

1. The street sections at each of these intersections vary considerably in cross section, age and maintenance.
2. The driving lanes and turning lanes vary at each intersection. The proposed project does not include changing these widths.
3. The condition of the street pavements at each of these intersections varies. The purpose of the proposed project does not include any rehabilitation or reconstruction work for the pavement at the proposed intersections.
4. The existing geometrics at each intersection varies. The proposed project does not include modifying any intersection geometrics.
5. The proposed project does not include any geometric or intersection modifications, therefore there should not be any access points of special concern.
6. The existing sidewalks and/or shared use paths located at the intersections vary. The proposed project scope does not include any modifications to sidewalks or shared use paths.
7. The condition of the existing storm sewer at each intersection vary. No storm sewer work is anticipated with this project

8. The condition of the existing water lines and sanitary sewer lines vary at each intersection. No sanitary sewer or water line work is anticipated with this project.
9. Existing street lights mounted on the traffic signals vary in size, length of mast arm, and luminaire. Each location will be evaluated for rehabilitation work during the project development phase.
10. See the attached sheet for location, age and anticipated level of maintenance for each traffic signal. Turn lanes are outside of the scope of this proposed project.

Remarks:

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City Engineer: Allen R. Gross

Date: 1/17/18

Intersection	NHS/Non-NHS	Yr of Orig Const or Major Rehab	Intermediate or Minimal Rehabilitation		Age in 2022	NHS System					Non-NHS System						
			Rev Yr	Rev Scope		Maj Rehab	Int Rehab	Min Rehab	Sandblast	No Work	Maj Rehab	Int Rehab	Min Rehab	Sandblast	No Work		
N 42nd St @ 6th Ave N	Non-NHS	2018			4												X
S Washington @ 44th Ave S	NHS	2017			5												
Columbia Rd @ 47th Ave S	NHS	2017			5												
Columbia Rd @ 13th Ave S	NHS	2016			6												
Columbia Rd @ 36th Ave S	NHS	2015			7												
Columbia Rd @ 40th Ave S	NHS	2015			7												
S 42nd St @ 11th Ave S	Non-NHS	2014			8												X
S Washington @ 40th Ave S	NHS	2014			8												
S Columbia Rd @ 11th Ave S	NHS	2013	2016	Flashing Yellow Heads	9												
S 5th St @ Kittson Ave	Non-NHS	2012			10												X
S Washington @ 47th Ave S	NHS	2009			13												
Columbia Rd @ 24th Ave S	NHS	2008	2014	New Foundations	14												
Columbia Rd @ 28th Ave S	NHS	2003			19												
N 42nd St @ University Ave	Non-NHS	2001			21												
S 42nd St @ 17th Ave S	NHS	2001			21		X										
17th Ave S @ S 34th St	Non-NHS	2000			22												
S 20th St @ 24th Ave S	Non-NHS	2000			22												
Columbia Rd @ 6th Ave N	NHS	1995			27	X											
Columbia Rd @ 2nd Ave N	NHS	1984			38	X											
Columbia Rd @ University Ave	NHS	1984			38	X											
Columbia Rd @ 17th Ave S	NHS	1979	1992	5 section heads	43	X											
17th Ave S @ S 20th St	Non-NHS	Pre1979			43+												X
4th Ave S @ Cherry St	Non-NHS	Pre1979			43+												X
Lt Turn phase = Left Turn Phase Cabinet = Controller Cabinet Ped H&B = Pedestrian Signal Heads and Push Buttons Ped Heads = Pedestrian Signal Heads Vid Det = Video Detection Cameras and equipment Em Det = Emergency Vehicle Detection equipment Det Loops = Detection Loops * = May be included in requested HSIP Projects	Maj Rehab Int Rehab Min Rehab Sandblast No Work	<u>General Scope of Work</u>					Primary Regional					Secondary Regional					
		Replacement of Cabinet, Cable/Conduit, Vid Det, Em Det, Ped Push B Quantity					Maj Rehab	Int Rehab	Min Rehab	Sandblast	No Work	Maj Rehab	Int Rehab	Min Rehab	Sandblast	No Work	
		Replacement of Cabinet Equipment, Vid Det, Em Det, Ped Push Butto Cost/Unit					4	1	3	4	7	2	3	0	2	3	
		Replacement of Signal Heads and Backplates, other minor work as ne Total Cost					\$250,000	\$165,000	\$30,000	\$100,000	\$0	\$250,000	\$165,000	\$30,000	\$100,000	\$0	
		Sandblasting and painting of poles and mast arms (signals >25 years old)					\$1,000,000	\$165,000	\$90,000	\$400,000	\$0	\$500,000	\$495,000	\$0	\$200,000	\$0	
No work is anticipated to take place at this signal				NHS Total \$1,655,000					Non-NHS Total \$1,195,000								
									Construction Total \$2,850,000								
									Engineering \$250,000								
									Project Total \$3,100,000								

# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

## Adjust Scoring Categories (Use TAB key to navigate.)

Category	Description	Weights	Points
<input type="checkbox"/> 1	Economic Vitality Support the economic vitality through enhancing the economic competitiveness of the metropolitan area by giving people access to	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 2	Security Increase security of the transportation system for motorized and nonmotorized uses.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 3	Accessibility and Mobility Increase the accessibility and mobility options to people and freight by providing more transportation choices.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 4	Environmental/Energy/QOL Protect and enhance the environment, promote energy conservation, and improve quality of life by valuing the unique	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 5	Integration and Connectivity Enhance the integration and connectivity of the transportation system, across and between modes for people and freight, and	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 6	Efficient System Management Promote efficient system management and operation by increasing collaboration among federal, state, local government to better	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 7	System Preservation Emphasize the preservation of the existing transportation system by first targeting federal funds towards existing infrastructure to spur	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 8	Safety Increase safety of the transportation system for motorized and nonmotorized uses.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="checkbox"/> 9	Local/Regional Factors Factors of local or regional importance	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

Project Number

Project Name

Traffic Signal Rehabilitation Non-Regional Road System - 2022

### Category 1 Economic Vitality

<i>Support the economic vitality through enhancing the economic competitiveness of the metropolitan area by giving people access to jobs, education services as well as giving</i>		Assign score 0 or 1
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	0
D	Improves connection to terminal (air, multimodal) on the last mile or two access	0
E	Located on arterial street	1

### Category 2 Security

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		Assign score 0 or 1
A	Installs equipment that improves the security of the transportation infrastructure	1
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinate/improves special events management plans	0

### Category 3 Accessibility and Mobility

<i>Increase the accessibility and mobility options to people and freight by providing more transportation choices.</i>		Assign score 0 or 1
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Implements local access control regulations	0
C	Enhances accessibility and mobility for all modes	1
D	Address existing LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to local businesses	0

### Category 4 Environmental/Energy/QOL

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life by valuing the unique qualities of all communities - whether urban, suburban, or rural.</i>		Assign score 0 or 1
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	1
C	Decreases fuel consumption which will reduce greenhouse gas	0
D	Avoids or minimize impacts to wetlands/natural habitats/cultural/historic resource	1
E	Incorporates innovative stormwater management techniques	0
F	Promotes nonmotorized travel	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No
1=Yes

**Project Number**

**Project Name**

Traffic Signal Rehabilitation Non-Regional Road System - 2022
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### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system, across and between modes for people and freight, and housing, particularly affordable housing located close to</i>		<b>Assign score 0 or 1</b>
A	Reduces excessive travel delays	0
B	Improves direct travel trips between regional major generators	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	1

### Category 6 Efficient System Management

<i>Promote efficient system management and operation by increasing collaboration among federal, state, local government to better target investments and improve accountability..</i>		<b>Assign score 0 or 1</b>
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system by first targeting federal funds towards existing infrastructure to spur revitalization, promote urban landscapes and</i>		<b>Assign score 0 or 1</b>
A	Utilize pavement management system results	0
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	0
E	Contributes to better system maintenance	1

### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Address locations identified as high crash locations in LRTP or corridor studies o	0
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

**Project Number**

**Project Name**

Traffic Signal Rehabilitation Non-Regional Road System - 2022
---

### Category 9 Local/Regional Factors

<i>Factors of local or regional importance</i>		Assign score 0 or 1
<b>A</b>	Conformance with regional or state plan	0
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0



Railroads Crossings						
RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
None						

**Purpose and Need Statement For Regional Projects**

I-29 was originally constructed around 1968, at the time of its construction four interchanges were constructed in or around the city of Grand Forks. These interchanges included: N Washington St, Gateway Dr/US 2, Demers Ave (ND SH 297), and 32<sup>nd</sup> Ave S/Bus US 81. These interchanges have been in place for nearly 50 years, with no additional interchanges being built within the city limits. There are also two overpasses located at University Ave and at Merrifield Rd/County Rd 6. Over that time the City of Grand Forks has grown from a population of approximately 39,000 to approximately 57,000. Though the city of Grand Forks has grown, the city’s growth has been dense with a population density of 2,723/sq mi. Grand Forks’ population density exceeds other similar cities within North Dakota:, Fargo – 2,318/sq mi, Bismarck - 2,034/sq mi, West Fargo - 1,924/sq mi, Minot – 1,719/sq mi, Williston – 1,083/sq mi<sup>1</sup>.

With the increased population of Grand Forks, comes increase transportation needs, and associated traffic congestion on the existing infrastructure. In the summer of 2017 an I-29 Traffic Operations Report was completed looking at the I-29 corridor around the city. This report noted numerous times that the projected traffic volumes at the most southern existing interchange located at US Bus 81/32<sup>nd</sup> Ave S would have extreme levels of congestion, traffic cuing onto the interstate, and nearby intersections operating at a level of service F by 2025. This study looked at multiple aspects to prevent these issues from occurring in the future. This included, looking at non interstate improvements to encourage local traffic to use existing arterial roadways, improvements to the existing interchanges, and construction of new interchanges.

The study first looked at non-interstate improvements to encourage local traffic to use the existing arterial roadway system and reduce the traffic using the interstate. This included widening existing north-south arterial roadways such as 42<sup>nd</sup> St and Columbia Rd, improving some intersections including a continuous flow intersection, as well as adding dual left turn lanes, and realigning roadways to have better accessibility. The results of this scenario showed that these projects did not reduce demand onto I-29, and in some cases actually increased the volume of traffic onto I-29.

1. <http://www.towncharts.com/North-Dakota/Top-25-Cities-in-North-Dakota-ranked-by-Population-Density.html>

Another aspect which was explored was improvements to the interchange at 32<sup>nd</sup> Ave S/Bus US 81. Some of these alternatives included widening 32<sup>nd</sup> Ave S/Bus US 81, consolidating the east ramp, adding a northwest loop ramp, adding a southwest loop ramp, reconstructing the interchange to a diverging diamond interchange, and a diverging diamond with a partial cloverleaf. Of the available alternatives, only in two scenarios could 95% of the PM peak volumes in 2040 could be processed. In the summary of these alternatives the study states **“None of the alternatives studied under the Existing Interstate Access Scenario, without a 47<sup>th</sup> Avenue interchange, meet the established [Purpose and Needs] because they cannot improve operations to an acceptable level.”**

This report also evaluated the 32<sup>nd</sup> Ave S/Bus US 81 interchange with a new interchange constructed at 47<sup>th</sup> Ave S. By constructing a new interchange at 47<sup>th</sup> Ave S, traffic volumes on 32<sup>nd</sup> Ave S/Bus US 81 are forecasted to be reduced by approximately 40%. Evaluating available alternatives under this scenario 32<sup>nd</sup> Ave S/Bus US 81 could utilize the least expensive option of “Spot Improvements” and would be able to support anticipated traffic volumes and intersections are forecasted to operate at LOS D or better.

The proposed project for this NEPA document is to construct a new interchange on I-29 and connect to 47<sup>th</sup> Ave S to address the congestion and level of service issues on Bus US 81/32<sup>nd</sup> Ave S. The report identified a number of alternatives for consideration for this interchange.

Remarks:

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City Engineer: Allen N. Kuss

Date: 1/17/18

District Engineer: Debbie W. Boehlke

Date: 1/18/18

**Project: I-29 and 47th Ave S Interchange  
Environmental Document  
1/25/2018**

Estimated Cost            \$2,000,000

Proposed Cost Share

Federal	40%	\$800,000
State	10%	\$200,000
Local	50%	\$1,000,000
<u>Total</u>	<u>100%</u>	<u>\$2,000,000</u>

## 32<sup>ND</sup> AVENUE/US 81B

32<sup>nd</sup> Avenue/US 81B serves a large majority of commercial activity in Grand Forks. Daily traffic volumes from 2015 along this corridor range from approximately 11,300 vehicles per day west of I-29 to 16,300 vehicles per day east of I-29. The areas surrounding I-29 at 32<sup>nd</sup> Avenue/US 81B and heading south to 47<sup>th</sup> Avenue are forecasted to be the largest population and employment growth centers in the city. Specifically, 58 percent of new employment opportunities are expected to occur within one-mile of either the 32<sup>nd</sup> Avenue/US 81B interchange or the 47<sup>th</sup> Avenue corridor. By 2040, this amount of growth is expected to result in traffic volumes around 43,000 vehicles per day east of I-29 and 23,000 vehicles per day west of I-29. This results in oversaturated interchange operations, producing long delays and queues by 2040.

Analysis completed for the Macro Level Alternatives Analysis found that the construction of a 47<sup>th</sup> Avenue interchange would have significant tangible benefits to the 32<sup>nd</sup> Avenue/US 81B interchange, potentially mitigating the need for costly widening at I-29 east to Columbia Road. The 32<sup>nd</sup> Avenue/US 81B intersection would experience more than 40 percent traffic reduction under this scenario, where other interchanges experienced far less. This necessitated a need to evaluate different interchange scenarios with and without the 47<sup>th</sup> Avenue interchange. Alternatives were analyzed under the Existing Interstate Access Scenario (no 47<sup>th</sup> Avenue interchange), which assumes a six-lane section on 32<sup>nd</sup> Avenue/US 81B, and the 47<sup>th</sup> Avenue Interchange Scenario, which assumes a four-lane section on 32<sup>nd</sup> Avenue/US 81B.

The Merrifield Road/CR 6 Interchange Infrastructure will also be considered later in this chapter but had minimal impacts to the overall operations of 32<sup>nd</sup> Avenue/US 81B. The combination of the 47<sup>th</sup> Avenue Interchange and the Merrifield Road/CR 6 Interchange provided similar benefits to 32<sup>nd</sup> Avenue/US 81B as the 47<sup>th</sup> Avenue interchange in isolation.

## ANALYSIS METHODOLOGY

Analysis for this interchange location used the Value Planning approach detailed previously in this report.

## INTERCHANGE ALTERNATIVES

### EXISTING INTERSTATE ACCESS SCENARIO

As described above, this scenario does not include any additional interchange infrastructure. This means the future development expected in the southwest metro will be funneled to the 32<sup>nd</sup> Avenue/US 81B corridor for access onto and across the interstate.

### Widen Only Alternative

The Widen Only Alternative (WO) would add one through lane in each direction on 32<sup>nd</sup> Avenue/US 81B from the 42<sup>nd</sup> Street west frontage road to east of 38<sup>th</sup> Street, as well as traffic control at the 42<sup>nd</sup> Street west frontage road and turn lanes at all four study intersections which would require bridge widening. The WO alternative is treated as the baseline for comparisons against other alternative designs; the true do nothing alternative model broke down and could not accurately replicate queues and delay.

Even with the additional capacity, this alternative was unable to be properly calibrated during the 2040 P.M. peak, with 15.2 percent latent demand. This means more than 1,500 vehicles did not enter the model so their delay has not been incorporated into the overall network delay and is not acceptable for analysis.

Based on the traffic the model could process, long queues, in excess of 1,000 feet are expected at all four study intersections. Levels of service are deficient at all study intersections, excluding the East Ramp intersection. It is important to note that the queues extending onto I-29 are likely not being incorporated into the East Ramp delay.

The estimated cost for this alternative was \$7.7 million which only included widening the bridge and the difference between reconstructing 32<sup>nd</sup> Avenue/US 81B as a four-lane section and reconstructing and widening as a six-lane section. This planning level cost should be further refined but was used as a baseline cost. Value planning scores for this alternative can be seen in Table 7-17.

# MICRO LEVEL ALTERNATIVES ANALYSIS

Table 7-17: 32<sup>nd</sup> Avenue/US 81B Widen Only Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 57.1, LOS "E"</li> <li>▪ P.M. Peak Average: 92.2, LOS "F"</li> </ul>	0*
Mainline Operations	<ul style="list-style-type: none"> <li>▪ Average A.M. Peak: 12.8, LOS "B"</li> <li>▪ Average P.M. Peak: 94.4 LOS "F"</li> </ul>	0*
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ No additional environmental impacts expected.</li> </ul>	8
Safety	<ul style="list-style-type: none"> <li>▪ Baseline crash potential distribution for alternative comparison:                             <ul style="list-style-type: none"> <li>» 6.5% Crossing Crash Potential</li> <li>» 62.5% Rear End Crash Potential</li> <li>» 31.0% Sideswipe Crash Potential</li> </ul> </li> </ul>	9
Cost	<ul style="list-style-type: none"> <li>▪ \$7.7 Million**</li> </ul>	10
<b>Total</b>		<b>27</b>

\*Score of zero assigned because model could not be calibrated. Not all delay considered.

\*\*Includes planning level costs on a per mile basis.

## Consolidated East Ramp

The Consolidated East Ramp (CER) Alternative would add a through lane in each direction as well as realign 42<sup>nd</sup> Street east of I-29 with the East Ramp. This helps split southbound traffic at 38<sup>th</sup> Street, a major bottleneck along the corridor. This alternative also incorporates double left turn lanes at 38<sup>th</sup> Street, a northbound right turn lane, westbound left and a traffic control signal at the 42<sup>nd</sup> Street west frontage road. It requires bridge widening. This alternative also incorporates two loops in the southeast and southwest quadrants, which helps eliminate crossing conflicts and improves operational efficiency by allowing a two-phase signal controller.

This alternative had 4.7 percent latent demand during the 2040 P.M. peak, which is acceptable for calibration according to FHWA standards. During the 2040 P.M. peak, operations at 42<sup>nd</sup> Street frontage road and 38<sup>th</sup> Street are deficient at LOS "E", while the two ramp intersections operate at LOS "D"; delays at the ramp intersections produce long queues onto the interstate. There are no operational concerns during the 2040 A.M. peak hour.

This alternative reduces crossing crash potential by 24.1 percent and rear-end potential by 49.0 percent when compared against the WO alternative. Sideswipe crash potential is increased by 188.6 percent when compared against the Widen Only alternative.

Value planning scores for this alternative can be seen in Table 7-18 with planning level design layout in Figure 7-26.

Table 7-18: 32<sup>nd</sup> Avenue/US 81B Consolidated East Ramp Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	<ul style="list-style-type: none"> <li>» A.M. Peak Average: 18.1, LOS "A"</li> <li>» P.M. Peak Average: 62.0, LOS "E "</li> </ul>	5
Mainline Operations	<ul style="list-style-type: none"> <li>» Average A.M. Peak: 11.92, LOS "B"</li> <li>» Average P.M. Peak: 55.1 LOS "F"</li> </ul>	4
Environmental Impacts	<ul style="list-style-type: none"> <li>» No significant new environmental impacts. 3.5 acres of ROW required.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>26.2% increase in crash potential when compared against Widen Only Alternative                             <ul style="list-style-type: none"> <li>» 24.1% Reduction in Crossing Crash Potential</li> <li>» 49.0% Reduction in Rear End Crash Potential</li> <li>» 188.6% Increase in Sideswipe Crash Potential</li> </ul> </li> </ul>	0
Cost	<ul style="list-style-type: none"> <li>» \$30.9 Million</li> </ul>	0
<b>Total</b>		<b>15</b>

## Northwest Loop Ramp

The Northwest Loop Ramp (NWL) Alternative incorporates a northwest loop on-ramp for westbound to southbound movements, turn lanes at adjacent intersections and traffic control at the 42<sup>nd</sup> Street west frontage road. This alternative requires widening the 32<sup>nd</sup> Avenue/US 82B bridge to accommodate additional through lanes. Due to the posted speeds and the ROW constraints, only a small radius could be constructed. This requires parallel merge lanes to ensure safe and efficient merging.

This alternative had 10.0 percent latent demand during the 2040 P.M. peak, which is not acceptable for calibration according to FHWA standards. Nearly 1,000 vehicles were unable to enter the network during the 2040 P.M. peak. However, based on the vehicles processed, the 42<sup>nd</sup> Street west frontage roads and 38<sup>th</sup> Street intersections were deficient at LOS “F” with the ramp intersections operating at LOS “E”. Queues at the ramp intersection extend onto the interstate, completely blocking all through lanes.

During the 2040 A.M. peak, only the 38<sup>th</sup> Street intersection is deficient at LOS “E”. There are no queueing concerns.

Value planning scores for this alternative can be seen in Table 7-19 with planning level design layout in Figure 7-27.

*Table 7-19: 32<sup>nd</sup> Avenue/US 81B Northwest Loop Ramp Interchange Alternative (Existing Interstate Access Scenario)*

	Results (2040 Conditions)	Score
Local Operations	» A.M. Peak Average: 39.1, LOS “D” » P.M. Peak Average: 99.4, LOS “F”	0*
Mainline Operations	» Average A.M. Peak: 13.3, LOS “B” » Average P.M. Peak: 54.4, LOS “F”	0*
Environmental Impacts	» No significant environmental impacts. Two acres of ROW required and some access revisions.	6
Safety	14.8% increase in crash potential when compared against Widen Only Alternative » 128.2% Increase in Crossing Crash Potential » 16.4% Reduction in Rear End Crash Potential » 53.6% Increase in Sideswipe Crash Potential	4
Cost	» \$27.8 Million	1
<b>Total</b>		<b>11</b>

\*Score of zero assigned because model not calibrated. Not all delay considered.

## Southwest Loop Ramp

The Southwest Loop Ramp (SWL) Alternative incorporates a southwest loop off-ramp for southbound to eastbound movements, turn lanes at adjacent intersections and traffic control at 44<sup>th</sup> Street. This alternative requires widening the 32<sup>nd</sup> Avenue/US 81B bridge to accommodate additional through lanes and access revisions to the 42<sup>nd</sup> Street west frontage road which allowed for a RIRO access on the northside of 32<sup>nd</sup> Avenue/US 81B but closed the access on the southside.

This alternative had 3.1 percent latent demand during the 2040 P.M. peak, which is acceptable for calibration according to FHWA standards. During the 2040 P.M. peak, operations at the East Ramp are deficient at LOS “E” with queues that extend onto the interstate. The 38<sup>th</sup> Street and 44<sup>th</sup> Street intersections are deficient at LOS “F” and LOS “E” respectively. The 44<sup>th</sup> Street intersection would be improved with a double left-turn lane. However, that would require two receiving lanes which would have building impacts. At this time, a single left-turn lane was analyzed.

During the 2040 A.M. peak, all intersections operate at LOS “C” or better except the 38<sup>th</sup> Street intersection which operates at LOS “E”. There are no queueing concerns at the ramp intersections.

The SWL Alternative reduces crossing crash potential by 42.1 percent and rear-end crash potential by 40.2 percent. Sideswipe crash potential is increased 88.3 percent.

Value planning scores for this alternative can be seen in Table 7-20 with planning level design layout in Figure 7-28.

# MICRO LEVEL ALTERNATIVES ANALYSIS

Table 7-20: 32<sup>nd</sup> Avenue/US 81B Southwest Loop Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	» A.M. Peak Average: 27.9, LOS "C" » P.M. Peak Average: 57.6, LOS "E"	5
Mainline Operations	» Average A.M. Peak: 13.2, LOS "B" » Average P.M. Peak: 23.9, LOS "D"	7
Environmental Impacts	» No significant environmental impacts. Two acres of ROW required and some access revisions.	6
Safety	0.5% decrease in crash potential when compared against Widen Only Alternative » 42.1% Reduction in Crossing Crash Potential » 40.2% Reduction in Rear End Crash Potential » 88.3% Increase in Sideswipe Crash Potential	10
Cost	» \$23.5 Million	5
<b>Total</b>		<b>33</b>

## Diverging Diamond Interchange

The Diverging Diamond Interchange (DDI) Alternative requires the two directions of traffic on 32<sup>nd</sup> Avenue/US 81B to cross to the opposite side of the road under the I-29 bridge. This allows left-turning and right-turning traffic to perform a free flow movement onto the interstate on-ramp. The free-flowing movements reduce the signal phases to two at each intersection, significantly reducing delays. The right-turn slip ramp on the southbound I-29 on-ramp requires access management at the 42<sup>nd</sup> Street west frontage road. This alternative requires widening the 32<sup>nd</sup> Avenue/US 81B bridge to accommodate additional through lanes. A backage road was configured with a signal incorporated at 44<sup>th</sup> Street.

This alternative had 6.0 percent latent demand during the 2040 P.M. peak, which is not acceptable for calibration according to FHWA standards. More than 600 vehicles were unable to enter the network during the 2040 P.M. peak. However, based on the vehicles processed, the West Ramp intersection and 38<sup>th</sup> Street intersection were deficient with LOS "E" during the 2040 P.M. peak. Queues at the West Ramp and East Ramp extend back onto the interstate. During the 2040 A.M. peak all intersections operate at LOS "D" or better with no queuing concerns. The DDI alternative increases crossing crash potential by 23.7 percent and sideswipe crash potential by 18.0 percent but decreases rear end crash potential by 9.4 percent.

Value planning scores for this alternative can be seen in Table 7-21: 32<sup>nd</sup> Avenue/US 81B Diverging Diamond Interchange Alternative (Existing Interstate Access Scenario) with planning level design layout in Figure 7-29.

Table 7-21: 32<sup>nd</sup> Avenue/US 81B Diverging Diamond Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	» A.M. Peak Average: 23.2, LOS "C" » P.M. Peak Average: 50.8, LOS "D"	0*
Mainline Operations	» Average A.M. Peak: 13.3, LOS "B" » Average P.M. Peak: 77.0, LOS "F"	0*
Environmental Impacts	» No significant environmental impacts. Two acres of ROW required and some access revisions.	6
Safety	1.3% increase in crash potential when compared against Widen Only Alternative » 23.7% Increase in Crossing Crash Potential » 9.4% Reduction in Rear End Crash Potential » 18.0% Increase in Sideswipe Crash Potential	9
Cost	» \$22.1 Million	6
<b>Total</b>		<b>21</b>

\*Score of zero assigned because model not calibrated. Not all delay considered.

## Diverging Diamond Partial Cloverleaf

Additional analysis was completed for the 2040 P.M. peak hour using a diverging diamond partial cloverleaf design, shown in Figure 7-23. This uses a diverging diamond interchange concept with bypass lanes to a northwest loop ramp and southeast loop ramp. It would require access control at the 42<sup>nd</sup> Street west frontage road, double left-turn lanes on all approaches at 38<sup>th</sup> Street and would require significant bridge widening. This design has similar free flow movements and signal phase efficiency as the DDI alternative.

This alternative was only analyzed under the 2040 P.M. peak hour to determine if further analysis should be completed. With 4.7 percent latent demand it was technically calibrated. However, the 44<sup>th</sup> Street and 38<sup>th</sup> Street intersections were still deficient and queuing onto I-29 still occurred. Since this alternative did not have acceptable operations, no further analysis was completed.

*Figure 7-23: Diverging Diamond Partial Cloverleaf Alternative (Existing Interstate Access Scenario)*



## Summary of Alternatives Under Existing Interstate Access Scenario

The growth areas planned for the southwest metro result in more than 160 percent growth on 32<sup>nd</sup> Avenue/US 81B as this corridor is the only access across and onto I-29. This growth results in extreme congestion, to an extent where three of the five alternatives (WO, NWL, DDI) analyzed cannot process at least 95 percent or more of projected 2040 P.M. peak hour traffic, resulting in the inability to properly calibrate the alternatives. The remaining two alternatives that meet calibration standards do not meet local or mainline operations standards, with deficient intersection operations and queues onto the interstate. **None of the alternatives studied under the Existing Interstate Access Scenario, without a 47<sup>th</sup> Avenue interchange, meet the established PNS because they cannot improve operations to an acceptable level.**

The SWL Alternative scored highest based on the value planning criteria. It was able to accept 97 percent of the forecasted volumes for 2040 P.M. peak but provides deficient local operations. It improves crash potential but does require access management at the 42<sup>nd</sup> Street west frontage road. The summary of value planning scores is shown in Table 7-22.

*Table 7-22: Summary of 32<sup>nd</sup> Avenue/US 81B Interchange Alternatives Under Existing Interstate Access Scenario*

Alternative	Local Operations	Mainline Operations	Environmental Impacts	Safety	Cost	Technical Total	Technical Rank
WO	0	0	8	9	10	27	2
CER	5	4	6	0	0	15	4
NWL	0	0	6	4	2	12	5
SWL	5	7	6	10	5	33	1
DDI	0	0	6	9	6	21	3

## 47<sup>TH</sup> AVENUE INTERCHANGE SCENARIO

The 47<sup>th</sup> Avenue interchange would likely have significant impacts on 32<sup>nd</sup> Avenue/US 81B, expected to reduce traffic on 32<sup>nd</sup> Avenue/US 81B by more than 40 percent. The Spot Improvement Alternative was analyzed specifically for the 47<sup>th</sup> Avenue Interchange Scenario. This alternative includes

- At 38<sup>th</sup> Street, extend the eastbound right-turn lane (435 feet, full width) and install double left-turn lanes on the eastbound, westbound and southbound approaches.
- At the East Ramp, a double right-turn lane on the northbound off-ramp.
- Traffic control signal and access modification at the 42<sup>nd</sup> Street west frontage road intersection.
- Queue flushing on the off-ramps
- Pedestrian crossing enhancements at the ramp intersections that includes pedestrian actuation and prohibits right-turns.
- Reconstruct or major rehabilitation of pavement from the East Ramp to Columbia Road.

Under this alternative, all study intersection are LOS “D” or better; the ramp intersections operate at LOS “C” or better during both peak hours through 2040. This alternative would minimize queueing onto the interstate and improve traffic flow, which should mitigate some of the most prevalent crash trends. The signal at the 42<sup>nd</sup> Street west frontage road and improvements to the existing signal timing should improve pedestrian crossing safety. This analysis suggests constructing a 47<sup>th</sup> Avenue interchange would mitigate almost all improvements necessary on 32<sup>nd</sup> Avenue/US 81B.

Value planning scores for this alternative can be seen in Table 7-23 with planning level design layout in Figure 7-30.

*Table 7-23: 32<sup>nd</sup> Avenue/US 81B Spot Improvement Interchange Alternative Under 47<sup>th</sup> Avenue Interchange Scenario*

	Results (2040 Conditions)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 16.7, LOS “B”</li> <li>▪ P.M. Peak Average: 31.9, LOS “C”</li> </ul>	7
Mainline Operations	<ul style="list-style-type: none"> <li>▪ Average A.M. Peak: 9.6, LOS “A”</li> <li>▪ Average P.M. Peak: 18.6, LOS “C”</li> </ul>	8
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ No additional environmental impacts expected.</li> </ul>	8
Safety	<ul style="list-style-type: none"> <li>▪ No change in crash potential expected.                             <ul style="list-style-type: none"> <li>» 15.0% Crossing Crash Potential</li> <li>» 33.2% Rear End Crash Potential</li> <li>» 51.8% Sideswipe Crash Potential</li> </ul> </li> </ul>	6
Cost	<ul style="list-style-type: none"> <li>▪ \$700,000 plus the cost of interchange at 47<sup>th</sup> Avenue (discussed in next chapter)</li> </ul>	10
<b>Total</b>		<b>39</b>

### Other Alternatives

Other interchange alternatives were studied under the 47<sup>th</sup> Avenue Interchange Scenario, which reduces traffic on 32<sup>nd</sup> Avenue/US 81B by more than 40 percent. These alternatives do provide some benefits to local and mainline operations and safety. Brief descriptions are provided below with a summary table and layouts at the end of this chapter.

### Consolidated East Ramp

The Consolidated East Ramp Alternative (CER) was identified in the 2040 LRTP but could not be cost constrained. It would realign 42<sup>nd</sup> Street east of I-29 with the East Ramp. This helps split southbound traffic at 38<sup>th</sup> Street, which is a major bottleneck along the corridor. A signal was included for 42<sup>nd</sup> Street west frontage road. During the 2040 P.M. peak the 38<sup>th</sup> Street intersection operates deficiently at LOS “E” with long queues on the minor approaches. No queueing or delay concerns during the 2040 A.M. peak.

This alternative comes at a cost of \$15.7 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-31.

## Northwest Loop Ramp

The Northwest Loop Ramp Alternative (NWL) adds a loop ramp for the westbound to southbound movements onto I-29 in the northwest quadrant. Due to the posted speeds and the ROW constraints, only a small radius could be constructed. This requires parallel merge lanes to ensure safe and efficient merging, which would likely be incompatible with a 47<sup>th</sup> Avenue interchange. The addition of the northwest loop helps eliminate crossing conflicts by converting a left-turn to a free right. The right-turn slip ramp on the southbound I-29 on-ramp requires access management at the 42<sup>nd</sup> Street west frontage road. A backage road was configured with a signal incorporated at 44<sup>th</sup> Street. During the 2040 P.M. peak all intersections operate efficiently, including 38<sup>th</sup> Street. However, there are long queues anticipated on the minor approaches at 38<sup>th</sup> Street. No queuing or delay concerns during the 2040 A.M. peak.

This alternative comes at a cost of \$14.2 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-32.

## Southwest Loop Ramp

The Southwest Loop Ramp Alternative (SWL) adds a loop ramp for the southbound to eastbound movements off of I-29 in the southwest quadrant. This configuration supports more than 400 vehicles during the 2040 P.M. peak hour, eliminating one signal phase and permitting right-turn-on-reds to improve through-put. No queueing is expected on the interstate ramps, but large queues build up at 38<sup>th</sup> Street and the 42<sup>nd</sup> Street west frontage road. A signal was included for 42<sup>nd</sup> Street west frontage road. There are some queueing concerns on the minor approaches at 38<sup>th</sup> Street. All other intersections operate effectively at LOS "D" or better. No queueing or delay concerns during the 2040 A.M. peak.

This alternative comes at a cost of \$11.0 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-33.

## Diverging Diamond Interchange

The Diverging Diamond Interchange Alternative (DDI) requires the two directions of traffic on 32<sup>nd</sup> Avenue/US 81B to cross to the opposite side of the road over I-29. This allows left-turning and right-turning traffic to perform a free flow movement onto the interstate on-ramp. The free-flowing movements reduce the signal phases to two at each intersection, significantly reducing delays. The right-turn slip ramp on the southbound I-29 on-ramp requires access management at the 42<sup>nd</sup> Street west frontage road. A backage road was configured with a signal incorporated at 44<sup>th</sup> Street. All intersections operate efficiently during the 2040 A.M. and P.M. peak. There are some queuing issues on the minor approaches at 38<sup>th</sup> Street during the 2040 P.M. peak.

This alternative comes at a cost of \$8.5 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-34.

# MICRO LEVEL ALTERNATIVES ANALYSIS

Table 7-24: 32<sup>nd</sup> Avenue/US 81B Alternatives Under 47<sup>th</sup> Avenue Interchange Scenario

	SI		CER		NWL		SWL		DDI	
	Results	Score	Results	Score	Results	Score	Results	Score	Results	Score
Local Operations	» A.M. Peak: 16.7, LOS "B" » P.M. Peak Average: 31.9, LOS "C"	7	» A.M. Peak: 18.2, LOS "B" » P.M. Peak Average: 37.0, LOS "D"	7	» A.M. Peak: 16.1, LOS "B" » P.M. Peak Average: 24.1, LOS "C"	7	» A.M. Peak: 16.1, LOS "B" » P.M. Peak Average: 33.4, LOS "C"	7	» A.M. Peak: 13.9, LOS "B" » P.M. Peak Average: 23.5, LOS "C"	8
Mainline Operations*	» A.M. Peak: 9.6, LOS "A" » P.M. Peak: 18.6, LOS "C"	8	» A.M. Peak: 14.5, LOS "B" » P.M. Peak: 19.2, LOS "C"	8	» A.M. Peak: 13.3, LOS "B" » P.M. Peak: 18.4, LOS "C"	8	» A.M. Peak: 13.5, LOS "B" » P.M. Peak: 18.0, LOS "C"	8	» A.M. Peak: 13.0, LOS "B" » P.M. Peak: 18.1, LOS "C"	8
Environmental Impacts	» No additional environmental impacts expected.	8	» 3.5 Acres of ROW required. No access changes.	6	» 2 Acres of ROW required. Access management at 42 <sup>nd</sup> Street west frontage road.	6	» 2 Acres of ROW required. No access changes.	6	» 2 Acres of ROW required. Access management at 42 <sup>nd</sup> Street west frontage road.	6
Safety	Baseline Crash Potential Distribution for Comparison » 15.0% Crossing » 33.2% Rear End » 51.8% Sideswipe	6	43.2% Increase in Crash Potential Compared to SI » 140.9% Increase in Crossing Crash Potential » 40.5% Decrease in Rear End Crash Potential » 82.2% Increase in Sideswipe Crash Potential	0	4.1% Decrease in Crash Potential Compared to SI » 0.9% Decrease in Crossing Crash Potential » 10.5% Decrease in Rear End Crash Potential » 0.3% Decrease in Sideswipe Crash Potential	9	5.0% Decrease in Crash Potential Compared to SI » 42.2% Increase in Crossing Crash Potential » 32.0% Decrease in Rear End Crash Potential » 4.9% Increase in Sideswipe Crash Potential	10	20.0% Increase in Crash Potential Compared to SI » 130.9% Increase in Crossing Crash Potential » 7.6% Increase in Rear End Crash Potential » 9.5% Increase in Sideswipe Crash Potential	5
Cost	» \$700,000	10	» \$15.7 Million	0	» \$14.2 Million	1	» \$11.0 Million	3	» \$8.5 Million	5
<b>Total</b>	<b>39</b>		<b>21</b>		<b>31</b>		<b>34</b>		<b>32</b>	
<b>Rank</b>	<b>1</b>		<b>5</b>		<b>4</b>		<b>2</b>		<b>3</b>	

\*Mainline operations does not incorporate friction between 32<sup>nd</sup> Avenue and 47<sup>th</sup> Avenue. This is discussed in greater detail in the next section.

## 47<sup>TH</sup> AVENUE

During the Macro Level Analysis completed for this study, the 47<sup>th</sup> Avenue interchange was studied to address future long-term development in southern Grand Forks. This analysis found an interchange at this location would reduce vehicle hours traveled by 4.4 million hours from 2025 to 2040 and vehicle miles traveled by 53.3 million miles from 2025 to 2040. This interchange is also estimated to reduce traffic on 32<sup>nd</sup> Avenue/US 81B by 40.3 percent, which is likely significant enough to prevent widening on 32<sup>nd</sup> Avenue/US 81B. However, the analysis also estimated a 21 percent increase in traffic on I-29. This increase in traffic on mainline I-29 may present merging, weaving and diverging challenges. Unlike analysis completed for other interchanges in this report, impacts between 32<sup>nd</sup> Avenue/US 81B and the 47<sup>th</sup> Avenue interchange alternatives were analyzed using the existing 32<sup>nd</sup> Avenue/US 81B on- and off-ramp configurations. Four alternatives were feasible based on the criteria established in this report.

- Traditional Diamond Interchange: A standard diamond interchange on the 47<sup>th</sup> Avenue alignment was considered the base alternative.
- Diamond with South Loops Interchange: A standard diamond interchange with a southeast loop ramp and southwest loop ramp on the 47<sup>th</sup> Avenue alignment. This alternative split the diverging movements to minimize the congestion between the 32<sup>nd</sup> Avenue/US 81B on-ramp and the 47<sup>th</sup> Avenue off-ramp. This provided improved operations at the ramp intersections by reducing the number of signal phases.
- Shifted Diamond with South Loops Interchange: A standard diamond interchange with a southeast loop on-ramp and southwest loop off-ramp shifted 0.25 miles south. This alternative also splits the diverging movements to minimize congestion but increases the spacing to allow more time for drivers to make the lane changes necessary.
- Shifted Diamond with No Business Impacts Interchange: This alternative is shifted 0.25 miles south and includes a southwest loop ramp for the on- and off-ramps and southeast loop on-ramp. This alternative avoids impacting the campground south of 47<sup>th</sup> Avenue and increases spacing between the 32<sup>nd</sup> Avenue/US 81B on-ramp and the 47<sup>th</sup> Avenue off-ramp.

## ANALYSIS METHODOLOGY

These four alternatives were analyzed and presented below using the Value Planning approach detailed at the beginning of this report. The 47<sup>th</sup> Avenue interchange analysis is slightly different than the baseline methodology because it is a new interchange, with no existing conditions to compare.

### MAINLINE OPERATIONS

Because of concerns regarding the I-29 mainline due to spacing and higher volumes, an alternative mainline analysis approach was used. Mainline operations for the 47<sup>th</sup> Avenue interchange analysis refers to the operations of I-29 between the merge and diverge points of 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue, including the 500-foot sections upstream and downstream of the 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue intersections. This change was made for two reasons: first, none of the alternatives analyzed on 47<sup>th</sup> Avenue found unique or deficient lane densities on the 500-foot section upstream of off-ramp and downstream of on-ramps; second, the nearly 14,000 ADT increase on I-29 associated with the 47<sup>th</sup> Avenue interchange could have capacity impacts outside of the interchange influence areas. Similar to the baseline methodology for mainline operations, the northbound and southbound densities were averaged to provide one score.

### COST

Typically, the interchange alternatives would be scored using a distribution between highest cost alternative and lowest cost alternative. The Southwest Loop Alternative (SWL) for the 32<sup>nd</sup> Avenue/US 81B alternative under the Existing Interstate Access Scenario was the prioritized alternative based on technical criteria. The SWL was included in the range of costs to provide valuable context related to the true impacts of a 47<sup>th</sup> Avenue interchange; it has a cost of \$23.5 million. The range of costs was scored using the Cost scoring criteria table established in the methodology section above.

## INTERCHANGE ALTERNATIVES

Analysis presented below was completed using ADT forecasts from the 47<sup>th</sup> Avenue Interchange Scenario.

## TRADITIONAL DIAMOND ALTERNATIVE

The Traditional Diamond Alternative (TD) is a standard diamond interchange with signals at the East Ramp, West Ramp and 38<sup>th</sup> Street intersections. It operates at LOS “D” or better for both 2040 A.M. and P.M. peak hours. There are no queueing concerns that would impact I-29. This alternative provides spacing challenges between the 32<sup>nd</sup> Avenue/US 81B southbound on-ramp and the 47<sup>th</sup> Avenue off-ramp, which results in some lane densities that fall to LOS “D” during the 2040 P.M. peak. This alternative will require relocation to the campground in the southwest quadrant but the least amount of right-of-way at 61 acres. Value planning scores for this alternative can be seen in Table 7-25 with planning level design layout in Figure 7-36.

*Table 7-25: 47<sup>th</sup> Avenue Traditional Diamond Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.9, LOS “B”</li> <li>▪ P.M. Peak Average: 32.6, LOS “C”</li> </ul>	7
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.4, LOS “B”</li> <li>▪ P.M. Peak Average: 29.3, LOS “D”</li> </ul>	7
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 63 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ Baseline crash potential distribution for alternative comparison:                             <ul style="list-style-type: none"> <li>» Crossing: 9.4% of total estimated crash potential</li> <li>» Rear End: 81.2% of total estimated crash potential</li> <li>» Lane Change: 9.4% of total estimated crash potential</li> </ul> </li> </ul>	0
Cost	<ul style="list-style-type: none"> <li>▪ \$24.6 Million</li> </ul>	5
<b>Total</b>		<b>25</b>

## DIAMOND WITH SOUTH LOOPS ALTERNATIVE

The Diamond with South Loops Alternative (DL) is a diamond interchange with a southeast loop ramp for eastbound to northbound on-ramp movements and a southwest loop ramp for southbound to eastbound off-ramp movements. By removing left-turns, some crossing conflicts are eliminated, as well as enabling the traffic control signal to operate with reduced phases, improving efficiency. This alternative operates effectively during both 2040 A.M. and P.M. peak hours and does not have queueing concerns. This alternative has the lowest estimated crash potential, as well as providing acceptable levels of service for local operations, but does require business impacts and 87 acres of ROW needed, the most of all four build alternatives. As for mainline operations, this alternative does result in some lane densities between 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue falling to LOS “D” during the 2040 P.M. peak. Value planning scores for this alternative can be seen in Table 7-26 with planning level design layout in Figure 7-37.

*Table 7-26: 47<sup>th</sup> Avenue Diamond with South Loops Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 12.0, LOS “B”</li> <li>▪ P.M. Peak Average: 15.3, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.8, LOS “B”</li> <li>▪ P.M. Peak Average: 29.3, LOS “D”</li> </ul>	6
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 63 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ 59.4% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 29.1% reduction in crossing crash potential</li> <li>» 68.1% reduction in rear end crash potential</li> <li>» 15.0% reduction in sideswipe crash potential</li> </ul> </li> </ul>	10
Cost	<ul style="list-style-type: none"> <li>▪ \$27.2 Million</li> </ul>	1
<b>Total</b>		<b>32</b>

## DIAMOND WITH SOUTH LOOPS AND MIXING LANES ALTERNATIVE

The Diamond with South Loops and Mixing Lanes Alternative (DLM) is the same interchange configuration as above but includes mixing lanes (also referred to as auxiliary lanes, speed-change lane or acceleration lane) between 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue to improve lane density during the peak hours. This requires about 1,000 feet of extra lane length for each direction of traffic on I-29. These mixing lanes would keep lane densities at LOS “A” during the 2040 A.M. peak and LOS “C” during the 2040 P.M. peak. Local operations, environmental impacts and safety remain unchanged. Value planning scores for this alternative can be seen in Table 7-27. Planning level designs at the interchange are similar to Figure 7-37.

*Table 7-27: 47<sup>th</sup> Avenue Diamond with South Loops and Mixing Lanes Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 12.0, LOS “B”</li> <li>▪ P.M. Peak Average: 15.3, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 10.9, LOS “A”</li> <li>▪ P.M. Peak Average: 18.8, LOS “C”</li> </ul>	8
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 63 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ 59.4% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 29.1% reduction in crossing crash potential</li> <li>» 68.1% reduction in rear end crash potential</li> <li>» 15.0% reduction in sideswipe crash potential</li> </ul> </li> </ul>	10
Cost	<ul style="list-style-type: none"> <li>▪ \$28.5 Million</li> </ul>	0
<b>Total</b>		<b>33</b>

## SHIFTED DIAMOND WITH SOUTH LOOPS ALTERNATIVE

The Shifted Diamond with South Loops Alternative (SDL) is the same geometric design as the South Loops Interchange Alternative, just shifted 0.25 miles south. This improves spacing between the 32<sup>nd</sup> Avenue/US 81B interchange. This alternative operates effectively both on local and mainline operations. However, during the 2040 P.M. peak, some lane densities fall to LOS “D”. This alternative improves estimated crash potential, when compared against the Diamond Interchange. It also impacts the campground and will require a buyout and 78 acres of ROW needed. Value planning scores for this alternative can be seen in Table 7-28 with planning level design layout in Figure 7-38.

*Table 7-28: 47<sup>th</sup> Avenue Shifted Diamond with South Loops Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 11.7, LOS “B”</li> <li>▪ P.M. Peak Average: 14.5, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.2, LOS “B”</li> <li>▪ P.M. Peak Average: 26.8, LOS “D”</li> </ul>	7
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 78 acres of ROW needed.</li> </ul>	5
Safety	<ul style="list-style-type: none"> <li>▪ 57.5% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 34.8% reduction in crossing crash potential</li> <li>» 66.7% reduction in rear end crash potential</li> <li>» 1.4% reduction in sideswipe crash potential</li> </ul> </li> </ul>	» 9
Cost	<ul style="list-style-type: none"> <li>▪ \$27.6 Million</li> </ul>	1
<b>Total</b>		<b>31</b>

## SHIFTED DIAMOND WITH NO BUSINESS IMPACTS

The Shifted Diamond with No Business Impacts Alternative (SNI) shifts the interchange alignment 0.25 miles south and folds the southbound off-ramp to eliminate the business impacts. This alternative operates effectively during both 2040

A.M. and P.M. peak hours with no queueing concerns that would impact I-29. It improves crash potential when compared against the Diamond Interchange alternative with effective local and mainline operations. Eliminating the business impacts and low ROW needed helps this alternative score high in the Environmental Impacts category and Cost. Value planning scores for this alternative can be seen in Table 7-29 with planning level design layout in Figure 7-39.

*Table 7-29: 47<sup>th</sup> Avenue Shifted Diamond with No Business Impacts Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 11.4, LOS “B”</li> <li>▪ P.M. Peak Average: 16.9, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.3, LOS “B”</li> <li>▪ P.M. Peak Average: 26.7, LOS “D”</li> </ul>	7
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. No business impacts. 59 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ 56.9% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 12.7% increase in crossing crash potential</li> <li>» 70.2% reduction in rear end crash potential</li> <li>» 11.4% reduction in sideswipe crash potential</li> </ul> </li> </ul>	9
Cost	<ul style="list-style-type: none"> <li>▪ \$23.2 Million</li> </ul>	10
<b>Total</b>		<b>41</b>

## SUMMARY OF ALTERNATIVES

The Shifted Folded Southbound Off-Ramp Interchange Alternative scored highest on the Value Planning analysis with strong scores in local and mainline operations, safety and low cost. It does not require impacts which improves its environmental impact score relative to other alternatives for 47<sup>th</sup> Avenue.

The value planning scores summary for 47<sup>th</sup> Avenue interchange alternatives is shown in Table 7-30.

*Table 7-30: Summary of 47<sup>th</sup> Avenue Interchange Alternatives*

Alternative	Local Operations	Mainline Operations	Environmental Impacts	Safety	Cost	Technical Total	Technical Rank
TD	7	7	6	0	5	25	5
DL	9	6	6	10	1	32	3
DLM	9	8	6	10	0	33	2
SDL	9	7	5	9	1	31	4
SNI	9	7	6	9	10	41	1

## STEERING COMMITTEE RANKING

As part of the Value Planning workshop, the Steering Committee was asked to rank the alternatives; the Diamond with South Loops and Mixing Lanes and the Shifted Diamond with No Business Impacts were tied with 33.3 percent of the Steering Committee ranking each as their first choice.

those improvements included in the I-29 Corridor Study, none are currently cost constrained in the GF-EGF MPO Long Range Transportation Plan (LRTP).

## NEEDS COMPARISON

Comparing needs for different improvements can be a very complicated process. For example, how do you compare a railroad grade separation improvement to a new interchange to a new loop? A railroad grade separation generates major delays but only occurs a few times per day, mostly during off-peak periods. A new interchange may provide massive relief for several hours of the day but may not be needed for several years.

The current Transportation Improvement Program (TIP) process utilizes a project scoring and ranking process. A more technically based project specific evaluation process was needed to support the I-29 Corridor Study Implementation Plan. To assess needs, a five point needs index was developed to show relative need. This starts with the technical information compiled in this study and other studies as necessary to compare quantified benefits. Quantified benefits incorporate vehicle hours of delay, vehicle miles travelled and crash reduction factors. For example, the 2040 yearly quantified benefits for an interchange at 47<sup>th</sup> Avenue is \$3.2 million and for a railroad grade separation at 42<sup>nd</sup> Street and DeMers Avenue is \$0.6 million. Where quantified benefits were not readily available, level of service and railroad crossing exposure were compared.

This information was used to provide an educated estimate of need for every improvement over \$1 million for existing, 2025 and 2040 time periods. This information will be refined by the Steering Committee. The results are illustrated in Table 8-2.

*Table 8-2: Needs by Year*

Location	Improvement	Need			Notes
		Existing	2025	2040	
North Washington Street/CR 11/US 81	Interchange and Access Improvements	0	0.5	1	The Washington Street improvements are preventive in nature and not based on quantified deficiencies.
Gateway Drive/US 2	Interchange Improvements	1	2	5	The Gateway Drive interchange operates at LOS "F" by 2040.
	Railroad Grade Separation	2	2.5	3	Queuing onto the interstate when train events and peak hours coincide. The railroad grade separation has a crossing exposure of 245,000 by 2040.*
DeMers Avenue/ND 297	Interchange Improvements	2	4	5	The DeMers Avenue interchange operates at LOS "E" by 2025 and LOS "F" by 2040.
	42nd Street Railroad Grade Separation	3	3.5	4	The grade separation has a yearly quantified benefit of \$0.6 million dollars by 2040 and crossing exposure of 749,700 by 2040.*
32nd Avenue/US 81B	New Interchange at 47th Avenue	2	5	5	32nd Avenue Operates at LOS "F" by 2025, has a yearly quantified benefit of \$3.2 M by 2040.
Merrifield Road/CR 6	New Interchange	2.5	3	3.5	The Merrifield Interchange has a yearly quantified benefit of 2.4 million dollars by 2040.

0 = No need, 5 = Greatest Need

\* Based on previous study, may require updating

### *LONG RANGE: 2031-2040+*

This stage represents year 11 and beyond the current TIP and extends to the life of the current 2040 Long Range Transportation Plan (LRTP). Figure 8-6 demonstrates the long-range phase of project development efforts required to implement the I-29 Corridor Study.

Costs shown demonstrate a year of expenditure estimate to the mid-range of the phase for which construction is anticipated per the I-29 Corridor Study. Projects in the mid-range are adjusted to YOY of 2036. Table 8-3 demonstrates a more descriptive dialogue of the implementation efforts needed at each phase of implementation for the most significant projects. Table 8-3 should be treated as a tentative set of actions needed to address needs identified by the I-29 Corridor Study. As additional planning and programming efforts unfold beyond the completion of the I-29 Corridor Study, these assumptions may change.

### **STAGES OF PROJECT DEVELOPMENT & DELIVERY**

The I-29 Implementation Plan assists with stratifying the stage of planning and project development required to deliver each of the above mentioned projects. This is specifically important for more of the complex projects and for those projects which will require additional scoping to move out of the planning phase and deeper into advanced project development. The Implementation Plan has been developed around the following generalized Stages of Project Delivery:

- **Planning & Environmental (Preliminary Engineering/Scoping):** Reflects additional planning or project level scoping to continue to define and delineate alternatives and project feasibility. This phase also includes the transition into the development of relevant environmental documentation. In many cases, the alternatives developed as part of the I-29 Corridor Study are assumed to be ready to move further into project development (i.e. environmental/NEPA). In the case of interchanges at 47<sup>th</sup> Avenue and Merrifield Road/CR 6, this phase includes completion of an IJR. However, some of these actions may not result in a signed environmental document until such time as Federal funds are programmed, or FHWA fiscal constraint requirements can be met.
- **Right-of-Way, Design and Construction (Advanced Project Development):** Reflects efforts following completion of a signed environmental document. These are stages of advanced project development involving actual final design and right of way. Included in this phase would also be efforts to secure final programming (or project selection). Advanced project development includes the construction phase.

The implementation plan will assign one of these two general categories to identified improvements listed in the I-29 Corridor Study. Smaller less significant projects which will likely fit more easily into the GF-EGF TIP or move quickly in the first phase or two are not noted. For more complex projects, the transition through these stages is more gradual, and more thoughtfulness is needed on how these projects continue to transition out of planning and further into project development.

### *32<sup>ND</sup> AVENUE/US 81B NEEDS*

Due to the major investment needed at 32<sup>nd</sup> Avenue/US 81B, and the coordinated needs between 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue, additional analysis was completed to determine the approximate thresholds where 32<sup>nd</sup> Avenue/US 81B begins to breakdown. This analysis increased the modeled traffic volumes based on linear growth between the existing and approved 2025 ADT projections and then between the approved 2025 ADT and 2040 ADT projections.

- According to the 2025 P.M. peak hour analysis, deficiencies along the corridor emerged. However, there are key issues that emerge before 2025.
  - » At around 40 percent (2019) of the growth between 2015 and 2025, deficient operations are expected at 38<sup>th</sup> Street.
  - » By 70 percent (2022) of the growth between 2015 and 2025, the northbound off-ramp begins to queue onto the interstate.
  - » By 2025, deficient operations are expected at the West Ramp, East Ramp and 38<sup>th</sup> Street intersections during the P.M. peak hour.

- With the Spot Improvements on 32<sup>nd</sup> Avenue/US 81B, 2025 operations are improved to LOS “D” across the corridor. However, as growth continues capacity constraints on the overpass bridge begin to emerge around 2030, or 30 percent of growth expected between 2025 and 2040. The capacity constraints result in deficient operations at the West Ramp intersection and queues onto the interstate.

Figure 8-2: 2015 to 2025 Growth Thresholds with Existing Configuration on 32<sup>nd</sup> Avenue/US 81B

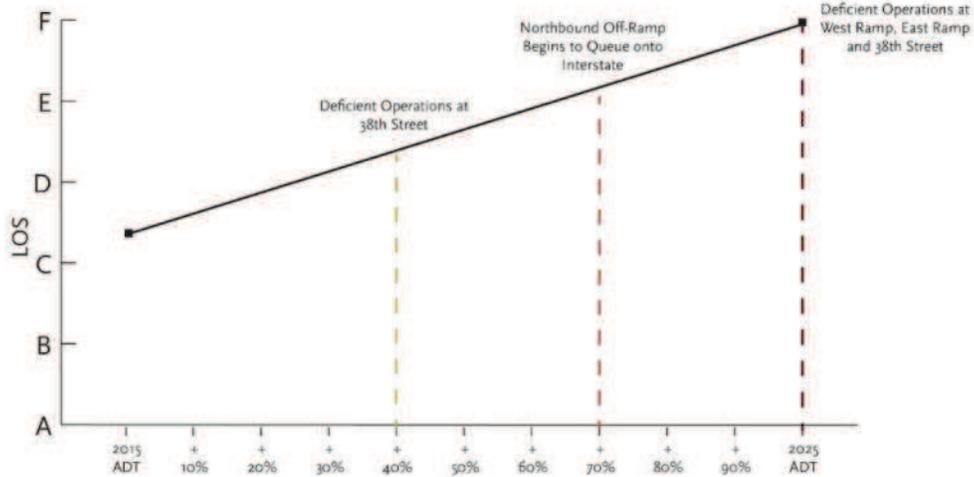
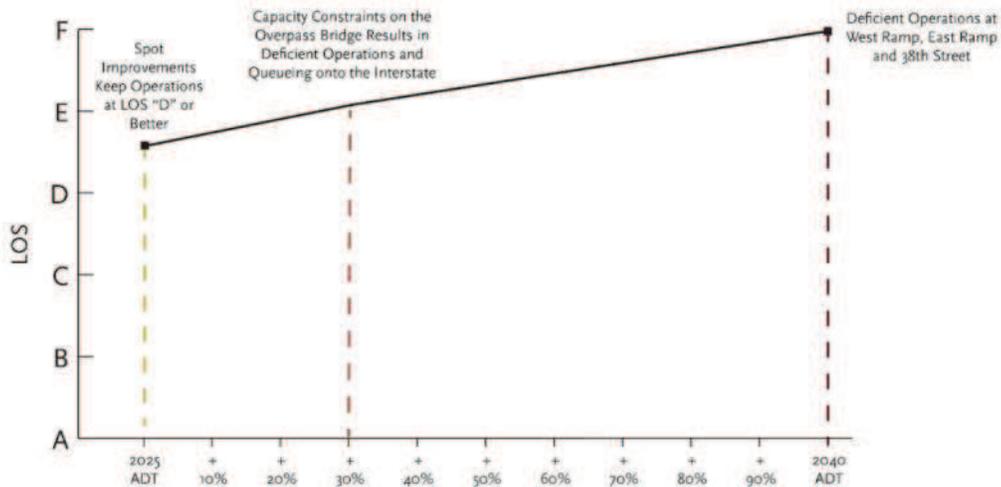


Figure 8-3: 2025 to 2040 Growth Thresholds with Spot Improvements on 32<sup>nd</sup> Avenue/US 81B



## ANCILLARY INVESTMENTS TO SUPPORT 47<sup>TH</sup> AVENUE INTERCHANGE

As noted, the Implementation Plan for the I-29 Corridor Study is not cost constrained. Further, it is a demonstration of needed improvements more narrowly focused on the I-29 Corridor and adjacent systems. To that end, development of a future interchange at 47<sup>th</sup> Avenue will require substantial additional investment in local roadways. In current year dollars, total needs to provide local roadway system to support 47<sup>th</sup> Avenue is estimated at nearly \$17.0 million. This system of roadways is shown as part of Figure 8-1 and Figure 8-4, and includes extension and/or completion of 34<sup>th</sup> Street, 38<sup>th</sup> Street,

Grade Separation) are shown with a potential for Regional funding. Urban funds are shown on both Regional and Interstate projects. This is done to indicate that broad partnerships may be needed to fully program these investments on a more accelerated time frame.

## PROGRAMMING SPLITS

Table 8-5 demonstrates a tentative set of programming and cost splits for the most significant project improvements identified through the I-29 Corridor Study. These cost splits are based upon current local, state and federal funding guidance. More specific guidance regarding local, state and federal funding splits is available in the *NDDOT Local Government Manual*. These splits generally follow that guidance, however Table 8-5 represents a best-case scenario. It is likely many of these improvements will require more local resources to construct improvements in the phases identified by the I-29 Corridor Study.

*Table 8-5: Funding Matrix*

Project	Total Cost (2017 \$)	Total Cost (YOE \$)	Funding Split (YOE \$)			
			Federal	State	City	County
<b>North Washington/CR 11/US 81</b>						
Access Modification + Ramp Modification	\$5.700	\$12.489	\$9.99	\$1.25	\$0.000	\$1.25
<b>Gateway Drive/US 2</b>						
Northeast Loop Modification	\$6.600	\$14.461	\$11.57	\$1.45	\$1.45	\$0.000
Gateway Drive Grade Separation	\$28.300	\$62.009	\$49.61	\$6.20	\$6.20	\$0.000
<b>DeMers Avenue/ND 297</b>						
42nd Street Grade Separation*	\$40.000	\$61.578	\$21.55	\$0.000	\$40.026	\$0.000
Capacity Enhancements (No Bridge Widening)	\$7.400	\$9.003	\$7.20	\$0.90	\$0.90	\$0.000
<b>32nd Avenue/US 81B</b>						
Reconstruct 38th Street to Columbia Road	\$12.000	\$18.473	\$14.78	\$1.85	\$1.85	\$0.000
<b>47th Avenue</b>						
Construct New Interchange	\$28.500	\$43.874	\$39.49	\$4.39	\$0.000	\$0.000
<b>Merrifield Road/CR 6</b>						
Modify Overpass to Full Interchange	\$16.480	\$36.110	\$32.50	\$3.61	\$0.000	\$0.000

\* 25% Urban Roads + 10% Regional; Balance of cost Local

\*\*YOE costs were estimated using the midpoint of the implementation phase for which they are anticipated to be constructed.

# Setup Scoring Categories & Factors

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Score System  Max. Score

(Use TAB key to navigate.)

## Adjust Scoring Categories

Category	Description	Weights	Points
<input type="text" value="1"/>	Economic Vitality Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="2"/>	Security Increase security of the transportation system for motorized and nonmotorized uses.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="text" value="3"/>	Accessibility and Mobility Increase the accessibility and mobility options to people and freight.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="text" value="4"/>	Environmental/Energy/QOL Protect and enhance the environment, promote energy conservation, and improve quality of life.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="5"/>	Integration and Connectivity Enhance the integration and connectivity of the transportation system across and between modes for people and freight.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="6"/>	Efficient System Management Promote efficient system management and operation.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="text" value="7"/>	System Preservation Emphasize the preservation of the existing transportation system.	<input type="text" value="20"/> %	<input type="text" value="20"/> pts <input type="button" value="Delete"/>
<input type="text" value="8"/>	Safety Increase safety of the transportation system for motorized and nonmotorized uses.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="text" value="9"/>	Local/Regional Factors Factors of local or regional importance	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

**Project Number**

**Project Name**

I-29 and 47th Ave Interchange NEPA Documentation - 2020
--

<b>Category 1 Economic Vitality</b>		
<i>Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.</i>		<b>Assign score 0 or 1</b>
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	0
D	Improves connection to terminal (sea, air, multimodal) on the last mile or two ac	0
<b>Category 2 Security</b>		
<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Install equipment that monitors the security of the transportation infrastructure	0
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinates/improves Special Events Management Plans	0
<b>Category 3 Accessibility and Mobility</b>		
<i>Increase the accessibility and mobility options to people and freight.</i>		<b>Assign score 0 or 1</b>
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Consistent with access control regulations	0
C	Enhances accessibility and mobility for all modes	0
D	Address LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to area businesses	0
<b>Category 4 Environmental/Energy/QOL</b>		
<i>Protect and enhance the environment, promote energy conservation, and improve quality of life.</i>		<b>Assign score 0 or 1</b>
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	0
C	Decreases fuel consumption which reduces greenhouse gas	0
D	Avoids or minimize impacts to wetlands or other natural habitats	1
E	Incorporates innovative stormwater management techniques	0
F	Promotes nonmotorized travel	0

## TIP SCORING SHEETS

### TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

Project Number

Project Name

I-29 and 47th Ave Interchange NEPA Documentation - 2020
---

#### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system across and between modes for people and freight.</i>		<b>Assign score 0 or 1</b>
A	Reduces excessive travel delays	0
B	Improves direct travel trips between states	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	0
E	On Regional Primary Road	0

#### Category 6 Efficient System Management

<i>Promote efficient system management and operation.</i>		<b>Assign score 0 or 1</b>
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	0
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

#### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system.</i>		<b>Assign score 0 or 1</b>
A	Utilize pavement management system results	0
B	Emphasizes system rehabilitation rather than expansion	0
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	0
e	Contributes to better system maintenance	0

#### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Address locations identified as high crash locations in LRTP, corridor studies, hi	0
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

<b>0=No</b> <b>1=Yes</b>
-----------------------------

**Project Number**

**Project Name**

<b>Category 9 Local/Regional Factors</b>	
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<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	0
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0



Railroads Crossings						
RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
None						

**Purpose and Need Statement For Regional Projects**

1. According to the 2012 Washington St Corridor Study, the pavement on Bus US 81/ Washington St was constructed and rehabilitated at different times. Bus US 81/Washington St from 1<sup>st</sup> Ave N to 8<sup>th</sup> Ave N was originally constructed in 1952 with structural overlays in 1970, 1985 and 2002. Bus US 81/Washington St from Demers Ave to Hammerling Ave was originally constructed in 1952 with structural overlays in 1974, and mill and overlays in 1985 and 2002. By the time this project is proposed to occur the surface asphalt pavement will be 18 years old.

Remarks:

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City Engineer:           *Ally N. Shea*          

Date:           1/17/18          

District Engineer:           *Leslie W. Faehle*          

Date:           1/18/18

**Project: Bus US 81/Washington St Mill & Overlay (8th Ave N to 1st Ave N, Demers Ave to Hammerling Ave)**  
**2" Thick Mill & Overlay**  
**10/6/2017**

SPEC NO.	CODE NO.	ITEM DESCRIPTION	UNIT	Total Quantity	UNIT PRICE	ITEM TOTAL
103	0100	CONTRACT BOND	L SUM	1	\$ 8,000.00	\$ 8,000.00
202	0130	REMOVAL OF CURB AND GUTTER	LF	1220	\$ 10.00	\$ 12,200.00
251	0300	SEEDING CLASS III	ACRE	0.02	\$ 50,000.00	\$ 1,000.00
253	0201	HYDRAULIC MULCH	ACRE	0.02	\$ 50,000.00	\$ 1,000.00
401	0050	TACK COAT	GAL	2790	\$ 3.24	\$ 9,052.99
411	0105	MILLING PAVEMENT SURFACE	SY	37100	\$ 1.08	\$ 40,127.36
430	0045	SUPERPAVE FAA 45	TON	4200	\$ 60.00	\$ 252,000.00
430	1000	CORED SAMPLE	EA	30	\$ 48.67	\$ 1,460.16
430	5828	PG 58-28 ASPHALT CEMENT	TON	210	\$ 638.14	\$ 134,010.24
702	0100	MOBILIZATION	L SUM	1	\$ 79,000.00	\$ 79,000.00
704	0100	FLAGGING	MHR	1840	\$ 45.43	\$ 83,586.05
704	1000	TRAFFIC CONTROL SIGNS	UNIT	2207	\$ 2.25	\$ 4,965.75
704	1052	TYPE III BARRICADE	EA	81	\$ 85.00	\$ 6,885.00
704	1054	SIDEWALK BARRICADE	EA	20	\$ 75.00	\$ 1,500.00
704	1055	PEDESTRIAN LONGITUDINAL BARRICADE	LF	900	\$ 17.00	\$ 15,300.00
704	1060	DELINEATOR DRUMS	EA	194	\$ 28.00	\$ 5,432.00
704	1067	TUBULAR MARKERS	EA	161	\$ 9.00	\$ 1,449.00
704	1087	SEQUENCING ARROW PANEL - TYPE C	EA	2	\$ 1,100.00	\$ 2,200.00
706	0550	BITUMINOUS LABORATORY	EA	1	\$ 4,000.00	\$ 4,000.00
706	0600	CONTRACTOR'S LABORATORY	EA	1	\$ 4,000.00	\$ 4,000.00
708	1540	INLET PROTECTION-SPECIAL	EA	84	\$ 170.00	\$ 14,280.00
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	84	\$ 100.00	\$ 8,400.00
722	0315	MANHOLE CASTING	EA	9	\$ 825.00	\$ 7,425.00
722	3445	CASTING INLET-TYPE 1	EA	9	\$ 815.00	\$ 7,335.00
722	6160	ADJUST INLET	EA	21	\$ 300.00	\$ 6,300.00
722	6200	ADJUST MANHOLE	EA	21	\$ 250.00	\$ 5,250.00
748	0140	CURB & GUTTER TYPE I	LF	1220	\$ 40.00	\$ 48,800.00
750	0125	SIDEWALK CONCRETE -5IN	SY	440	\$ 85.00	\$ 37,400.00
750	2115	DETECTABLE WARNING PANELS	SF	780	\$ 45.00	\$ 35,100.00
762	0112	EPOXY PVMT MK MESSAGE	SF	608	\$ 9.00	\$ 5,472.00
762	0113	EPOXY PVMT MK 4IN LINE	LF	22800	\$ 0.50	\$ 11,400.00
762	0114	EPOXY PVMT MK 6IN LINE	LF	5700	\$ 2.25	\$ 12,825.00
762	0117	EPOXY PVMT MK 24IN LINE	LF	768	\$ 8.00	\$ 6,144.00

Subtotal	\$ 873,299.55
~20% Contingencies	\$ 174,700.45
Subtotal	\$ 1,048,000.00
Construction Engineering 10%	\$ 105,000.00
ROW / Ease 1%	\$ 11,000.00
<b>2017 Project Total</b>	<b>\$ 1,164,000.00</b>

2017 Subtotal Inflated to 2020 @ 4%	\$ 982,343.23
~20% Contingencies	\$ 197,656.77
Subtotal	\$ 1,180,000.00
Construction Engineering ~10%	\$ 118,000.00
ROW / Ease ~1%	\$ 12,000.00
<b>2020 Project Total</b>	<b>\$ 1,310,000.00</b>

# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

(Use TAB key to navigate.)

## Adjust Scoring Categories

Category	Description	Weights	Points
<input type="text" value="1"/>	Economic Vitality Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="2"/>	Security Increase security of the transportation system for motorized and nonmotorized uses.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="text" value="3"/>	Accessibility and Mobility Increase the accessibility and mobility options to people and freight.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="text" value="4"/>	Environmental/Energy/QOL Protect and enhance the environment, promote energy conservation, and improve quality of life.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="5"/>	Integration and Connectivity Enhance the integration and connectivity of the transportation system across and between modes for people and freight.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="6"/>	Efficient System Management Promote efficient system management and operation.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="text" value="7"/>	System Preservation Emphasize the preservation of the existing transportation system.	<input type="text" value="20"/> %	<input type="text" value="20"/> pts <input type="button" value="Delete"/>
<input type="text" value="8"/>	Safety Increase safety of the transportation system for motorized and nonmotorized uses.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="text" value="9"/>	Local/Regional Factors Factors of local or regional importance	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

**Project Number**

**Project Name**

Bus US 81/Washington St Hammerling Ave to Demers Ave & 1st Ave N to 8th Ave N Mill & Overlay 2020
---

### Category 1 Economic Vitality

<i>Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.</i>		<b>Assign score 0 or 1</b>
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	0
D	Improves connection to terminal (sea, air, multimodal) on the last mile or two ac	0

### Category 2 Security

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Install equipment that monitors the security of the transportation infrastructure	0
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinates/improves Special Events Management Plans	0

### Category 3 Accessibility and Mobility

<i>Increase the accessibility and mobility options to people and freight.</i>		<b>Assign score 0 or 1</b>
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Consistent with access control regulations	0
C	Enhances accessibility and mobility for all modes	0
D	Address LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to area businesses	0

### Category 4 Environmental/Energy/QOL

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life.</i>		<b>Assign score 0 or 1</b>
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	0
C	Decreases fuel consumption which reduces greenhouse gas	0
D	Avoids or minimize impacts to wetlands or other natural habitats	1
E	Incorporates innovative stormwater management techniques	0
F	Promotes nonmotorized travel	1

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No
1=Yes

**Project Number**

**Project Name**

Bus US 81/Washington St Hammerling Ave to Demers Ave & 1st Ave N to 8th Ave N Mill & Overlay 2020
---

<b>Category 5 Integration and Connectivity</b>
--

<i>Enhance the integration and connectivity of the transportation system across and between modes for people and freight.</i>		<b>Assign score 0 or 1</b>
A	Reduces excessive travel delays	0
B	Improves direct travel trips between states	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	0
E	On Regional Primary Road	0

<b>Category 6 Efficient System Management</b>
---

<i>Promote efficient system management and operation.</i>		<b>Assign score 0 or 1</b>
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

<b>Category 7 System Preservation</b>
---------------------------------------

<i>Emphasize the preservation of the existing transportation system.</i>		<b>Assign score 0 or 1</b>
A	Utilize pavement management system results	1
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	1
e	Contributes to better system maintenance	1

<b>Category 8 Safety</b>
--------------------------

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Address locations identified as high crash locations in LRTP, corridor studies, hi	0
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

<b>0=No</b> <b>1=Yes</b>
-----------------------------

**Project Number**

**Project Name**

<b>Category 9 Local/Regional Factors</b>	
--	--

<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	1
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0

## PROJECT SCOPING WORKSHEET

DATE: 1/17/2018

PRIORITY: Secondary Regional system for construction in 2021

City: Grand Forks

Street: Bus US 81/Washington St

Segment #1: Mile 944.464 to 945.105 8<sup>th</sup> Ave N to Gateway Dr (0.641 miles).

Segment #2: Mile 945.105 to 945.504 4-lane section from Gateway Dr. north (0.399 miles)

Segment #3: Mile 947.334 to 947.634 Section built with English Coulee Diversion (0.300 miles)

County: Grand Forks

Length: Gross length = 3.170 miles

Net length = 1.340 miles

Proposed Improvement: Concrete pavement repair and grind segments #1 & #3, concrete pavement repair, dowel bar retrofit, and grind segment #2. If consistent with a preventative maintenance project, evaluate the need for a pedestrian crossing at Gateway and Washington.

<i>Cost Estimates Breakdown (in \$1,000)</i>							
Alternate	PE	R/W	Utility	Constr.	Bridges	Misc.	Total
				1,480			1,480

Present Road: Surface Width? Segments #1 & #2, 4 lane divided    Surface Type? Concrete  
 Segment #3 2-lane rural

On Street Parking Allowed?    Present: No    Proposed: No

<b>Proposed Improvements</b>		
ADT Present: 15,640 (south end)	Yr: 2015	Travel Way Width : 60'
ADT Design: 11,260-32,870	Design year: 2040	No. of Lanes: 4 & 2
Design Speed: 40 MPH (urban) & 65 mph (rural)		Roadway Width: 12 foot lanes
Maximum Curve:		Min. R/W Width:
Maximum Grade:		
<b>Right of Way</b>		
Will Additional ROW or easement be acquired? No ROW acquisition by:		
Has any ROW easements been acquired since 7-1-72:    ROW Condemnation by:		
Est. No. of occupied family dwelling to be displaced? None		
Est. No. business to be displaced? None		

**Impacts**

Will there be any additional Impacts (Cultural and Environmental Resources): No  
Will there be any taking of any right-of-way from any public parkland (4F) or schools (6F): No  
Airports: No Public Hearings: No  
Environmental Classification (Cat-Ex, EA, EIS): Cat-Ex  
Transportation Enhancements: None  
Intermodal: Currently there is no pedestrian crossing at the intersection of Gateway Dr and Washington St

**Railroads Crossings**

RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
None						

**Purpose and Need Statement For Regional Projects**

Segment #1, 8<sup>th</sup> Ave N to gateway Dr was constructed in 2001 as a plain jointed, doweled concrete pavement. Segment #2, 4-lane segment from Gateway Dr north is concrete pavement that will take further investigation on when exactly it was built, yet it is in a condition that warrants rehabilitation. Segment #3 is concrete pavement constructed with the Cities USACE flood protection project. All three segments are in relatively good condition and at or beyond the time period for a preventative maintenance project to keep them in a state of good repair.

Remarks:

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City Engineer: Allen A. Green

Date: 1/17/18

District Engineer: Terrie W. Decker

Date: 1/18/18

# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

(Use TAB key to navigate.)

## Adjust Scoring Categories

Category	Description	Weights	Points
<input type="text" value="1"/>	<input type="text" value="Economic Vitality"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.		
<input type="text" value="2"/>	<input type="text" value="Security"/>	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
	Increase security of the transportation system for motorized and nonmotorized uses.		
<input type="text" value="3"/>	<input type="text" value="Accessibility and Mobility"/>	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
	Increase the accessibility and mobility options to people and freight.		
<input type="text" value="4"/>	<input type="text" value="Environmental/Energy/QOL"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Protect and enhance the environment, promote energy conservation, and improve quality of life.		
<input type="text" value="5"/>	<input type="text" value="Integration and Connectivity"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Enhance the integration and connectivity of the transportation system across and between modes for people and freight.		
<input type="text" value="6"/>	<input type="text" value="Efficient System Management"/>	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
	Promote efficient system management and operation.		
<input type="text" value="7"/>	<input type="text" value="System Preservation"/>	<input type="text" value="20"/> %	<input type="text" value="20"/> pts <input type="button" value="Delete"/>
	Emphasize the preservation of the existing transportation system.		
<input type="text" value="8"/>	<input type="text" value="Safety"/>	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
	Increase safety of the transportation system for motorized and nonmotorized uses.		
<input type="text" value="9"/>	<input type="text" value="Local/Regional Factors"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Factors of local or regional importance		
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

**Project Number**

**Project Name**

Bus US 81/Washington St 8th Ave N to 0.4 Miles N of US 2 CPR and Grind - 2021
--

<b>Category 1 Economic Vitality</b>
-------------------------------------

<i>Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.</i>		<b>Assign score 0 or 1</b>
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	0
D	Improves connection to terminal (sea, air, multimodal) on the last mile or two ac	0

<b>Category 2 Security</b>
----------------------------

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Install equipment that monitors the security of the transportation infrastructure	0
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinates/improves Special Events Management Plans	0

<b>Category 3 Accessibility and Mobility</b>
--

<i>Increase the accessibility and mobility options to people and freight.</i>		<b>Assign score 0 or 1</b>
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Consistent with access control regulations	0
C	Enhances accessibility and mobility for all modes	0
D	Address LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to area businesses	0

<b>Category 4 Environmental/Energy/QOL</b>
--

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life.</i>		<b>Assign score 0 or 1</b>
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	0
C	Decreases fuel consumption which reduces greenhouse gas	0
D	Avoids or minimize impacts to wetlands or other natural habitats	1
E	Incorporates innovative stormwater management techniques	0
F	Promotes nonmotorized travel	1

## TIP SCORING SHEETS

### TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No
1=Yes

**Project Number**

**Project Name**

Bus US 81/Washington St 8th Ave N to 0.4 Miles N of US 2 CPR and Grind - 2021
--

#### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system across and between modes for people and freight.</i>		<b>Assign score</b> 0 or 1
A	Reduces excessive travel delays	0
B	Improves direct travel trips between states	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	0
E	On Regional Primary Road	0

#### Category 6 Efficient System Management

<i>Promote efficient system management and operation.</i>		<b>Assign score</b> 0 or 1
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

#### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system.</i>		<b>Assign score</b> 0 or 1
A	Utilize pavement management system results	1
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	1
e	Contributes to better system maintenance	1

#### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score</b> 0 or 1
A	Address locations identified as high crash locations in LRTP, coridor studies, hi	0
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

<b>0=No</b> <b>1=Yes</b>
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**Project Number**

**Project Name**

<b>Category 9 Local/Regional Factors</b>	
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<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	1
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0

## PROJECT SCOPING WORKSHEET

DATE: 1/17/2018

PRIORITY: Secondary Regional request for construction in 2022

City: Grand Forks

Street: Bus US 81 (1<sup>st</sup> Ave N to 5<sup>th</sup> Ave S)

County: Grand Forks

Length: ~1,000 ft

Proposed Improvement: Reconstruction of Bus US 81/N Washington St from 1<sup>st</sup> Ave N to 5<sup>th</sup> Ave S, Railroad Bridge, and Lift Station.

<i>Cost Estimates Breakdown (in \$1,000)</i>							
Alternate	PE	R/W	Utility	Constr.	Bridges	Misc.	Total
				17,600*			17,600*

\*Cost is based on the 2012 study inflated @ 4%/year to 2022. This cost does not include the additional \$4 million in 2011 dollars (~\$6.1 million in 2022) if the southbound lanes on Washington are widened to four lanes as mentioned in the last paragraph on page 83 of the study without the Demers Ave intersection improvements.

Present Road: Surface Width? (one direction)

Surface Type? 9" Concrete with

29' Back of Curb to Back of Curb

1-1/2" Asphalt Overlay

32' Retaining Wall/Bridge Pier Face to Bridge Pier Face

On Street Parking Allowed?

Present: No

Proposed: No

<b>Proposed Improvements</b>		
ADT Present: 24,780	Yr: 2013	Travel Way Width : 29' - 29'
ADT Design: 17,600	Design year: 2040	No. of Lanes: 4
Design Speed: 35 MPH		Roadway Width:
Maximum Curve:		Min. R/W Width: 95-151'
Maximum Grade:		Depending on Retaining Wall or Sloped Sides Option

<b>Right of Way</b>	
Will Additional ROW or easement be acquired? Yes	ROW acquisition by: NDDOT
Has any ROW easements been acquired since 7-1-72: Unknown	ROW Condemnation by:
Est. No. of occupied family dwelling to be displaced? 0-1 (eight unit apartment building) depending on if a retaining wall or sloped bank is constructed	
Est. No. business to be displaced? 1-4 depending on location of Shoo-fly	

### Impacts

Will there be any additional Impacts (Cultural and Environmental Resources): Possible, During the public input meeting for the 2012 study on May 5, 2011, the GF Historic Preservation Commission noted potential sites near the project. The potential sites were not detailed in the study.

Will there be any taking of any right-of-way from any public parkland (4F) or schools (6F): No  
Airports: No Public Hearings:

Environmental Classification (Cat-Ex, EA, EIS): Documented CatEx

Transportation Enhancements: Temporary closures likely during construction, Improved Bicycle/Pedestrian Sidewalk/Shared Use Path upon project completion

Intermodal: Temporary closures likely during construction.

### Railroads Crossings

RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
BNSF 081328B CASS LK-DL SW Washington St Underpass	1	3 Bridge	9	0-20MPH	Grade Separation	Same

### Purpose and Need Statement For Regional Projects

1. The railroad bridge was originally constructed in 1937 as two lanes wide and in 1964 was expanded to four lanes wide. BUS US 81/N Washington St was originally constructed in 1964 under NDDOT project F-FG-608(6). According to record drawings, the cross section was 9" of concrete pavement, on 3" of sand, on 36" of pit run gravel, on 6" of lime treated subgrade. In 1985 this section of road had a concrete grinding project, which according to the record drawings removed an average of 1/4". In 2003 there was a project to overlay the concrete with 1-1/2" of Class 31 asphalt. In 2017 there was a project that milled and overlaid the pavement underneath the underpass from approximately Demers Ave to 2<sup>nd</sup> Ave N.
2. There are a total of four through lanes for north and south bound traffic. Northbound traffic at the northern project limits have a left turn lane for 1<sup>st</sup> Ave S. The through lanes have an approximate width of 14.5' from the lane line to the face of the curb. Based on aerials the left turn lane appears to be 11' wide.
3. According to the 2012 Washington St Corridor Study, "Concrete cores indicated the main cracking is result of ACR and to a lesser extent ASR. Damage from ACR and ASR is not reversible or repairable: the only long term corrective option is replacement of the affected elements of the structure. The bridge also exhibits deterioration in the superstructure and retaining walls typical of a bridge of this age." According to the 2012 study, this pavement is reaching the end of its useful life.

4. The existing geometrics do not matter as the proposed project for reconstruction.
5. This study also indicated that all three tracks would need to remain in service during construction. A shoo-fly bridge would need to be constructed and would likely be constructed on the south side to accommodate switching activities. An underpass on the south side of the bridge will likely limit the vertical clearance restricting the size of vehicles that can use the road during construction.
6. There are existing sidewalks and shared use paths which will need to be addressed during the project development phase.
7. Lift Station #183, which provides for removal of storm water from the underpass, will need to be replaced at the same time the structure is replaced based on the relative proximity to the existing retaining walls. In addition, this lift station has a capacity to handle a five year design storm. The 2012 Study recommended that the lift station be replaced with a lift station capable of handling a 25-year design storm event to meet NDDOT design standards.
8. The existing sanitary sewer adjacent to the project was constructed in 1978. At this time it is assumed that no maintenance or replacement work is required.
9. There are street lights on both sides of the road. These street lights are believed to be 40' tall steel poles with davit arms and 250W High Pressure Sodium fixtures, which are believed to be American Electric Lighting No. 115\_25S\_R3\_DG or an equivalent thereof.
10. There are no traffic signals within the project limits. Though the intersection is outside the project limits, the intersection of Washington St and Demers Ave is on the 2016 High Crash Intersection Report #14. No additional turn lanes are needed within the project limits.

Additional information in regards to the proposed project may be found in the following pages, which are excerpts from the 2012 Washington St. Corridor Study.

Remarks:

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City Engineer: Allen N. Grant

Date: 1/17/18

District Engineer: Julie A. Hahn

Date: 1/18/18

## Discarded Alternatives: Interchange, Roundabout, Jughandle, Fly-Over, Northbound and Southbound Lane Expansion and Improvements to Complimentary Corridors

While a number of improvement strategies have been evaluated in the past to improve traffic conditions, limited availability of ROW coupled with potential impacts on adjacent properties serve as obstacles to increasing roadway capacity. With these constraints in mind, a multi-iterative analysis process was developed for the intersection. First, options recently studied and discarded were screened out including interchange construction and improvements to complimentary corridors. Next, options anticipated to significantly impact adjacent businesses were screened out including fly-over, near-side jughandle, far-side jughandle and roundabout alternatives and any alternative that included an additional northbound or southbound through lane. Finally, any alternative that failed to meet capacity requirements were discarded including the 2035 LRTP recommended at-grade configuration.

It is important to note the continuous flow intersection configuration positively addresses all of the identified crash patterns at the intersection. The issue of sideswipe susceptibility present in the westbound double left-turn lane may be reduced with improved geometrics, such as AASHTO recommended receiving lanes of 15 foot width. The new configuration would completely revamp the movement. If the sideswipe crash rate is not improved upon continuous flow intersection implementation, it is recommended positive signage and pavement markings restricting merging movements within the double left-turn pocket be installed.

## Recommendation: Replace the Existing BNSF Railway Underpass Structure and Adjacent Lift Station #183

Widespread cracking is present in the portion of the pier originally constructed in 1937. Concrete cores indicate the main cracking is result of ACR and to a lesser extent ASR. Damage from ACR and ASR is not reversible or reparable: the only long term correction option is replacement of the affected elements of the structure. The bridge also exhibits deterioration in the superstructure and retaining walls typical of a bridge of this age.

The pavement underneath the bridge structure was constructed in 1964 and is reaching the end of its useful life. Vertical clearance constraints underneath the BNSF Railway Bridge have reduced the potential improvement options underneath the bridge exclusively to pavement rehabilitation. Rehabilitation efforts improve deteriorated sections but do not prevent future deterioration concerns.

Full bridge replacement would alleviate any ASR and ACR issues within the bridge. Additionally, full bridge replacement would address all other concerns to the retaining walls and superstructure. Finally, during bridge replacement, the pavement underneath the bridge could be reconstructed.

Currently, the bridge has retaining walls on three of the four quadrants with a wing wall on the northwest side of the bridge. Sloped sections to the abutment may potentially reduce or eliminate the need for retaining walls. Sloped sections are potentially more aesthetically appealing and the open sides may be more attractive to pedestrian and bicycle activity. It is important to note the proposed grades required to tie in a bridge with sloped sides may create undesirably steep grades adjacent to the former City Detention Hospital, currently used as a multi-resident housing unit. To avoid possible negative impacts at this potentially historic building, a minor retaining wall adjacent to this building may be appropriate. Additionally, bridge replacement with retaining walls does offer cost and ROW benefits.

To balance aesthetic, multimodal, ROW and cost considerations, a combination of sloped sections and retaining walls may be appropriate. This balance would be developed during the environmental document phase of the project. A bridge with sloped sections can be reviewed on FIGURE 7.14 and 7.15 to conservatively highlight the bridge studied with the largest footprint and ROW requirements. FIGURE 7.14 illustrates a bridge with sloped sections, FIGURE 7.15 illustrates a bridge with a combination of sloped sections and retaining walls and FIGURES 7.16 and 7.17 illustrate the proposed bridge dimensions.

All three of the existing tracks would need to remain in service during construction. As a result, a shoo-fly bridge would need to be constructed to detour rail service around the bridge construction. Although the exact design ROW requirements necessary to construct a shoo-fly was beyond the scope of this report, potential impacts were estimated. The two most impactful shoo-fly options were conservatively studied. These options included a full north or south bypass structure. It is important to note that alternative shoo-fly options with reduced impacts may be possible. A shoo-fly routed to the north would potentially impact four (4) buildings. A shoo-fly to the south would impact one building and the railroad maintenance roundhouse. It is important to note that the grades present south of the underpass may limit the vertical clearance that can be provided under the shoo-fly bridge, restricting the size of vehicles that can use the route during construction.. Refer to 7.16 for a graphic illustration of the potential building impacts for a north and south shoo-fly.

Input received during consultation and coordination with representatives of BNSF Railway indicated that a north shoo-fly alignment will be problematic and may not be feasible. In order to provide rail service to the State Mill and Elevator and American Crystal Sugar, BNSF must be able to operate several switches in the vicinity of the bridge. BNSF representatives stated that the switching operation would not be feasible with the north alignment due to their operational requirements.

Lift station #183 is approximately three feet from the east BNSF Railway Bridge retaining wall and would need to be replaced and relocated upon bridge improvements. Storm water design calculations performed on the existing drainage area indicate that the existing pumps are sized with capacity for a five-year design storm. It is recommended that reconstruction of this lift station includes upgrades to handle a 25 year storm event to meet NDDOT design standards. Additionally, it is recommended the lift station be equipped with a grit chamber or sediment trap to increase the useful life the station's pumps.

Note that bridge reconstruction should be coordinated with intersection design at the DeMers Avenue intersection to ensure adequate bridge clearance and that Washington Street gradelines are compatible. The DeMers Avenue intersection elevations may need to be modified to meet the desired bridge clearance and approach grades.

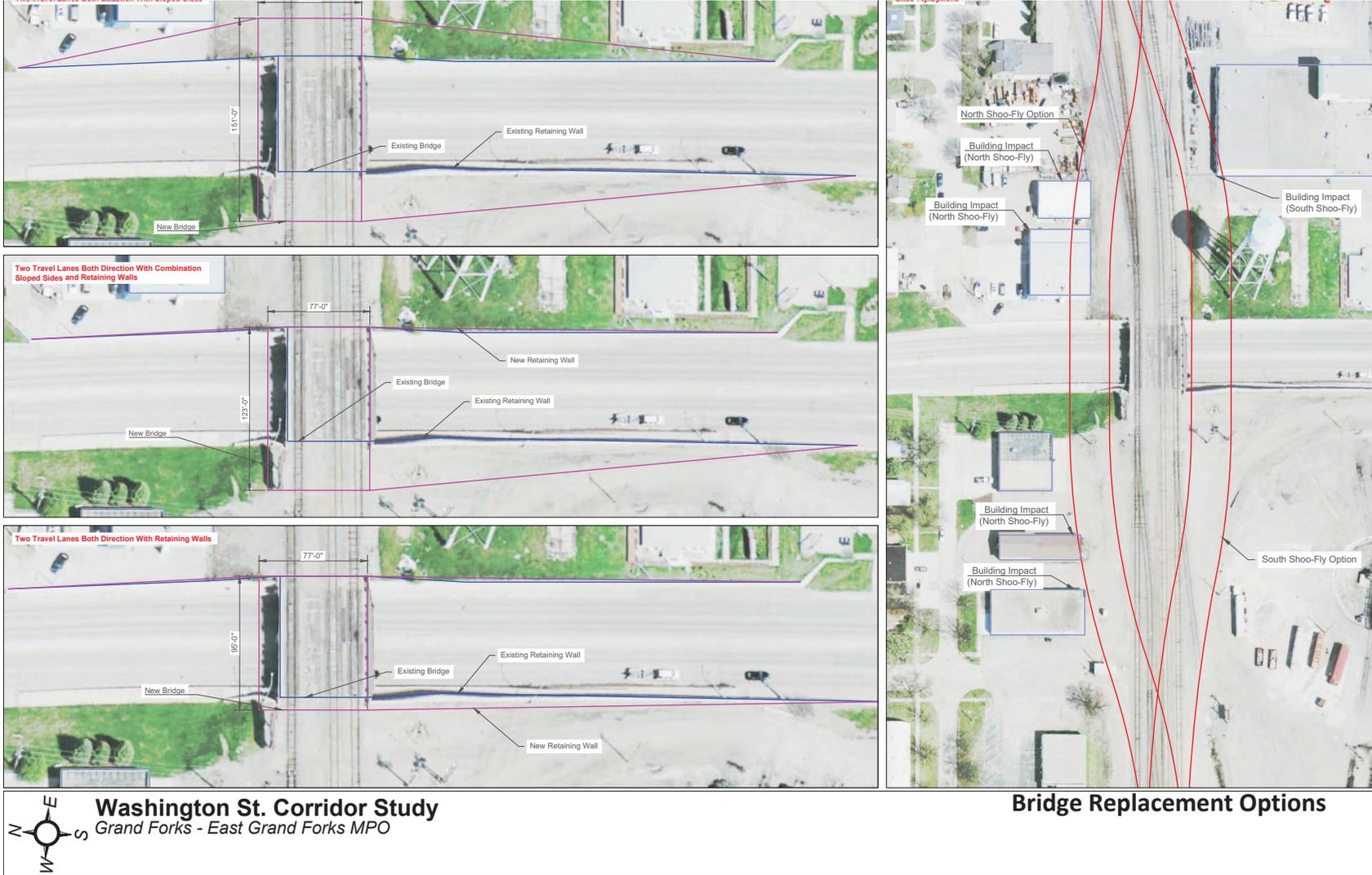
If the DeMers Avenue intersection improvements are not implemented, the southbound queue lengths would exceed the distance between the intersection and the bridge during the peak hour of the day. This scenario restricts turning vehicles from entering designated turn lanes. As a result, if the DeMers Avenue intersection improvements are not adopted and scheduled within a reasonable time after bridge reconstruction, it may be necessary to expand the bridge to include 4 southbound lanes to account for vehicle queues. Bridge expansion to include 2 additional southbound lanes would increase the cost of bridge by an estimated \$4,000,000 in 2011 dollars. It is important to note that cost estimates that included this additional \$4,000,000 was presented to the steering committee. Steering Committee feedback indicated that this additional cost may be impractical. This input was supported by the fact that other than at 17th Avenue South where frontage roads and medians are in place, no location was able to meet NDDOT turn lane length standards. As a result of the input and supporting analysis, this cost was not included in the implementation strategy for the corridor but should be revisited during project development.

FIGURE 7.14 – Proposed BNSF Railway Underpass Improvements (Sloped Section Alternative)



FIGURE 7.15 – Proposed BNSF Railway Underpass Improvements (Sloped Sections/Retaining Wall Combination Alternative)





Bridge Replacement Options

FIGURE 7.16 – Bridge Replacement Options

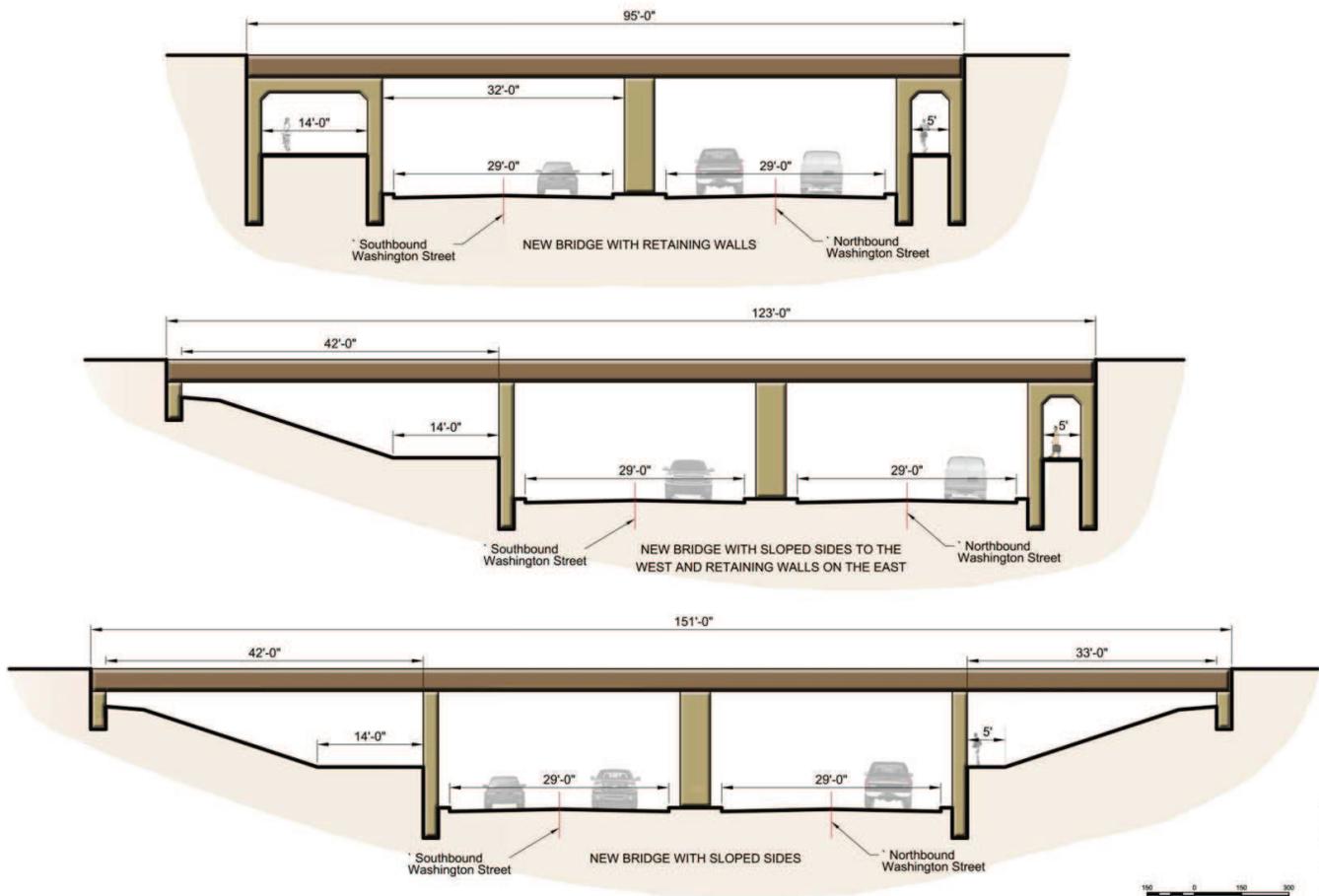


FIGURE 7.17 – Bridge Alternatives - Cross Sections

## Discarded Alternative: Short-Term Bridge Repair

Short-term repairs and west bridge span replacement were considered during analysis. Short-term repairs include those measures necessary to ensure the continued functionality of the bridge for the next five years. However, to ensure functionality of the bridge beyond this time period, long-term repairs would need to be completed. As result, the alternative was discarded during analysis.

## Discarded Alternative: Partial Bridge Replacement

A west bridge span replacement would include removal and replacement of the west bridge span in conjunction with concrete rehabilitation to the east span. With removal of the west span, the ASR and ACR issues would be removed. Cores from Braun Intertec do not indicate any ASR or ACR in the east span constructed in 1964. At some point in the future, the east span will need to be replaced at a time when the west span is still functional. Splitting the reconstruction into intermittent phases will double the frequency that traffic is impacted. Additionally, the overall cost of splitting the span replacements will be higher than replacing the entire bridge at once due to the cost of installing a shoo-fly required for each replacement. The cost of a shoo-fly was estimated at approximately 1.7 million dollars.

## Discarded Alternative: Expand Bridge to Include Additional Lanes

Existing and forecasted 2035 corridor progression and capacity analysis indicated that the corridor is adequately served by the existing lane configuration underneath the bridge if DeMers Avenue intersection improvements are implemented. It is important to note that the design life of the bridge exceeds the study horizon for this project. It was beyond the project scope to consider traffic volumes beyond the year 2035. As a result, it may be appropriate to determine the specific bridge size and corresponding lane arrangement during the environmental project phase.

The southbound through-lane queue lengths at DeMers Avenue are anticipated to terminate approximately 40 feet from the bridge. To prevent queue blockage at the left and right-turn lane, it is recommended turn lanes be extended this distance. Based upon NDDOT design manual standards for turn-lanes, a 96 foot taper length is required from the end of the full-width turn-lane length. To accommodate for these taper lengths, the bridge would need to be extended by two-lane widths. It is important to note that no turn-lanes within the corridor meet NDDOT design standards due to the short block lengths. As a result, the cost associated with providing two additional lanes underneath the bridge to account for the adequate taper length distances was deemed an unnecessary luxury at this tightly constrained location. As such, the alternative was discarded.

## Recommendation: Replace the Traffic Signal at 2nd Avenue North with Two-Way Stop Control

The intersection at 2nd Avenue North is not anticipated to meet traffic signal warrants throughout the study horizon. Analysis based upon procedures outlined in the FHWA publication User Guide For Removal of Not Needed Traffic Signals indicate the intersection may experience traffic operational and safety benefits from traffic signal removal. Analysis indicated upon traffic signal removal and two-way stop control installation on 2nd Avenue North, the location is anticipated to experience a reduction in crashes. Additionally, removal of the signal would eliminate any potentially unnecessary stops incurred by mainline Washington Street traffic. Eliminating unnecessary stops would reduce delay and fuel consumption and have minimal effects upon emissions at the intersection.

It is important to note several factors impact the traffic control signal removal decision other than analytical justification. Public opposition, as well as political and institutional considerations should be weighed against the technical findings provided in the report. If the decision is made to remove the candidate traffic control signal, guidelines outlined in the User Guide For Removal of Not Needed Traffic Signals should be followed. Refer to FIGURE 7.18 for a graphic illustration of this option.

## Implementation Plan

### Methodology

The purpose of this step is to provide the local jurisdictions with the necessary information to address the corridor transportation needs and guide the allocation and investment of transportation funds. This portion of the report identifies all project elements, includes programmatic cost estimates sufficient to include within local and regional Transportation Improvement Programs (TIP), evaluates options for funding sources and prepares a recommended priority-based schedule for implementation.

At the request of the MPO, City and NDDOT, a prioritization plan was identified first. This plan looks at the corridor in isolation and does not account for the transportation needs of the region as a whole and financial constraints resulting from funding other regional projects. The purpose of this plan is to provide decision makers with the necessary information required to make difficult and complicated short and long-term planning decisions.

First the corridor was segmented at logical termini (refer to FIGURE 8.1). Next, the corridor needs were identified to assist in project prioritization (refer to FIGURE 8.2). Corridor needs were tabulated in four categories: safety, infrastructure, multimodal and operational needs. These needs were subsequently rated. A rating of 5 corresponds to a need requiring urgent attention and a rating of 1 corresponds to a need that does not require immediate attention. It is important to note that the rating scale is relative to the perceived needs within the corridor exclusively. For example, a categorical rating of 1 is not to say that a specific corridor need is not essential, but implies that comparatively this improvement is not as urgent as other needs in this category at other locations within the corridor. The purpose of this rating scale is for ordering implementation strategies within the corridor and is not intended for comparative purposes beyond the study limits. Refer to TABLE 8.1 for results of the corridor needs assessment.

TABLE 8.1 – Corridor Needs Assessment

Corridor Segment	Safety	Infrastructure	Multimodal	Operations
8th Avenue to 1st Avenue North	2	3	5	1
1st Avenue North to 5th Avenue South	5	5	4	1
5th Avenue South to 7th Avenue South	5	1	4	5
7th Avenue South to Hammerling Avenue	3	3	5	3
Hammerling Avenue to 17th Avenue South	1	1	1	2

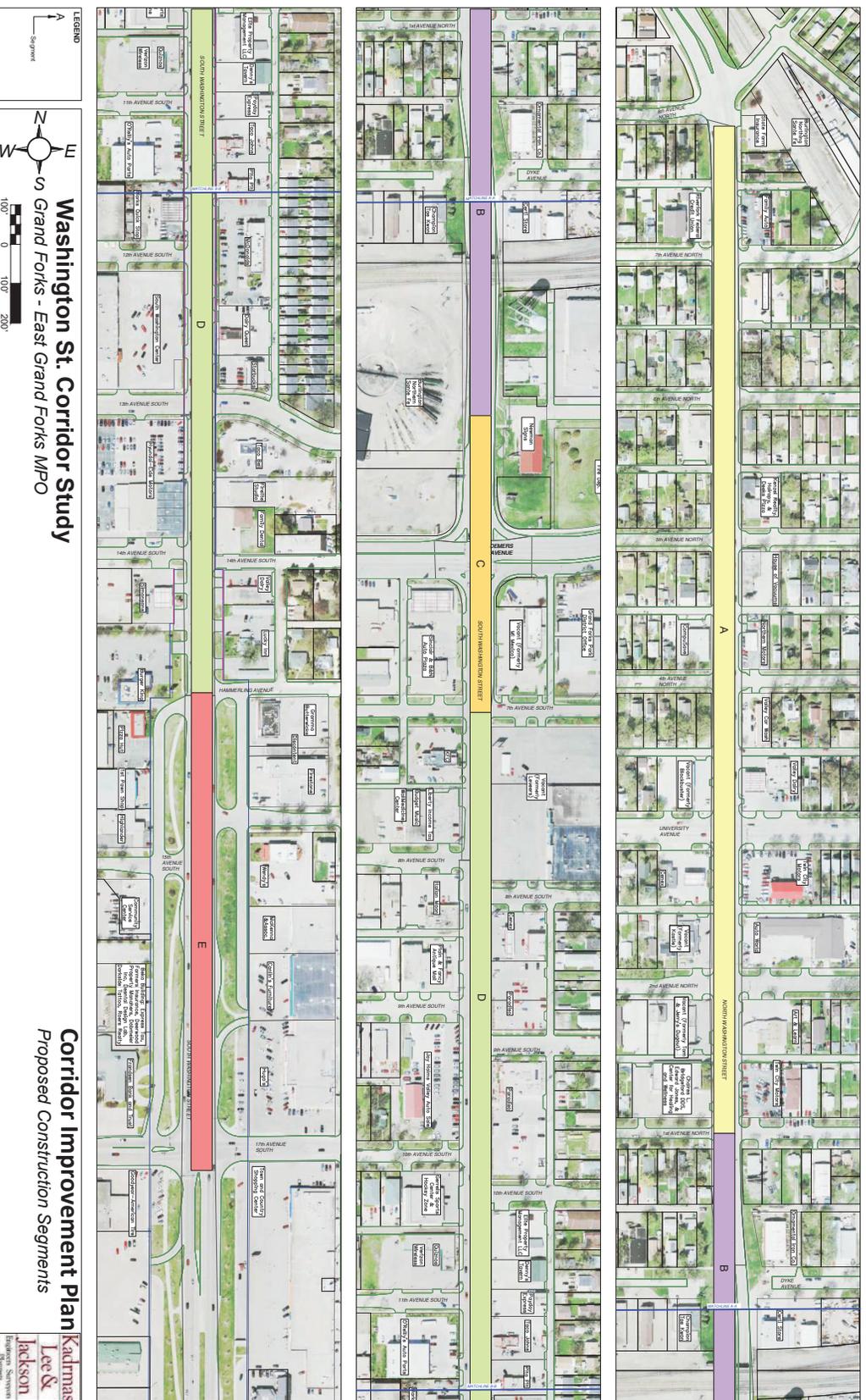


FIGURE 8.1 – Corridor Improvement Plan Proposed Construction Segments



Corridor Needs Matrix

Corridor Segment	Safety	Infrastructure	Multimodal	Traffic Operations
<b>A.</b> 8th Avenue North to 1st Avenue North	<p>*WB approach of 8th Avenue North is approximately 50 feet from railroad tracks. This location meets Warrant 9 requirements for traffic signal installation.</p> <p>*3.7 crashes per year attributed to ingress or egress into private driveways.</p> <p>*NB and SB approaches of University Avenue each experienced 3 left-turn crashes.</p>	<p>*Pavement originally constructed in 1952 with structural overlays in 1970, 1985 and 2002.</p>	<p>*ADA side-slope standards are not met at the majority of driveways.</p> <p>*ADA clearance standards are not met around majority of street lights.</p> <p>*Sidewalks in need of rehabilitation at multiple locations.</p> <p>*No current bicycle accommodations.</p>	<p>*2nd Avenue North intersection does not meet MUTCD traffic signal warrants. Traffic operation benefits are anticipated upon conversion to two way stop control.</p>
<b>B.</b> 1st Avenue North to 5th Avenue South	<p>*Bridge deterioration may lead to structural instability.</p> <p>*Bridge piers are within close proximity to driving lanes with no protection.</p>	<p>*West span of BNSF railroad bridge structure has irreversible conditions that leads to increased deterioration and an abbreviated useful life</p> <p>*Pavement was constructed in 1964 with no structural overlays since.</p> <p>*Storm sewer lift station #183 adjacent to the BNSF bridge structure is sized for 5 year event (NDDOT requires underpass lift stations to be sized for a 25 year event).</p>	<p>*Water leakage at BNSF bridge retaining wall can create icy sidewalks.</p> <p>*Narrow pedestrian/bicycle path under BNSF bridge structure does not meet AASHTO design standards for bicycles.</p>	<p>*Bridge rehabilitation offers potential to install conduit and fiber optic hardware to interconnect north and south sides of City.</p>
<b>C.</b> 5th Avenue South to 7th Avenue South	<p>*15.3 rear-end crashes per year at DeMers Avenue intersection.</p> <p>*0.7 pedestrian or bicycle crashes per year at DeMers Avenue intersection.</p> <p>*1.7 SB to EB crashes per year at DeMers Avenue intersection.</p> <p>*1.7 crashes per year at 7th Avenue South intersection attributed to NB DeMers Avenue spillback conditions.</p> <p>*4th Avenue South on-ramp onto DeMers Avenue intersection (0.2 miles from DeMers Avenue intersection) identified as high crash location by NDDOT due to rear-end crash rate.</p> <p>*1.3 crashes per year attributed to ingress/egress into/out of private driveway.</p>	<p>*Pavement has varied sections. The section requiring the most immediate attention is between 5th Avenue South and DeMers Avenue which was constructed in 1964 with no structural overlays.</p> <p>*DeMers Avenue watermain trunk line is cast iron underneath Washington Street and should be replaced with PVC.</p>	<p>*ADA side-slope standards are not met at driveways.</p> <p>*Porkchop islands at DeMers Avenue intersection do not meet current AASHTO design standards.</p> <p>*No bicycle facilities south of DeMers Avenue.</p>	<p>*DeMers Avenue intersection operates at LOS 'E' during existing peak-hour and is anticipated to operate at LOS 'F' during forecasted peak hour.</p> <p>*NB DeMers Avenue Intersection traffic experiences spillback onto 7th Avenue South.</p>
<b>D.</b> 7th Avenue South to Hammerling Avenue	<p>*9.3 crashes per year attributed to ingress/egress into/out of private driveway.</p> <p>*1.7 crashes per year attributed to through or left-turn movements from the westbound approach of 10th Avenue South (10th Avenue South side-street approaches offset by approximately 100 feet).</p>	<p>*Pavement originally constructed in 1952 with structural overlays in 1974 and mill and overlays in 1985 and 2002.</p>	<p>*No traffic control other than a marked crosswalk at 9th Avenue South to allow pedestrians to cross Washington Street between DeMers Avenue and 13th Avenue South.</p> <p>*ADA side-slope standards are not met at majority of driveways.</p> <p>*Sidewalks in need of rehabilitation at multiple locations.</p> <p>*No current bicycle accommodations.</p> <p>*No bus turn-outs or transit patron amenities.</p>	<p>*The negatively offset intersection of 8th Avenue South (offset by approximately 120 feet) is anticipated to operate at LOS 'E' during forecasted peak hour operation.</p> <p>*Negatively offset intersections at 9th, 10th, and 14th Avenues South cause operational issues.</p>
<b>E.</b> Hammerling Avenue to 17th Avenue South		<p>*Pavement was reconstructed in 1997.</p>	<p>*Includes bus turn-outs but does not include transit patron amenities.</p>	<p>*Forecasted 2035 SB 17th Avenue South through queue lengths exceed existing full-width turn-lane lengths.</p> <p>*The positively offset intersection of 15th Avenue South (offset by approximately 90 feet) is anticipated to operate at a LOS 'F' during forecasted peak hour operation.</p>

All crash data is from 1/1/2008 to 12/31/2010.

FIGURE 8.2 – Corridor Needs Matrix

During implementation planning, each corridor needs parameter was not weighted equally. First, improvements corresponding to safety in regards to minimizing crashes or potential infrastructure failures were considered. Next, infrastructure needs were considered due to the time sensitive nature of deterioration. Finally, multimodal and traffic operations were considered to promote efficient and convenient vehicular, pedestrian, bicycle and transit traffic flow.

Improvements that could be implemented without full roadway reconstruction were addressed as standalone projects. Standalone projects were much smaller in scope and magnitude than the entire corridor segment projects. As such, these projects were accompanied by much lower associated costs. The lower costs associated with these projects allow for implementation flexibility. Based upon the varying degree of funding, planning and project development between standalone and large-scale reconstruction projects, unique prioritization lists was developed for each. Similar methodology was utilized to develop the standalone project prioritization list. For example, the 2nd Avenue North signal replacement with two-way stop control was the first project prioritized due to the anticipated improvements to crash rates and traffic operations compounded by the inherent long-term cost benefits of the project. Implementing this project first may result in signal maintenance and operation cost savings that could subsequently help pay for other projects in the future.

It is important to note that the implementation plan assumes proper maintenance of the existing and proposed infrastructure including seal coats, structural overlays, concrete pavement repair, restriping, sign maintenance, signal timing modifications, etc. Roadway maintenance requirements may spur project development in an order that disagrees with the following plan. Refer to TABLES 8.2 and 8.3 for details regarding the corridor-specific prioritization plan.

## Implementation Plan

TABLE 8.2 – Full Reconstruction Project Priority

Year	Implementation Plan with Regional Considerations	Planning Term	Programming Cost (1st Year of Term)	Programming Cost (Mid-Term Year)	Programming Cost (Last Year of Term)
2016	32nd Avenue South to Hammerling Avenue Preventive Maintenance <sup>1</sup>	Mid-Term 2016-2022	<b>\$2,281,224</b> Federal \$1,824,979 State \$228,122 Local \$228,122	<b>\$2,566,067</b> Federal \$2,052,854 State \$256,607 Local \$256,607	<b>\$2,886,476</b> Federal \$2,309,181 State \$288,648 Local \$288,648
	1st Avenue North to 5th Avenue South Full Reconstruct (Include Underpass Improvements) <sup>2</sup>	Mid-Term 2016-2022	<b>\$14,466,859</b> Federal \$11,573,487 State \$1,446,686 Local \$1,446,686	<b>\$16,273,248</b> Federal \$13,018,599 State \$1,627,325 Local \$1,627,325	<b>\$18,305,191</b> Federal \$14,644,153 State \$1,830,519 Local \$1,830,519
	Alternate Bicycle Route Adjacent to Corridor <sup>3</sup>	Mid-Term 2016-2022	<b>\$210,286</b> Federal \$168,229 State \$21,029 Local \$21,029	<b>\$236,543</b> Federal \$189,234 State \$23,654 Local \$23,654	<b>\$266,079</b> Federal \$212,863 State \$26,608 Local \$26,608
	8th Avenue North to 1st Avenue North Full Reconstruct	Long-Term 2023-2035	<b>\$8,017,637</b> Federal \$6,414,110 State \$801,764 Local \$801,764	<b>\$10,144,869</b> Federal \$8,115,895 State \$1,014,487 Local \$1,014,487	<b>\$12,836,495</b> Federal \$10,269,196 State \$1,283,650 Local \$1,283,650
	7th Avenue South to Hammerling Avenue Full Reconstruct	Long-Term 2023-2035	<b>\$10,336,000</b> Federal \$8,268,800 State \$1,033,600 Local \$1,033,600	<b>\$13,078,337</b> Federal \$10,462,670 State \$1,307,834 Local \$1,307,834	<b>\$16,548,269</b> Federal \$13,238,615 State \$1,654,827 Local \$1,654,827
	Alternate Bicycle Route Adjacent to Corridor <sup>2</sup>	Long-Term 2023-2035	<b>\$276,722</b> Federal \$221,378 State \$27,672 Local \$27,672	<b>\$350,142</b> Federal \$280,114 State \$35,014 Local \$35,014	<b>\$443,041</b> Federal \$354,433 State \$44,304 Local \$44,304
	Traffic Signal Fiber Optic Interconnect	Long-Term 2023-2035	<b>\$1,097,052</b> Federal \$877,642 State \$109,705 Local \$109,705	<b>\$1,388,121</b> Federal \$1,110,497 State \$138,812 Local \$138,812	<b>\$1,756,416</b> Federal \$1,405,133 State \$175,642 Local \$175,642
	5th Avenue South to 7th Avenue South Full Reconstruct (Include DeMers Avenue Intersection Improvements)	Long-Term 2023-2035	<b>\$18,758,124</b> Federal \$15,006,499 State \$1,875,812 Local \$1,875,812	<b>\$23,735,011</b> Federal \$18,988,009 State \$2,373,501 Local \$2,373,501	<b>\$30,032,361</b> Federal \$24,025,889 State \$3,003,236 Local \$3,003,236
	2nd Avenue North Intersection Signal Replacement with Two-Way Stop Control, 8th Avenue North Traffic Signal Installation, University Avenue Northbound and Southbound Left-Turn Improvements, 15th Avenue South Right Turn-Lane Installation & 17th Avenue South Turn-Lane Modifications	Part of Another Priority	Part of Another Priority	Part of Another Priority	Part of Another Priority
<p><sup>1</sup>The majority of this project is beyond the project limits and scope of this study. This cost represents an NDDOT estimate and is not included in the Appendix.</p> <p><sup>2</sup>Cost conservatively represents the highest cost bridge alternative. This alternative includes full bridge replacement with sloped sections.</p> <p><sup>3</sup>Cost assumes that roadway widening is not required to implement an alternate bicycle route adjacent to the corridor. Additionally the cost assumes that the pedestrian beacon at the intersection of North 15th Street and University is relocated to the North 14th Street and University. This improvement is pending Winship Elementary School acceptance</p>					

# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

(Use TAB key to navigate.)

## Adjust Scoring Categories

Category	Description	Weights	Points
<input type="text" value="1"/>	<input type="text" value="Economic Vitality"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.		
<input type="text" value="2"/>	<input type="text" value="Security"/>	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
	Increase security of the transportation system for motorized and nonmotorized uses.		
<input type="text" value="3"/>	<input type="text" value="Accessibility and Mobility"/>	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
	Increase the accessibility and mobility options to people and freight.		
<input type="text" value="4"/>	<input type="text" value="Environmental/Energy/QOL"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Protect and enhance the environment, promote energy conservation, and improve quality of life.		
<input type="text" value="5"/>	<input type="text" value="Integration and Connectivity"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Enhance the integration and connectivity of the transportation system across and between modes for people and freight.		
<input type="text" value="6"/>	<input type="text" value="Efficient System Management"/>	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
	Promote efficient system management and operation.		
<input type="text" value="7"/>	<input type="text" value="System Preservation"/>	<input type="text" value="20"/> %	<input type="text" value="20"/> pts <input type="button" value="Delete"/>
	Emphasize the preservation of the existing transportation system.		
<input type="text" value="8"/>	<input type="text" value="Safety"/>	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
	Increase safety of the transportation system for motorized and nonmotorized uses.		
<input type="text" value="9"/>	<input type="text" value="Local/Regional Factors"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Factors of local or regional importance		
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No
1=Yes

**Project Number**

**Project Name**

Bus US 81/Washington S 5th Ave N to 1st Ave S Reconstruction Underpass - 2022
--

### Category 1 Economic Vitality

<i>Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.</i>		<b>Assign score 0 or 1</b>
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	0
D	Improves connection to terminal (sea, air, multimodal) on the last mile or two ac	0

### Category 2 Security

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Install equipment that monitors the security of the transportation infrastructure	0
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinates/improves Special Events Management Plans	0

### Category 3 Accessibility and Mobility

<i>Increase the accessibility and mobility options to people and freight.</i>		<b>Assign score 0 or 1</b>
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Consistent with access control regulations	0
C	Enhances accessibility and mobility for all modes	1
D	Address LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to area businesses	0

### Category 4 Environmental/Energy/QOL

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life.</i>		<b>Assign score 0 or 1</b>
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	0
C	Decreases fuel consumption which reduces greenhouse gas	0
D	Avoids or minimize impacts to wetlands or other natural habitats	1
E	Incorporates innovative stormwater management techniques	1
F	Promotes nonmotorized travel	1

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

**Project Number**

**Project Name**

Bus US 81/Washington S 5th Ave N to 1st Ave S  
Reconstruction Underpass - 2022

0=No  
1=Yes

### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system across and between modes for people and freight.</i>		Assign score 0 or 1
A	Reduces excessive travel delays	0
B	Improves direct travel trips between states	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	0
E	On Regional Primary Road	0

### Category 6 Efficient System Management

<i>Promote efficient system management and operation.</i>		Assign score 0 or 1
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system.</i>		Assign score 0 or 1
A	Utilize pavement management system results	0
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	1
e	Contributes to better system maintenance	1

### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		Assign score 0 or 1
A	Address locations identified as high crash locations in LRTP, coridor studies, hi	0
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

**Project  
Number**

**Project  
Name**

0=No  
1=Yes

<b>Category 9 Local/Regional Factors</b>		
<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	1
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0



Railroads Crossings						
RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
BNSF Mill Spur 081297E	1	1 Concrete	4	0-20MPH	Flashing Lights, Signs	Same
BNSF Glasston 062505C	1	1 Concrete	2	0-25MPH	Gates, Flashing Lights, Signs	Same

### Purpose and Need Statement For Regional Projects

By 2022 there are anticipated to be 42 signalized intersections on the regional system in the City of Grand Forks. Of these, over 60% of the signalized intersections will be over 20 years old by 2022, and over 20% will be at least 35 years old by this time. This project is intended to rehabilitate the aging traffic signals on the regional system as needed on a signal by signal basis. This can include replacement of aged conduit and cable, upgrading pedestrian push buttons, replacement of outdated video detection and emergency detection equipment, replacing outdated controller cabinets and associated hardware, replacing aging fiber optic cable, signal heads and installation of new back plates with retroreflective borders. In the older signal systems this can also include rehabilitating the signal poles and mast arms by, sandblasting them free of paint, primer, scale, rust, etc to a clean bare metal surface and applying a fresh coat of epoxy primer and paint. The rehabilitation of these signals will prolong the life of these signals systems, and reduce the downtime and maintenance of signals caused by deteriorating connections, and aging equipment.

1. The street sections at each of these intersections vary considerably in cross section, age and maintenance.
2. The driving lanes and turning lanes vary at each intersection. The proposed project does not include changing these widths.
3. The condition of the street pavements at each of these intersections varies. The purpose of the proposed project does not include any rehabilitation or reconstruction work for the pavement at the proposed intersections.
4. The existing geometrics at each intersection varies. The proposed project does not include modifying any intersection geometrics.
5. The proposed project does not include any geometric or intersection modifications, therefore there should not be any access points of special concern.
6. The existing sidewalks and/or shared use paths located at the intersections vary. The proposed project scope does not include any modifications to sidewalks or shared use

paths.

7. The condition of the existing storm sewer at each intersection vary. No storm sewer work is anticipated with this project
8. The condition of the existing water lines and sanitary sewer lines vary at each intersection. No sanitary sewer or water line work is anticipated with this project.
9. Existing street lights mounted on the traffic signals vary in size, length of mast arm, and luminaire. Each location will be evaluated for rehabilitation work during the project development phase.
10. See the attached sheet for location, age and anticipated level of maintenance for each traffic signal. Signals included in this proposed project located at intersections included in the 2017 High Crash Intersection Report are:
  - 32<sup>nd</sup> Ave S & S 34<sup>th</sup> St #11
  - S Washington St & 17<sup>th</sup> Ave S #14
  - Washington St & Demers Ave #24
  - 32<sup>nd</sup> Ave S & S 20<sup>th</sup> St #26
  - 32<sup>nd</sup> Ave S & S Columbia Rd #31
  - 32<sup>nd</sup> Ave S & S 31<sup>st</sup> St #40
  - 32<sup>nd</sup> Ave S & S Washington St #44
  - Demers Ave & 42<sup>nd</sup> St #46

Turn lanes are outside of the scope of this proposed project.

Remarks:

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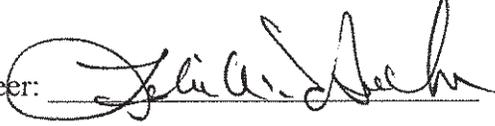
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City Engineer: 

Date: 1/17/18

District Engineer: 

Date: 1/10/18



# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

(Use TAB key to navigate.)

## Adjust Scoring Categories

Category	Description	Weights	Points
<input type="text" value="1"/>	<input type="text" value="Economic Vitality"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.		
<input type="text" value="2"/>	<input type="text" value="Security"/>	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
	Increase security of the transportation system for motorized and nonmotorized uses.		
<input type="text" value="3"/>	<input type="text" value="Accessibility and Mobility"/>	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
	Increase the accessibility and mobility options to people and freight.		
<input type="text" value="4"/>	<input type="text" value="Environmental/Energy/QOL"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Protect and enhance the environment, promote energy conservation, and improve quality of life.		
<input type="text" value="5"/>	<input type="text" value="Integration and Connectivity"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Enhance the integration and connectivity of the transportation system across and between modes for people and freight.		
<input type="text" value="6"/>	<input type="text" value="Efficient System Management"/>	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
	Promote efficient system management and operation.		
<input type="text" value="7"/>	<input type="text" value="System Preservation"/>	<input type="text" value="20"/> %	<input type="text" value="20"/> pts <input type="button" value="Delete"/>
	Emphasize the preservation of the existing transportation system.		
<input type="text" value="8"/>	<input type="text" value="Safety"/>	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
	Increase safety of the transportation system for motorized and nonmotorized uses.		
<input type="text" value="9"/>	<input type="text" value="Local/Regional Factors"/>	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
	Factors of local or regional importance		
<b>TOTAL</b>		<input type="text" value="100"/> %	<input type="text" value="100"/> pts

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
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Project Number

Project Name

Traffic Signal Maintenance Regional Roads - 2022

### Category 1 Economic Vitality

<i>Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.</i>		<b>Assign score 0 or 1</b>
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	0
D	Improves connection to terminal (sea, air, multimodal) on the last mile or two ac	0

### Category 2 Security

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Install equipment that monitors the security of the transportation infrastructure	1
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinates/improves Special Events Management Plans	0

### Category 3 Accessibility and Mobility

<i>Increase the accessibility and mobility options to people and freight.</i>		<b>Assign score 0 or 1</b>
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Consistent with access control regulations	0
C	Enhances accessibility and mobility for all modes	1
D	Address LOS deficiency not resolved by another planned project	0
E	Enhances the range of freight service options available to area businesses	0

### Category 4 Environmental/Energy/QOL

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life.</i>		<b>Assign score 0 or 1</b>
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	0
C	Decreases fuel consumption which reduces greenhouse gas	0
D	Avoids or minimize impacts to wetlands or other natural habitats	1
E	Incorporates innovative stormwater management techniques	0
F	Promotes nonmotorized travel	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

**Project Number**

**Project Name**

Traffic Signal Maintenance Regional Roads - 2022

### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system across and between modes for people and freight.</i>		<b>Assign score 0 or 1</b>
A	Reduces excessive travel delays	0
B	Improves direct travel trips between states	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	1
E	On Regional Primary Road	1

### Category 6 Efficient System Management

<i>Promote efficient system management and operation.</i>		<b>Assign score 0 or 1</b>
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	1

### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system.</i>		<b>Assign score 0 or 1</b>
A	Utilize pavement management system results	0
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	1
e	Contributes to better system maintenance	1

### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Address locations identified as high crash locations in LRTP, coridor studies, hi	1
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
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**Project Number**

**Project Name**

Traffic Signal Maintenance Regional Roads - 2022
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<b>Category 9 Local/Regional Factors</b>
--

<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	0
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0

## PROJECT SCOPING WORKSHEET

DATE: 1/17/2017

PRIORITY: Interstate system I-29 for construction in 2023

City: Grand Forks Street: I-29 near 47<sup>th</sup> Ave S

County: Grand Forks Length: ~1 mile

Proposed Improvement: Address congestion and level of service on Bus US 81/32<sup>nd</sup> Ave S with the construction of a new interchange bridge, approaches and ramps at 47<sup>th</sup> Ave S.

<i>Cost Estimates Breakdown (in \$1,000)</i>							
Alternate	PE	R/W	Utility	Constr.	Bridges	Misc.	Total
				36,100			36,100

Present Road: Surface Width? 4 lane divided Surface Type? Concrete

On Street Parking Allowed? Present: No Proposed: No

<b>Proposed Improvements</b>	
ADT Present: I-29 12,515 - 47 <sup>th</sup> Ave S 2,830	-32 <sup>nd</sup> Ave S 15,325 Yr: 2015
ADT Design: I-29 23,735 - 47 <sup>th</sup> Ave S 17,975	- 32 <sup>nd</sup> Ave S 25,890 Yr: 2040
Travel Way Width :	No. of Lanes: 4 & 2
Design Speed: 40 MPH (urban) & 70MPH Interstate	Roadway Width: 12 foot lanes
Maximum Curve:	Min. R/W Width:
Maximum Grade:	
<b>Right of Way</b>	
Will Additional ROW or easement be acquired? Yes ROW acquisition by: NDDOT	
Has any ROW easements been acquired since 7-1-72: Unknown ROW Condemnation by:	
Est. No. of occupied family dwelling to be displaced? None	
Est. No. business to be displaced? None	

<b>Impacts</b>
Will there be any additional Impacts (Cultural and Environmental Resources): No
Will there be any taking of any right-of-way from any public parkland (4F) or schools (6F): No
Airports: No Public Hearings: Maybe
Environmental Classification (Cat-Ex, EA, EIS): Cat-Ex or EA
Transportation Enhancements: Decreased traffic volume and congestion at 32 <sup>nd</sup> Ave S, improved Level of Service for intersections on Bus US 81/32 <sup>nd</sup> Ave S. This also anticipated to significantly reduced the number of vehicle miles traveled and vehicle hours traveled compared to a no build scenario.
Intermodal: Shared use path on overpass bridge

Railroads Crossings						
RR Name	No. Xings	No. Tracks and Type of Crossing	Daily Train Movements	Train Speed	Present Protection	Proposed Protection
None						

**Purpose and Need Statement For Regional Projects**

I-29 was originally constructed around 1968, at the time of its construction four interchanges were constructed in or around the city of Grand Forks. These interchanges included: N Washington St, Gateway Dr/US 2, Demers Ave (ND SH 297), and 32<sup>nd</sup> Ave S/Bus US 81. These interchanges have been in place for nearly 50 years, with no additional interchanges being built within the city limits. There are also two overpasses located at University Ave and at Merrifield Rd/County Rd 6. Over that time the City of Grand Forks has grown from a population of approximately 39,000 to approximately 57,000. Though the city of Grand Forks has grown, the city’s growth has been dense with a population density of 2,723people/sq mi. Grand Forks’ population density exceeds other similar cities within North Dakota:, Fargo – 2,318people/sq mi, Bismarck - 2,034people/sq mi, West Fargo - 1,924people/sq mi, Minot – 1,719people/sq mi, Williston – 1,083people/sq mi<sup>1</sup>.

With the increased population of Grand Forks, comes increased transportation needs, and associated traffic congestion on the existing infrastructure. In the summer of 2017 an I-29 Traffic Operations Report was completed looking at the I-29 corridor around the city. This report noted numerous times that the projected traffic volumes at the most southern existing interchange located at US Bus 81/32<sup>nd</sup> Ave S would have extreme levels of congestion, traffic cuing onto the interstate, and nearby intersections operating at a level of service F by 2025. This study looked at multiple aspects to prevent these issues from occurring in the future. This included, looking at non interstate improvements to encourage local traffic to use existing arterial roadways, improvements to the existing interchanges, and construction of new interchanges. The Highway Safety Improvement Project on 32<sup>nd</sup> Ave S/Bus US 81 programmed for 2019, includes installing a video camera and traffic signal programming to flush off ramp traffic if there is substantial backup on the ramp, to prevent traffic from backing up onto the interstate in the short term.

The study first looked at non-interstate improvements to encourage local traffic to use the existing arterial roadway system and reduce the traffic using the interstate. This included widening existing north-south arterial roadways such as 42<sup>nd</sup> St and Columbia Rd, improving some intersections including a continuous flow intersection, as well as adding dual left turn lanes, and realigning roadways to have better accessibility. The results of this scenario showed that these projects did not reduce demand onto I-29, and in some cases actually increased the volume of traffic onto I-29.

1. <http://www.towncharts.com/North-Dakota/Top-25-Cities-in-North-Dakota-ranked-by-Population-Density.html>

Another aspect which was explored was improvements to the interchange at 32<sup>nd</sup> Ave S/Bus US 81. Some of these alternatives included widening 32<sup>nd</sup> Ave S/Bus US 81, consolidating the east ramp, adding a northwest loop ramp, adding a southwest loop ramp, reconstructing the interchange to a diverging diamond interchange, and a diverging diamond with a partial cloverleaf. Of the available alternatives, only in two scenarios could 95% of the PM peak volumes in 2040 could be processed. In the summary of these alternatives the study states **“None of the alternatives studied under the Existing Interstate Access Scenario, without a 47<sup>th</sup> Avenue interchange, meet the established [Purpose and Needs] because they cannot improve operations to an acceptable level.”**

This report also evaluated the 32<sup>nd</sup> Ave S/Bus US 81 interchange with a new interchange constructed at 47<sup>th</sup> Ave S. By constructing a new interchange at 47<sup>th</sup> Ave S, traffic volumes on 32<sup>nd</sup> Ave S/Bus US 81 are forecasted to be reduced by approximately 40%. Evaluating available alternatives under this scenario 32<sup>nd</sup> Ave S/Bus US 81 could utilize the least expensive option of “Spot Improvements” and would be able to support anticipated traffic volumes and intersections are forecasted to operate at LOS D or better.

The proposed project is to construct a new interchange on I-29 and connect to 47<sup>th</sup> Ave S. The report identified a number of alternatives for consideration for this interchange. Though the proposed project will develop a selected alternative from the NEPA process proposed in 2020, the cost estimate included in this scoping report is based on the alternative with the highest score in the valuing planning analysis. This alternative identified in the report was for the 47<sup>th</sup> Ave Shifted Diamond with No Business Impacts.

Remarks:

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City Engineer: 

Date: 1/17/18

District Engineer: 

Date: 1/18/18

**Project: I-29 and 47th Ave S Interchange  
Construction  
1/25/2018**

Estimated Cost           \$36,100,000

Proposed Cost Share

Federal	80%	\$28,880,000
State	10%	\$3,610,000
Local	10%	\$3,610,000
<hr/> Total	<hr/> 100%	<hr/> \$36,100,000

## 32<sup>ND</sup> AVENUE/US 81B

32<sup>nd</sup> Avenue/US 81B serves a large majority of commercial activity in Grand Forks. Daily traffic volumes from 2015 along this corridor range from approximately 11,300 vehicles per day west of I-29 to 16,300 vehicles per day east of I-29. The areas surrounding I-29 at 32<sup>nd</sup> Avenue/US 81B and heading south to 47<sup>th</sup> Avenue are forecasted to be the largest population and employment growth centers in the city. Specifically, 58 percent of new employment opportunities are expected to occur within one-mile of either the 32<sup>nd</sup> Avenue/US 81B interchange or the 47<sup>th</sup> Avenue corridor. By 2040, this amount of growth is expected to result in traffic volumes around 43,000 vehicles per day east of I-29 and 23,000 vehicles per day west of I-29. This results in oversaturated interchange operations, producing long delays and queues by 2040.

Analysis completed for the Macro Level Alternatives Analysis found that the construction of a 47<sup>th</sup> Avenue interchange would have significant tangible benefits to the 32<sup>nd</sup> Avenue/US 81B interchange, potentially mitigating the need for costly widening at I-29 east to Columbia Road. The 32<sup>nd</sup> Avenue/US 81B intersection would experience more than 40 percent traffic reduction under this scenario, where other interchanges experienced far less. This necessitated a need to evaluate different interchange scenarios with and without the 47<sup>th</sup> Avenue interchange. Alternatives were analyzed under the Existing Interstate Access Scenario (no 47<sup>th</sup> Avenue interchange), which assumes a six-lane section on 32<sup>nd</sup> Avenue/US 81B, and the 47<sup>th</sup> Avenue Interchange Scenario, which assumes a four-lane section on 32<sup>nd</sup> Avenue/US 81B.

The Merrifield Road/CR 6 Interchange Infrastructure will also be considered later in this chapter but had minimal impacts to the overall operations of 32<sup>nd</sup> Avenue/US 81B. The combination of the 47<sup>th</sup> Avenue Interchange and the Merrifield Road/CR 6 Interchange provided similar benefits to 32<sup>nd</sup> Avenue/US 81B as the 47<sup>th</sup> Avenue interchange in isolation.

## ANALYSIS METHODOLOGY

Analysis for this interchange location used the Value Planning approach detailed previously in this report.

## INTERCHANGE ALTERNATIVES

### EXISTING INTERSTATE ACCESS SCENARIO

As described above, this scenario does not include any additional interchange infrastructure. This means the future development expected in the southwest metro will be funneled to the 32<sup>nd</sup> Avenue/US 81B corridor for access onto and across the interstate.

### Widen Only Alternative

The Widen Only Alternative (WO) would add one through lane in each direction on 32<sup>nd</sup> Avenue/US 81B from the 42<sup>nd</sup> Street west frontage road to east of 38<sup>th</sup> Street, as well as traffic control at the 42<sup>nd</sup> Street west frontage road and turn lanes at all four study intersections which would require bridge widening. The WO alternative is treated as the baseline for comparisons against other alternative designs; the true do nothing alternative model broke down and could not accurately replicate queues and delay.

Even with the additional capacity, this alternative was unable to be properly calibrated during the 2040 P.M. peak, with 15.2 percent latent demand. This means more than 1,500 vehicles did not enter the model so their delay has not been incorporated into the overall network delay and is not acceptable for analysis.

Based on the traffic the model could process, long queues, in excess of 1,000 feet are expected at all four study intersections. Levels of service are deficient at all study intersections, excluding the East Ramp intersection. It is important to note that the queues extending onto I-29 are likely not being incorporated into the East Ramp delay.

The estimated cost for this alternative was \$7.7 million which only included widening the bridge and the difference between reconstructing 32<sup>nd</sup> Avenue/US 81B as a four-lane section and reconstructing and widening as a six-lane section. This planning level cost should be further refined but was used as a baseline cost. Value planning scores for this alternative can be seen in Table 7-17.

# MICRO LEVEL ALTERNATIVES ANALYSIS

Table 7-17: 32<sup>nd</sup> Avenue/US 81B Widen Only Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 57.1, LOS "E"</li> <li>▪ P.M. Peak Average: 92.2, LOS "F"</li> </ul>	0*
Mainline Operations	<ul style="list-style-type: none"> <li>▪ Average A.M. Peak: 12.8, LOS "B"</li> <li>▪ Average P.M. Peak: 94.4 LOS "F"</li> </ul>	0*
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ No additional environmental impacts expected.</li> </ul>	8
Safety	<ul style="list-style-type: none"> <li>▪ Baseline crash potential distribution for alternative comparison:                             <ul style="list-style-type: none"> <li>» 6.5% Crossing Crash Potential</li> <li>» 62.5% Rear End Crash Potential</li> <li>» 31.0% Sideswipe Crash Potential</li> </ul> </li> </ul>	9
Cost	<ul style="list-style-type: none"> <li>▪ \$7.7 Million**</li> </ul>	10
<b>Total</b>		<b>27</b>

\*Score of zero assigned because model could not be calibrated. Not all delay considered.

\*\*Includes planning level costs on a per mile basis.

## Consolidated East Ramp

The Consolidated East Ramp (CER) Alternative would add a through lane in each direction as well as realign 42<sup>nd</sup> Street east of I-29 with the East Ramp. This helps split southbound traffic at 38<sup>th</sup> Street, a major bottleneck along the corridor. This alternative also incorporates double left turn lanes at 38<sup>th</sup> Street, a northbound right turn lane, westbound left and a traffic control signal at the 42<sup>nd</sup> Street west frontage road. It requires bridge widening. This alternative also incorporates two loops in the southeast and southwest quadrants, which helps eliminate crossing conflicts and improves operational efficiency by allowing a two-phase signal controller.

This alternative had 4.7 percent latent demand during the 2040 P.M. peak, which is acceptable for calibration according to FHWA standards. During the 2040 P.M. peak, operations at 42<sup>nd</sup> Street frontage road and 38<sup>th</sup> Street are deficient at LOS "E", while the two ramp intersections operate at LOS "D"; delays at the ramp intersections produce long queues onto the interstate. There are no operational concerns during the 2040 A.M. peak hour.

This alternative reduces crossing crash potential by 24.1 percent and rear-end potential by 49.0 percent when compared against the WO alternative. Sideswipe crash potential is increased by 188.6 percent when compared against the Widen Only alternative.

Value planning scores for this alternative can be seen in Table 7-18 with planning level design layout in Figure 7-26.

Table 7-18: 32<sup>nd</sup> Avenue/US 81B Consolidated East Ramp Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	<ul style="list-style-type: none"> <li>» A.M. Peak Average: 18.1, LOS "A"</li> <li>» P.M. Peak Average: 62.0, LOS "E "</li> </ul>	5
Mainline Operations	<ul style="list-style-type: none"> <li>» Average A.M. Peak: 11.92, LOS "B"</li> <li>» Average P.M. Peak: 55.1 LOS "F"</li> </ul>	4
Environmental Impacts	<ul style="list-style-type: none"> <li>» No significant new environmental impacts. 3.5 acres of ROW required.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>26.2% increase in crash potential when compared against Widen Only Alternative                             <ul style="list-style-type: none"> <li>» 24.1% Reduction in Crossing Crash Potential</li> <li>» 49.0% Reduction in Rear End Crash Potential</li> <li>» 188.6% Increase in Sideswipe Crash Potential</li> </ul> </li> </ul>	0
Cost	<ul style="list-style-type: none"> <li>» \$30.9 Million</li> </ul>	0
<b>Total</b>		<b>15</b>

## Northwest Loop Ramp

The Northwest Loop Ramp (NWL) Alternative incorporates a northwest loop on-ramp for westbound to southbound movements, turn lanes at adjacent intersections and traffic control at the 42<sup>nd</sup> Street west frontage road. This alternative requires widening the 32<sup>nd</sup> Avenue/US 82B bridge to accommodate additional through lanes. Due to the posted speeds and the ROW constraints, only a small radius could be constructed. This requires parallel merge lanes to ensure safe and efficient merging.

This alternative had 10.0 percent latent demand during the 2040 P.M. peak, which is not acceptable for calibration according to FHWA standards. Nearly 1,000 vehicles were unable to enter the network during the 2040 P.M. peak. However, based on the vehicles processed, the 42<sup>nd</sup> Street west frontage roads and 38<sup>th</sup> Street intersections were deficient at LOS “F” with the ramp intersections operating at LOS “E”. Queues at the ramp intersection extend onto the interstate, completely blocking all through lanes.

During the 2040 A.M. peak, only the 38<sup>th</sup> Street intersection is deficient at LOS “E”. There are no queueing concerns.

Value planning scores for this alternative can be seen in Table 7-19 with planning level design layout in Figure 7-27.

*Table 7-19: 32<sup>nd</sup> Avenue/US 81B Northwest Loop Ramp Interchange Alternative (Existing Interstate Access Scenario)*

	Results (2040 Conditions)	Score
Local Operations	» A.M. Peak Average: 39.1, LOS “D” » P.M. Peak Average: 99.4, LOS “F”	0*
Mainline Operations	» Average A.M. Peak: 13.3, LOS “B” » Average P.M. Peak: 54.4, LOS “F”	0*
Environmental Impacts	» No significant environmental impacts. Two acres of ROW required and some access revisions.	6
Safety	14.8% increase in crash potential when compared against Widen Only Alternative » 128.2% Increase in Crossing Crash Potential » 16.4% Reduction in Rear End Crash Potential » 53.6% Increase in Sideswipe Crash Potential	4
Cost	» \$27.8 Million	1
<b>Total</b>		<b>11</b>

\*Score of zero assigned because model not calibrated. Not all delay considered.

## Southwest Loop Ramp

The Southwest Loop Ramp (SWL) Alternative incorporates a southwest loop off-ramp for southbound to eastbound movements, turn lanes at adjacent intersections and traffic control at 44<sup>th</sup> Street. This alternative requires widening the 32<sup>nd</sup> Avenue/US 81B bridge to accommodate additional through lanes and access revisions to the 42<sup>nd</sup> Street west frontage road which allowed for a RIRO access on the northside of 32<sup>nd</sup> Avenue/US 81B but closed the access on the southside.

This alternative had 3.1 percent latent demand during the 2040 P.M. peak, which is acceptable for calibration according to FHWA standards. During the 2040 P.M. peak, operations at the East Ramp are deficient at LOS “E” with queues that extend onto the interstate. The 38<sup>th</sup> Street and 44<sup>th</sup> Street intersections are deficient at LOS “F” and LOS “E” respectively. The 44<sup>th</sup> Street intersection would be improved with a double left-turn lane. However, that would require two receiving lanes which would have building impacts. At this time, a single left-turn lane was analyzed.

During the 2040 A.M. peak, all intersections operate at LOS “C” or better except the 38<sup>th</sup> Street intersection which operates at LOS “E”. There are no queueing concerns at the ramp intersections.

The SWL Alternative reduces crossing crash potential by 42.1 percent and rear-end crash potential by 40.2 percent. Sideswipe crash potential is increased 88.3 percent.

Value planning scores for this alternative can be seen in Table 7-20 with planning level design layout in Figure 7-28.

# MICRO LEVEL ALTERNATIVES ANALYSIS

Table 7-20: 32<sup>nd</sup> Avenue/US 81B Southwest Loop Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	» A.M. Peak Average: 27.9, LOS "C" » P.M. Peak Average: 57.6, LOS "E"	5
Mainline Operations	» Average A.M. Peak: 13.2, LOS "B" » Average P.M. Peak: 23.9, LOS "D"	7
Environmental Impacts	» No significant environmental impacts. Two acres of ROW required and some access revisions.	6
Safety	0.5% decrease in crash potential when compared against Widen Only Alternative » 42.1% Reduction in Crossing Crash Potential » 40.2% Reduction in Rear End Crash Potential » 88.3% Increase in Sideswipe Crash Potential	10
Cost	» \$23.5 Million	5
<b>Total</b>		<b>33</b>

## Diverging Diamond Interchange

The Diverging Diamond Interchange (DDI) Alternative requires the two directions of traffic on 32<sup>nd</sup> Avenue/US 81B to cross to the opposite side of the road under the I-29 bridge. This allows left-turning and right-turning traffic to perform a free flow movement onto the interstate on-ramp. The free-flowing movements reduce the signal phases to two at each intersection, significantly reducing delays. The right-turn slip ramp on the southbound I-29 on-ramp requires access management at the 42<sup>nd</sup> Street west frontage road. This alternative requires widening the 32<sup>nd</sup> Avenue/US 81B bridge to accommodate additional through lanes. A backage road was configured with a signal incorporated at 44<sup>th</sup> Street.

This alternative had 6.0 percent latent demand during the 2040 P.M. peak, which is not acceptable for calibration according to FHWA standards. More than 600 vehicles were unable to enter the network during the 2040 P.M. peak. However, based on the vehicles processed, the West Ramp intersection and 38<sup>th</sup> Street intersection were deficient with LOS "E" during the 2040 P.M. peak. Queues at the West Ramp and East Ramp extend back onto the interstate. During the 2040 A.M. peak all intersections operate at LOS "D" or better with no queuing concerns. The DDI alternative increases crossing crash potential by 23.7 percent and sideswipe crash potential by 18.0 percent but decreases rear end crash potential by 9.4 percent.

Value planning scores for this alternative can be seen in Table 7-21: 32<sup>nd</sup> Avenue/US 81B Diverging Diamond Interchange Alternative (Existing Interstate Access Scenario) with planning level design layout in Figure 7-29.

Table 7-21: 32<sup>nd</sup> Avenue/US 81B Diverging Diamond Interchange Alternative (Existing Interstate Access Scenario)

	Results (2040 Conditions)	Score
Local Operations	» A.M. Peak Average: 23.2, LOS "C" » P.M. Peak Average: 50.8, LOS "D"	0*
Mainline Operations	» Average A.M. Peak: 13.3, LOS "B" » Average P.M. Peak: 77.0, LOS "F"	0*
Environmental Impacts	» No significant environmental impacts. Two acres of ROW required and some access revisions.	6
Safety	1.3% increase in crash potential when compared against Widen Only Alternative » 23.7% Increase in Crossing Crash Potential » 9.4% Reduction in Rear End Crash Potential » 18.0% Increase in Sideswipe Crash Potential	9
Cost	» \$22.1 Million	6
<b>Total</b>		<b>21</b>

\*Score of zero assigned because model not calibrated. Not all delay considered.

## Diverging Diamond Partial Cloverleaf

Additional analysis was completed for the 2040 P.M. peak hour using a diverging diamond partial cloverleaf design, shown in Figure 7-23. This uses a diverging diamond interchange concept with bypass lanes to a northwest loop ramp and southeast loop ramp. It would require access control at the 42<sup>nd</sup> Street west frontage road, double left-turn lanes on all approaches at 38<sup>th</sup> Street and would require significant bridge widening. This design has similar free flow movements and signal phase efficiency as the DDI alternative.

This alternative was only analyzed under the 2040 P.M. peak hour to determine if further analysis should be completed. With 4.7 percent latent demand it was technically calibrated. However, the 44<sup>th</sup> Street and 38<sup>th</sup> Street intersections were still deficient and queuing onto I-29 still occurred. Since this alternative did not have acceptable operations, no further analysis was completed.

*Figure 7-23: Diverging Diamond Partial Cloverleaf Alternative (Existing Interstate Access Scenario)*



## Summary of Alternatives Under Existing Interstate Access Scenario

The growth areas planned for the southwest metro result in more than 160 percent growth on 32<sup>nd</sup> Avenue/US 81B as this corridor is the only access across and onto I-29. This growth results in extreme congestion, to an extent where three of the five alternatives (WO, NWL, DDI) analyzed cannot process at least 95 percent or more of projected 2040 P.M. peak hour traffic, resulting in the inability to properly calibrate the alternatives. The remaining two alternatives that meet calibration standards do not meet local or mainline operations standards, with deficient intersection operations and queues onto the interstate. **None of the alternatives studied under the Existing Interstate Access Scenario, without a 47<sup>th</sup> Avenue interchange, meet the established PNS because they cannot improve operations to an acceptable level.**

The SWL Alternative scored highest based on the value planning criteria. It was able to accept 97 percent of the forecasted volumes for 2040 P.M. peak but provides deficient local operations. It improves crash potential but does require access management at the 42<sup>nd</sup> Street west frontage road. The summary of value planning scores is shown in Table 7-22.

*Table 7-22: Summary of 32<sup>nd</sup> Avenue/US 81B Interchange Alternatives Under Existing Interstate Access Scenario*

Alternative	Local Operations	Mainline Operations	Environmental Impacts	Safety	Cost	Technical Total	Technical Rank
WO	0	0	8	9	10	27	2
CER	5	4	6	0	0	15	4
NWL	0	0	6	4	2	12	5
SWL	5	7	6	10	5	33	1
DDI	0	0	6	9	6	21	3

## 47<sup>TH</sup> AVENUE INTERCHANGE SCENARIO

The 47<sup>th</sup> Avenue interchange would likely have significant impacts on 32<sup>nd</sup> Avenue/US 81B, expected to reduce traffic on 32<sup>nd</sup> Avenue/US 81B by more than 40 percent. The Spot Improvement Alternative was analyzed specifically for the 47<sup>th</sup> Avenue Interchange Scenario. This alternative includes

- At 38<sup>th</sup> Street, extend the eastbound right-turn lane (435 feet, full width) and install double left-turn lanes on the eastbound, westbound and southbound approaches.
- At the East Ramp, a double right-turn lane on the northbound off-ramp.
- Traffic control signal and access modification at the 42<sup>nd</sup> Street west frontage road intersection.
- Queue flushing on the off-ramps
- Pedestrian crossing enhancements at the ramp intersections that includes pedestrian actuation and prohibits right-turns.
- Reconstruct or major rehabilitation of pavement from the East Ramp to Columbia Road.

Under this alternative, all study intersection are LOS “D” or better; the ramp intersections operate at LOS “C” or better during both peak hours through 2040. This alternative would minimize queueing onto the interstate and improve traffic flow, which should mitigate some of the most prevalent crash trends. The signal at the 42<sup>nd</sup> Street west frontage road and improvements to the existing signal timing should improve pedestrian crossing safety. This analysis suggests constructing a 47<sup>th</sup> Avenue interchange would mitigate almost all improvements necessary on 32<sup>nd</sup> Avenue/US 81B.

Value planning scores for this alternative can be seen in Table 7-23 with planning level design layout in Figure 7-30.

*Table 7-23: 32<sup>nd</sup> Avenue/US 81B Spot Improvement Interchange Alternative Under 47<sup>th</sup> Avenue Interchange Scenario*

	Results (2040 Conditions)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 16.7, LOS “B”</li> <li>▪ P.M. Peak Average: 31.9, LOS “C”</li> </ul>	7
Mainline Operations	<ul style="list-style-type: none"> <li>▪ Average A.M. Peak: 9.6, LOS “A”</li> <li>▪ Average P.M. Peak: 18.6, LOS “C”</li> </ul>	8
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ No additional environmental impacts expected.</li> </ul>	8
Safety	<ul style="list-style-type: none"> <li>▪ No change in crash potential expected.                             <ul style="list-style-type: none"> <li>» 15.0% Crossing Crash Potential</li> <li>» 33.2% Rear End Crash Potential</li> <li>» 51.8% Sideswipe Crash Potential</li> </ul> </li> </ul>	6
Cost	<ul style="list-style-type: none"> <li>▪ \$700,000 plus the cost of interchange at 47<sup>th</sup> Avenue (discussed in next chapter)</li> </ul>	10
<b>Total</b>		<b>39</b>

### Other Alternatives

Other interchange alternatives were studied under the 47<sup>th</sup> Avenue Interchange Scenario, which reduces traffic on 32<sup>nd</sup> Avenue/US 81B by more than 40 percent. These alternatives do provide some benefits to local and mainline operations and safety. Brief descriptions are provided below with a summary table and layouts at the end of this chapter.

### Consolidated East Ramp

The Consolidated East Ramp Alternative (CER) was identified in the 2040 LRTP but could not be cost constrained. It would realign 42<sup>nd</sup> Street east of I-29 with the East Ramp. This helps split southbound traffic at 38<sup>th</sup> Street, which is a major bottleneck along the corridor. A signal was included for 42<sup>nd</sup> Street west frontage road. During the 2040 P.M. peak the 38<sup>th</sup> Street intersection operates deficiently at LOS “E” with long queues on the minor approaches. No queueing or delay concerns during the 2040 A.M. peak.

This alternative comes at a cost of \$15.7 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-31.

## Northwest Loop Ramp

The Northwest Loop Ramp Alternative (NWL) adds a loop ramp for the westbound to southbound movements onto I-29 in the northwest quadrant. Due to the posted speeds and the ROW constraints, only a small radius could be constructed. This requires parallel merge lanes to ensure safe and efficient merging, which would likely be incompatible with a 47<sup>th</sup> Avenue interchange. The addition of the northwest loop helps eliminate crossing conflicts by converting a left-turn to a free right. The right-turn slip ramp on the southbound I-29 on-ramp requires access management at the 42<sup>nd</sup> Street west frontage road. A backage road was configured with a signal incorporated at 44<sup>th</sup> Street. During the 2040 P.M. peak all intersections operate efficiently, including 38<sup>th</sup> Street. However, there are long queues anticipated on the minor approaches at 38<sup>th</sup> Street. No queuing or delay concerns during the 2040 A.M. peak.

This alternative comes at a cost of \$14.2 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-32.

## Southwest Loop Ramp

The Southwest Loop Ramp Alternative (SWL) adds a loop ramp for the southbound to eastbound movements off of I-29 in the southwest quadrant. This configuration supports more than 400 vehicles during the 2040 P.M. peak hour, eliminating one signal phase and permitting right-turn-on-reds to improve through-put. No queueing is expected on the interstate ramps, but large queues build up at 38<sup>th</sup> Street and the 42<sup>nd</sup> Street west frontage road. A signal was included for 42<sup>nd</sup> Street west frontage road. There are some queueing concerns on the minor approaches at 38<sup>th</sup> Street. All other intersections operate effectively at LOS "D" or better. No queueing or delay concerns during the 2040 A.M. peak.

This alternative comes at a cost of \$11.0 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-33.

## Diverging Diamond Interchange

The Diverging Diamond Interchange Alternative (DDI) requires the two directions of traffic on 32<sup>nd</sup> Avenue/US 81B to cross to the opposite side of the road over I-29. This allows left-turning and right-turning traffic to perform a free flow movement onto the interstate on-ramp. The free-flowing movements reduce the signal phases to two at each intersection, significantly reducing delays. The right-turn slip ramp on the southbound I-29 on-ramp requires access management at the 42<sup>nd</sup> Street west frontage road. A backage road was configured with a signal incorporated at 44<sup>th</sup> Street. All intersections operate efficiently during the 2040 A.M. and P.M. peak. There are some queuing issues on the minor approaches at 38<sup>th</sup> Street during the 2040 P.M. peak.

This alternative comes at a cost of \$8.5 million, plus the cost of the interchange at 47<sup>th</sup> Avenue, estimated between \$23.2 and \$28.5 million, discussed in the next section.

Value planning scores for this alternative can be seen in Table 7-24 with planning level design layout in Figure 7-34.

# MICRO LEVEL ALTERNATIVES ANALYSIS

Table 7-24: 32<sup>nd</sup> Avenue/US 81B Alternatives Under 47<sup>th</sup> Avenue Interchange Scenario

	SI		CER		NWL		SWL		DDI	
	Results	Score	Results	Score	Results	Score	Results	Score	Results	Score
Local Operations	» A.M. Peak: 16.7, LOS "B" » P.M. Peak Average: 31.9, LOS "C"	7	» A.M. Peak: 18.2, LOS "B" » P.M. Peak Average: 37.0, LOS "D"	7	» A.M. Peak: 16.1, LOS "B" » P.M. Peak Average: 24.1, LOS "C"	7	» A.M. Peak: 16.1, LOS "B" » P.M. Peak Average: 33.4, LOS "C"	7	» A.M. Peak: 13.9, LOS "B" » P.M. Peak Average: 23.5, LOS "C"	8
Mainline Operations*	» A.M. Peak: 9.6, LOS "A" » P.M. Peak: 18.6, LOS "C"	8	» A.M. Peak: 14.5, LOS "B" » P.M. Peak: 19.2, LOS "C"	8	» A.M. Peak: 13.3, LOS "B" » P.M. Peak: 18.4, LOS "C"	8	» A.M. Peak: 13.5, LOS "B" » P.M. Peak: 18.0, LOS "C"	8	» A.M. Peak: 13.0, LOS "B" » P.M. Peak: 18.1, LOS "C"	8
Environmental Impacts	» No additional environmental impacts expected.	8	» 3.5 Acres of ROW required. No access changes.	6	» 2 Acres of ROW required. Access management at 42 <sup>nd</sup> Street west frontage road.	6	» 2 Acres of ROW required. No access changes.	6	» 2 Acres of ROW required. Access management at 42 <sup>nd</sup> Street west frontage road.	6
Safety	Baseline Crash Potential Distribution for Comparison » 15.0% Crossing » 33.2% Rear End » 51.8% Sideswipe	6	43.2% Increase in Crash Potential Compared to SI » 140.9% Increase in Crossing Crash Potential » 40.5% Decrease in Rear End Crash Potential » 82.2% Increase in Sideswipe Crash Potential	0	4.1% Decrease in Crash Potential Compared to SI » 0.9% Decrease in Crossing Crash Potential » 10.5% Decrease in Rear End Crash Potential » 0.3% Decrease in Sideswipe Crash Potential	9	5.0% Decrease in Crash Potential Compared to SI » 42.2% Increase in Crossing Crash Potential » 32.0% Decrease in Rear End Crash Potential » 4.9% Increase in Sideswipe Crash Potential	10	20.0% Increase in Crash Potential Compared to SI » 130.9% Increase in Crossing Crash Potential » 7.6% Increase in Rear End Crash Potential » 9.5% Increase in Sideswipe Crash Potential	5
Cost	» \$700,000	10	» \$15.7 Million	0	» \$14.2 Million	1	» \$11.0 Million	3	» \$8.5 Million	5
<b>Total</b>	<b>39</b>		<b>21</b>		<b>31</b>		<b>34</b>		<b>32</b>	
<b>Rank</b>	<b>1</b>		<b>5</b>		<b>4</b>		<b>2</b>		<b>3</b>	

\*Mainline operations does not incorporate friction between 32<sup>nd</sup> Avenue and 47<sup>th</sup> Avenue. This is discussed in greater detail in the next section.

## 47<sup>TH</sup> AVENUE

During the Macro Level Analysis completed for this study, the 47<sup>th</sup> Avenue interchange was studied to address future long-term development in southern Grand Forks. This analysis found an interchange at this location would reduce vehicle hours traveled by 4.4 million hours from 2025 to 2040 and vehicle miles traveled by 53.3 million miles from 2025 to 2040. This interchange is also estimated to reduce traffic on 32<sup>nd</sup> Avenue/US 81B by 40.3 percent, which is likely significant enough to prevent widening on 32<sup>nd</sup> Avenue/US 81B. However, the analysis also estimated a 21 percent increase in traffic on I-29. This increase in traffic on mainline I-29 may present merging, weaving and diverging challenges. Unlike analysis completed for other interchanges in this report, impacts between 32<sup>nd</sup> Avenue/US 81B and the 47<sup>th</sup> Avenue interchange alternatives were analyzed using the existing 32<sup>nd</sup> Avenue/US 81B on- and off-ramp configurations. Four alternatives were feasible based on the criteria established in this report.

- Traditional Diamond Interchange: A standard diamond interchange on the 47<sup>th</sup> Avenue alignment was considered the base alternative.
- Diamond with South Loops Interchange: A standard diamond interchange with a southeast loop ramp and southwest loop ramp on the 47<sup>th</sup> Avenue alignment. This alternative split the diverging movements to minimize the congestion between the 32<sup>nd</sup> Avenue/US 81B on-ramp and the 47<sup>th</sup> Avenue off-ramp. This provided improved operations at the ramp intersections by reducing the number of signal phases.
- Shifted Diamond with South Loops Interchange: A standard diamond interchange with a southeast loop on-ramp and southwest loop off-ramp shifted 0.25 miles south. This alternative also splits the diverging movements to minimize congestion but increases the spacing to allow more time for drivers to make the lane changes necessary.
- Shifted Diamond with No Business Impacts Interchange: This alternative is shifted 0.25 miles south and includes a southwest loop ramp for the on- and off-ramps and southeast loop on-ramp. This alternative avoids impacting the campground south of 47<sup>th</sup> Avenue and increases spacing between the 32<sup>nd</sup> Avenue/US 81B on-ramp and the 47<sup>th</sup> Avenue off-ramp.

## ANALYSIS METHODOLOGY

These four alternatives were analyzed and presented below using the Value Planning approach detailed at the beginning of this report. The 47<sup>th</sup> Avenue interchange analysis is slightly different than the baseline methodology because it is a new interchange, with no existing conditions to compare.

### MAINLINE OPERATIONS

Because of concerns regarding the I-29 mainline due to spacing and higher volumes, an alternative mainline analysis approach was used. Mainline operations for the 47<sup>th</sup> Avenue interchange analysis refers to the operations of I-29 between the merge and diverge points of 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue, including the 500-foot sections upstream and downstream of the 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue intersections. This change was made for two reasons: first, none of the alternatives analyzed on 47<sup>th</sup> Avenue found unique or deficient lane densities on the 500-foot section upstream of off-ramp and downstream of on-ramps; second, the nearly 14,000 ADT increase on I-29 associated with the 47<sup>th</sup> Avenue interchange could have capacity impacts outside of the interchange influence areas. Similar to the baseline methodology for mainline operations, the northbound and southbound densities were averaged to provide one score.

### COST

Typically, the interchange alternatives would be scored using a distribution between highest cost alternative and lowest cost alternative. The Southwest Loop Alternative (SWL) for the 32<sup>nd</sup> Avenue/US 81B alternative under the Existing Interstate Access Scenario was the prioritized alternative based on technical criteria. The SWL was included in the range of costs to provide valuable context related to the true impacts of a 47<sup>th</sup> Avenue interchange; it has a cost of \$23.5 million. The range of costs was scored using the Cost scoring criteria table established in the methodology section above.

## INTERCHANGE ALTERNATIVES

Analysis presented below was completed using ADT forecasts from the 47<sup>th</sup> Avenue Interchange Scenario.

## TRADITIONAL DIAMOND ALTERNATIVE

The Traditional Diamond Alternative (TD) is a standard diamond interchange with signals at the East Ramp, West Ramp and 38<sup>th</sup> Street intersections. It operates at LOS “D” or better for both 2040 A.M. and P.M. peak hours. There are no queueing concerns that would impact I-29. This alternative provides spacing challenges between the 32<sup>nd</sup> Avenue/US 81B southbound on-ramp and the 47<sup>th</sup> Avenue off-ramp, which results in some lane densities that fall to LOS “D” during the 2040 P.M. peak. This alternative will require relocation to the campground in the southwest quadrant but the least amount of right-of-way at 61 acres. Value planning scores for this alternative can be seen in Table 7-25 with planning level design layout in Figure 7-36.

*Table 7-25: 47<sup>th</sup> Avenue Traditional Diamond Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.9, LOS “B”</li> <li>▪ P.M. Peak Average: 32.6, LOS “C”</li> </ul>	7
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.4, LOS “B”</li> <li>▪ P.M. Peak Average: 29.3, LOS “D”</li> </ul>	7
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 63 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ Baseline crash potential distribution for alternative comparison:                             <ul style="list-style-type: none"> <li>» Crossing: 9.4% of total estimated crash potential</li> <li>» Rear End: 81.2% of total estimated crash potential</li> <li>» Lane Change: 9.4% of total estimated crash potential</li> </ul> </li> </ul>	0
Cost	<ul style="list-style-type: none"> <li>▪ \$24.6 Million</li> </ul>	5
<b>Total</b>		<b>25</b>

## DIAMOND WITH SOUTH LOOPS ALTERNATIVE

The Diamond with South Loops Alternative (DL) is a diamond interchange with a southeast loop ramp for eastbound to northbound on-ramp movements and a southwest loop ramp for southbound to eastbound off-ramp movements. By removing left-turns, some crossing conflicts are eliminated, as well as enabling the traffic control signal to operate with reduced phases, improving efficiency. This alternative operates effectively during both 2040 A.M. and P.M. peak hours and does not have queueing concerns. This alternative has the lowest estimated crash potential, as well as providing acceptable levels of service for local operations, but does require business impacts and 87 acres of ROW needed, the most of all four build alternatives. As for mainline operations, this alternative does result in some lane densities between 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue falling to LOS “D” during the 2040 P.M. peak. Value planning scores for this alternative can be seen in Table 7-26 with planning level design layout in Figure 7-37.

*Table 7-26: 47<sup>th</sup> Avenue Diamond with South Loops Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 12.0, LOS “B”</li> <li>▪ P.M. Peak Average: 15.3, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.8, LOS “B”</li> <li>▪ P.M. Peak Average: 29.3, LOS “D”</li> </ul>	6
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 63 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ 59.4% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 29.1% reduction in crossing crash potential</li> <li>» 68.1% reduction in rear end crash potential</li> <li>» 15.0% reduction in sideswipe crash potential</li> </ul> </li> </ul>	10
Cost	<ul style="list-style-type: none"> <li>▪ \$27.2 Million</li> </ul>	1
<b>Total</b>		<b>32</b>

## DIAMOND WITH SOUTH LOOPS AND MIXING LANES ALTERNATIVE

The Diamond with South Loops and Mixing Lanes Alternative (DLM) is the same interchange configuration as above but includes mixing lanes (also referred to as auxiliary lanes, speed-change lane or acceleration lane) between 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue to improve lane density during the peak hours. This requires about 1,000 feet of extra lane length for each direction of traffic on I-29. These mixing lanes would keep lane densities at LOS “A” during the 2040 A.M. peak and LOS “C” during the 2040 P.M. peak. Local operations, environmental impacts and safety remain unchanged. Value planning scores for this alternative can be seen in Table 7-27. Planning level designs at the interchange are similar to Figure 7-37.

*Table 7-27: 47<sup>th</sup> Avenue Diamond with South Loops and Mixing Lanes Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 12.0, LOS “B”</li> <li>▪ P.M. Peak Average: 15.3, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 10.9, LOS “A”</li> <li>▪ P.M. Peak Average: 18.8, LOS “C”</li> </ul>	8
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 63 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ 59.4% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 29.1% reduction in crossing crash potential</li> <li>» 68.1% reduction in rear end crash potential</li> <li>» 15.0% reduction in sideswipe crash potential</li> </ul> </li> </ul>	10
Cost	<ul style="list-style-type: none"> <li>▪ \$28.5 Million</li> </ul>	0
<b>Total</b>		<b>33</b>

## SHIFTED DIAMOND WITH SOUTH LOOPS ALTERNATIVE

The Shifted Diamond with South Loops Alternative (SDL) is the same geometric design as the South Loops Interchange Alternative, just shifted 0.25 miles south. This improves spacing between the 32<sup>nd</sup> Avenue/US 81B interchange. This alternative operates effectively both on local and mainline operations. However, during the 2040 P.M. peak, some lane densities fall to LOS “D”. This alternative improves estimated crash potential, when compared against the Diamond Interchange. It also impacts the campground and will require a buyout and 78 acres of ROW needed. Value planning scores for this alternative can be seen in Table 7-28 with planning level design layout in Figure 7-38.

*Table 7-28: 47<sup>th</sup> Avenue Shifted Diamond with South Loops Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 11.7, LOS “B”</li> <li>▪ P.M. Peak Average: 14.5, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.2, LOS “B”</li> <li>▪ P.M. Peak Average: 26.8, LOS “D”</li> </ul>	7
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. Business impacts and relocation necessary. 78 acres of ROW needed.</li> </ul>	5
Safety	<ul style="list-style-type: none"> <li>▪ 57.5% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 34.8% reduction in crossing crash potential</li> <li>» 66.7% reduction in rear end crash potential</li> <li>» 1.4% reduction in sideswipe crash potential</li> </ul> </li> </ul>	» 9
Cost	<ul style="list-style-type: none"> <li>▪ \$27.6 Million</li> </ul>	1
<b>Total</b>		<b>31</b>

## SHIFTED DIAMOND WITH NO BUSINESS IMPACTS

The Shifted Diamond with No Business Impacts Alternative (SNI) shifts the interchange alignment 0.25 miles south and folds the southbound off-ramp to eliminate the business impacts. This alternative operates effectively during both 2040

A.M. and P.M. peak hours with no queueing concerns that would impact I-29. It improves crash potential when compared against the Diamond Interchange alternative with effective local and mainline operations. Eliminating the business impacts and low ROW needed helps this alternative score high in the Environmental Impacts category and Cost. Value planning scores for this alternative can be seen in Table 7-29 with planning level design layout in Figure 7-39.

*Table 7-29: 47<sup>th</sup> Avenue Shifted Diamond with No Business Impacts Alternative*

	Results (2040 Conditions – 47 <sup>th</sup> Avenue Interchange Scenario)	Score
Local Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 11.4, LOS “B”</li> <li>▪ P.M. Peak Average: 16.9, LOS “B”</li> </ul>	9
Mainline Operations	<ul style="list-style-type: none"> <li>▪ A.M. Peak Average: 14.3, LOS “B”</li> <li>▪ P.M. Peak Average: 26.7, LOS “D”</li> </ul>	7
Environmental Impacts	<ul style="list-style-type: none"> <li>▪ Limited ecological impacts with mitigation possible. No business impacts. 59 acres of ROW needed.</li> </ul>	6
Safety	<ul style="list-style-type: none"> <li>▪ 56.9% Reduction in Crash Potential when Compared Against Diamond                             <ul style="list-style-type: none"> <li>» 12.7% increase in crossing crash potential</li> <li>» 70.2% reduction in rear end crash potential</li> <li>» 11.4% reduction in sideswipe crash potential</li> </ul> </li> </ul>	9
Cost	<ul style="list-style-type: none"> <li>▪ \$23.2 Million</li> </ul>	10
<b>Total</b>		<b>41</b>

## SUMMARY OF ALTERNATIVES

The Shifted Folded Southbound Off-Ramp Interchange Alternative scored highest on the Value Planning analysis with strong scores in local and mainline operations, safety and low cost. It does not require impacts which improves its environmental impact score relative to other alternatives for 47<sup>th</sup> Avenue.

The value planning scores summary for 47<sup>th</sup> Avenue interchange alternatives is shown in Table 7-30.

*Table 7-30: Summary of 47<sup>th</sup> Avenue Interchange Alternatives*

Alternative	Local Operations	Mainline Operations	Environmental Impacts	Safety	Cost	Technical Total	Technical Rank
TD	7	7	6	0	5	25	5
DL	9	6	6	10	1	32	3
DLM	9	8	6	10	0	33	2
SDL	9	7	5	9	1	31	4
SNI	9	7	6	9	10	41	1

## STEERING COMMITTEE RANKING

As part of the Value Planning workshop, the Steering Committee was asked to rank the alternatives; the Diamond with South Loops and Mixing Lanes and the Shifted Diamond with No Business Impacts were tied with 33.3 percent of the Steering Committee ranking each as their first choice.

those improvements included in the I-29 Corridor Study, none are currently cost constrained in the GF-EGF MPO Long Range Transportation Plan (LRTP).

## NEEDS COMPARISON

Comparing needs for different improvements can be a very complicated process. For example, how do you compare a railroad grade separation improvement to a new interchange to a new loop? A railroad grade separation generates major delays but only occurs a few times per day, mostly during off-peak periods. A new interchange may provide massive relief for several hours of the day but may not be needed for several years.

The current Transportation Improvement Program (TIP) process utilizes a project scoring and ranking process. A more technically based project specific evaluation process was needed to support the I-29 Corridor Study Implementation Plan. To assess needs, a five point needs index was developed to show relative need. This starts with the technical information compiled in this study and other studies as necessary to compare quantified benefits. Quantified benefits incorporate vehicle hours of delay, vehicle miles travelled and crash reduction factors. For example, the 2040 yearly quantified benefits for an interchange at 47<sup>th</sup> Avenue is \$3.2 million and for a railroad grade separation at 42<sup>nd</sup> Street and DeMers Avenue is \$0.6 million. Where quantified benefits were not readily available, level of service and railroad crossing exposure were compared.

This information was used to provide an educated estimate of need for every improvement over \$1 million for existing, 2025 and 2040 time periods. This information will be refined by the Steering Committee. The results are illustrated in Table 8-2.

Table 8-2: Needs by Year

Location	Improvement	Need			Notes
		Existing	2025	2040	
North Washington Street/CR 11/US 81	Interchange and Access Improvements	0	0.5	1	The Washington Street improvements are preventive in nature and not based on quantified deficiencies.
Gateway Drive/US 2	Interchange Improvements	1	2	5	The Gateway Drive interchange operates at LOS "F" by 2040.
	Railroad Grade Separation	2	2.5	3	Queuing onto the interstate when train events and peak hours coincide. The railroad grade separation has a crossing exposure of 245,000 by 2040.*
DeMers Avenue/ND 297	Interchange Improvements	2	4	5	The DeMers Avenue interchange operates at LOS "E" by 2025 and LOS "F" by 2040.
	42nd Street Railroad Grade Separation	3	3.5	4	The grade separation has a yearly quantified benefit of \$0.6 million dollars by 2040 and crossing exposure of 749,700 by 2040.*
32nd Avenue/US 81B	New Interchange at 47th Avenue	2	5	5	32nd Avenue Operates at LOS "F" by 2025, has a yearly quantified benefit of \$3.2 M by 2040.
Merrifield Road/CR 6	New Interchange	2.5	3	3.5	The Merrifield Interchange has a yearly quantified benefit of 2.4 million dollars by 2040.

0 = No need, 5 = Greatest Need

\* Based on previous study, may require updating

### *LONG RANGE: 2031-2040+*

This stage represents year 11 and beyond the current TIP and extends to the life of the current 2040 Long Range Transportation Plan (LRTP). Figure 8-6 demonstrates the long-range phase of project development efforts required to implement the I-29 Corridor Study.

Costs shown demonstrate a year of expenditure estimate to the mid-range of the phase for which construction is anticipated per the I-29 Corridor Study. Projects in the mid-range are adjusted to YOE of 2036. Table 8-3 demonstrates a more descriptive dialogue of the implementation efforts needed at each phase of implementation for the most significant projects. Table 8-3 should be treated as a tentative set of actions needed to address needs identified by the I-29 Corridor Study. As additional planning and programming efforts unfold beyond the completion of the I-29 Corridor Study, these assumptions may change.

### **STAGES OF PROJECT DEVELOPMENT & DELIVERY**

The I-29 Implementation Plan assists with stratifying the stage of planning and project development required to deliver each of the above mentioned projects. This is specifically important for more of the complex projects and for those projects which will require additional scoping to move out of the planning phase and deeper into advanced project development. The Implementation Plan has been developed around the following generalized Stages of Project Delivery:

- **Planning & Environmental (Preliminary Engineering/Scoping):** Reflects additional planning or project level scoping to continue to define and delineate alternatives and project feasibility. This phase also includes the transition into the development of relevant environmental documentation. In many cases, the alternatives developed as part of the I-29 Corridor Study are assumed to be ready to move further into project development (i.e. environmental/NEPA). In the case of interchanges at 47<sup>th</sup> Avenue and Merrifield Road/CR 6, this phase includes completion of an IJR. However, some of these actions may not result in a signed environmental document until such time as Federal funds are programmed, or FHWA fiscal constraint requirements can be met.
- **Right-of-Way, Design and Construction (Advanced Project Development):** Reflects efforts following completion of a signed environmental document. These are stages of advanced project development involving actual final design and right of way. Included in this phase would also be efforts to secure final programming (or project selection). Advanced project development includes the construction phase.

The implementation plan will assign one of these two general categories to identified improvements listed in the I-29 Corridor Study. Smaller less significant projects which will likely fit more easily into the GF-EGF TIP or move quickly in the first phase or two are not noted. For more complex projects, the transition through these stages is more gradual, and more thoughtfulness is needed on how these projects continue to transition out of planning and further into project development.

### *32<sup>ND</sup> AVENUE/US 81B NEEDS*

Due to the major investment needed at 32<sup>nd</sup> Avenue/US 81B, and the coordinated needs between 32<sup>nd</sup> Avenue/US 81B and 47<sup>th</sup> Avenue, additional analysis was completed to determine the approximate thresholds where 32<sup>nd</sup> Avenue/US 81B begins to breakdown. This analysis increased the modeled traffic volumes based on linear growth between the existing and approved 2025 ADT projections and then between the approved 2025 ADT and 2040 ADT projections.

- According to the 2025 P.M. peak hour analysis, deficiencies along the corridor emerged. However, there are key issues that emerge before 2025.
  - » At around 40 percent (2019) of the growth between 2015 and 2025, deficient operations are expected at 38<sup>th</sup> Street.
  - » By 70 percent (2022) of the growth between 2015 and 2025, the northbound off-ramp begins to queue onto the interstate.
  - » By 2025, deficient operations are expected at the West Ramp, East Ramp and 38<sup>th</sup> Street intersections during the P.M. peak hour.

- With the Spot Improvements on 32<sup>nd</sup> Avenue/US 81B, 2025 operations are improved to LOS “D” across the corridor. However, as growth continues capacity constraints on the overpass bridge begin to emerge around 2030, or 30 percent of growth expected between 2025 and 2040. The capacity constraints result in deficient operations at the West Ramp intersection and queues onto the interstate.

Figure 8-2: 2015 to 2025 Growth Thresholds with Existing Configuration on 32<sup>nd</sup> Avenue/US 81B

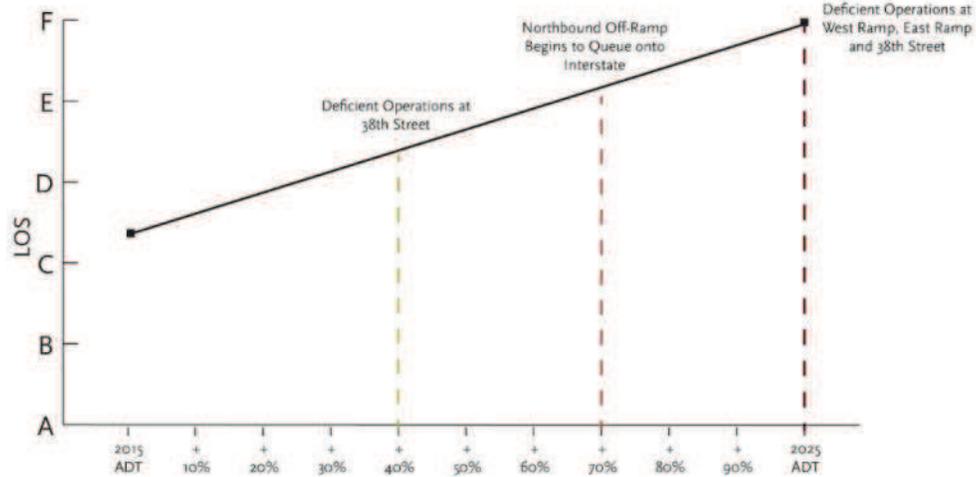
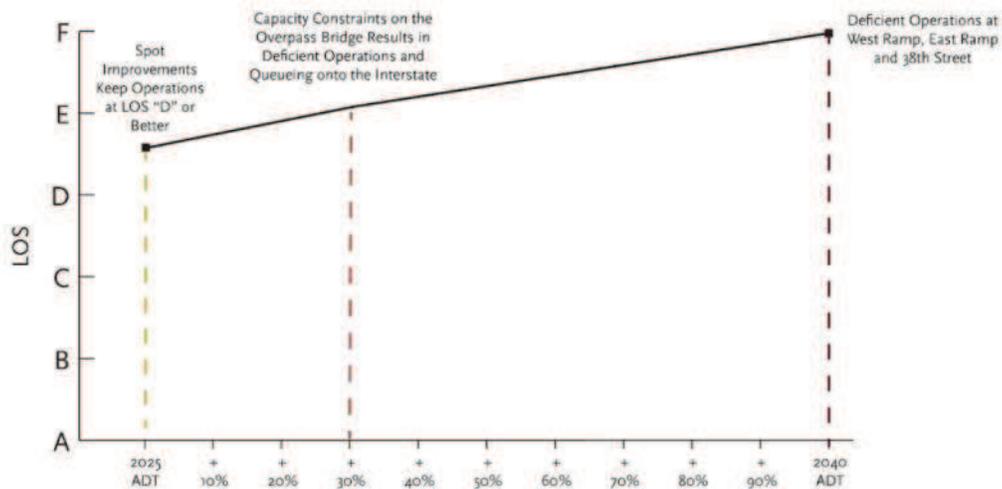


Figure 8-3: 2025 to 2040 Growth Thresholds with Spot Improvements on 32<sup>nd</sup> Avenue/US 81B



## ANCILLARY INVESTMENTS TO SUPPORT 47<sup>TH</sup> AVENUE INTERCHANGE

As noted, the Implementation Plan for the I-29 Corridor Study is not cost constrained. Further, it is a demonstration of needed improvements more narrowly focused on the I-29 Corridor and adjacent systems. To that end, development of a future interchange at 47<sup>th</sup> Avenue will require substantial additional investment in local roadways. In current year dollars, total needs to provide local roadway system to support 47<sup>th</sup> Avenue is estimated at nearly \$17.0 million. This system of roadways is shown as part of Figure 8-1 and Figure 8-4, and includes extension and/or completion of 34<sup>th</sup> Street, 38<sup>th</sup> Street,

Grade Separation) are shown with a potential for Regional funding. Urban funds are shown on both Regional and Interstate projects. This is done to indicate that broad partnerships may be needed to fully program these investments on a more accelerated time frame.

## PROGRAMMING SPLITS

Table 8-5 demonstrates a tentative set of programming and cost splits for the most significant project improvements identified through the I-29 Corridor Study. These cost splits are based upon current local, state and federal funding guidance. More specific guidance regarding local, state and federal funding splits is available in the *NDDOT Local Government Manual*. These splits generally follow that guidance, however Table 8-5 represents a best-case scenario. It is likely many of these improvements will require more local resources to construct improvements in the phases identified by the I-29 Corridor Study.

*Table 8-5: Funding Matrix*

Project	Total Cost (2017 \$)	Total Cost (YOE \$)	Funding Split (YOE \$)			
			Federal	State	City	County
<b>North Washington/CR 11/US 81</b>						
Access Modification + Ramp Modification	\$5.700	\$12.489	\$9.99	\$1.25	\$0.000	\$1.25
<b>Gateway Drive/US 2</b>						
Northeast Loop Modification	\$6.600	\$14.461	\$11.57	\$1.45	\$1.45	\$0.000
Gateway Drive Grade Separation	\$28.300	\$62.009	\$49.61	\$6.20	\$6.20	\$0.000
<b>DeMers Avenue/ND 297</b>						
42nd Street Grade Separation*	\$40.000	\$61.578	\$21.55	\$0.000	\$40.026	\$0.000
Capacity Enhancements (No Bridge Widening)	\$7.400	\$9.003	\$7.20	\$0.90	\$0.90	\$0.000
<b>32nd Avenue/US 81B</b>						
Reconstruct 38th Street to Columbia Road	\$12.000	\$18.473	\$14.78	\$1.85	\$1.85	\$0.000
<b>47th Avenue</b>						
Construct New Interchange	\$28.500	\$43.874	\$39.49	\$4.39	\$0.000	\$0.000
<b>Merrifield Road/CR 6</b>						
Modify Overpass to Full Interchange	\$16.480	\$36.110	\$32.50	\$3.61	\$0.000	\$0.000

\* 25% Urban Roads + 10% Regional; Balance of cost Local

\*\*YOE costs were estimated using the midpoint of the implementation phase for which they are anticipated to be constructed.

# Setup Scoring Categories & Factors

Go Back

Score System  Max. Score

(Use TAB key to navigate.)

## Adjust Scoring Categories

Category	Description	Weights	Points
<input type="text" value="1"/>	<input type="text" value="Economic Vitality"/> Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="2"/>	<input type="text" value="Security"/> Increase security of the transportation system for motorized and nonmotorized uses.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="text" value="3"/>	<input type="text" value="Accessibility and Mobility"/> Increase the accessibility and mobility options to people and freight.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="text" value="4"/>	<input type="text" value="Environmental/Energy/QOL"/> Protect and enhance the environment, promote energy conservation, and improve quality of life.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="5"/>	<input type="text" value="Integration and Connectivity"/> Enhance the integration and connectivity of the transportation system across and between modes for people and freight.	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<input type="text" value="6"/>	<input type="text" value="Efficient System Management"/> Promote efficient system management and operation.	<input type="text" value="5"/> %	<input type="text" value="5"/> pts <input type="button" value="Delete"/>
<input type="text" value="7"/>	<input type="text" value="System Preservation"/> Emphasize the preservation of the existing transportation system.	<input type="text" value="20"/> %	<input type="text" value="20"/> pts <input type="button" value="Delete"/>
<input type="text" value="8"/>	<input type="text" value="Safety"/> Increase safety of the transportation system for motorized and nonmotorized uses.	<input type="text" value="15"/> %	<input type="text" value="15"/> pts <input type="button" value="Delete"/>
<input type="text" value="9"/>	<input type="text" value="Local/Regional Factors"/> Factors of local or regional importance	<input type="text" value="10"/> %	<input type="text" value="10"/> pts <input type="button" value="Delete"/>
<b>TOTAL</b>		<b><input type="text" value="100"/> %</b>	<b><input type="text" value="100"/> pts</b>

Add New Category

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No 1=Yes
---------------

**Project Number**

**Project Name**

I-29 and 47th Ave S Interchange Bridge, approaches, and Ramps - 2023
--

### Category 1 Economic Vitality

<i>Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity, and efficiency.</i>		<b>Assign score 0 or 1</b>
A	Consistent with local, regional or state economic development plans	0
B	Work located on identified truck route or identified in Freight Study	1
C	Provides new access to jobs and opportunities	1
D	Improves connection to terminal (sea, air, multimodal) on the last mile or two ac	0

### Category 2 Security

<i>Increase security of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Install equipment that monitors the security of the transportation infrastructure	0
B	Consistent with regional emergency/security/hazardous materials movement.	0
C	Coordinates/improves Bridge Closure Management Plan	0
D	Coordinates/improves Special Events Management Plans	1

### Category 3 Accessibility and Mobility

<i>Increase the accessibility and mobility options to people and freight.</i>		<b>Assign score 0 or 1</b>
A	Provides acceptable LOS for facility as recommended in LRTP	0
B	Consistent with access control regulations	0
C	Enhances accessibility and mobility for all modes	1
D	Address LOS deficiency not resolved by another planned project	1
E	Enhances the range of freight service options available to area businesses	1

### Category 4 Environmental/Energy/QOL

<i>Protect and enhance the environment, promote energy conservation, and improve quality of life.</i>		<b>Assign score 0 or 1</b>
A	Demonstrates core context sensitive solutions principles	0
B	Addresses EJ analysis process	0
C	Decreases fuel consumption which reduces greenhouse gas	1
D	Avoids or minimize impacts to wetlands or other natural habitats	1
E	Incorporates innovative stormwater management techniques	0
F	Promotes nonmotorized travel	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

0=No
1=Yes

**Project Number**

**Project Name**

I-29 and 47th Ave S Interchange Bridge, approaches, and Ramps - 2023
--

### Category 5 Integration and Connectivity

<i>Enhance the integration and connectivity of the transportation system across and between modes for people and freight.</i>		<b>Assign score 0 or 1</b>
A	Reduces excessive travel delays	1
B	Improves direct travel trips between states	0
C	Address last segment/link of corridor	0
D	Improves the integration/connectivity of whole transportation system	1
E	On Regional Primary Road	1

### Category 6 Efficient System Management

<i>Promote efficient system management and operation.</i>		<b>Assign score 0 or 1</b>
A	Incorporates elements from ITS Strategic Plan	0
B	Improving operations without adding through capacity	1
C	Enhances interoperability among modal equipment/technologies	0
D	Contributes to better collecting traffic data	0

### Category 7 System Preservation

<i>Emphasize the preservation of the existing transportation system.</i>		<b>Assign score 0 or 1</b>
A	Utilize pavement management system results	0
B	Emphasizes system rehabilitation rather than expansion	1
C	Incorporates technologies new to the MPO area	0
D	Maximizes existing capacity	1
e	Contributes to better system maintenance	1

### Category 8 Safety

<i>Increase safety of the transportation system for motorized and nonmotorized uses.</i>		<b>Assign score 0 or 1</b>
A	Address locations identified as high crash locations in LRTP, corridor studies, hi	1
B	Enhances safe route to school route	0
C	Consistent with Strategic Highway Safety Plan	0
D	Improves points of conflict	0
E	Enhances the public safety of nonmotorized users	0

# TIP SCORING SHEETS

## TELUS ASSISTED SCORING MPO SCORING SHEET FOR EACH PROJECT

<b>0=No</b> <b>1=Yes</b>
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**Project Number**

**Project Name**

<b>Category 9 Local/Regional Factors</b>
--

<i>Factors of local or regional importance</i>		<b>Assign score 0 or 1</b>
A	Conformance with regional or state plan	0
B	Demonstrates analysis of project risk in implementation	1
C	Provides benefit for multiple transportation agencies	1
D	Advances smart growth objectives	0



**MPO Staff Report**  
**MPO Executive Board: February 21, 2018**

**RECOMMENDED ACTION: Recommend Adoption of MPO Area Safety Performance Targets**

Matter of Adoption of MPO Area Safety Performance Targets.

**Background:** MAP-21 created the requirement of performance based planning and programming. The recent FAST continued the same. The rule making documents were finalized implementing this performance based approach. The first focus on SAFETY.

The performance measures rules identifies that there are 5 different measures that are required. The rules also provide options for the State to split the measures between rural and urban. Neither state opted to split measures. Each state has sent the MPO of their respective targets.

The rules require MPOs to either adopt the State measure for all five or choose a combination of either the state's or an MPO target. Bi-state MPOs must address each state independently. The MPO has until February 23, 2018, to provide each state with the MPO targets.

We have discussed this essentially each month for the past 8 months. The MPO staff and TAC are recommending the adoption of the following. This is an annual target and will be set annually to reflect the past year data.

<b>Performance Measure</b>	<b>Target</b>
Number of Fatalities	3 or fewer (decline in trend)
Rate of Fatalities	0.673 per VMT (decline in trend)
Number of Serious Injuries	18 or fewer (decline in trend)
Rate of Serious Injuries	5.933 per VMT (decline in trend)
Number of Nonmotorized Fatalities and Serious Injuries.	3 or fewer (decline in trend)

**Findings and Analysis:**

- MAP21/FAST requires MPO to adopt Safety Targets
- Can either adopt Statewide target or target for MPO Area
- NDDOT and MnDOT have been actively engaged in the cooperative development and discussion on setting these targets.
- If the MOP adoptes MPO Area Targets, the MPO Area targets will be supportive of the Statewide targets.

**Support Materials:**

- Presentation

# Safety Targets Annual

- Must Adopt Minimum of 5 Targets; Can adopt maximum of 10 Targets; Or a Number Inbetween
  - 5 targets would mean just for MPO Area.
  - 10 Targets would mean just both statewide area.
  - Can choose to adopt combinations of some targets at MPO area and others at Statewide level.
- Next Slides present the Statewide Adopted Targets for each State and the target for just the MPO Area.

# Number of traffic fatalities

## *Safety Target Analysis*

	North Dakota	Minnesota	GF-EGF MPO
GF-EGF Performance	2007 -- 2 2008 -- 2 2009 -- 1 2010 -- 4 2011 -- 1 2012 -- 1 2013 -- 2 2014 -- 3 2015 -- 0  5-year rolling average: 2011-2015 -- 1.4	2007 -- 0 2008 -- 1 2009 -- 0 2010 -- 0 2011 -- 0 2012 -- 1 2013 -- 1 2014 -- 0 2015 -- 0  5-year rolling average: 2011-2015 -- 0.4	5-year rolling average: 2007-2011 -- 2.2 2008-2012 -- 2.2 2009-2013 -- 2.2 2010-2014 -- 2.6 2011-2015 -- 1.8  <i>Analysis: Between 2007 and 2015:</i> <ul style="list-style-type: none"> <li>• <i>Number ranges from 0 to 4</i></li> <li>• <i>5-year rolling average ranges from 1.8 to 2.6</i></li> <li>• <i>Declining trend (-.04 per year)</i></li> </ul> <b>TARGET:</b> <ul style="list-style-type: none"> <li>• <b><u>3 or fewer traffic fatalities by 2018</u></b></li> <li>• <b><u>No change in trend</u></b></li> </ul>
State Targets	138 traffic fatalities or fewer statewide  0.5% decline	375 traffic fatalities or fewer statewide  3% decline	

# Traffic fatality rate per 100 million VMT

## Safety Target Analysis

	North Dakota	Minnesota	GF-EGF MPO
GF-EGF Performance	<p>Data not available</p> <p><i><u>Methodology notes:</u></i></p> <ul style="list-style-type: none"> <li><i>Did not have VMT for Grand Forks separate from East Grand Forks</i></li> <li><i>All rate calculations using 2015 VMT for urbanized GF-EGF MPO area</i></li> </ul>	Data not available	<p>5-year rolling average:</p> <p>2007-2011 -- 0.673/mvmt            2008-2012 -- 0.673/mvmt            2009-2013 -- 0.673/mvmt            2010-2014 -- 0.795/mvmt            2011-2015 -- 0.550/mvmt</p> <p><i>Analysis: Between 2007 and 2015:</i></p> <ul style="list-style-type: none"> <li><i>5-year rolling average ranges from 0.550/mvmt to 0.795/mvmt</i></li> <li><i>Declining trend (-0.0122 per year)</i></li> </ul> <p><b>TARGET:</b></p> <ul style="list-style-type: none"> <li><b><u>0.673/mvmt or lower by 2018</u></b></li> <li><b><u>No change in trend</u></b></li> </ul>
State Targets	1.336/mvmt 0.5% decline	0.62/mvmt No change in trend	

# Number of crash-related serious injuries

## *Safety Target Analysis*

	North Dakota	Minnesota	GF-EGF MPO
GF-EGF Performance	2007 -- 19 2008 -- 13 2009 -- 5 2010 -- 16 2011 -- 15 2012 -- 23 2013 -- 17 2014 -- 15 2015 -- 17  5-year rolling average: 2011-2015 -- 17.4	2007 -- 1 2008 -- 0 2009 -- 3 2010 -- 2 2011 -- 1 2012 -- 1 2013 -- 1 2014 -- 4 2015 -- 3  5-year rolling average: 2011-2015 -- 2.0	5-year rolling average: 2007-2011 -- 15.0 2008-2012 -- 15.8 2009-2013 -- 16.8 2010-2014 -- 19.0 2011-2015 -- 19.4  <i>Analysis: Between 2007 and 2015:</i> <ul style="list-style-type: none"> <li>• <i>Number ranges from 8 to 24</i></li> <li>• <i>5-year rolling average ranges from 15.0 to 19.4</i></li> <li>• <i>Rising trend (+ 1.2 per year)</i></li> </ul> <b>TARGET:</b> <ul style="list-style-type: none"> <li>• <b><u>18 or fewer serious injuries by 2018</u></b></li> <li>• <b><u>Decline in trend</u></b></li> </ul>
State Targets	516 serious injuries or fewer statewide  No change in trend	1,935 serious injuries or fewer statewide  Decline in trend	

# Serious injury rate per 100 million VMT

## Safety Target Analysis

	North Dakota	Minnesota	GF-EGF MPO
GF-EGF Performance	<p>Data not available</p> <p><i><u>Methodology notes:</u></i></p> <ul style="list-style-type: none"> <li>• <i>Did not have VMT for Grand Forks separate from East Grand Forks</i></li> <li>• <i>All rate calculations using 2015 VMT for urbanized GF-EGF MPO area</i></li> </ul>	Data not available	<p>5-year rolling average:</p> <p>2007-2011 -- 4.587</p> <p>2008-2012 -- 4.832</p> <p>2009-2013 -- 5.138</p> <p>2010-2014 -- 5.810</p> <p>2011-2015 -- 5.933</p> <p><i>Analysis: Between 2007 and 2015:</i></p> <ul style="list-style-type: none"> <li>• <i>5-year rolling average ranges from 4.587/mvmt to 5.933/mvmt</i></li> <li>• <i>Rising trend (+0.367 per year)</i></li> </ul> <p><b>TARGET:</b></p> <ul style="list-style-type: none"> <li>• <b><u>5.933/mvmt or lower by 2018</u></b></li> <li>• <b><u>Decline in trend</u></b></li> </ul>
State Targets	5.088/mvmt	3.15/mvmt	

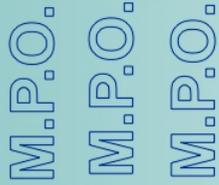
# Number of non-motorized fatalities and non-motorized serious injuries

## *Safety Target Analysis*

	North Dakota	Minnesota	GF-EGF MPO
GF-EGF Performance	2007 -- 2 2008 -- 3 2009 -- 1 2010 -- 3 2011 -- 5 2012 -- 0 2013 -- 4 2014 -- 5 2015 -- 2  5-year rolling average: 2011-2015 -- 3.2	2007 -- 0 2008 -- 0 2009 -- 0 2010 -- 0 2011 -- 0 2012 -- 0 2013 -- 0 2014 -- 0 2015 -- 0  5-year rolling average: 2011-2015 -- None	5-year rolling average: 2007-2011 -- 2.8 2008-2012 -- 2.4 2009-2013 -- 2.6 2010-2014 -- 3.4 2011-2015 -- 3.2  <i>Analysis: Between 2007 and 2015:</i> <ul style="list-style-type: none"> <li>• <i>Number ranges from 0 to 5</i></li> <li>• <i>5-year rolling average ranges from 2.4 to 3.4</i></li> <li>• <i>Rising trend (+0.18 per year)</i></li> </ul> <b>TARGET:</b> <ul style="list-style-type: none"> <li>• <b><u>3 or fewer non-motorized fatal and serious injury crashes by 2018</u></b></li> <li>• <b><u>Decline in trend</u></b></li> </ul>
State Targets	34 fatalities and serious injuries or fewer statewide  No change in trend	348 fatalities and serious injuries or fewer statewide  5% decline	

# Safety Targets Long-Term

- Towards Zero Deaths



# Grand Forks - East Grand Forks Metropolitan Planning Organization

## **MPO Staff Report** **Technical Advisory Committee: February 14, 2018** **MPO Executive Board: February 21, 2018**

**RECOMMENDED ACTION: Update on the Street/Highway Element of 2045 Metropolitan Transportation Plan.**

Matter of Update on 2045 Street/Highway Element.

**Background:** The UPWP identifies that the major undertaking of the MPO for the next two years is to update the Street/Highway Element of our Metropolitan Transportation Plan to the horizon year of 2045. This monthly update will report on three items:

1. Summary Public Meeting and Online Financial Planning Activity
2. Draft Goals/Objectives/Standards
3. Added River Crossing Scope of Work Amendment

### **Public Meeting 2 and Online financial Activity:**

The attendance at the second open house was minimal. The few that came in person provided valuable feedback. One of the input we were specifically seeking was obtaining a general sense of where the public would place emphasis on spending funds. An online activity was announced (also held at the open house) through our website and a push from our Constant Contact via email. 70 responses were recorded from the online activity. Attached is a summary of the input we received.

### **Draft Goals/Objectives/Standards:**

The feedback/input we received have been incorporated into the document. The attached draft indicates the modifications that have been made. We are seeking an endorsement of this draft to submit to public for further feedback.

### **Added River Crossings:**

The MPO Board requested a scope of work amendment to have a traffic change analysis done to allow some level of comparison of how each individual new river crossing would be forecasted to impact traffic patterns. The stated focus is to serve local traffic. The Board desired results for new crossing at 4 locations (24<sup>th</sup>, 32<sup>nd</sup>, 47<sup>th</sup> and Merrifield). The attached document provides an analysis of the traffic impact each individual bridge location would have on the network.

It is hoped that with this level of information, some locations can be identified to pursue further analysis while some are dropped for the purpose of serving local traffic.

**Findings and Analysis:**

- This activity is identified in UPWP.
- The regular 5 year update cycle ends December 2018
- This update is required to be FAST compliant
- This update will need to incorporate require performance measures and targets.
- The consulting team of Kimley-Horn and WSB are under contract and working.
- One of the first activities is to analyze the existing conditions.

**Support Materials:**

- Public Input meeting summary
- Draft Goals/Objective/Standards
- Safety Target Options
- Future Red River Bridge traffic analysis



# 2045 Street/Highway Plan Update: Recommended Goals, Objectives, and Standards

January 30, 2018

DRAFT FOR REVIEW AND COMMENT



## Goal 1: Economic Vitality

**Goal statement:** Support the economic vitality through enhancing the economic competitiveness of the metropolitan area by giving people access to jobs, and education services as well as giving business access to markets.

Table 1: Updated Objectives and Standards for Goal 1 Economic Vitality

Objective	Standards
<p>1. Coordinate land use and transportation planning, programming, and investments between agencies.</p>	<ul style="list-style-type: none"> <li>▪ Strengthen and connect existing communities by focusing street and highway system expansion in areas that are contiguous to currently developed areas.</li> <li>▪ Recognize and identify investments that support the types and locations of future development identified in the Grand Forks and East Grand Forks Land Use Plans.</li> <li>▪ Coordinate with local governments on the placement of regionally significant developments (e.g., ones that have a major impact on existing networks) and consider both motorized and non-motorized modes of transportation.</li> <li>▪ <b>Identify prime corridors for industrial uses that are adjacent to major freight operations and truck routes, have facilities for efficient freight and goods movement, and route truck traffic away from incompatible land uses.</b> (note to reviewers: moved from Goal 5, second objective, standard 2)</li> </ul>
<p>2. Enhance the area's economic competitiveness through the movement of goods and services.</p>	<ul style="list-style-type: none"> <li>▪ Provide street and highway access that is appropriate for the street and highway facility type and land-use environment.</li> <li>▪ Protect the operational capacity of interstate and state highways through the GF/EGF MPO area and support the growth of regional intermodal freight capacity.</li> </ul>
<p>3. Support efficient local and regional street and highway connections for freight and rail movement.</p>	<ul style="list-style-type: none"> <li>▪ Participate in state and national freight planning efforts.</li> <li>▪ Build and maintain relationships with area businesses to increase the understanding of their freight needs.</li> <li>▪ Improve connections to freight terminals (e.g., air and multimodal), especially the last 1-2 miles of access.</li> <li>▪ Strategically locate freight rail improvements in areas that currently do not have freight rail access. Investments will support critical rail-street/highway connections for key regional centers and businesses to move goods and services.</li> <li>▪ Support an integrated network of streets, roads, and highways that provide direct routes for freight and rail.</li> </ul>
<p>4. Consider economic development planning efforts in the transportation planning and programming processes.</p>	<ul style="list-style-type: none"> <li>▪ Invite economic development officials to collaborate in the transportation system alternatives analysis process and provide documentation of the alternatives screening process to local economic development officials for review.</li> <li>▪ Recognize and respond to economic changes at the local, regional, state and national level that influence the metro area's transportation system.</li> </ul>



## Goal 2: Security

**Goal statement:** Increase security of the transportation system for motorized and non-motorized uses.

Table 2: Updated Objectives and Standards for Goal 2 Security

Objective	Standards
1. Identify and maintain security of critical street and highway system assets.	<ul style="list-style-type: none"> <li>▪ Support improvement projects that do not compromise the security of identified critical street and highway assets.</li> <li>▪ Evaluate and manage the security of the transportation network, especially in critical areas.</li> <li>▪ <b><i>During security threats or events, coordinate traffic operations consistent with the Grand Forks-East Grand Forks Bridge Closure Management Plan.</i></b> (note to reviewers: added to address security aspect of the Bridge Closure Management Plan, which is currently the focus of the second objective)</li> </ul>
2. Support state and regional emergency, evacuation, and security plans.	<ul style="list-style-type: none"> <li>▪ <b><i>Incorporate state and regional emergency, evacuation, and security plans into transportation plans, project development, and project selection processes.</i></b> (note to reviewers: added to address security aspect of incident response, which is currently the focus of the fourth objective)</li> <li>▪ Develop an implementation plan that responds to various disaster events that might occur within the region including evacuation routes and contingency planning.</li> <li>▪ <b><i>Coordinate efforts with local emergency/security/hazardous materials groups.</i></b> (note to reviewers: moved from Goal 8, last objective, last standard)</li> </ul>



### Goal 3: Accessibility and Mobility

**Goal statement:** Increase the accessibility and mobility options for people and freight by providing more transportation choices.

Table 3: Updated Objectives and Standards for Goal 3 Accessibility and Mobility

Objective	Standards
1. Mitigate excessive travel delays.	<ul style="list-style-type: none"> <li>▪ Evaluate all new roadway construction and roadway reconstruction for viability of fiber installation to support future interconnection of traffic signals.</li> <li>▪ Fund and implement a congestion management process that identifies congestion management strategies to expand roadway capacity prior to adding more lanes on streets and highways.</li> <li>▪ Identify, map, report, and regularly update corridor congestion levels in the MPO area using volume, capacity, level of service, and amount of delay.</li> <li>▪ Consider and implement as appropriate innovative intersection improvements, such as roundabouts, that do not stop cross traffic.</li> </ul>
2. Maintain an acceptable level of service for all streets and intersections during peak hours.	<ul style="list-style-type: none"> <li>▪ Strive to deliver level of service C or better at intersections, including during peak travel periods (with the understanding that local and state agencies accept a lower level of service D threshold for determining deficiencies at intersections).</li> <li>▪ Define corridor-specific level of service criteria for corridors within the metro area, including acceptable levels of congestion, and the meaning of congestion in the context of the region.</li> </ul>



### Goal 4: Environment/Energy/Quality of Life

**Goal statement:** Protect and enhance the environment, promote energy conservation, and improve quality of life by valuing the unique qualities of all communities – whether urban, suburban, or rural.

Table 4: Updated Objectives and Standards for Goal 4 Environment/Energy/Quality of Life

Objective	Standards
<p>1. Avoid, minimize, and/or mitigate adverse social, environmental, and economic impacts resulting from existing or new transportation facilities.</p>	<ul style="list-style-type: none"> <li>▪ Initiate corridor preservation and right-of-way acquisition procedures to strengthen communities and avoid or minimize significant social, environmental, and economic impacts.</li> <li>▪ Incorporate elements of the Environmental Justice (EJ), Title IV and Limited English Proficiency (LEP) plans into the GF/EGF transportation planning process.</li> <li>▪ Prioritize transportation improvements that reduce transportation impacts on the existing environment through context sensitive solutions.</li> <li>▪ <b>Protect, enhance, and mitigate impacts on social, natural, and economic resources when planning, constructing, operating, and maintaining transportation systems. This will include identification of priority resources through available maps, plans, and inventories, and integrating environmentally sustainable practices into street and highway design, construction, and operations.</b> (note to reviewers: combined and clarified the two existing standards; maintaining add per MnDOT)</li> </ul>
<p>2. Maintain and improve quality of life along streets and highways.</p>	<ul style="list-style-type: none"> <li>▪ Work with land use authorities to develop and implement context sensitive projects that incorporate placemaking and “complete streets” principles on new and existing roadways in the GF/EGF MPO area. Tactics may include traffic calming.</li> <li>▪ Identify and avoid, minimize, and mitigate the impact that transportation and development projects have on historical sites and areas of cultural or historical significance.</li> <li>▪ <b>Plan and implement a transportation system that considers the needs of all potential users, including children, senior citizens, and persons with disabilities, and that promotes active lifestyles and cohesive communities. A special emphasis should be placed on promoting the environmental and health benefits of alternatives to single-occupancy vehicle travel.</b> (note to reviewers: new standard)</li> </ul>
<p>3. Maintain and improve regional air quality.</p>	<ul style="list-style-type: none"> <li>▪ Provide and promote alternatives to single occupancy vehicle travel through the implementation of traffic demand management strategies, such as carpooling, vanpooling, telecommuting, walking, bicycling, and travel by public transit.</li> <li>▪ Evaluate air quality monitoring on a regular basis and incorporate mitigation strategies in all transportation and land use plans.</li> <li>▪ Conduct a regional Greenhouse Gas (GHG) Inventory.</li> <li>▪ <b>Recognize the role of transportation choices in reducing emissions and support state and regional goals for reducing greenhouse gas and air pollutant emissions.</b> (note to reviewers: new standard)</li> </ul>



## Goal 5: Integration and Connectivity

**Goal statement:** Enhance the integration and connectivity of the transportation system, across and between modes for people and freight, and housing, particularly affordable housing located close to transit.

Table 5: Updated Objectives and Standards for Goal 5 Integration and Connectivity

Objective	Standards
<p>1. Effectively coordinate transportation and land use by promoting the sustainability and livability principles, goals, and objectives from local land use plans.</p>	<ul style="list-style-type: none"> <li>▪ Identify priority corridors and nodes for infill development, densification, or transit-oriented development.</li> <li>▪ Increase the use of multi-modal transportation by providing additional transit service and reducing bicycle/pedestrian network gaps.</li> <li>▪ Promote transportation improvements that support access to employment centers, especially those that provide a mix of employment opportunities (e.g. jobs and income levels).</li> <li>▪ <b>Promote higher land use densities.</b> (note to reviewers: moved from Goal 3, Objective 1)</li> </ul>
<p>2. Provide a balanced mix of local, collector, and arterial streets to help meet local and regional travel needs.</p>	<ul style="list-style-type: none"> <li>▪ <b>Map and update street and highway functional classification based on consistency with adjacent land uses, street/highway design, road authority jurisdiction, and use.</b> (note to reviewers: added to address functional classification, which is currently the focus of the second objective)</li> <li>▪ <b>Map and invest in the Minnesota Critical Urban Freight and NDDOT Strategic Freight corridors.</b> (note to reviewers: added to address new information and freight system mapping, which is currently the focus of the second objective, standard 1)</li> <li>▪ Maintain and update street and highway functional classification consistent with FHWA guidelines for mileage by classification, and to reflect the regional definitions established as part of the planning process.</li> <li>▪ Regularly update and implement access management guidelines for the region's street and highway system.</li> </ul>



## Goal 6: Efficient System Management

**Goal statement:** Promote efficient system management and operation by increasing collaboration among federal, state, local government to better target investments and improve accountability.

Table 6: Updated Objectives and Standards for Goal 6 Efficient System Management

Objective	Standards
<p>1. Implement best practice programming and innovative financing alternatives.</p>	<ul style="list-style-type: none"> <li>▪ <b>Include inflation in project cost estimates and report project costs for the forecast year(s) of expenditure.</b> (note to reviewers: moved from current fourth objective, standard 3)</li> <li>▪ <b>Identify, track, and pursue alternate funding sources and financing tools to fund local transportation projects, maintenance, and operations. Innovative funding alternatives may include public/private partnerships.</b> (note to reviewers: combined text from current objective, the two standards below, and the current fourth objective, standard 1)</li> <li>▪ For projects significantly benefitting private entities, develop and implement a cost sharing model to help fund street or highway projects.</li> <li>▪ Assess developers for the costs of street and highway improvements associated with new developments, where appropriate.</li> </ul>
<p>2. Involve all local partners in the transportation planning process.</p>	<ul style="list-style-type: none"> <li>▪ Collaborate with economic development, transit providers, housing providers, workforce, and other agencies whose clients impact the transportation network to deliver projects that benefit people, businesses, and freight.</li> <li>▪ Participate in and involve nontraditional partners in the transportation planning process.</li> <li>▪ Execute agreements necessary (e.g., MOUs, cost sharing, service contracts, etc.) to facilitate regional traffic management strategies.</li> <li>▪ Incorporate environmental stewardship considerations and environmental agency coordination into the planning and implementation of transportation improvements.</li> <li>▪ Collaborate with local and state agencies in setting performance measures and targets for urban and rural areas.</li> </ul>
<p>3. Cooperate across jurisdictional boundaries to create an integrated transportation network.</p>	<ul style="list-style-type: none"> <li>▪ Establish multijurisdictional protocols for special events (e.g., events and parades).</li> <li>▪ Encourage region-wide coordination among traffic, emergency, and maintenance agencies (e.g., police, fire, DOTs, and public works).</li> <li>▪ Continue to develop and maintain a regional travel demand forecast model for use in forecasting future corridor levels of service.</li> <li>▪ <b>Encourage member jurisdictions should continue to continue participation participate in the GF/EGF MPO's transportation planning activities.</b> (note to reviewers: rephrased to start with a verb like other standards per B. Retzlaff)</li> </ul>
<p>4. Maintain and update the regional ITS architecture.</p>	<ul style="list-style-type: none"> <li>▪ Implement, where applicable, Active Transportation Demand Management techniques using existing and/or new ITS infrastructure.</li> <li>▪ Develop and implement coordinated signal timing plans between jurisdictions and along new corridors.</li> <li>▪ Invest in ITS infrastructure that can record travel times, traffic volumes, turning movements, and other various data points.</li> </ul>



Objective	Standards
	<ul style="list-style-type: none"> <li>▪ Implement, where appropriate, monitoring systems as part of transportation facilities, such as bridges that monitor fatigue, tampering, or failure.</li> </ul>
<p>5. Consider advances in autonomous vehicle and connected vehicle technology in the transportation planning and programming processes.</p>	<ul style="list-style-type: none"> <li>▪ <b>Participate in national and state autonomous vehicle and connected vehicle planning efforts</b></li> <li>▪ <b>Support implementation in autonomous vehicle and connected vehicle technology that collectively provides increased transportation options for people and freight</b></li> <li>▪ <b>Recognize and address autonomous vehicle and connected vehicle changes at the local, regional, state, and national level that influence the metro area's transportation system</b> <i>(note to reviewers: new objective and standards added per MPO)</i></li> </ul>



## Goal 7: System Preservation

**Goal statement:** Emphasize the preservation of the existing transportation system by first targeting federal funds towards existing infrastructure to spur revitalization, promote urban landscapes and protect rural landscapes.

Table 7: Updated Objectives and Standards for Goal 7 System Preservation

Objective	Standards
<p>1. Identify sufficient funding for the program of projects included in GF/EGF MPO transportation plans.</p>	<ul style="list-style-type: none"> <li>▪ Inform project finance planning and fiscal constraints by identifying all available funding amounts and their sources.</li> <li>▪ Identify funding that can be used for operations, maintenance, and facility construction.</li> <li>▪ <b>Assign more likely construction, operation, and maintenance funding to near-term projects.</b> (note to reviewers: moved from current second objective, and combined with current second objective, standard 1<sup>st</sup> bullet)</li> <li>▪ Document funding used for “State of Good Repair” projects and document whether a “State of Good Repair” for the federal transportation system can be currently maintained.</li> <li>▪ <b>Provide technical assistance to local jurisdictions in applying for state and federal funding programs.</b> (note to reviewers: moved from current second objective, standard 2<sup>nd</sup> bullet)</li> </ul>
<p>2. Cost-effectively preserve, maintain, and improve the existing street and highway system.</p>	<ul style="list-style-type: none"> <li>▪ <b>Maintain pavement, signal systems, signage, striping and other features of the transportation system to a level that permits safe and multimodal traffic operations.</b> (note to reviewers: moved and refined standard from current fourth objective and standard, 3<sup>rd</sup> bullet)</li> <li>▪ <b>Continue pavement management programs that include monitoring, reporting, and integrating reporting across jurisdictions.</b> (note to reviewers: combined current standard, 6<sup>th</sup> bullet below, and current fourth objective and standard, 2<sup>nd</sup> bullet)</li> <li>▪ <b>Continue implementing appropriate preventative maintenance, rehabilitation, or reconstruction projects. Partners will identify projects based on pavement needs documented in an objective and measurable prioritization matrix, and will include elements that improve travel efficiency as identified through the congestion management process.</b> (note to reviewers: combined text from current objective and standard, 7<sup>th</sup> and 8<sup>th</sup> bullets below, and current fourth objective and standards, 1<sup>st</sup> and 4<sup>th</sup> bullets)</li> <li>▪ Develop a life-cycle cost analysis of pavement type done for projects with cost estimates over \$2,500,000. (note to reviewers: \$2.5 million needs to be updated based on Asset Management plans)</li> <li>▪ Identify and implement, where appropriate, new pavement technologies.</li> <li>▪</li> <li>▪ When developing the transportation improvement program (TIP), prioritize improvement of the existing transportation network over construction of new infrastructure.</li> </ul>



## Goal 8: Safety

**Goal statement:** Increase safety of the transportation system for motorized and non-motorized uses.

*Note to reviewers: Objectives 1 through 20 are from draft 2040 street/highway plan amendment.*

Table 8: Updated Objectives and Standards for Goal 8 Safety

Objective	Standards
<p><b>1. Keep vehicles from encroaching on the roadside in rural areas</b></p>	<ul style="list-style-type: none"> <li>▪ <b>Continue to install shoulder rumble strips, edge lines, “profile marking” edge line rumble strips, modified shoulder rumble strips, 6-inch edge lines, or embedded wet-reflective pavement markings on section with narrow or no paved shoulders</b></li> <li>▪ <b>Continue to install enhanced shoulders, lighting, delineation (for example, Chevrons), or pavement markings for sharp horizontal curves in rural areas</b></li> <li>▪ <b>Continue to install improved highway geometry for horizontal curves</b></li> <li>▪ <b>Increase skid-resistance pavement surfaces</b></li> <li>▪ <b>Continue to install shoulder treatments</b> <ul style="list-style-type: none"> <li>• <b>Eliminate shoulder drop-offs from paved road to unpaved shoulder</b></li> <li>• <b>Shoulder edge</b></li> <li>• <b>Widen and/or pave shoulders</b></li> </ul> </li> </ul>
<p><b>2. Minimize the likelihood of crashing into an object or overturning if the vehicle travels off the shoulder in rural areas</b></p>	<ul style="list-style-type: none"> <li>▪ <b>Continue to install safer slopes and ditches to prevent rollovers</b></li> <li>▪ <b>Remove/relocate objects in hazardous locations</b></li> </ul>
<p><b>3. Reduce the likelihood of a head-on vehicle collision in rural areas</b></p>	<ul style="list-style-type: none"> <li>▪ <b>Continue to install centerline rumble strips and 6-inch center lines for two-lane rural roads</b></li> <li>▪ <b>Continue operation of alternating passing lanes or four-lane sections at key locations</b></li> <li>▪ <b>Continue to install cable median barrier for narrow-width medians and multilane roads</b></li> <li>▪ <b>Continue operation of buffer space between opposite travel directions</b></li> <li>▪ <b>Continue to install directional medians</b></li> </ul>



Objective	Standards
<p><b>4. Reduce frequency and severity of intersection conflicts through traffic control and operational improvements in urban areas</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue operation of multiphase signal operation</i></li> <li>▪ <i>Optimize clearance intervals</i></li> <li>▪ <i>Restrict or eliminate turning maneuvers (including right turns on red)</i></li> <li>▪ <i>Continue operation of signal coordination along a corridor or route</i></li> <li>▪ <i>Continue operation of emergency vehicle preemption</i></li> <li>▪ <i>Continue to install countdown timers, advanced walk phase, and other low-cost pedestrian/bicycle facility improvements</i></li> <li>▪ <i>Remove unwarranted signals</i></li> <li>▪ <i>Continue to supplement conventional red-light running enforcement with traffic signal confirmation lights and other technology enhancements that support enforcement efforts</i></li> </ul>
<p><b>5. Reduce the severity of the crash</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to improve design and applications of barrier and systems to maintain flow of traffic</i></li> </ul>
<p><b>6. Improve efficiency and effectiveness of aggressive driving/speed enforcement efforts</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Strengthen speed detection and public perceived risk of being stopped and ticketed through sustained, well-publicized, highly visible speed enforcement campaigns</i></li> <li>▪ <i>Conduct highly visible, publicized and saturated enforcement campaigns at locations with higher incidence of aggressive driving/speed related crashes</i></li> <li>▪ <i>Enact/support legislation to strengthen penalties such as increased fines for right-of-way and speed violations</i></li> <li>▪ <i>Strengthen the adjudication of speeding citations to enhance the deterrent effect of fines</i></li> <li>▪ <i>Address the perception of widespread speeding by heavy vehicles by first conducting a statewide assessment of commercial vehicle speeds. In response to the assessment results, examine enforcement, safety education, and outreach safety strategies for priority regions or corridors identified as needing improvement</i></li> </ul>
<p><b>7. Review crash data</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to analyze data to clearly define aggressive driving and identify factors contributing to aggressive driving</i></li> </ul>
<p><b>8. Set and communicate appropriate speed limits</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to implement active speed warning signs, including dynamic message boards at rural to urban transitions, school zones, and work zones</i></li> <li>▪ <i>Continue operation of in-pavement measures to communicate the need to reduce speeds</i></li> </ul>
<p><b>9. Ensure that roadway design and traffic control elements support appropriate and safe speeds</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Effect safe speed transitions through design elements and on approaches to lower speed areas</i></li> </ul>
<p><b>10. Improve sight distance at signalized and unsignalized intersections</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to clear sight triangles</i></li> <li>▪ <i>Redesign intersection approaches</i></li> <li>▪ <i>Change horizontal and/or vertical alignment of approaches to provide more sight distance</i></li> <li>▪ <i>Eliminate parking that restricts sight distance</i></li> </ul>



Objective	Standards
<p><b>11. Improve driver awareness of intersections and signal control</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to improve visibility of intersections by providing enhanced signing, delineating, overhead indications, 12-inch lenses, background shields, or pavement markings/messages</i></li> <li>▪ <i>Continue to call attention to intersections by installing rumble strips on intersection approaches</i></li> <li>▪ <i>Continue to improve visibility of intersections by providing appropriate street lighting</i></li> <li>▪ <i>Continue to install larger regulatory and warning signs at intersections, including the use of dynamic warning signs at appropriate intersections</i></li> <li>▪ <i>Continue to provide dashed markings (extended left edge lines) for major road continuity across the median opening at divided highway intersections</i></li> </ul>
<p><b>12. Improve management of access near signalized and unsignalized intersections</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to restrict or eliminate parking on intersection approaches</i></li> <li>▪ <i>Expand driveway closure/relocations</i></li> <li>▪ <i>Provide longer left-turn lanes at intersections</i></li> <li>▪ <i>Expand driveway turn restrictions</i></li> <li>▪ <i>Continue to install left-turn lanes at intersections</i></li> <li>▪ <i>Continue to offset left-turn lanes at intersections</i></li> <li>▪ <i>Continue to install bypass lanes on shoulders at T-intersections</i></li> <li>▪ <i>Continue to provide acceleration lanes at divided highway intersections</i></li> <li>▪ <i>Continue to install right-turn lanes at intersections</i></li> <li>▪ <i>Continue to offset right-turn lanes at intersections</i></li> <li>▪ <i>Expand to provide right-turn acceleration lanes at intersections</i></li> <li>▪ <i>Expand channelized or closed median openings to restrict or eliminate turning maneuvers</i></li> <li>▪ <i>Close or relocate “high-risk” intersections</i></li> <li>▪ <i>Continue to convert four-legged intersections to two T-intersections</i></li> <li>▪ <i>Realign intersection approaches to reduce or eliminate intersection skew</i></li> <li>▪ <i>Continue to improve pedestrian and bicycle facilities to reduce conflict between motorists and nonmotorized travelers</i></li> <li>▪ <i>Convert 2-lane intersection to 3-lane intersection</i></li> </ul>
<p><b>13. Choose appropriate intersection traffic control to minimize crash frequency and severity</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Continue to construct roundabouts at appropriate locations</i> <ul style="list-style-type: none"> <li>• <i>Currently occurring at intersections in Grand Forks: 23th St &amp; 40th Ave S, 34th St &amp; 24th Ave</i></li> <li>• <i>*only standard found in safety plans</i></li> </ul> </li> </ul>
<p><b>14. Improve the roadway and driving environment to better accommodate drivers’ needs</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Expand the use of advanced guide signs and street name signs</i></li> <li>▪ <i>Continue to increase sign and letter heights of roadway signs</i></li> <li>▪ <i>Provide more all-red clearance intervals at signalized intersections</i></li> <li>▪ <i>Provide more protected left-turn signal phases at high-volume intersections</i></li> <li>▪ <i>Continue to improve lighting at intersections, horizontal curves, and railroad grade crossings</i></li> <li>▪ <i>Continue to improve roadway delineation</i></li> <li>▪ <i>Continue to reduce intersection skew angle</i></li> </ul>



Objective	Standards
<b>15. Improve Sight Distance and/or Visibility Between Motor Vehicles and Pedestrians/Bicyclists</b>	<ul style="list-style-type: none"> <li>▪ <i>Continue to provide crosswalk enhancements</i></li> <li>▪ <i>Continue to implement lighting/crosswalk illumination measures</i></li> <li>▪ <i>Continue to eliminate screening by physical objects</i></li> <li>▪ <i>Expand signals to alert motorists that pedestrians/bicyclists are crossing</i></li> <li>▪ <i>Continue to improve reflectivity/visibility of pedestrians/bicyclists</i></li> </ul>
<b>16. Reduce Vehicle Speed</b>	<ul style="list-style-type: none"> <li>▪ <i>Continue to implement road narrowing measures</i></li> <li>▪ <i>Continue to install traffic calming—road sections</i></li> <li>▪ <i>Continue to install traffic calming—intersections</i></li> <li>▪ <i>Continue to provide school route improvements</i></li> </ul>
<b>17. Improve Motorist Safety Awareness and Behavior</b>	<ul style="list-style-type: none"> <li>▪ <i>Continue to provide education, outreach, and training</i></li> <li>▪ <i>Continue to implement enforcement campaigns</i></li> </ul>
<b>18. Reduce Effect of Hazards</b>	<ul style="list-style-type: none"> <li>▪ <i>Fix or remove surface irregularities</i></li> <li>▪ <i>Provide routine maintenance of bicycle facilities</i></li> </ul>
<b>19. Implement a multimodal transportation system that is balanced and integrated with all transportation modes to ensure safe and efficient movement of people and goods</b>	<ul style="list-style-type: none"> <li>▪ <i>Minimize congestion on roadways and at intersections</i></li> <li>▪ <i>Maintain roadway and other Level of Service standards consistent with regional, county, and municipal comprehensive plans</i></li> <li>▪ <i>Provide a balanced system with viable multi-modal options that are consistent with local comprehensive plans</i></li> <li>▪ <i>Provide infrastructure that supports transportation (transit riders, pedestrians, bicyclists and other alternative transportation modes)</i></li> <li>▪ <i>Improve intermodal connectivity and access to intermodal facilities (e.g., airports, transit centers, Interstate bus system, rail, etc.) and activity centers</i></li> <li>▪ <i>Provide more sidewalks and bikeways</i></li> <li>▪ <i>Improve public transit services so they are efficient, frequent, reliable, convenient, safe, easy to use and understand, and promotes other intermodal uses</i></li> </ul>
<b>20. Increase the safety and security of the transportation system for motorized and non-motorized users</b>	<ul style="list-style-type: none"> <li>▪ <i>Provide for safer travel by all transportation modes, including pedestrian, bicycling, transit, and automobile</i></li> <li>▪ <i>Encourage measures that reduce congestion</i></li> <li>▪ <i>Encourage strategies that improve emergency response to accident</i></li> </ul>



Objective	Standards
<p>21. Reduce the number, severity, and rate of crashes compared to previous years by type of vehicle and transportation facility.</p>	<ul style="list-style-type: none"> <li>▪ Identify and maintain a database and map of frequent or severe crash locations by transportation facility within the MPO area (intersections, road segment, bicycle/pedestrian facility, and bicycle/pedestrian – vehicle conflict point). The database will include number, type, and severity of crashes.</li> <li>▪ Identify and implement, where possible, intersection treatments that reduce crashes</li> <li>▪ Support policies that prohibit/penalize distracted driving.</li> <li>▪ Identify funding available to improve the safety of the roadway system.</li> <li>▪ Coordinate with local, county, and state agencies to develop education, public health, engineering, and enforcement strategies targeted at crash reduction.</li> </ul> <p>▪ <b><i>Support the region’s vision of moving toward zero traffic fatalities and serious injuries, which includes supporting educational and enforcement programs to increase awareness of regional safety issues, shared responsibility, and safe behavior. (note to reviewers: new standard)</i></b></p>



## Goal 9: Resiliency and Reliability

**Goal statement:** Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.

*Note to reviewers: Modeled after content in Goal 2 (Security), current second and fourth objectives and standards.*

Table 9: Objectives and Standards for Goal 9 Resiliency

Objective	Standards
<p><b>1. Reduce street and highway system vulnerability to snow and storm water</b></p>	<ul style="list-style-type: none"> <li>▪ <b>Maintain passable streets and highways under all reasonable weather conditions.</b></li> <li>▪ <b>Strategically design and maintain the street and highway system to operate under all reasonable weather conditions.</b></li> <li>▪ <b>Assess and mitigate any possible impacts new roadway construction may have on high water events, including proximity to waterways, construction in wetlands or floodways, storm drainage, etc.</b></li> </ul>
<p><b>2. Support the region's resilience and travel reliability through efficient detour and evacuation routes</b></p>	<ul style="list-style-type: none"> <li>▪ <b>During river flood events, reroute traffic consistent with the Bridge Closure Management Plan, or revised to respond to significant, observed delays or changes.</b></li> <li>▪ <b>Be trained in and use established alternate routes and intelligent transportation systems (ITS) to maintain street and highway operations during incidents and temporary street or highway blockages.</b></li> <li>▪ <b>Provide auxiliary power sources to operate traffic signals when mainline power is interrupted.</b></li> </ul>



## Goal 10: Tourism

Goal statement: Enhance travel and tourism.

Note to reviewers: New content.

Table 10: Objectives and Standards for Goal 10 Tourism

Objective	Standards
<p><b>1. Maintain convenient and intuitive street and highway access to major activity centers</b></p>	<ul style="list-style-type: none"> <li>▪ <u>Develop and use event traffic management plans for major activity centers such as the Alerus Center, Ralph Engelstad Arena, and Greater Grand Forks Greenway including the Red River State Recreation Campground.</u></li> <li>▪ <u>Identify, coordinate, and communicate traffic plans for simultaneous events.</u></li> </ul>



## DRAFT MEMORANDUM

**To:** Earl Haugen, Executive Director Grand Forks – East Grand Forks MPO  
**From:** Brandon Bourdon, P.E. (ND, MN), Kimley-Horn and Associates  
**Date:** February 9, 2018  
**Re:** Grand Forks-East Grand Forks MPO 2045 Street/Highway Plan Update  
River Crossing Alternatives Analysis

A variety of additional potential Red River crossing locations have been included in prior Grand Forks – East Grand Forks long range transportation plans. These additional river crossings have been discussed, documented, and analyzed at varying degrees since at the late 1960s. Since the 2004 long range transportation plan update, the locations for any new river crossings have included both the 32nd Avenue and Merrifield Road river crossings. The Merrifield Road crossing has been a “bypass” option that would provide regional benefit by reducing trips, particularly truck trips, through the urbanized area.

There has been renewed interest in adding an additional river crossing(s) recently. Since the Grand Forks – East Grand Forks Metropolitan Planning Organization (MPO) is in the process of updating the region's transportation plan, a high-level transportation focused planning analysis has been completed to assess some transportation benefits of several potential river crossings. This analysis focuses on the transportation planning impacts of the following potential river crossing locations:

- 24th Avenue
- 32nd Avenue
- 47th Avenue
- Merrifield Road

Advanced Traffic Analysis Center (ATAC) has been completing travel demand modeling as part of the 2045 Street/Highway Plan Update. ATAC used the regions travel demand model for this analysis to develop 2045 daily traffic forecasts. Kimley-Horn and WSB used these forecasts to analyze regional traffic pattern changes, link level volume to capacity (V/C) ratios, and local intersection level of service (LOS) for each of the four potential new river crossings scenarios. Each river crossing was analyzed at a regional and local level to allow for a comparison of transportation impacts. The purpose of this memorandum is to summarize the findings of this analysis.

## Existing and No Build Traffic Conditions

Existing and No Build traffic conditions were analyzed on both a link and intersection LOS basis. The link level analysis focused on several key corridors within the urbanized area of the MPO. The corridors analyzed are:

- Gateway Drive (US 2) from Columbia Road to Central Avenue
- DeMers Avenue from Columbia Road to 4<sup>th</sup> Street (Business US 2)
- 4<sup>th</sup> Avenue / Minnesota Avenue / 1<sup>st</sup> Street from DeMers Avenue to 3<sup>rd</sup> Avenue
- 24<sup>th</sup> Avenue from Washington Street to Belmont Road
- 32<sup>nd</sup> Avenue from Columbia Road to Belmont Road
- 47<sup>th</sup> Avenue from Washington Street to Belmont Road
- Bygland Road / 3<sup>rd</sup> Avenue / 2nd Avenue from Rhinehart Drive to Business US 2
- Belmont Road from 4<sup>th</sup> Avenue to 17<sup>th</sup> Avenue
- Washington Street from DeMers Avenue to 55<sup>th</sup> Avenue
- 4th Street / Business US 2 from DeMers Avenue to 170th Street



In addition to the corridors, six intersections were analyzed at an overall intersection LOS basis. The analyzed intersections include the following:

- DeMers Avenue and 5<sup>th</sup> Street
- DeMers Avenue and Washington Street
- Washington Street and 17<sup>th</sup> Avenue
- Washington Street and 32<sup>nd</sup> Avenue
- 1<sup>st</sup> Street and 3<sup>rd</sup> Avenue
- 4<sup>th</sup> Avenue and Belmont Road

Existing traffic patterns were first analyzed at a link level. To complete the link level analysis, ADT volumes (average daily traffic) and V/C ratios under Existing conditions were provided by ATAC. The V/C ratios were then compared to planning level LOS ratings based on typical facility V/C ratios. LOS ratings were then assigned to the links that were reviewed as part of this analysis.

Overall, the urbanized area is operating acceptably under Existing conditions although several links operate LOS C and D. **Figure 1**, below, shows the link level LOS under Existing conditions. **Table 1** below describes the V/C thresholds for each of the LOS criteria.

Table 1: Link Level of Service Thresholds

Level of Service	Link Level Volume to Capacity LOS Threshold
A	0.0 to 0.6
B	>0.6 to 0.7
C	>0.7 to 0.8
D	>0.8 to 0.85
D-	>0.85 to 0.9
E	>0.9 to 1.0
F	>1.0

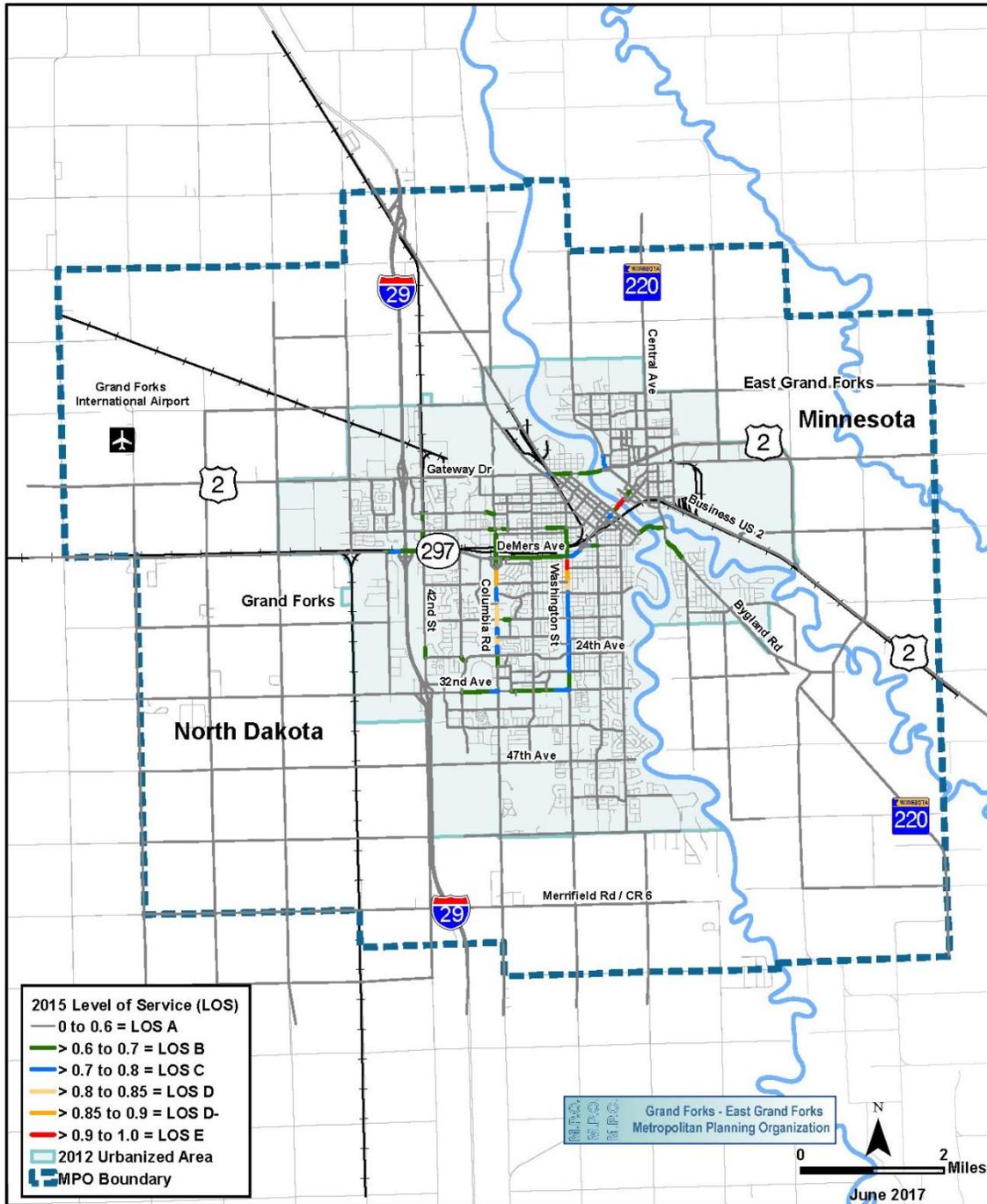


Figure 1: Existing Conditions Link Level LOS Summary



Although analyzing link V/C ratios and LOS are beneficial, another way to analyze traffic is to focus on intersection operations. An intersection capacity analysis can identify operational concerns that may not be apparent by completing a link LOS analysis. To complete the intersection analysis existing turning movement counts, collected in 2017, were used to model intersection operations and review intersection LOS. This analysis was completed during the PM peak hour at the study intersections for Existing, 2045 No Action, and the four potential bridge crossing alternatives under 2045 conditions. Synchro version 9 was used to complete this analysis.

The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 2**.

Table 2: Level of Service Grading Descriptions

Level of Service	Description
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	Minor control delay at signalized intersections; traffic operates at an unimpeded level with slightly restricted movement within traffic stream.
C	Moderate control delay; movement within traffic stream more restricted than at LOS B; the formation of queues contributes to lower average travel speeds.
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	High control delay; average travel speed no more than 33 percent of free flow speed.
F	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

The range of control delay for each rating (as detailed in the HCM) is shown in **Table 3**. Signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, so higher delays are generally tolerated more by drivers for each corresponding LOS ratings. In general, LOS D or better for overall intersection LOS is the accepted standard for existing and future intersection operations.

Table 3: Level of Service Grading Descriptions

Level of Service	Average Control Delay (s/veh) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

For unsignalized intersections, LOS is reported for the worst approach and overall intersection. Similar to the link level analysis, the overall intersection LOS does not show any issues at the analyzed intersections under Existing conditions. **Table 4** below summarizes the Existing PM peak intersection operations.



Table 4: Existing Intersection LOS Summary

Analyzed Intersection/ LOS	DeMers Ave at 5 <sup>th</sup> Street	DeMers Ave at Washington St.	Washington St. at 17 <sup>th</sup> Ave	Washington St. at 32 <sup>nd</sup> Ave	1 <sup>st</sup> St. at 3 <sup>rd</sup> Ave	4 <sup>th</sup> Ave at Belmont Rd.
Existing PM Peak LOS	B	D	C	C	A	B

No Build conditions were analyzed in the same manner as existing conditions except using 2045 No Build ADTs and V/Cs provided by ATAC. Under this scenario, no additional bridge crossings were assumed by 2045. **Figure 2** on the next page shows the link level LOS under 2045 No Build conditions. This analysis shows that several key corridors are operating undesirably (LOS worse than D). All three river crossings in addition to segments of Washington Street and 32<sup>nd</sup> Avenue are anticipated to operate at LOS E or F.

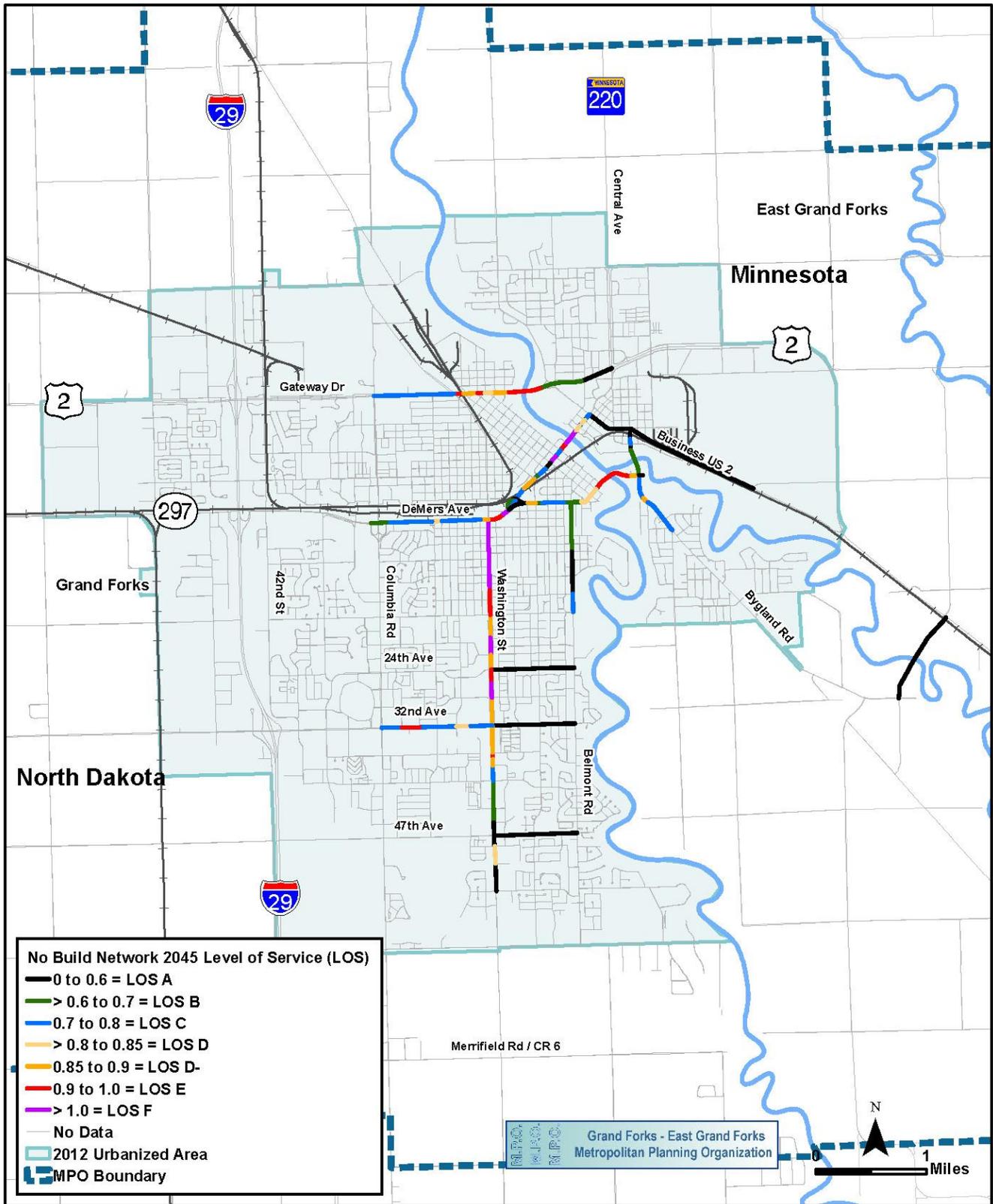


Figure 2: 2045 No Build Conditions Link Level LOS Summary



In addition to the link level analysis, an intersection analysis was also completed. To develop volumes for the 2045 No Build scenario, link ADTs under Existing and 2045 No Build conditions were compared on all intersection approaches. Then a growth factor for each approach was developed based on that comparison. The growth factor was used to adjust the existing turning movement counts to create future turning movement volumes at each intersection.

The intersection LOS analysis shows a similar trend as the link level LOS. The intersections of DeMers Avenue and Washington Street, Washington Street and 32<sup>nd</sup> Avenue, and 4<sup>th</sup> Avenue and Belmont Road show undesirable operations under 2045 No Build conditions. **Table 5** below is a continuation of **Table 4**, it summarizes the intersection LOS under both Existing and 2045 No Build conditions.

Table 5: Existing and 2045 No Build Intersection LOS Summary

Analyzed Intersection/ LOS	DeMers Ave at 5 <sup>th</sup> Street	DeMers Ave at Washington St.	Washington St. at 17 <sup>th</sup> Ave	Washington St. at 32 <sup>nd</sup> Ave	1 <sup>st</sup> St. at 3 <sup>rd</sup> Ave	4 <sup>th</sup> Ave at Belmont Rd.
Existing PM Peak LOS	B	D	C	C	A	B
2045 No Build PM Peak LOS	B	E	D	E	B	F

The operational challenges at the two Washington Street intersections are also evident when looking at **Figure 2**, many areas where links are anticipated to operate at LOS E or F occur around these two intersections. The poor operations at 4<sup>th</sup> Avenue at Belmont Road are attributed to the existing intersection control. The 2045 No Build volumes exceed the capacity of an all-way stop. The intersection of 4<sup>th</sup> Avenue at Belmont Road was recently a signal, but it was removed after a vehicular crash rendered it inoperable. The all-way stop is acceptable under Existing traffic levels. Under 2045 No Build conditions, if a signal was reinstalled, the intersection would operate at an acceptable LOS. **Figure 3** on the next page shows intersection LOS values from **Table 5** on a map.

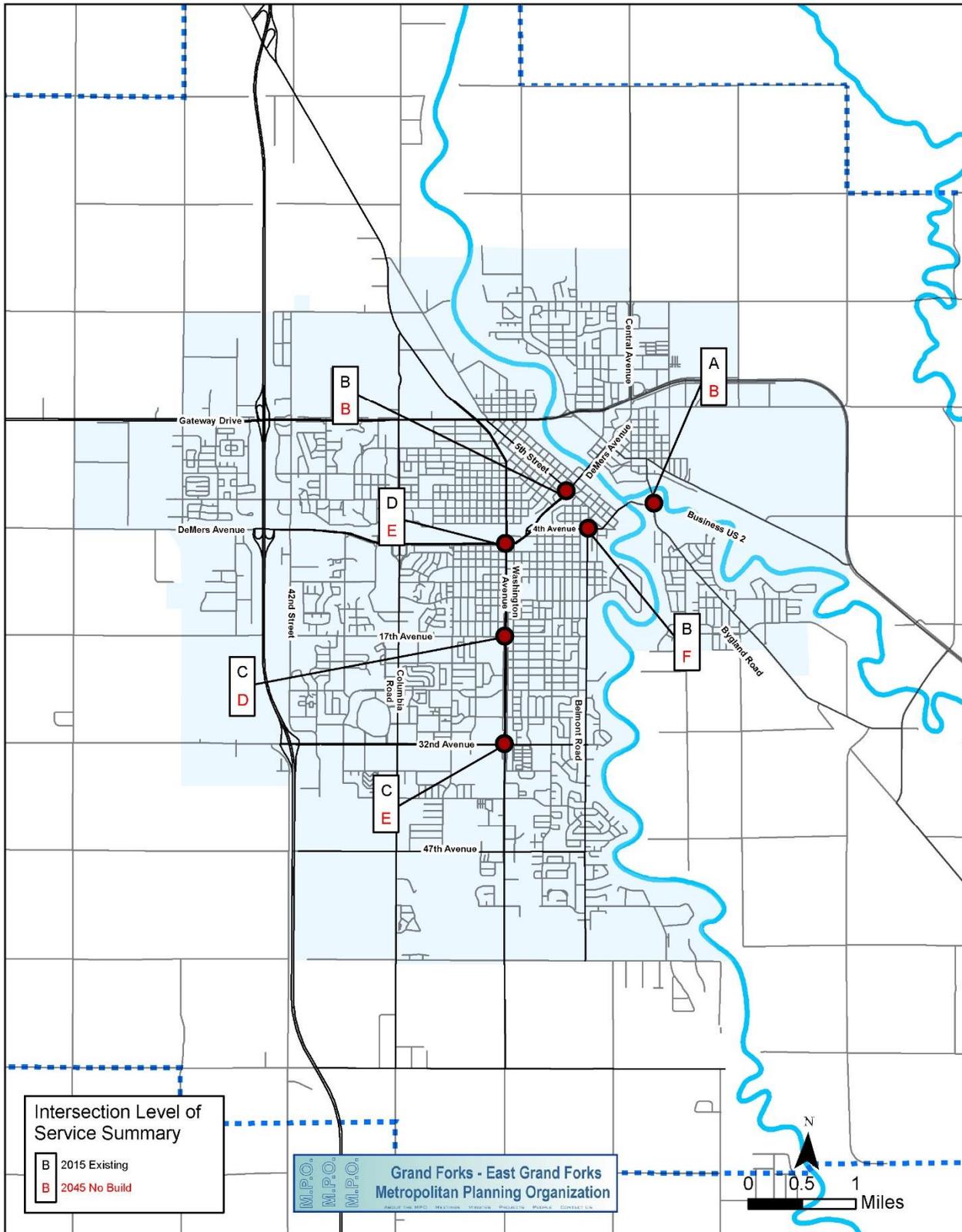


Figure 3: Existing and 2045 No Build Intersection LOS Summary



## River Crossing Analysis

Based on input from area political leaders and agency staff in the region, the following four potential new river crossing locations were analyzed: 24th Avenue, 32nd Avenue, 47th Avenue and Merrifield Road. Each river crossing was analyzed at a local level (intersection and link LOS) and regional level (global metrics such as urban vehicle miles traveled) under 2045 conditions to determine transportation related impacts of each potential crossing on the transportation network. A summary matrix of each river crossing is included at the end of this memo that provides an overall comparison.

### Local Impacts

**Figures 4 through 11** on the following pages show the corridor ADTs and link level LOS for each of the potential river crossing alternatives. Here are a few observations noted:

- The Point Bridge link LOS operates better under the 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue river crossing alternatives.
- Gateway Drive operates better under the 24<sup>th</sup> Avenue, 32<sup>nd</sup> Avenue, and 47<sup>th</sup> Avenue river crossings.
- DeMers Avenue experienced similar operations under each of the alternatives analyzed.
- Washington Street operated with the fewest LOS F segments under the 32<sup>nd</sup> Avenue and 47<sup>th</sup> Avenue river crossing alternatives.
- Belmont Road operations were better under all the river crossing alternatives when compared to the No Action scenario.

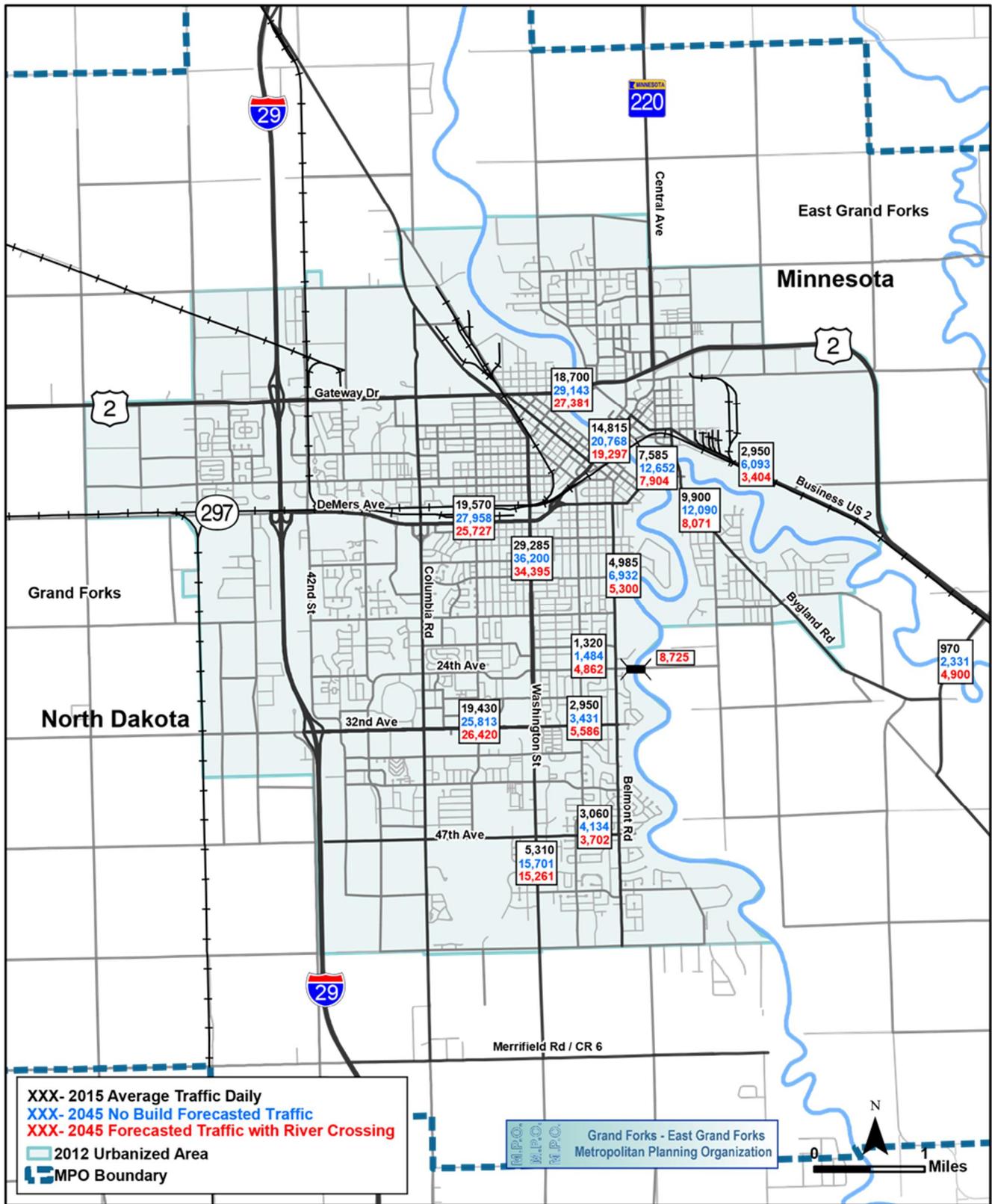


Figure 4: ADT Summary for the Proposed 24<sup>th</sup> Avenue River Crossing

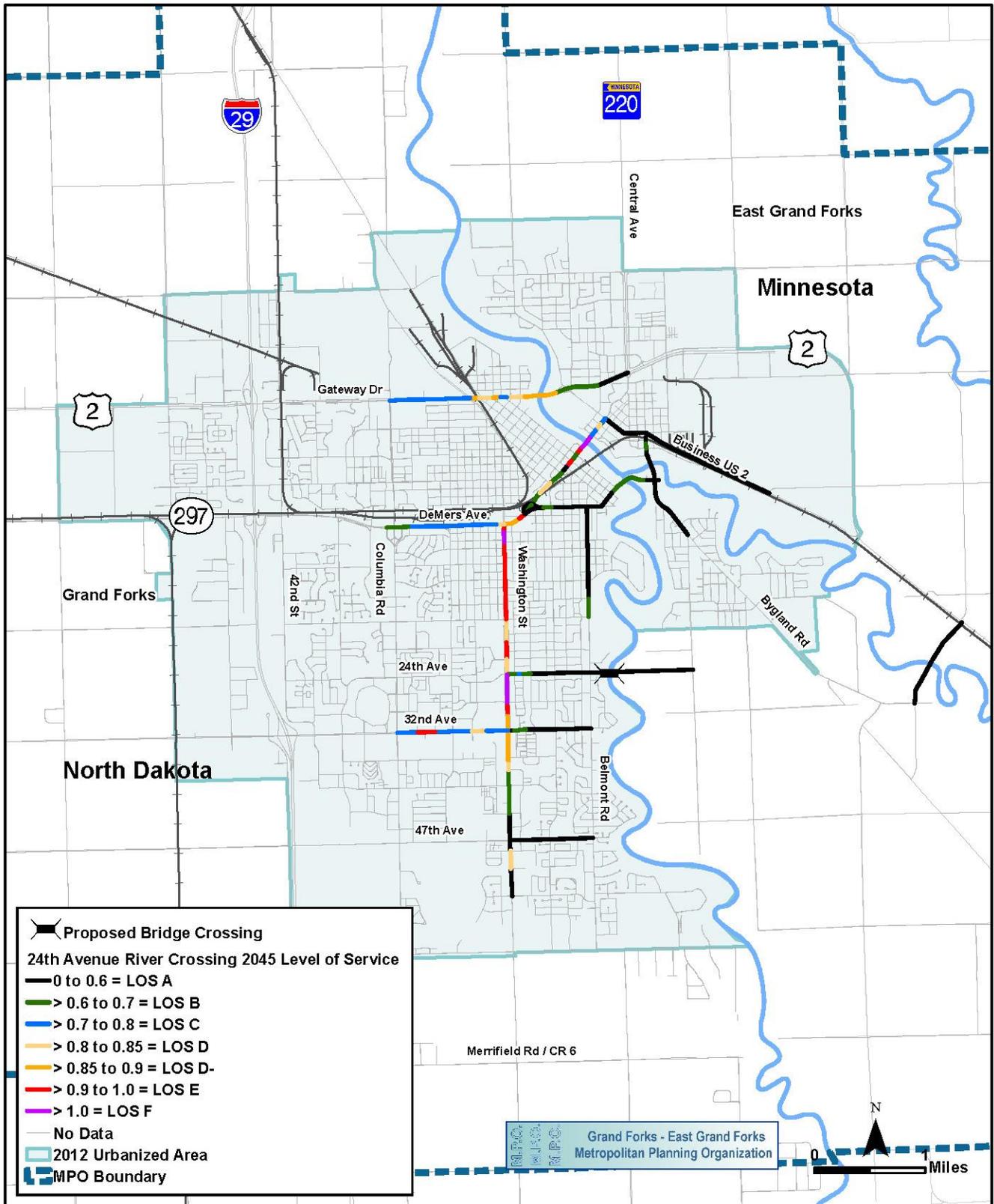


Figure 5: Link Level of Service Summary for the Proposed 24<sup>th</sup> Avenue River Crossing

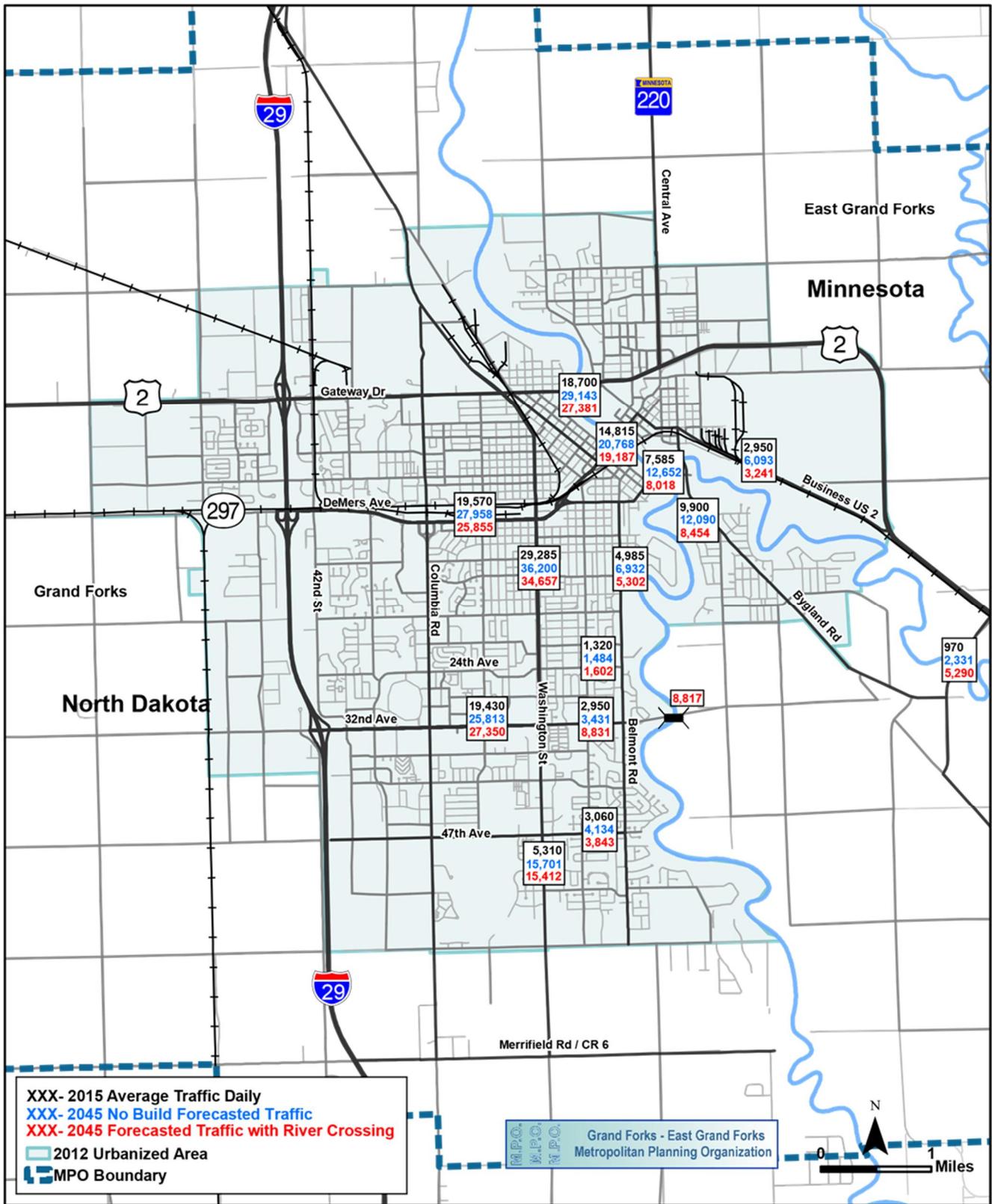


Figure 6: ADT Summary for the Proposed 32nd Avenue River Crossing

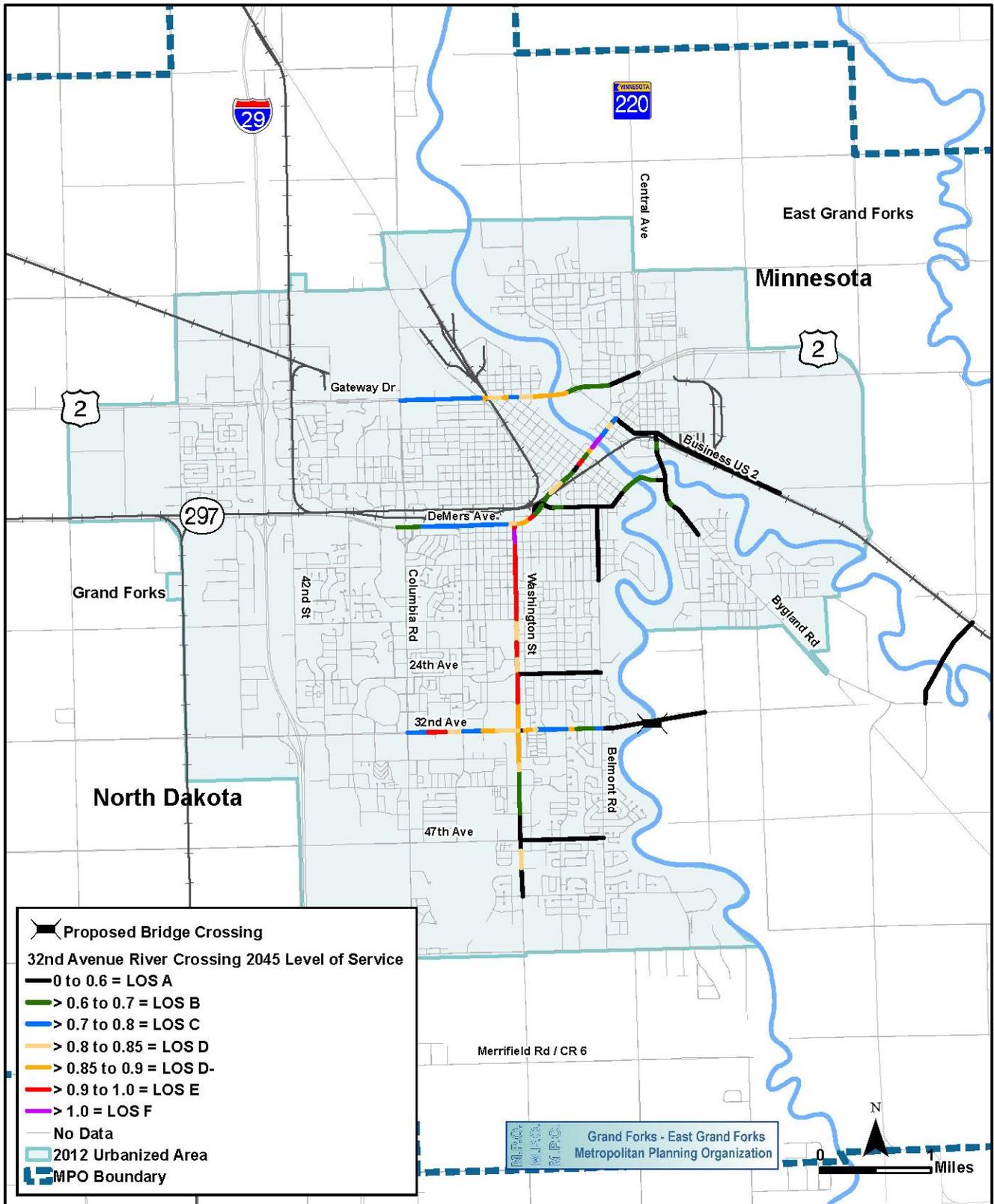


Figure 7: Link Level of Service Summary for the Proposed 32<sup>nd</sup> Avenue River Crossing

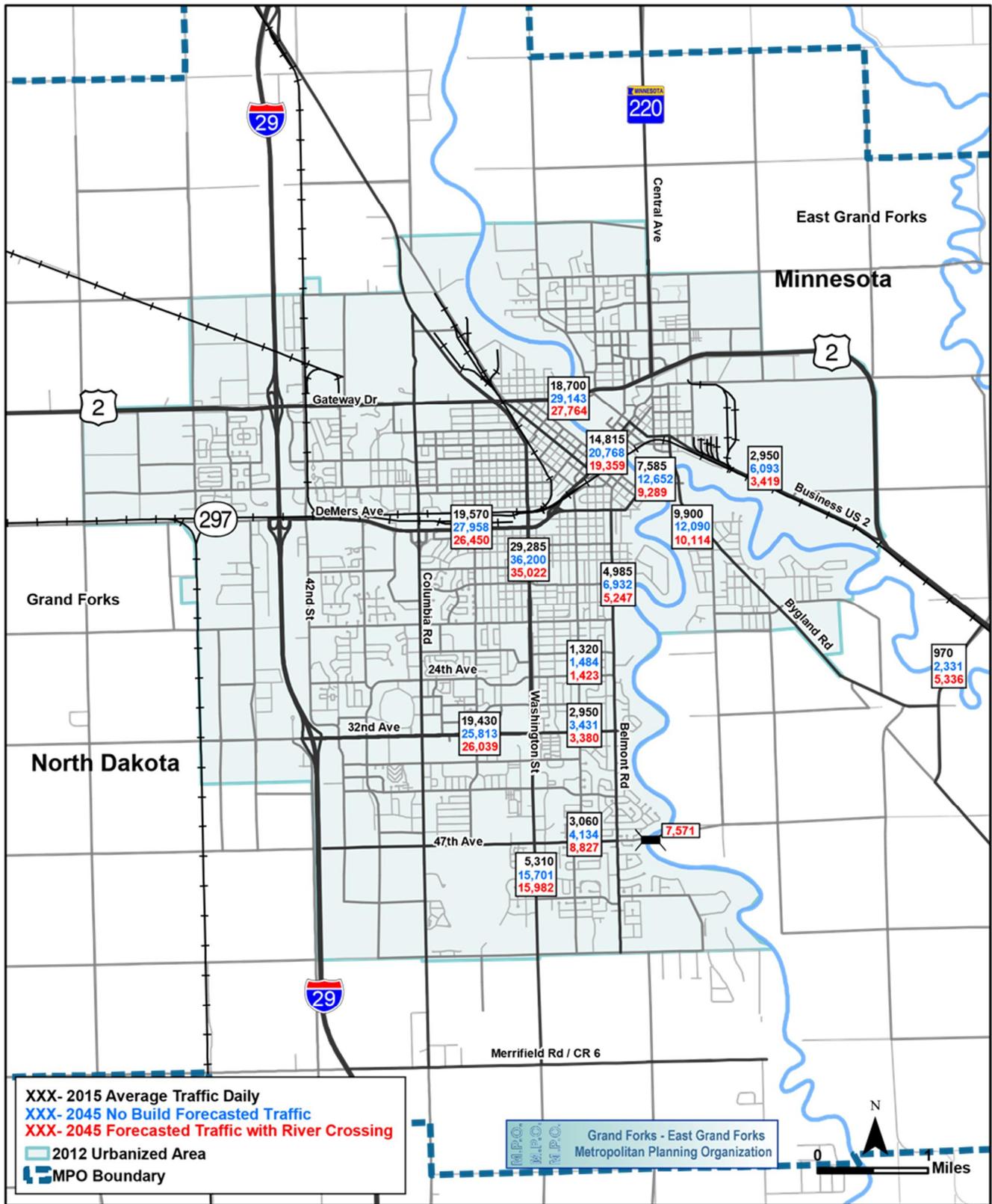


Figure 8: ADT Summary for the Proposed 47th Avenue River Crossing

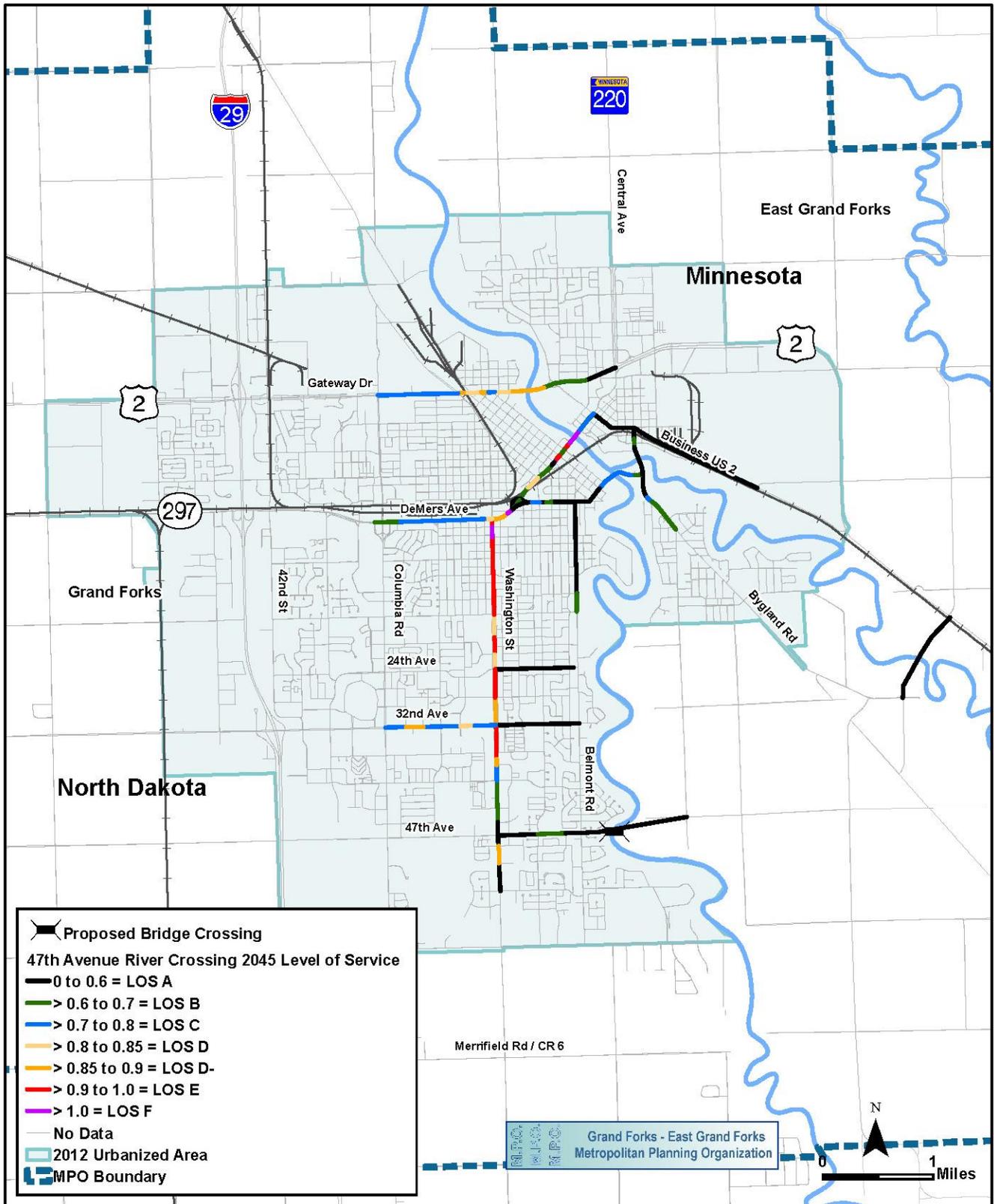


Figure 9: Link Level of Service Summary for the Proposed 47<sup>th</sup> Avenue River Crossing

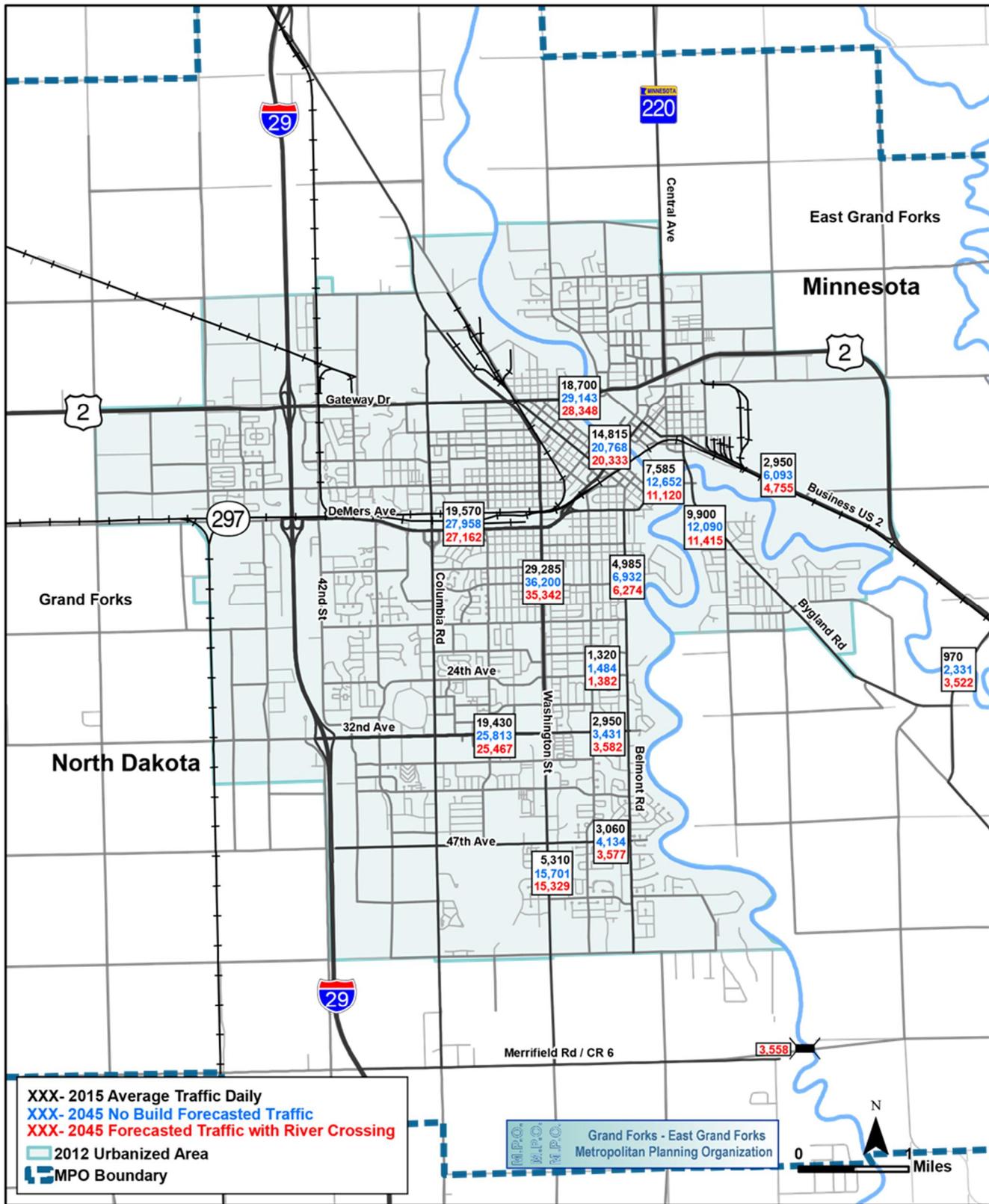


Figure 10: ADT Summary for the Proposed Merrifield Road River Crossing

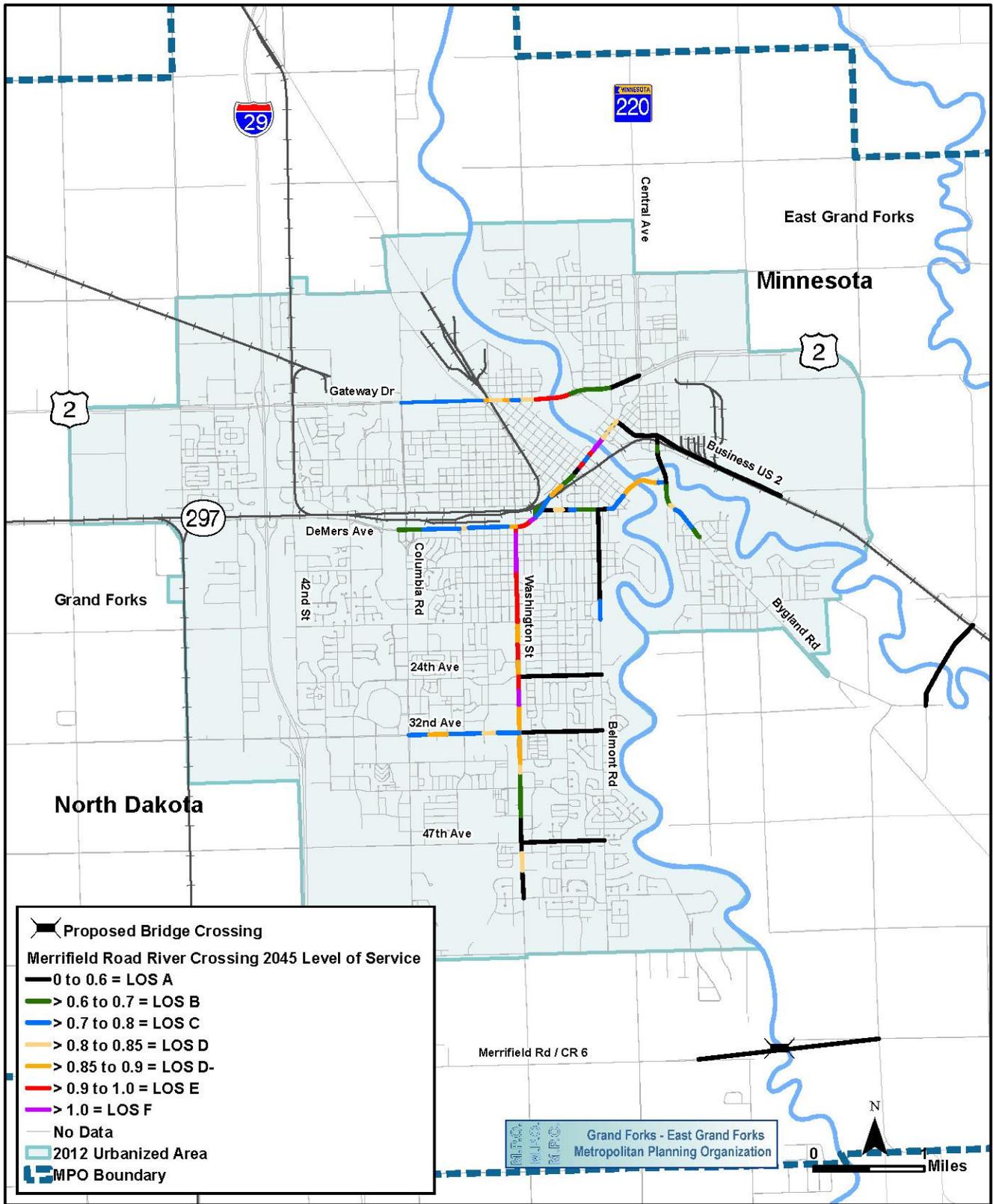


Figure 11: Link Level of Service Summary for the Proposed Merrifield Road River Crossing



The second part of the river crossing analysis looked at the same six intersections analyzed under the Existing and No Build scenarios. Turning movement counts for each intersection and each river crossing scenario were created using the same methodology as for the No Build scenario. **Table 6** is a continuation of **Tables 4** and **5**.

Table 6: Intersection LOS Summary

Analyzed Intersection/ LOS	DeMers Ave at 5 <sup>th</sup> Street	DeMers Ave at Washington St.	Washington St. at 17 <sup>th</sup> Ave	Washington St. at 32 <sup>nd</sup> Ave	1 <sup>st</sup> St. at 3 <sup>rd</sup> Ave	4 <sup>th</sup> Ave at Belmont Rd.
Existing PM Peak LOS	B	D	C	C	A	B
2045 No Build PM Peak LOS	B	E	D	E	B	F
24 <sup>th</sup> Avenue Crossing PM Peak LOS	B	E	D	F	A	C
32 <sup>nd</sup> Avenue Crossing PM Peak LOS	B	E	D	F	A	C
47 <sup>th</sup> Avenue Crossing PM Peak LOS	B	E	D	E	A	C
Merrifield Road Crossing PM Peak LOS	B	E	D	E	A	F

For the intersection analysis, there are some differences between the river crossing alternatives. The major difference between the scenarios occurs at the intersections of Washington Street and 32<sup>nd</sup> Avenue and 4<sup>th</sup> Avenue and Belmont Road. The 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue crossings pull traffic from the north and shift it south. This increases the traffic volumes on Washington Street on the southern end causing poor operations. The operations at the intersection of 4<sup>th</sup> Avenue at Belmont Road vary greatly depending on the amount of traffic on the east/west approaches. This is a stop-controlled intersection and under the 24<sup>th</sup> Avenue, 32<sup>nd</sup> Avenue, and 47<sup>th</sup> Avenue crossing scenarios, significant E/W ADT is shifted from the intersection decreasing the overall LOS at the intersection to an acceptable level. Under the Merrifield Road crossing scenario, little traffic is pulled from the E/W movements, therefore a positive impact at this intersection is not realized as experienced under the other river crossing scenarios. This intersection could be signalized, as it was recently, to serve the increased traffic demand at a satisfactory level of service. **Figure 12** on the following page summarizes the overall intersection LOS for each of the analyzed river crossings including Existing and No Build conditions.

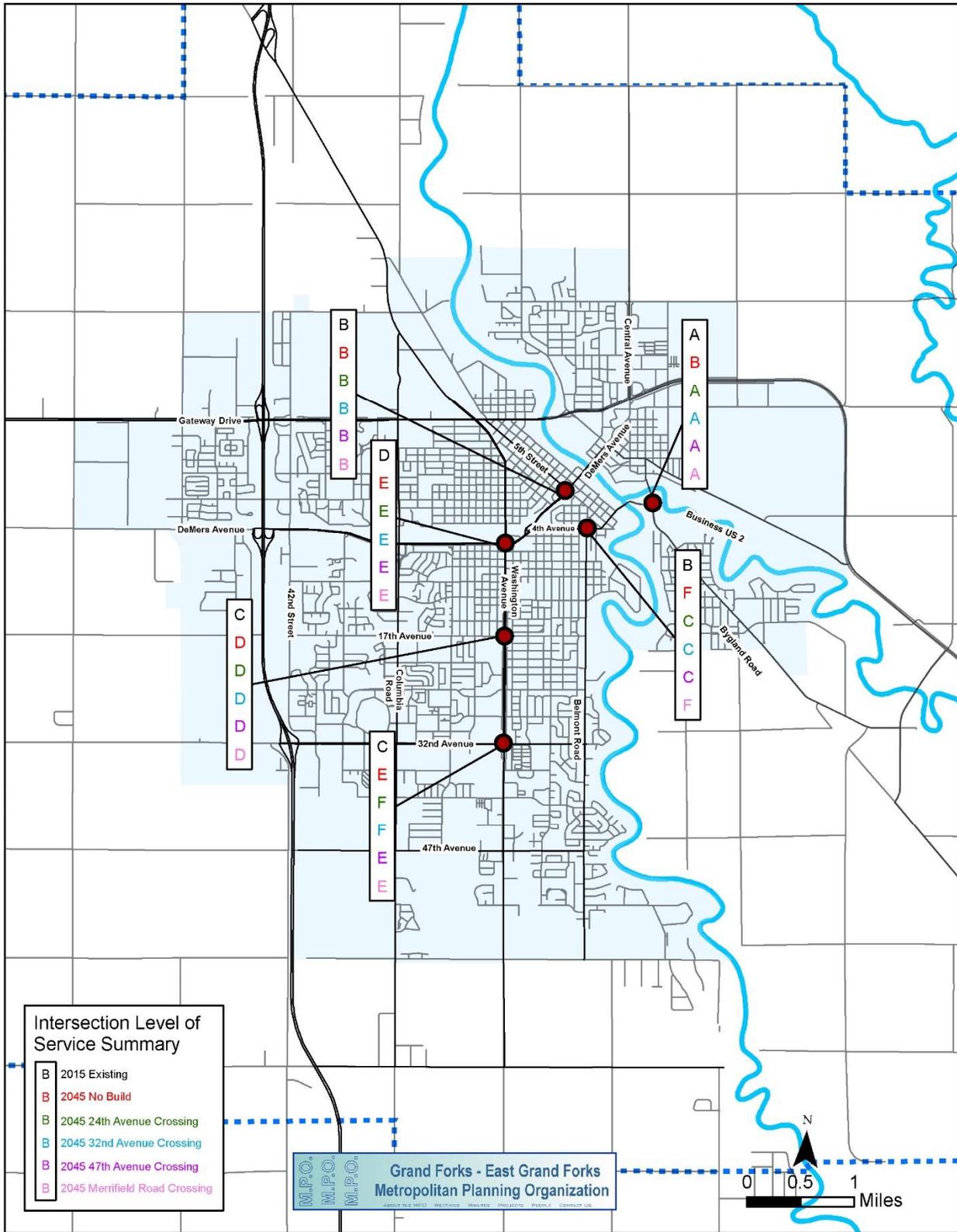


Figure 12: Intersection LOS Summary



## Regional Impacts

One goal of a new river crossing is to alleviate the anticipated congestion on the existing crossings by providing users an alternate route. **Table 7** summarizes the ADTs by scenario for each of the existing and proposed river crossings. Many of the river crossing scenarios have similar results from a traffic volume perspective, although there is generally a decrease in the river crossing volume served by the proposed river crossing as it moves further to the south. There are also some notable decreases in traffic volumes on the Minnesota Avenue / 1<sup>st</sup> Street SE crossing under the 24<sup>th</sup> Avenue, 32<sup>nd</sup> Avenue and 47<sup>th</sup> Avenue scenarios.

Table 7: Forecast River Crossing ADTs Summary

River Crossing Location	Existing	2045 No Build	2045 with 24th Crossing	2045 with 32nd Crossing	2045 with 47th Crossing	2045 with Merrifield Crossing
US 2	18,700	29,100	27,400	27,400	27,800	28,300
Demers Avenue	14,800	20,800	19,300	19,200	19,400	20,300
Minnesota Avenue / 1st Street	7,600	12,700	7,900	8,000	9,300	11,100
24th Avenue	--	--	8,700	--	--	--
32nd Avenue	--	--	--	8,800	--	--
47th Avenue	--	--	--	--	7,600	--
Merrifield Road	--	--	--	--	--	3,600
Total ADT	41,100	62,600	63,300	63,400	64,100	63,300

**Table 8** summarizes the net difference between each scenario at the Red River crossings as compared to No Build.

Table 8: Net ADT Change by Red River Crossing as Compared to No Build ADT

River Crossing Location	2045 with 24th Crossing	2045 with 32nd Crossing	2045 with 47th crossing	2045 with Merrifield crossing
US 2	-1,700	-1,700	-1,300	-800
Demers Avenue	-1,500	-1,600	-1,400	-500
Minnesota Avenue / 1st Street	-4,800	-4,700	-3,400	-1,600
24th Avenue	8,700	--	--	--
32nd Avenue	--	8,800	--	--
47th Avenue	--	--	7,600	--
Merrifield Road	--	--	--	3,600
Net ADT Difference	700	800	1,500	700



**Table 9** below summarizes the link LOS at each river crossing for each scenario.

Table 9: River Crossing Link LOS by Scenario

River Crossing Location	2045 No Build	2045 with 24th Crossing	2045 with 32nd Crossing	2045 with 47th Crossing	2045 with Merrifield Crossing
US 2	E	D	D	D	E
Demers Avenue	F	F	F	F	F
Minnesota Avenue / 1st Street	E	B	B	C	D
24th Avenue	--	A	--	--	--
32nd Avenue	--	--	A	--	--
47th Avenue	--	--	--	A	--
Merrifield Road	--	--	--	--	A

**Table 10** summarizes the ADT link volumes on Bygland Road and TH 220 for each of the scenarios analyzed.

Table 10: Forecast ADTs on Bygland Road and TH 220 Summary

River Crossing Location	Existing	2045 No Build	2045 with 24th Crossing	2045 with 32nd Crossing	2045 with 47th Crossing	2045 with Merrifield Crossing
TH 220 River Crossing	970	2,330	4,900	5,290	5,340	3,520
Bygland Road N. of Rhinehart Dr.	9,900	12,090	8,070	8,450	10,110	11,420

**Table 11** summarizes the net difference between each scenario as compared to No Build on Bygland Road and TH 220.

Table 11: Net ADT Change on Bygland Road and TH 220 as Compared to No Build ADT

River Crossing Location	2045 with 24th Crossing	2045 with 32nd Crossing	2045 with 47th Crossing	2045 with Merrifield Crossing
TH 220 River Crossing	+2,570	+2,960	+3,010	+1,190
Bygland Road N. of Rhinehart Dr.	-4,020	-3,600	-1,980	-680

Based on **Tables 7** through **9**, there is no one river crossing location that will solve all the issues shown under the No Build scenario. The improvement of the link LOS on Minnesota Avenue / 1<sup>st</sup> Avenue and Gateway Drive (US 2) for the 24<sup>th</sup> Avenue, 32<sup>nd</sup> Avenue and 47<sup>th</sup> Avenue proposed river crossings is notable.

Reviewing two of the primary roadways that would provide access between East Grand Forks to the proposed Red River crossing, TH 220 over the Red Lake River and Bygland Road north of Rhinehart Drive, also provides insight as to the impacts on local and regional traffic for each of the alternatives analyzed. **Tables 10** and **11** shows that daily traffic on Bygland Road N. of Rhinehart Drive will decrease more if the proposed 24<sup>th</sup> Avenue or 32<sup>nd</sup> Avenue river crossings are constructed. Conversely the TH 220 daily traffic would be highest if the 32<sup>nd</sup> Avenue or 47<sup>th</sup> Avenue river crossings were constructed. This relationship indicates that the northern crossing alternatives serve more local trips and the southern crossings server more regional trips, although all crossings with have each trip type.

The travel demand model generates several measures of effectiveness on a network basis that allows for a comparison between the various river crossing scenarios including total vehicle miles traveled (VMT) and total vehicle hours traveled (VHT). Comparing the values of these measures for each scenario provides a better understanding of which alternatives reduces travel time and travel distance. Reducing the values of these measures



is desirable because additional VHT is typically due to delay, additional travel time required to avoid areas of delay, or additional travel time because a more direct route is not available. For this analysis, adding a river crossing could serve some travelers more directly and allow for reduced delay and distance traveled on their trip. Conversely, some drivers may travel slightly out of their way to avoid delay that is typically experienced on an existing crossing and that could increase VMT and decrease VHT. Delay adds stress to drivers, additional costs for businesses, increased fuel consumption, and higher vehicle emissions. The benefits of lower VMT are similar to VHT although VHT can be tied more directly to driver impacts and costs where VMT is more directly associated to impacts on emissions and fuel consumption.

**Tables 12 and 13**, on the following pages, summarizes the urban VMT and VHT totals for each river crossing scenario by roadway classification and the differences in VMT as compared to the 2045 No Build scenario for all alternatives. **Table 14** summarizes the differences in VHT as compared to the 2045 No Build scenario for all alternatives. Below are a few observations that can be made after reviewing these network measures:

- The 24th Avenue river crossing slightly increases "local VMT" at +199 and provides the greatest reduction in "regional VMT" at -23,734. The 24th Avenue crossing reduces VHT the most of any alternative with a decrease of 1,001.
- The 32<sup>th</sup> Avenue river crossing has the second greatest total VMT reduction at -23,400 and greatest "local VMT" reduction at -1,321. 32<sup>nd</sup> Avenue reduced VHT the second most of any alternative at -831.
- The 47<sup>th</sup> Avenue river crossing has the lowest VMT reduction with -13,393 and largest "local VMT" increase at +717. The 47th Avenue crossing is the only alternative that increases VHT at +147.
- The Merrifield Road river crossing "local VMT" is reduced the most at -4,226 and decreases VHT by -679 although "regional VMT" is decreased the least at -13,491.



Table 12: Urban VMT and VHT Total per River Crossing

Facility Type	2045 No Build Network	24th Avenue River Crossing	32nd Avenue River Crossing	47th Avenue River Crossing	Merrifield Road River Crossing
Freeways and Ramps	101,186	97,575	97,132	98,524	100,016
Major Arterials	530,889	510,766	511,543	519,441	518,568
Minor Arterials	237,590	236,949	237,572	237,338	234,983
Collectors	139,010	141,328	138,905	140,997	138,876
Local Streets/Rural	46,109	44,631	44,911	45,091	44,624
Urban VMT Totals	1,054,784	1,031,249	1,030,063	1,041,391	1,037,067
Total VHT	59,702	58,701	58,871	59,876	59,023

Table 13: Urban VMT Difference from 2045 No Build

Facility Type	2045 No Build	24th Avenue River Crossing	32nd Avenue River Crossing	47th Avenue River Crossing	Merrifield Road River Crossing	
Freeways and Ramps	101,186	-3,611	-4,054	-2,662	-1,170	
Major Arterials	530,889	-20,123	-19,346	-11,448	-12,321	
Minor Arterials	237,590	-641	-18	-252	-2,607	
Collectors	139,010	2,318	-105	1,987	-134	
Local Streets/Rural	46,109	-1,478	-1,198	-1,018	-1,485	
Total VMT Reduction Compared to 2045 No Build	1,054,784	-23,535	-24,721	-13,393	-17,717	Total VMT Reduction
Freeways, Ramps, Major Arterials VMT Compared to 2045 No Build	632,075	-23,734	-23,400	-14,110	-13,491	"Regional VMT"
Minor Arterials, Collectors, Local VMT Compared to 2045 No Build	422,709	199	-1,321	717	-4,226	"Local VMT"



Table 14: VMT Difference from 2045 No Build

Facility Type	2045 No Build Network	24th Avenue River Crossing	32nd Avenue River Crossing	47th Avenue River Crossing	Merrifield Road River Crossing
Total VHT Reduction Compared to 2045 No Build	59,702	-1,001	-831	174	-679

## Conclusions

A regional and local level analysis was completed for four potential river crossing locations. The analysis included a link LOS analysis, intersection LOS analysis, and comparison of river crossing volumes and network wide VMT and VHT under Existing (2017), No Build (2045), and the four potential river crossing scenarios (2045). All intersection LOS analysis was completed for PM peak conditions.

Under Existing conditions, there are minimal issues within the analysis area. Although under 2045 No Build conditions all three river crossings in addition to segments of Washington Street and 32nd Avenue are anticipated to operate at LOS E or F. The intersections of DeMers Avenue and Washington Street, Washington Street and 32nd Avenue, and 4th Avenue and Belmont Road also show undesirable operations under 2045 No Build conditions (LOS E or F).

A review of the link LOS analysis for the four river crossing alternatives yielded the following observations:

- The Point Bridge link LOS operates better under the 24<sup>th</sup> Avenue and 32<sup>nd</sup> Avenue river crossing alternatives.
- Gateway Drive operates better under the 24<sup>th</sup> Avenue, 32<sup>nd</sup> Avenue, and 47<sup>th</sup> Avenue river crossings.
- DeMers Avenue experienced similar operations under each of the alternatives analyzed.
- Washington Street operated with the fewest LOS F segments under the 32<sup>nd</sup> Avenue and 47<sup>th</sup> Avenue river crossing alternatives.
- Belmont Road operations were better under all the river crossing alternatives when compared to the No Action scenario.

The signalized intersection LOS analysis for the river crossing alternatives showed the most significant differences between the alternatives at the intersections of Washington Street and 32nd Avenue and 4th Avenue and Belmont Road. The 24th Avenue and 32nd Avenue crossings pull traffic from the north and shift it south. This increases the traffic volumes on Washington Street on the southern end causing poor operations. The operations at the intersection of 4th Avenue at Belmont Road vary greatly depending on the amount of traffic on the east/west approaches. This is a stop-controlled intersection and under the 24th Avenue, 32nd Avenue, and 47th Avenue crossing scenarios, significant E/W ADT is shifted from the intersection decreasing the overall LOS at the intersection to an acceptable level. Under the Merrifield Road crossing scenario, little traffic is pulled from the E/W movements, therefore a positive impact at this intersection is not realized as experienced under the other river crossing scenarios. This intersection could be signalized, as it was recently, to serve the increased traffic demand at a satisfactory level of service.

A review of the link LOS and ADTs on the actual river crossing shows:

- There are notable decreases in traffic volumes on the Minnesota Avenue / 1st Street SE crossing under the 24th Avenue, 32nd Avenue and 47th Avenue scenarios.
- There are improvements in the link LOS on Minnesota Avenue / 1st Avenue and Gateway Drive (US 2) for the 24th Avenue, 32nd Avenue and 47th Avenue proposed river crossings.



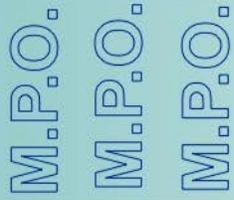
A review of the daily traffic on Bygland Road N. of Rhinehart Drive and the TH 220 Red Lake River crossing indicates that the northern crossing alternatives serve more local trips and the southern crossings serve more regional trips, although all crossings will have each trip type.

A review of the network wide performance measures of VMT and VHT shows the following:

- The 24th Avenue river crossing slightly increases "local VMT" at +199 and provides the greatest reduction in "regional VMT" at -23,734. The 24th Avenue crossing reduces VHT the most of any alternative with a decrease of 1,001.
- The 32<sup>th</sup> Avenue river crossing has the second greatest total VMT reduction at -23,400 and greatest "local VMT" reduction at -1,321. 32<sup>nd</sup> Avenue reduced VHT the second most of any alternative at -831.
- The 47<sup>th</sup> Avenue river crossing has the lowest VMT reduction with -13,393 and largest "local VMT" increase at +717. The 47th Avenue crossing is the only alternative that increases VHT at +147.
- The Merrifield Road river crossing "local VMT" is reduced the most at -4,226 and decreases VHT by -679 although "regional VMT" is decreased the least at -13,491.



# Appendix



# Grand Forks - East Grand Forks Metropolitan Planning Organization

## **MPO Staff Report** **Technical Advisory Committee: February 14, 2018** **MPO Executive Board: February 21, 2018**

### **RECOMMENDED ACTION: Information on Future Non-Motorized Bridge in Downtown Area**

Matter of Information on Future Non-Motorized Bridge in Downtown Area.

**Background:** With the discussion about how the Kennedy Bridge rehabilitation project would accommodate non-motorized traffic, some discussion was towards seeking another non-motorized bridge in the area between the Sorlie and Kennedy Bridges. This new future bridge would be similar as the north end and south end bike/pedestrian bridges serving the Greenway trail. The Kennedy Bridge will have an accommodation for non-motorized traffic instead of a separate bridge for non-motorized traffic.

In an exchange of letters, the MPO requested and the two State DOTs agreed to continue planning for a future non-motorized bridge between the Sorlie and Kennedy. As this was discussed, it was noted that the MPO studied such a possibility back when the flood protection system was being finalized. The MPO study included all possible non-motorized bridges as part of the flood protection (4 were studied) with two being actually constructed. The fourth bridge was a non-motorized bridge across the Red Lake River between the Murry Bridge and the confluence.

Attached are pertinent pages from the Study specifically addressing this “downtown” location. The concept was to focus on the general location of the old railroad bridge center pier with the possibility of utilizing the old pier. There are several other adopted planning documents recommending a new non-motorized bridge between the downtown.

The question is whether there is an interest in revisiting the study results and update them to reflect current information. Should there be other locations between the Sorlie and Kennedy that should be in place of the one or in addition to the one? There has been some discussion with NDDOT as to the MPO can use its CPG funding to replicate the Study, i.e., has rules/regulation changes place more restrictions on the MPO funding.

### **Findings and Analysis:**

- Stated desire to have another non-motorized bridge
- Previous Study contains information based upon flood protection assumptions.
- Can the MPO replicate and update the study information

### **Support Materials:**

- Pages from Study

# ***Non-Motorized Traffic Bridge Facilities Study***

Prepared for:  
Grand Forks/East Grand Forks  
Metropolitan Planning Organization

October 2001

I hereby certify that his plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

---

Gary W. Morien

Date: \_\_\_\_\_

License No. 25552

**The preparation of this (report, map, document, etc.) was partially financed by FHWA/FTA Planning funds through the North Dakota Department of Transportation and Minnesota Department of Transportation. The opinion, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the NDDOT, MnDOT, or the FHWA/FTA.**

# Downtown Bridge

- **General Area Analysis**

For the downtown bridge site, the only possible bridge location was the site of the old Northern Pacific Railroad bridge as shown in Fig 10. The site analysis concentrated on using different elevations while incorporating the old center pier of the railroad bridge.

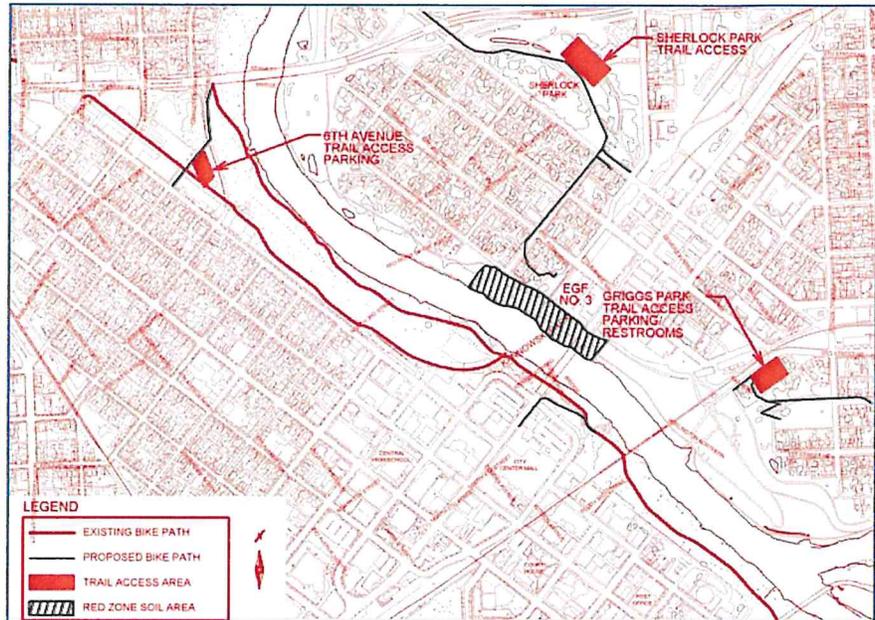


Figure 10 – Downtown Bridge Study Area

## Elevation Criteria

High-, mid- and low-level bridges were considered for this area. The Corps has indicated that any bridge here cannot raise the flood profile by more than 0.1 ft. A bridge using the center pier is unlikely to be approved by regulating agencies.

## Geotechnical Criteria

As noted in Index Table No. 2, Appendix B of the *US Army Corps of Engineers, General Reevaluation Report*, site number EGF No. 3 is classified as RED based on visual inspection and soil borings. This is in the approximate location of the proposed Downtown Bridge as shown in Figure 10.

## Other issues

Putting a high bridge here is complicated by the use of an “invisible flood wall” on the East Grand Forks side of the river. This would require the East Grand Forks end of the bridge to be about 10 feet in the air. Using the Sorlie Bridge for pedestrian traffic could also impact decisions on a new bridge in this area.

## • Location Analysis

The proposed downtown non-motorized bridge will link both Grand Forks and East Grand Forks downtown areas as shown in Fig. 11. It will be located at the old railroad bridge site just northwest and downstream of the Sorlie Memorial Bridge. The bridge elevation will be the main concern, since the Corps is unlikely to approve a crossing using the old NRR pier at the existing pier elevation.

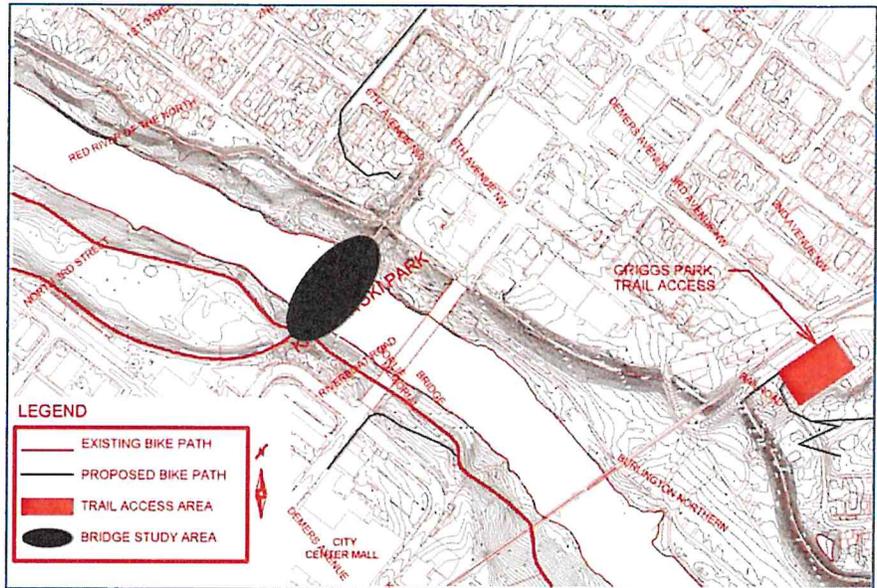


Figure 11 – Downtown Bridge Location

## Relation to Other Crossings

Even though the Sorlie Memorial Bridge is immediately adjacent to the proposed non-motorized bridge and has sidewalks on both sides, it is not a desirable route for non-motorized traffic use.

The sidewalks on the Sorlie Memorial Bridge are only six feet wide. This width will accommodate one-way traffic, but is not wide enough for two-way bicycle/pedestrian traffic. Therefore, if non-motorized users were directed to this bridge, either the northbound or southbound traffic would have to cross the two lanes of vehicle traffic on Demers Avenue at both ends of the bridge. Other issues the possible use of the Sorlie Memorial Bridge for non-motorized traffic include the lack of a bicycle “rub rail” on the truss members, a sub-standard outside rail and impacted scenic views from the bridge.

## Opportunity for Scenic Views

A bridge lower than the Sorlie Bridge and the remaining NRR center pier will provide a more dramatic view of the Sorlie Bridge and the upstream landscape.

## Proximity to Existing Development

There are several parks with facilities, the relocated library, five schools, and the Riverwalk Center Mall all within a half-mile radius of this

location. In addition, many businesses are near the crossing, making high use of this bridge very likely.

### Relation to Future Development

With a set location, this criterion does not relate to elevation options.

### Location of Trail Facilities

With a set location, this criterion does not relate to elevation options.

### Trail System Support

With a set location, this criterion does not relate to elevation options.

### Other Issues

A lower-elevation bridge would link the existing trails within the levee and provide easy access for trail users. An elevation below the Sorlie Memorial Bridge and the downtown businesses will result in less noticeable background noise, but a high-elevation bridge would provide easier access to businesses and nearby destination locations. In addition, a high bridge would allow larger boat traffic to pass through the area and provide continual service during low-level floods.

In either case, it is important to provide safe and efficient travel between the trails within the levee and the downtown areas. Either elevation would provide a safe crossing for this potential high-use area.

### Location Recommendation Matrix

Factor	High Bridge	Low Bridge
Relation to Other Crossings	1.5	1.5
Opportunity for Scenic Views	2	1
Proximity to Existing Development	1.5	1.5
Relation to Future Development	1.5	1.5
Location of Trail Facilities	1.5	1.5
Trail System Support	1.5	1.5
Other Issues	1	2
<b>Total</b>	<b>10.5</b>	<b>10.5</b>

The location of this bridge is determined. Elevation decisions need to be made on the criteria discussed above, along with flood profile impacts.

815.0 and 825.0 — each higher than the base Corps' planned "Low Level" bridge placed at elevation 810.0.

The South Bridge is located near the 5<sup>th</sup> Ave. Trial Access Parking Lot. The Corps' hydraulic reference is station 183.6. The flow volume using the Corps "Project Conditions" under the 210-year flood event is 102,000 cubic feet per second.

The *baseline* model included a bridge 350 feet long and a profile thickness of 3 feet. The upper limits or top of the deck were located at elevation 810.0, and the lower limits placed at elevation 807.0. Analysis showed the water surface elevation was 837.25.

The first option included a bridge 500 feet long and a profile thickness of 4 feet. The upper limits or top of the deck were located at elevation 815.0, and the lower limits placed at elevation 811.0. Analysis showed the water surface elevation was at 837.22.

The second option included a bridge 700 feet long and a profile thickness of 4 feet. The upper limits or top of the deck were located at elevation 825.0, and the lower limits placed at elevation 821.0. Analysis showed the water surface elevation was at 837.22.

The analysis, looking at water surface profiles, indicate the other bridge options had no comparable difference to the *baseline* model. Therefore, a bridge placed in this area, with a deck elevation between elevation 810 and 825, should have no adverse impacts on the overall flood protection plans.

### **Red River - Downtown Bridge Study Area**

For the Downtown Study Area, only one location was considered. This location is the site of the recently removed Northern Pacific Railroad Bridge, 350 feet north of the Sorlie Memorial Bridge. Studies done by the Corps showed the impact of the old Northern Pacific Bridge was significant and, in fact, raised the flood elevation almost 0.6 feet. The Corps cost/benefit analysis showed that removing the historic railroad bridge significantly minimized levee construction along the project. Therefore, the decision to remove the bridge and lower levee heights was made. Part of the decision process included saving the historic center stone pier.

To provide a baseline for comparison, the waterway was first analyzed without a bridge using "Project Conditions" but including the historic center stone pier. The second analysis included a bridge constructed next to the center pier, at an 810.0 deck elevation. The third and fourth analysis considered lowering the center pier and constructing bridge decks to elevations 820.0 and 830.0, respectively; however, lowering the center stone pier may not be an acceptable alternative from a historical perspective. With the full pier in place, the increase in water surface elevations is insignificant. The table below indicates how the water surface elevations for these model options compared to the base model.

Model	Water Surface Elevation Increase over "Base Model"
Base model	N/A
Option 1 (810 deck ,full center pier)	0.05 - feet
Option 2 (820 deck, center pier lowered)	0.19 - feet
Option 3 (830 deck, center pier lowered)	0.29 - feet

Bonestroo has initiated some discussions with the Corps concerning the raise in water surface elevations. Since Phase 1 and 2 construction plans are currently underway, an increase in the flood profile could have major implications. The question still remains: Is some level of tolerance acceptable provided design conditions don't change and there is no significant increase risk of overtopping planned levees? Based on preliminary discussions with the Corps, it appears a "low level" bridge may be acceptable, but a bridge constructed above elevation 820.0 may not be. Discussions regarding an acceptable level of impact will be ongoing after the completion of this study.

### **Red River - North Bridge Study Area (Location A)**

For the North Bridge Study Area (Location A), the Corps-proposed bridge was modeled first to provide a baseline for comparison. Two other options were then analyzed with bridges placed at elevations 815.0 and 825.0 — each higher than the base Corps-planned "Low Level" bridge placed at elevation 810.0.

The North Bridge is located at Riverside Park, approximately 1,500 feet upriver from the Riverside Dam. The Corps' hydraulic reference is station 146.7. The flow volume using the Corps' "Project Conditions" under the 210-year flood event is 136,900 cubic feet per second.

The *baseline* model included a bridge 350 feet long and a profile thickness of 3 feet. The upper limits or top of the deck were located at elevation 810.0, and the lower limits placed at elevation 807.0. Analysis results show the water surface elevation was at 833.01.

The first option analyzed included a bridge 500 feet long and a profile thickness of 4 feet. The upper limits or top of the deck were located at elevation 815.0, and the lower limits placed at elevation 811.0. Analysis results show the water surface elevation was at 832.97.

The second option analyzed included a bridge 700 feet long and a profile thickness of 4 feet. The upper limits or top of the deck were located at elevation 825.0, and the lower limits placed at elevation 821.0. Analysis showed the water surface elevation was at 832.96.

Therefore, like the South Study Area, a bridge placed in this area, with a deck elevation between elevation 810 and 825, should have no adverse impacts on the overall flood protection plans.

## • Downtown Bridge Study Area

### Geometrics

The elevation of the downtown bridge as shown in Fig. 26 located at the 820 elevation lends well to connection to existing and proposed trails in the area. The landing area on the Grand Forks side and the connecting trail fits well with plans for the "Community Green". On the east Grand Forks side trail geometrics should include curves within radius design standards and easily join existing trails. Current estimate calculates the bridge length at approximately 550 feet.

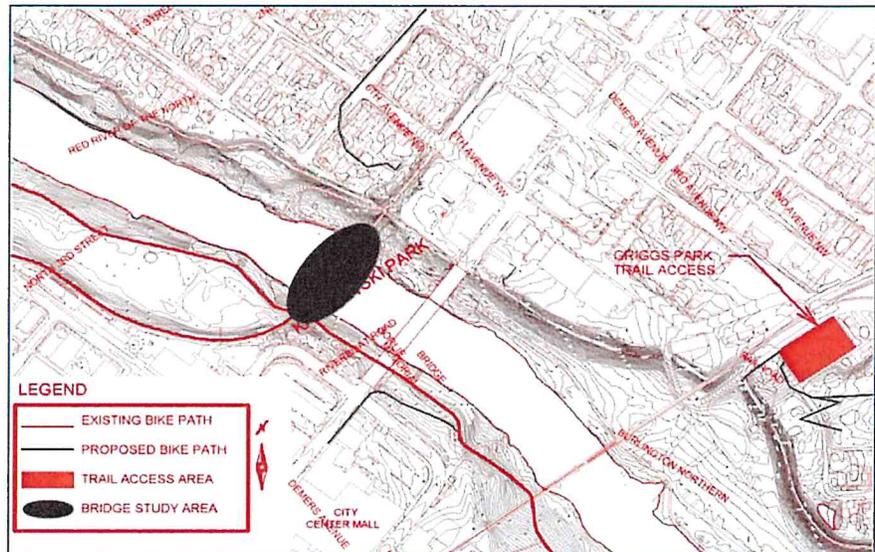


Figure 23 – Downtown Bridge Recommended Site

The elevation of the downtown bridge located at the 840 elevation does not lend well to connection to existing and proposed trails in the area. The landing areas on each side of the bridge would be at or above the proposed levee tops creating difficult trail connections. Distance from the bridge to the "Community Green" and other popular use areas would appear to be relatively inconvenient. Current estimate calculates the bridge length at approximately 1000 feet.

### Hydraulic Study

The hydraulic model revealed that a bridge placed in this area, with a deck elevation above elevation 810 will likely have adverse impacts on the overall flood protection plans.

**Bridge Design Summary –  
Option with Deck Elevation at 820.0**

Red River Downtown Bridge Location - Deck Elevation 820.0																	
Deck Elevation	Average deck elevation = 820.0 At abutments = 820.0 At centerline channel = 820.0																
Bridge Length	550-feet out to out																
Span Arrangement	110 ft. -110 ft. -110 ft. -110 ft. (5 spans)																
Clear Deck Width	10-feet																
Overall Deck Width	12-feet																
Superstructure	Bridge cross section Alternative 2 63" Prestressed Concrete or 45" Steel Girders/Concrete Deck Total structure depth approx. 54" to 72"																
Abutments	Concrete parapet type abutment walls, concrete footings, parallel wingwalls.																
Piers	Four total pier structures. Two rectangular shaped, solid concrete wall piers, and concrete footings within the defined riverbanks. Two solid encased pile bent type piers outside the riverbank area.																
Foundation	All substructure founded on cast-in- place concrete piles. (Subject to final geotechnical recommendations)																
Costs	<p><i>Professional:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">Site Survey</td> <td style="text-align: right;">\$4,000</td> </tr> <tr> <td style="padding-left: 20px;">Soil Borings &amp; Report</td> <td style="text-align: right;">\$10,000</td> </tr> <tr> <td style="padding-left: 20px;">Bridge Design</td> <td style="text-align: right;">\$60,000</td> </tr> <tr> <td style="padding-left: 20px;"><u>Contract Administration</u></td> <td style="text-align: right;"><u>\$60,000</u></td> </tr> <tr> <td style="padding-left: 20px;">Total Professional</td> <td style="text-align: right;">\$134,000</td> </tr> </table> <p><i>Construction:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">Basic Bridge Construction</td> <td style="text-align: right;">\$660,000</td> </tr> <tr> <td style="padding-left: 20px;"><u>Aesthetic Treatments</u></td> <td style="text-align: right;"><u>\$70,000</u></td> </tr> <tr> <td style="padding-left: 20px;">Total Construction</td> <td style="text-align: right;">\$730,000</td> </tr> </table>	Site Survey	\$4,000	Soil Borings & Report	\$10,000	Bridge Design	\$60,000	<u>Contract Administration</u>	<u>\$60,000</u>	Total Professional	\$134,000	Basic Bridge Construction	\$660,000	<u>Aesthetic Treatments</u>	<u>\$70,000</u>	Total Construction	\$730,000
Site Survey	\$4,000																
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Total Professional	\$134,000																
Basic Bridge Construction	\$660,000																
<u>Aesthetic Treatments</u>	<u>\$70,000</u>																
Total Construction	\$730,000																
Construction Time	3 months																

**Bridge Design Summary –  
Option with Deck Elevation at 840.0**

Red River Downtown Bridge Location - Deck Elevation 840.0																	
Deck Elevation	Average deck elevation = 840.0 At abutments = 840.0 At centerline channel = 840.0																
Bridge Length	990-feet out to out																
Span Arrangement	110 ft. -110 ft. -110 ft. -110 ft. -110 ft. 110 ft. -110 ft. -110 ft. -110 ft. (9 spans)																
Clear Deck Width	10-feet																
Overall Deck Width	12-feet																
Superstructure	Bridge cross section Alternative 2 63" Prestressed Concrete or 45" Steel Girders/Concrete Deck Total structure depth approx. 54" to 72"																
Abutments	Concrete parapet type abutment walls, concrete footings, parallel wingwalls.																
Piers	Eight total pier structures. Two rectangular shaped, solid concrete wall piers, and concrete footings within the defined riverbanks. Six solid encased pile bent type piers outside the riverbank area.																
Foundation	All substructure founded on cast-in- place concrete piles. (Subject to final geotechnical recommendations)																
Costs	<p><i>Professional:</i></p> <table> <tr> <td>Site Survey</td> <td style="text-align: right;">\$6,000</td> </tr> <tr> <td>Soil Borings &amp; Report</td> <td style="text-align: right;">\$20,000</td> </tr> <tr> <td>Bridge Design</td> <td style="text-align: right;">\$80,000</td> </tr> <tr> <td><u>Contract Administration</u></td> <td style="text-align: right;"><u>\$80,000</u></td> </tr> <tr> <td>Total Professional</td> <td style="text-align: right;">\$186,000</td> </tr> </table> <p><i>Construction:</i></p> <table> <tr> <td>Basic Bridge Construction</td> <td style="text-align: right;">\$1,188,000</td> </tr> <tr> <td><u>Aesthetic Treatments</u></td> <td style="text-align: right;"><u>\$120,000</u></td> </tr> <tr> <td>Total Construction</td> <td style="text-align: right;">\$1,308,000</td> </tr> </table>	Site Survey	\$6,000	Soil Borings & Report	\$20,000	Bridge Design	\$80,000	<u>Contract Administration</u>	<u>\$80,000</u>	Total Professional	\$186,000	Basic Bridge Construction	\$1,188,000	<u>Aesthetic Treatments</u>	<u>\$120,000</u>	Total Construction	\$1,308,000
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Total Construction	\$1,308,000																
Construction Time	3 months																

**TABLE OF CONTENTS- UPDATE JANUARY, 2018**

CODE	AREA	TASK	TASK	%	FISCAL YEAR	COMPLETION DATE
	Introduction					
<b>300</b>	<b>PLANNING AND IMPLEMENTATION</b>	<b>ACTIVITIES</b>				
	<b>2045 Street &amp; Highway Plan</b>	Finalized Goals, Objectives & Standards. Incorporated Safety Standards performance measures supporting Plan. Consultant provided results of 4-scenarios related to proposed site locations for construction of urban/regional bridges.	1	40%	2016	
<b>300</b>	<b>Plan Update (Travel Demand Model)</b>	Based model is complete.	1			
<b>300</b>	<b>Bicycle and Pedestrian Planning Element (Update)</b>	Prepared schedule & work activities to guide update of Bikeway Map, 2018. Scope of work includes goals and objectives and recommended changes by stakeholders.	2-3-4-5	30%	Jan. 2018	March, 2018
<b>300</b>	<b>Corridor PLANNING</b>					
<b>300</b>	Traffic Count Program	Resume data collection setup for the rest of the intersections.	Ongoing	70%		
	Corridor Preservation	Ongoing	Ongoing			
	Near South Neighborhood	Submitted Draft Report. Expecting stakeholders comments.		95%		
<b>300.5</b>	<b>SPECIAL STUDIES</b>					
	MAP-21/FAST (2015)	Ongoing				
<b>300.6</b>	<b>PLAN MONITORING, REVIEW AND EVALUATION</b>	<b>ACTIVITIES</b>				
<b>300.7</b>	<b>GEOGRAPHIC INFORMATION SYSTEMS (GIS) DEVELOPMENT</b>					
	Geographic Information Systems (GIS) Development	Ongoing-in-House				

**Grand Forks East Grand Forks MPO**  
**Transaction List by Vendor**  
 January 13 through February 16, 2018

Type	Date	Num	Memo	Account	Clr	Split	Amount
<b>AFLAC.</b>							
Liability Check	01/22/2018	AFLAC	501	104 · Checking	X	-SPLIT-	-520.06
<b>Alerus Financial</b>							
Liability Check	01/26/2018	EFTPS	45-0388273	104 · Checking	X	-SPLIT-	-3,191.66
Liability Check	02/09/2018	EFTPS	45-0388273	104 · Checking		-SPLIT-	-3,186.36
<b>Brady Martz</b>							
Bill	02/01/2018	Inv. #...	Progress Billi...	206 · Accounts Pay...		515 · Financial...	-4,500.00
Bill Pmt -Check	02/01/2018	6488	Progress Billi...	104 · Checking		206 · Accounts...	-4,500.00
<b>Business Essentials</b>							
Bill	02/08/2018	Inv # ...	Verbatim Flas...	206 · Accounts Pay...		517 · Overhead	-347.12
Bill Pmt -Check	02/08/2018	6492	Verbatim Flas...	104 · Checking		206 · Accounts...	-347.12
<b>CitiBusiness Card</b>							
Bill	01/23/2018	Acct. ....	Charges For ...	206 · Accounts Pay...		517 · Overhead	-104.41
Bill Pmt -Check	01/23/2018	6487	Charges For ...	104 · Checking	X	206 · Accounts...	-104.41
<b>City of Grand Forks</b>							
Bill	02/05/2018	Inv. #...	2018 Lease A...	206 · Accounts Pay...		517 · Overhead	-2,837.76
Bill Pmt -Check	02/05/2018	6490	2018 Lease A...	104 · Checking		206 · Accounts...	-2,837.76
<b>CPS</b>							
Bill	02/05/2018	Inv. #...	Professional ...	206 · Accounts Pay...		550 · Corridor ...	-1,717.65
Bill Pmt -Check	02/05/2018	6491	Professional ...	104 · Checking		206 · Accounts...	-1,717.65
<b>Earl Haugen</b>							
Bill	01/19/2018		Reimburse E...	206 · Accounts Pay...		530 · Educatio...	-88.80
Bill Pmt -Check	01/19/2018	6478	Reimburse E...	104 · Checking	X	206 · Accounts...	-88.80
Bill	02/08/2018		Travel Reimb...	206 · Accounts Pay...		530 · Educatio...	-56.00
Bill Pmt -Check	02/08/2018	6493	Travel Reimb...	104 · Checking		206 · Accounts...	-56.00
<b>East Grand Forks Water and Light</b>							
Bill	01/19/2018	Inv. # ...	4th Quarter 2...	206 · Accounts Pay...		517 · Overhead	-523.90
Bill Pmt -Check	01/19/2018	6479	4th Quarter 2...	104 · Checking	X	206 · Accounts...	-523.90
<b>Fidelity Security Life.</b>							
Liability Check	01/22/2018	6481	50790-1043	104 · Checking	X	210 · Payroll Li...	-16.88
<b>Forum Communications Company</b>							
Bill Pmt -Check	02/01/2018		QuickBooks g...	104 · Checking		206 · Accounts...	0.00
<b>Jairo Viafara.</b>							
Bill	01/19/2018		Reimburse Ja...	206 · Accounts Pay...		530 · Educatio...	-750.00
Bill Pmt -Check	01/19/2018	6477	Reimburse Ja...	104 · Checking	X	206 · Accounts...	-750.00
<b>Liberty Business Systems, INC.</b>							
Bill	01/19/2018	Inv. #...	Contract Bas...	206 · Accounts Pay...		535 · Equipment	-122.20
Bill Pmt -Check	01/19/2018	6480	Contract Bas...	104 · Checking	X	206 · Accounts...	-122.20
<b>LSNB as Trustee for PEHP</b>							
Liability Check	01/22/2018	PEHP		104 · Checking	X	216 · Post-Hea...	-165.00
<b>Madison Nat'l Life</b>							
Liability Check	01/22/2018	6482		104 · Checking		215 · Disability...	-89.28
<b>Mike's</b>							
Bill	01/17/2018		MPO Lunche...	206 · Accounts Pay...		711 · Miscellan...	-113.75
Bill Pmt -Check	01/17/2018	6476	MPO Lunche...	104 · Checking	X	206 · Accounts...	-113.75
Bill	02/08/2018		MPO Lunche...	206 · Accounts Pay...		711 · Miscellan...	-133.30
Bill Pmt -Check	02/08/2018	6494	MPO Lunche...	104 · Checking		206 · Accounts...	-133.30
<b>Minnesota Department of Revenue</b>							
Liability Check	01/22/2018	MNDOR	1403100	104 · Checking	X	210 · Payroll Li...	-198.00
Liability Check	02/09/2018	MNST...	1403100	104 · Checking		210 · Payroll Li...	-199.00
<b>Minnesota Life Insurance Company</b>							
Liability Check	01/22/2018	6483		104 · Checking		-SPLIT-	-80.78
<b>Nationwide Retirement Solutions</b>							
Liability Check	01/22/2018	NWR...	3413	104 · Checking	X	-SPLIT-	-788.94
Liability Check	02/09/2018	NWR...	3413	104 · Checking		-SPLIT-	-838.94
<b>NDPERS</b>							
Liability Check	01/22/2018	6484	D88	104 · Checking	X	-SPLIT-	-3,809.58
Liability Check	01/26/2018	6486		104 · Checking		-SPLIT-	-2,819.16
<b>QuickBooks Payroll Service</b>							
Liability Check	01/24/2018		Created by P...	104 · Checking	X	-SPLIT-	-8,251.69
Liability Check	02/07/2018		Created by P...	104 · Checking		-SPLIT-	-8,233.28
<b>SHRM</b>							
Bill	02/01/2018	90073...	Membership ...	206 · Accounts Pay...		517 · Overhead	-209.00
Bill Pmt -Check	02/01/2018	6489	Membership ...	104 · Checking		206 · Accounts...	-209.00
<b>Standard Insurance Company</b>							
Liability Check	01/22/2018	6485		104 · Checking	X	217 · Dental P...	-158.60
<b>The Exponent</b>							

**Grand Forks East Grand Forks MPO**  
**Transaction List by Vendor**  
**January 13 through February 16, 2018**

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Type	Date	Num	Memo	Account	Clr	Split	Amount
Bill	02/12/2018	Inv. #...	Public Hearin...	206 · Accounts Pay...		555 · TIP	-87.75
Bill Pmt -Check	02/12/2018	6495	Public Hearin...	104 · Checking		206 · Accounts...	-87.75
<b>WSI</b>							
Bill	02/13/2018		Workers Com...	206 · Accounts Pay...		517 · Overhead	-250.00
Bill Pmt -Check	02/13/2018	6496	Workers Com...	104 · Checking		206 · Accounts...	-250.00