



Chapter 7. Future Network and Implementation

Background and Overall Approach

The previous Range of Alternatives Chapter provides a summary of how the “Universe of Projects” list was developed, which encompasses all projects that could potentially be included in the Current Revenue Scenario of the financially constrained 2045 Street and Highway Plan. This Future Network and Implementation Chapter provides an outline of the methodology, assumptions and underlying approach used to narrow down the “Universe of Projects” list to a smaller subset of street and highway projects that have been identified as the financially constrained 2045 Street and Highway Plan (i.e. Current Revenue Scenario). Projects identified in the Current Revenue Scenario are eligible to compete for federal transportation funding through the GF/EGF MPO’s Transportation Improvement Program (TIP) process. The following pages provide further background of how these Current Revenue Scenario projects were selected.

Projects identified in this section supplement those identified in the 2019-2022 Transportation Improvement Program (TIP).

Goals, Objectives, Performance Measures

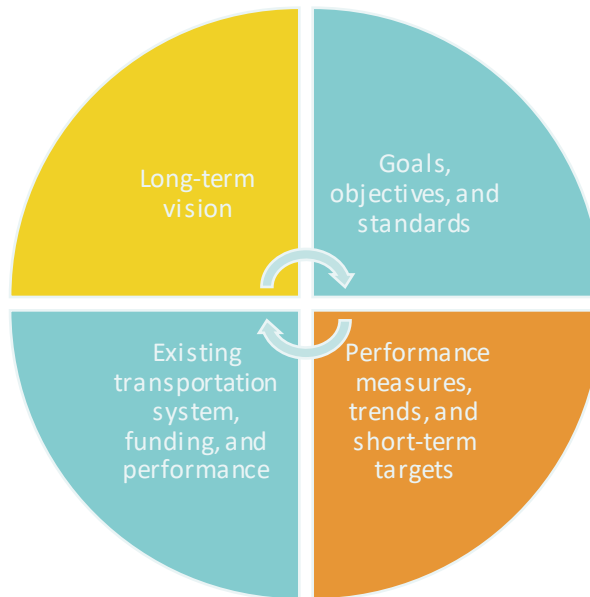
The fundamental starting point for reviewing the “Universe of Projects” list and considering projects for inclusion in the Current Revenue Scenario was to consider the overall vision, goals, objectives, standards, performance measures and targets established for the 2045 Street and Highway Plan. The policy framework outlined in the 2045 Plan includes specific federal performance target requirements from the FAST Act combined with State and local standards established by NDDOT, MnDOT and the MPO regarding how the overall transportation system should perform today and through the year 2045.

The Grand Forks-East Grand Forks MPO has established ten overarching goal areas in this Plan related to the regional transportation system. Federal performance measures through the FAST Act have also been established for safety, state of good repair, mobility and environment. Safety and state of good repair are identified as the top federal investment priority in the FAST Act. These federal investment priorities have been carried out by NDDOT and MnDOT and are also the primary investment focus of this Grand Forks-East Grand Forks MPO 2045 Street and Highway Plan.

Specific targets have been established by NDDOT and MnDOT to carry out State of Good Repair requirements for the National Highway System (NHS). Maintaining roadway pavements and bridges in a State of Good Repair consistent with these targets for NHS Interstate Principal Arterials and Non-NHS Minor Arterials was the number one priority of the MPO and its planning partners when identifying fiscally constrained projects in the Current Revenue Scenario. Table 2-15 of the Vision, Goals, Objectives, Standards, Performance Measures and Targets Chapter outlines the specific State of Good Repair performance targets established by NDDOT and MnDOT to satisfy this FAST Act State of Good Repair mandate. The Grand Forks East Grand Forks MPO has adopted these same NDDOT and MnDOT standards for pavement quality and bridge condition. Figure 7-1 provides an illustration of how the overall 2045 Street and Highway Plan vision, goals, objectives, standards, performance measures and targets relate to each other as part of the overall planning process.



Figure 7-1: Vision, Goals, Objectives, Standards and Performance Measures



Financial Forecast

As discussed in the Financial Forecast Chapter, Federal law requires that Current Revenue Scenario projects be financially constrained to only include projects that can reasonably be expected to be funded within the 2045 planning horizon. For the 2045 Street and Highway Plan Current Revenue Scenario, separate financially constrained project lists were prepared based on the following 2045 forecasted highway revenue sources outlined in Table 7-1.

Table 7-1: 2045 Highway Revenue Forecast (2023-2045)

Funding Source	Total Forecasted Revenue (2023-2045)*
Safety	\$17.7
North Dakota Main Street	\$19.1**
Interstate	\$10.2
State	\$20.3
Other Federal	\$218
Local	\$139.9
Total	\$425 Million

**An additional \$75 million is forecast to be available in the 2019-2022 Transportation Improvement Program

*An additional \$1.3 million in federal funding is available through the NDDOT Main Street program in years 2021-2022

Using the above referenced revenue forecasts, revenues for each funding source were then broken up further into the following time periods so projects could be grouped and financially constrained into logical implementation periods.



Table 7-2: 2045 Street/Highway Plan Time Periods

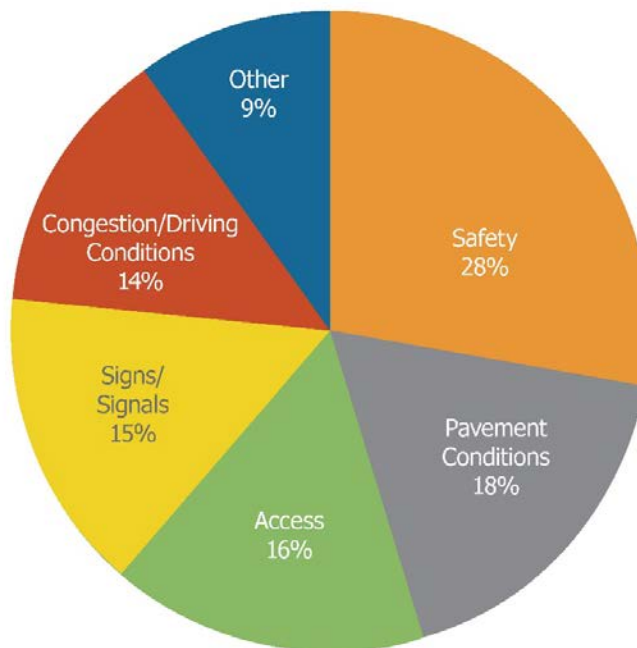
Transportation Improvement Program	2019-2022	■ Adopted MPO Transportation Improvement Program
Short-Range	2023 to 2027	■ Starts at end of adopted 2019-2022 MPO Transportation Improvement Program
Mid-Range	2028 to 2037	■ End coincides with expiration of City of Grand Forks 2018-2037 sales tax
Long-Range	2038 to 2045	■ Remaining years in planning horizon

Projects that could not be financially constrained within these time periods and the overall 2045 planning horizon were identified as “Illustrative.” Illustrative projects are projects that have a regional transportation purpose and need, however, based on the financial forecast and established project priorities, it is not reasonable to assume that the project can be funded within the 2045 planning horizon.

Public Input

Another important consideration in selecting projects from the Universe of Projects list for inclusion in the Current Revenue Scenario was collecting public input. Early in the study process, during the summer of 2017, citizens had an opportunity to provide input about general transportation issues they experience in the Grand Forks-East Grand Forks Metro Area via an interactive on-line “Wiki Maps” tool. General transportation issue areas identified through the “Wiki Maps” exercise are summarized in Figure 7-2.

Figure 7-2: 2017 On-line Wiki Map Survey: What are your transportation issues?

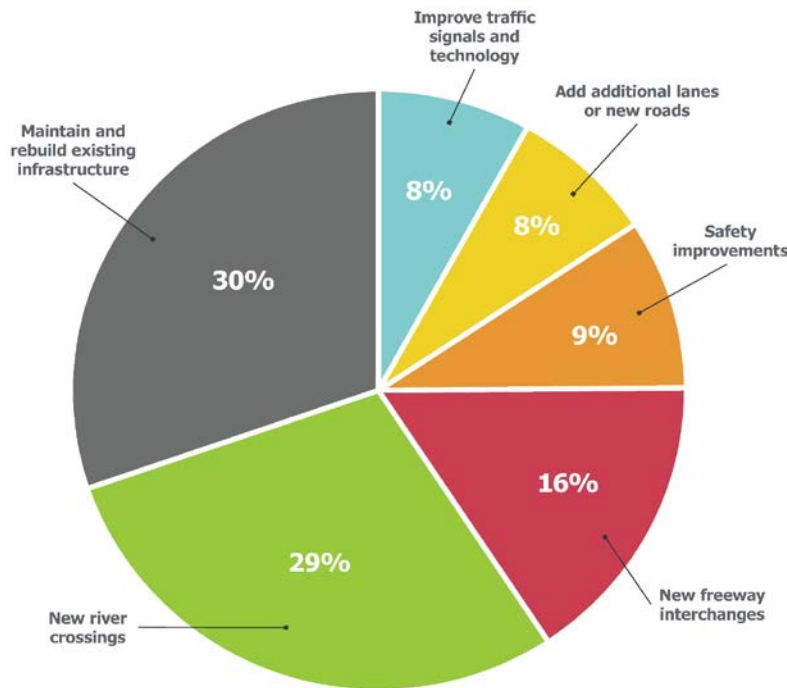


In late 2017, residents had an opportunity to provide input about investment priorities for the area’s street and highway system. Residents could provide input at the December 2017 Open House and online through the plan



website. Figure 7-3 summarizes investment preference responses. As shown in Figure 7-2 and Figure 7-3, existing transportation system preservation and safety are high priorities for Grand Forks-East Grand Forks residents, along with a new river crossing.

Figure 7-3: January 2018 Open House: How would you invest between the above referenced choices?



Prioritization Tool

In addition to overall transportation plan goals and objectives, the 2045 revenue forecast, and public input, another important resource used to identify Current Revenue Scenario projects from the Universe of Projects list was a Prioritization Tool that helped score and rank projects based on how well they addressed each of the following ten goal areas:

1. Economic Vitality
2. Security
3. Accessibility and Mobility
4. Environmental/Energy/Quality of Life
5. Integration and Connectivity
6. Efficient System Management
7. System Preservation
8. Safety
9. Resiliency
10. Tourism

Using the above referenced general goal areas and more detailed objectives associated with each goal as a reference, staff then used the prioritization tool to assign points to each project on the Universe of Projects list as one consideration in the project screening process. Projects that did not clearly improve a given goal area and its associated objectives received 0 points for that goal. Projects that clearly improved a given goal area and its associated objectives receive 1 point for that goal.

Projects were prioritized into the following federal project categories:



- State of Good Repair
- Safety
- North Dakota Urban Grant (Main Street) Program
- Illustrative

Other Considerations

In addition to the considerations outlined above, a variety of other factors also contributed to the overall conversation and ultimate decision of what projects to include in the Current Revenue Scenario. The following provides an overview of these considerations.

NHS and Functional Classification

State of Good Repair pavement and bridge projects on the federally designated National Highway System (NHS)/Principal Arterial system, including Interstate 29, US Highway 2, DeMers Avenue, Columbia Road, Washington Street and 32nd Avenue South were given the priority for inclusion in the Current Revenue Scenario. Secondly, Non-NHS Minor Arterial State of Good Repair pavement and bridge projects were also funded to the extent possible.

Pavement and Bridge Life Cycle

When considering State of Good Repair projects, efforts were made to group investments within the same roadway corridor that typically would occur in a sequence within the short-range, mid-range and long-range time periods of the transportation plan. These State of Good Repair investments, when done in the right sequence and the right time intervals, have been proven to maximize the useful life of pavements and bridges. These improvements generally include the following:

- Pavement
 - Reconstruction by rebuilding the roadway, including soil and infrastructure beneath the pavement
 - Rehabilitation by performing mill and overlay
 - Preservation by applying chip seal
- Bridge
 - Reconstruction by rebuilding the bridge, including approach roadways
 - Rehabilitation by replacing the bridge deck
 - Preservation by repainting the surface of the bridge

Existing Investment Programs

Existing short-, mid-, and long-range investment programs developed by MnDOT, NDDOT, the City of Grand Forks, the City of East Grand Forks, Grand Forks County and Polk County tied to known revenue sources were used as a starting point to identify individual agency investment priorities. These individual agency investment programs were integrated into the overall Current Revenue Scenario to the maximum extent possible within the framework of other factors outlined in this chapter.

The North Dakota Urban Grant (Main Street) Program was introduced in 2017. The program funds transportation improvements that directly support a community's urban core and central business district. It is also intended to leverage funding administered by other state agencies. Urban Grant Program objectives include: preserving existing assets; ensuring safety of all users of the transportation system; improvement of multi-modal transportation options such as walking, bicycling and public transit; supporting economically sustainable growth; lessening the need for outward expansion of community transportation infrastructure; and enhancing the economic vitality of the area by providing transportation assets.

Project Cost Estimates and Inflation

Current project cost estimates were provided by NDDOT, MnDOT, City of Grand Forks, City of East Grand Forks, Polk County and Grand Forks County or were taken from recent corridor studies. In limited cases, current cost



estimates were made based on similar projects in the Grand Forks/East-Grand Forks area. Each project was assigned to a time period in the plan, and its cost was inflated to the mid-year of the time period. The assumed annual inflation rates were 4 percent per year in North Dakota, and 4.4 percent per year in Minnesota. The inflation factors for each time period for North Dakota and Minnesota projects are:

NDDOT/City of Grand Forks/Grand Forks County Inflation Rates (4% compounded annually)

Short-Range:	2023 to 2027 (1.316)
Mid-Range:	2028 to 2037 (1.801)
Long-Range:	2038 to 2045 (2.563)

MnDOT/City of East Grand Forks/Polk County Inflation Rates (4.4% compounded annually)

Short-Range:	2023 to 2027 (1.352)
Mid-Range:	2028 to 2037 (1.908)
Long-Range:	2038 to 2045 (2.811)

Local Knowledge

In addition to the above referenced considerations, the final tool used to identify Current Revenue Projects from the Universe of Projects list was to consider local staff and elected official knowledge. Various local knowledge considerations such as project readiness, coordination with other scheduled projects, neighborhood and community support, elected official support, etc., were all considered in the Current Revenue Scenario project selection process.

Current Revenue Scenario Planned Investments

Current Revenue Scenario investments for 2023-2045 are summarized in Table 7-3 and Figure 7-4. The majority of funding goes toward maintaining a state of good repair for the non-Interstate National Highway System. This investment direction advances the direction first established in the 2040 Streets and Highway plan and reflected in the 2019-2022 Transportation Improvement Program.

The \$267 million in investments is less than the \$425 million in forecast revenues largely because the revenue forecast includes the transportation portion of the recent increase in City of Grand Forks sales tax. The City of Grand Forks sales tax increase for transportation was included to ensure the local match and local cost components of federally funded projects could be shown as fiscally constrained. Revenues from the City of Grand Forks sales tax for transportation exceed the amount required for federal project local match and local components. Consistent with City policy, these remaining revenues can serve purposes beyond paying for costs related to federally funded transportation projects, including repairing or expanding local roads.

The City of Grand Forks local projects will be identified by the City Council. Any project being financed locally and needing federal approval must be amended into this fiscally constrained Current Revenue Scenario.

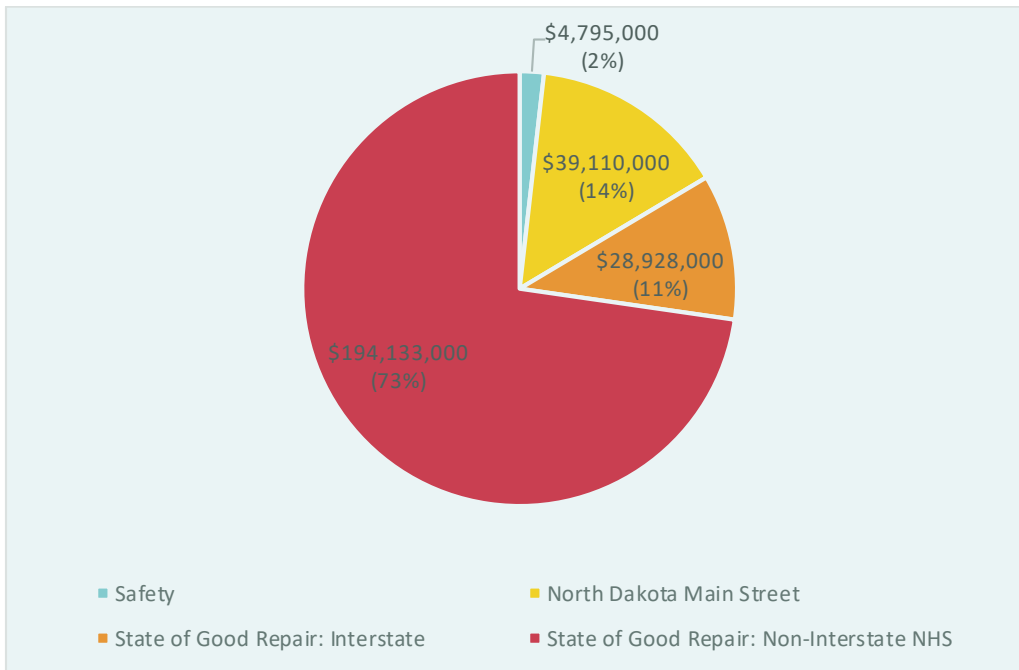
Table 7-3: Current Revenue Scenario Project Type Investment Amounts for 2023-2045*

Project Type	Investment Amounts	Share
Safety	\$4.8 million	2%
North Dakota Main Street	\$39.1 million	14%
State of Good Repair: Interstate	\$28.9 million	11%
State of Good Repair: Non-Interstate NHS	\$194.1 million	73%
Total	\$267 million	100%

*An additional \$75 million is programmed for investment through the 2019-2022 Transportation Improvement Program.



Figure 7-4: Current Revenue Scenario Investment Amounts



North Dakota Current Revenue Scenario Projects

NDDOT Planned State of Good Repair

NDDOT State of Good Repair projects were identified by NDDOT from their existing Capital Improvement Program and incorporated in their entirety within the Current Revenue Scenario. Roadways that have been targeted for State of Good Repair Investments by NDDOT are along the Interstate and NHS Principal Arterial system including Interstate 29, US Highway 2 (Gateway Drive), US 81 Business (Washington Street/32nd Avenue) and State Highway 297 (DeMers Avenue). Table 7-4 provides a summary of NDDOT State of Good Repair projects by time period. State of Good Repair project types included in the Current Revenue Scenario include chip seal, CPR and grind, mill and overlay, full reconstruction, painting the Kennedy and Sorlie Bridges in conjunction with MnDOT, as well as regional traffic signal upgrades.

Table 7-4: NDDOT State of Good Repair Planned Investments

Time Period	Federal/ State Match	City Match	YOE Total
Short-Range	\$20,181,000	\$1,440,000	\$21,620,000
Mid-Range	\$50,485,000	\$4,732,000	\$55,217,000
Long-Range	\$44,150,000	\$2,412,000	\$46,561,000
Total	\$114,816,000	\$8,584,000	\$123,398,000

Source: GF/EGF MPO, 2018

City of Grand Forks Planned State of Good Repair

City of Grand Forks federally funded State of Good Repair projects included in the Current Revenue Scenario focused on the NHS Principal Arterial system. These projects addressed pavement needs on roadways such as University Avenue, 4th Avenue South, Minnesota Avenue, South 48th Street, Columbia Road, 17th Avenue South and Washington Street. A project is also included in conjunction with the City of East Grand Forks to rehabilitate the Point Bridge. Specific project types include maintenance and operations, Concrete Pavement Rehabilitation



(CPR), rehabilitation, reconstruction as well as traffic signal or roundabout improvements. Table 7-5 provides a summary of the City of Grand Forks federally funded State of Good Repair projects by time period.

Table 7-5: City of Grand Forks State of Good Repair Planned Investments (Federally Funded)

Time Period	Federal/City Match	Additional City Funds	YOE Total
Short-Range	\$18,568,000	\$4,744,000	\$23,312,000
Mid-Range	\$42,138,000	\$13,906,000	\$56,044,000
Long-Range	\$40,117,000	\$13,238,000	\$53,355,000
Total	\$100,823,000	\$31,888,000	\$132,711,000

Source: GF/EGF MPO, 2018

The City of Grand Forks identified additional locally funded projects to bring segments of the federal aid system into state of good repair. A prioritized list of illustrative projects by agency, identifying relative importance to one another, is available in Appendix G.

City of Grand Forks Planned Main Street

The City of Grand Forks has identified a series of streetscape, bicycle/pedestrian, transit and downtown revitalization projects as potential “Main Street” program investments to compete for this recently established federal set-a-side available through NDDOT. The focus of these projects is to improve multimodal transportation options in the urban core of Grand Forks while also investing in decorative streetlighting, benches, planters, street signs and other streetscape amenities. Revitalization projects have been identified for east, west, north and south quadrants of the downtown, as well as reconstruction along North and South sections of 3rd Street and 4th Street. Table 7-6 provides a summary of City of Grand Forks Main Street projects by time period.

Table 7-6: City of Grand Forks Main Street Planned Investments

Time Period	YOE Total Federal/City Match
Short-Range	\$6,330,000*
Mid-Range	\$8,293,000
Long-Range	\$24,488,000
Total	\$39,111,000

*One or more of the short-range Main Street projects may be completed in 2021-2022.

Source: GF/EGF MPO, 2018

Grand Forks County Planned State of Good Repair

Grand Forks County has identified State of Good Repair mill and overlay projects along their federal-aid eligible roadway network in the MPO planning area along County Road 6, CR 5, CR 17 and 32nd Avenue west of Interstate 29. The County has also identified various chip seal projects throughout the County roadway network. Table 7-7 summarizes these projects by time period.

Table 7-7: Grand Forks County State of Good Repair Planned Investments

Time Period	Federal/County Match	County Only Funds	YOE Total
Short-Range	\$1,316,000	\$618,000	\$1,934,000
Mid-Range	\$2,702,000	\$1,162,000	\$3,864,000
Long-Range	\$3,845,000	\$1,459,000	\$5,304,000
Total	\$7,863,000	\$3,239,000	\$11,102,000

Source: GF/EGF MPO, 2018



Safety (North Dakota Portion of MPO)

Safety projects included in the Current Revenue Scenario were derived from the North Dakota Local Road Safety Plan, recent studies and local capital improvement programs. It is important to note that this Plan is in need of updating and efforts should be made in the future to include a short-term listing of projects that can be implemented. Safety projects will be funded through the Highway Safety Improvement Program (HSIP) and include miscellaneous intersection safety upgrades along with more significant investments. More significant investments include intersection improvements at Gateway Drive and Airport Drive and realignment of Stanford Road at Gateway Drive. Table 7-8 provides a summary of all safety/operation projects within the North Dakota portion of the MPO by time period.

Two projects are included in the Illustrative Projects list that respond to the higher than expected crash rates identified in Chapter 3 Existing Conditions. These projects are interchange improvements in the NE loop at Interstate 29 and Gateway Drive and intersection improvements at the Ralph Engelstad Arena entrance at Gateway Drive; they would cost about \$19 million if constructed in the mid-range time period of this plan.

Table 7-8: Safety Projects (North Dakota Portion of MPO)*

Time Period	YOE Total Federal/City Match
Short-Range	\$3,479,000
Mid-Range	\$1,316,000
Long-Range	\$0
Total	\$4,795,000

*Note: Short-range projects are from the North Dakota Local Road Safety Plan. Mid-range projects are candidates identified in recent studies and capital improvement programs and should be prioritized for funding through updates to the North Dakota Local Road Safety Plan and North Dakota Strategic Highway Safety Plan.

Source: GF/EGF MPO, 2018

Planned "Projects of Significance" (North Dakota Portion of MPO)

Table 7-9 outlines planned "Projects of Significance" on the North Dakota side of the MPO planning area. Projects of \$5 million or more are identified for NDDOT and the City of Grand Forks. Grand Forks County did not have any projects identified in the Current Revenue Scenario that met this criterion.

Table 7-9: Planned "Projects of Significance" (North Dakota Portion of MPO) (>= \$5 Million)

Project Type	Roadway	Lead Agency	Termini	Time Period	Improvement	Investment
State of Good Repair	US 81 Business	NDDOT	Grand Forks - South Washington Street (Hammerling to 8th Avenue South)	Short-Range	Reconstruct	\$5,922,000
State of Good Repair	Various	NDDOT	Various	Short-Range	Regional Traffic Signal Upgrade	\$7,238,000
State of Good Repair	Columbia Road	City of Grand Forks	Columbia Road Railroad Overpass North of DeMers Ave.	Short-Range	Overpass	\$7,481,000



Project Type	Roadway	Lead Agency	Termini	Time Period	Improvement	Investment
State of Good Repair	North Columbia Road	City of Grand Forks	8 th Avenue North to US 2 (Gateway Drive)	Short-Range	Reconstruct	\$10,632,000
State of Good Repair	US 81 Business	NDDOT	I-29 to South Washington Street	Mid-Range	Reconstruct	\$30,798,000
State of Good Repair	North Washington Street (US 81 Business)	NDDOT	Dyke Avenue to .05 Mi South of 8 th Avenue	Mid-Range	Reconstruct	\$9,450,000
State of Good Repair	North Columbia Road	City of Grand Forks	University Avenue to 8 th Avenue North	Mid-Range	Reconstruct	\$12,933,000
State of Good Repair	South Washington Street	City of Grand Forks	32 nd Avenue South to 47 th Avenue South	Mid-Range	CPR	\$11,209,000
State of Good Repair	South Columbia Road	City of Grand Forks	17 th Avenue South to 32 nd Avenue South	Mid-Range	CPR	\$11,425,000
State of Good Repair	South Columbia Road	City of Grand Forks	DeMers Avenue to 17 th Avenue South	Mid-Range	CPR	\$9,484,000
State of Good Repair	Various	NDDOT	Various	Long-Range	Regional Traffic Signal Upgrade	\$17,480,100
State of Good Repair	Columbia Road**	City of Grand Forks	47 th - 62 nd and Washington SED - 62 nd	Long-Range	Maintenance & Operations	\$9,107,000
State of Good Repair	Columbia Road	City of Grand Forks	32 nd Avenue South to 47 th Avenue South	Long-Range	CPR	\$15,645,000
State of Good Repair	Various	City of Grand Forks	Various	Long-Range	Traffic Signal Upgrade	\$11,886,000
State of Good Repair	32nd Avenue South	City of Grand Forks	Cherry Street to Belmont Road	Long-Range	Reconstruct	\$5,215,000

Source: GF/EGF MPO, 2018

**Columbia Road project includes two separate sets of termini. These projects being packaged together by the City of Grand Forks for a future NDDOT Urban Roads Program grant funding request.

Minnesota Current Revenue Scenario Projects

MnDOT Planned State of Good Repair

MnDOT's 20-year Minnesota Highway Investment Plan (MnSHIP) and 10-year Highway Investment Plan (HIP) communicate MnDOT's capital investment priorities and fiscally constrained project commitments. MnDOT's State of Good Repair projects in these Plans for the East Grand Forks/Polk County portion of the MPO planning area include painting the Kennedy and Sorlie bridges in conjunction with NDDOT, replacing the US Highway 2 Bridge



over River Road NW, rehabilitating the Sorlie Bridge, along with a variety of mill and overlay, resurfacing and concrete rehabilitation projects along US Highway 2, US Highway 2 Business and Minnesota State Trunk Highway 220. As noted in Table 7-10, these State of Good Repair improvements total \$39,500,000 through the 2045 planning horizon.

Table 7-10: MnDOT State of Good Repair Planned Investments

Time Period	YOE Total Federal/State Match
Short-Range	\$10,300,000
Mid-Range	\$9,000,000
Long-Range	\$20,600,000
Total	\$39,800,000

Source: GF/EGF MPO, 2018

City of East Grand Forks Planned State of Good Repair

City of East Grand Forks State of Good Repair projects were identified by the City for its federal-aid eligible roadways including Bygland Road, Rhinehart Drive, 10th Street NE, 5th Avenue NW, and 8th Avenue NW. Project types include rehabilitation and full reconstruction. Additionally, the City of East Grand Forks has a rehabilitation project planned for the Point Bridge in the short-range time period in cooperation with the City of Grand Forks. A summary of these investments is provided in Table 7-11.

Table 7-11: City of East Grand Forks State of Good Repair Planned Investments

Time Period	YOE Total Federal/City Match
Short-Range	\$2,738,000
Mid-Range	\$6,392,000
Long-Range	\$6,803,000
Total	\$15,933,000

Source: GF/EGF MPO, 2018

Polk County Planned State of Good Repair

Planning efforts were coordinated with Polk County to identify State of Good Repair projects, which has led to identification of mill and overlay projects along CSAH 72, CSAH 73 and CSAH 76. The CSAH 72 project is planned for the short-range time period and the CSAH 73 and CSAH 76 projects are planned for the mid-range time period. Table 7-12 below provides a summary of these investments.

Table 7-12: Polk County State of Good Repair Planned Investments

Time Period	YOE Total Federal/County Match
Short-Range	\$203,000
Mid-Range	\$638,000
Long-Range	\$0
Total	\$841,000

Source: GF/EGF MPO, 2018

Safety (Minnesota Portion of MPO)

The Current Revenue Scenario does not yet identify fiscally constrained safety projects in the Minnesota portion of the metropolitan area. Regional partners will work together to quickly identify projects to be funded using Highway Safety Improvement Program (HSIP) funds.



The Illustrative Projects list includes more than \$18 million in potential safety projects derived from the MnDOT District 2 Safety Plan, the Polk County Safety Plan, and a recent corridor study along Bygland Road. Examples of larger investments include signal and turn lane upgrades along US 2 and roundabout upgrades along Bygland Road at 13th Avenue and also 5th Avenue. Table 7-13 provides a summary of all safety/operation projects within the Minnesota portion of the MPO by time period.

Table 7-13: Safety (Minnesota Portion of MPO)

Time Period	YOE Total Federal/City/County Match
Short-Range	\$0
Mid-Range	\$0
Long-Range	\$0
Total	\$0

Source: GF/EGF MPO, 2018

Planned “Projects of Significance” (Minnesota Portion of MPO)

Table 7-14 outlines planned “Projects of Significance” on the Minnesota side of the MPO planning area. Projects of 5 million dollars or more are identified for MnDOT and the City of East Grand Forks. and Polk County.

Table 7-14: Planned “Projects of Significance” (Minnesota Portion of MPO) (>= \$5 Million)

Project Type	Roadway	Agency	Termini	Time Period	Improvement	Inflated Cost
State of Good Repair	US 2	MnDOT	Over River Road NW	Short-Range	Replace Bridge	\$5,600,000
State of Good Repair	US 2	MnDOT	WB from 0.5 miles W of the W JCT of MN 220 (East Grand Forks) to 0.3 miles E of Polk CSAH 15 (Fisher)	Long-Range	Resurfacing	\$15,000,000

Source: GF/EGF MPO, 2018

Fiscally Constrained Program of Projects

The following provides a summary of the financially constrained implementation plan based upon the GF/EGF MPO’s forecasted local, state and federal revenues and inflation adjusted expenditures by short-range (2023-2027), mid-range (2028-2037) and long-range (2038-2045) time period. Expenditures are financially constrained by Main Street, Safety and State of Good Repair eligible funding program and associated local match forecasts from 2023 through 2045. Project expenditures are also constrained within each individual funding program and within each time period.

As a result of the FAST Act required emphasis on State of Good Repair and safety investments and the NDDOT, MnDOT and MPO reinforcement of this emphasis, all of the fiscally constrained program of projects in this Plan through 2045 are State of Good Repair, Safety and Main Street investments.

Expected Revenue and Expenditure Estimates

The fiscally-constrained program of projects (Current Revenue Scenario) represents the financial balancing of the Grand Forks/East Grand Forks 2045 Street and Highway Plan recognized federally eligible project investment needs and corresponding revenues that are “reasonably expected to be available” over the 2023 to 2045 planning



horizon. As discussed earlier in this chapter and in various other locations of this Plan, the FAST Act requires that system preservation and maintenance needs for pavements and bridges and Safety needs be addressed before other discretionary transportation system needs are funded. This investment philosophy is also supported by NDDOT, MnDOT and the GF/EGF MPO.

Table 7-15 summarizes the GF/EGF MPO expenditures and revenues for the North Dakota portion of the MPO planning area. Table 7-16 summarizes the GF/EGF MPO expenditures and revenues for the Minnesota portion of the MPO planning area. During development of the fiscally constrained plan, a threshold tolerance of +/-8 percent was established for the purposes of balancing revenues and expenditures by time period.

Table 7-15: Fiscally Constrained Program for North Dakota Portion of Grand Forks-East Grand Forks MPO*

Time Period	Planned Expenditures			Forecast Revenue		Balance
	NDDOT	City of Grand Forks	Grand Forks County	State and Federal	City/County	
Short-Range (2023-2027)	\$20,951,000	\$13,902,000**	\$3,253,000	\$41,671,000	\$28,297,000	+\$32 million
Mid-Range (2028-2037)	\$50,485,000	\$28,247,000	\$3,864,000	\$96,805,000	\$65,737,000	+\$80 million
Long-Range (2038-2045)	\$44,150,000	\$40,137,000	\$5,304,000	\$92,499,000	\$32,841,000	+\$35.8 million
Subtotal	\$115,586,000	\$82,286,000	\$12,421,000	\$230,975,000	\$126,875,000	

*The 2019-2022 Transportation Improvement program includes an additional \$63 million in forecast revenues and planned expenditures for the North Dakota portion of the MPO area.

**One or more of the short-range Main Street projects may be completed in 2021-2022, when there is an additional \$1.3 million in federal funding available.

Source: GF/EGF MPO, 2018

Table 7-16: Fiscally Constrained Program for Minnesota Portion of Grand Forks-East Grand Forks MPO*

Time Period	Planned Expenditures			Forecasted Revenue		Balance
	MnDOT	City of East Grand Forks	Polk County	State and Federal	City/County	
Short-Range (2023-2027)	\$10,300,000	\$2,738,000	\$203,000	\$11,060,000	\$2,365,000	+\$0.2 million
Mid-Range (2028-2037)	\$9,000,000	\$6,392,000	\$638,000	\$11,657,000	\$5,453,000	+\$1.1 Million
Long-Range (2038-2045)	\$20,600,000	\$6,803,000	\$0	\$23,592,000	\$5,165,000	+\$1.4 million
Subtotal	\$39,800,000	\$15,933,000	\$841,000	\$46,309,000	\$12,983,000	



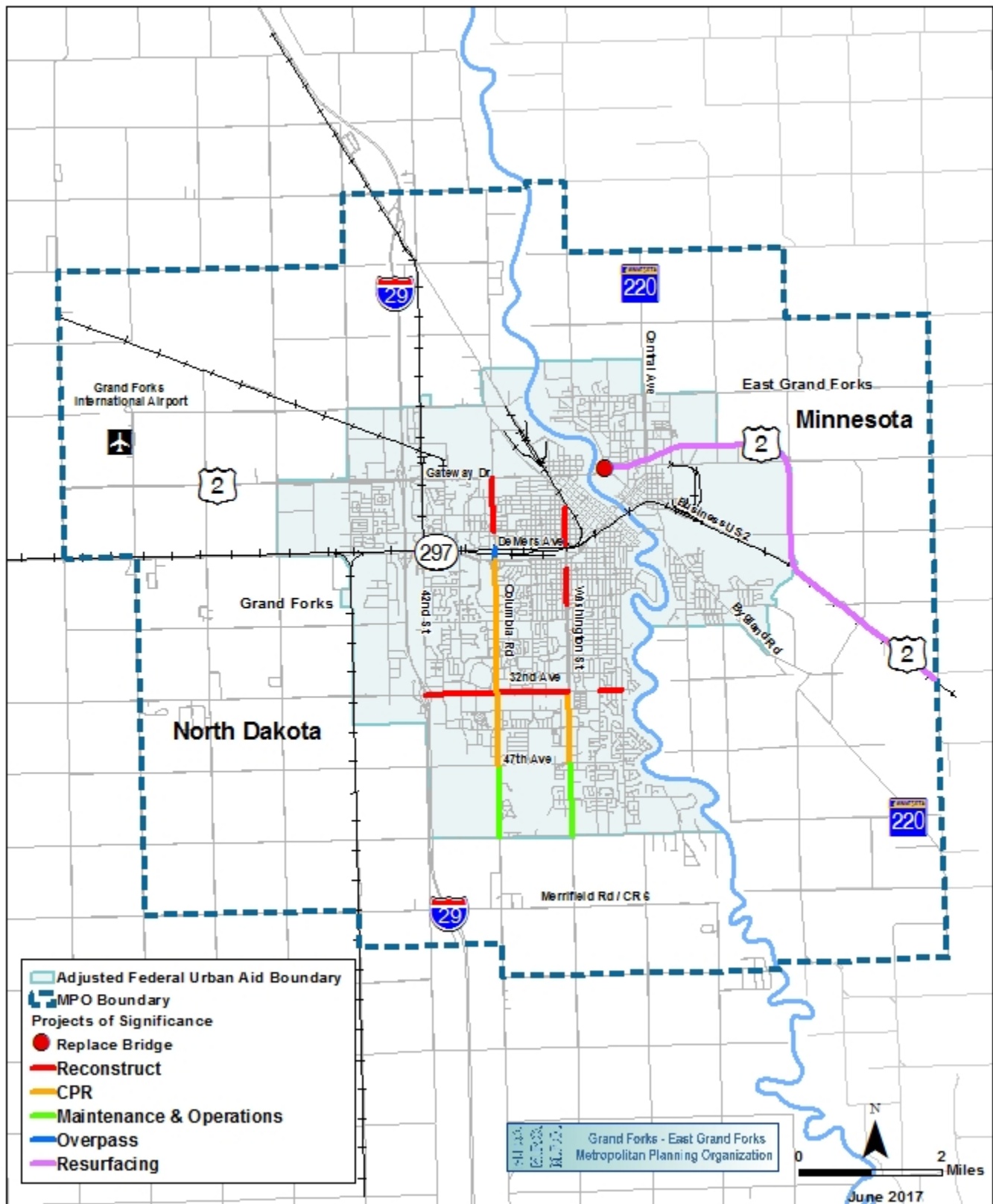
*The 2019-2022 Transportation Improvement Program includes an additional \$12 million in forecast revenues and planned expenditures for the Minnesota portion of the MPO area.

Source: GF/EGF MPO, 2018

A complete listing of fiscally constrained Current Revenue Scenario projects by agency and funding program can be found in Appendix F. Figure 7-5 also highlights Current Revenue Scenario “Projects of Significance” equal to or greater than \$5 million, as summarized earlier in this chapter in Table 7-9 and Table 7-14.



Figure 7-5: Current Revenue Scenario "Projects of Significance"





Illustrative Projects

After going through the project prioritization and vetting process described in this chapter, a variety of projects were not included in the Current Revenue Scenario. These illustrative projects have had an identified regionally significant transportation purpose and need, however, at this point in time, forecasted federal, state and local revenues are not available for construction through 2045. A prioritized list of Illustrative projects by agency, identifying relative importance to one another, is available in Appendix G. A summary of some of the highest ranked illustrative projects from the prioritization tool are outlined in Table 7-17 and in Figure 7-6.

The Red River crossing projects, 32nd Avenue S and Merrifield Road, shown on the bottom of the table are included on the list as a result of policy direction from the GF/EGF MPO Board that was made considering input from this planning process and public input. The river crossing projects will provide regional connectivity across the Red River, supplementing the three existing river crossings that are forecast to operate with significant congestion in 2045. The 2040 Plan also included the same crossings as Illustrative “Projects of Significance” although the 2040 plan prioritized Merrifield Road over 32nd Avenue S. As a part of this plan they have not been prioritized for the following reasons:

- There has been interest in the community in these two river crossing locations for “local traffic” and “bypass” since the late 1990s.
- The current analysis again showed that the Merrifield Road river crossing served “bypass” traffic and the 32nd Avenue S river crossing served “local” traffic. There are different transportation benefits for each crossing location.
- The Merrifield Road and 32nd Avenue S. river crossings would be led by different agencies. Merrifield Road would be a Grand Forks County and Polk County led project. The 32nd Avenue S crossing would be a City of Grand Forks and City of East Grand Forks led project.
- Both projects had a benefit-cost ratio over 1 based on the planning analysis completed, indicating both projects are anticipated to benefit the community when compared to cost of construction.
- Since both river crossing locations would benefit the region and funding would come from different sources, including both crossing as illustrative “Projects of Significance” provides some flexibility if one crossing is successful in obtaining funding.

Important activities that will be necessary to make a river crossing a success include the following:

- Continue to explore for additional funding sources for a river crossing.
- Political leaders in North Dakota and Minnesota should work collaboratively to communicate the need for funding to state and federal political leaders.
- Local land use authorities should take steps to preserve corridor right-of-way for public use.
- Lead transportation authorities should complete required environmental documentation when possible.

More information regarding the river crossings and how they impact the overall regional transportation network is available in Appendix C.

Table 7-17: Illustrative “Projects of Significance”

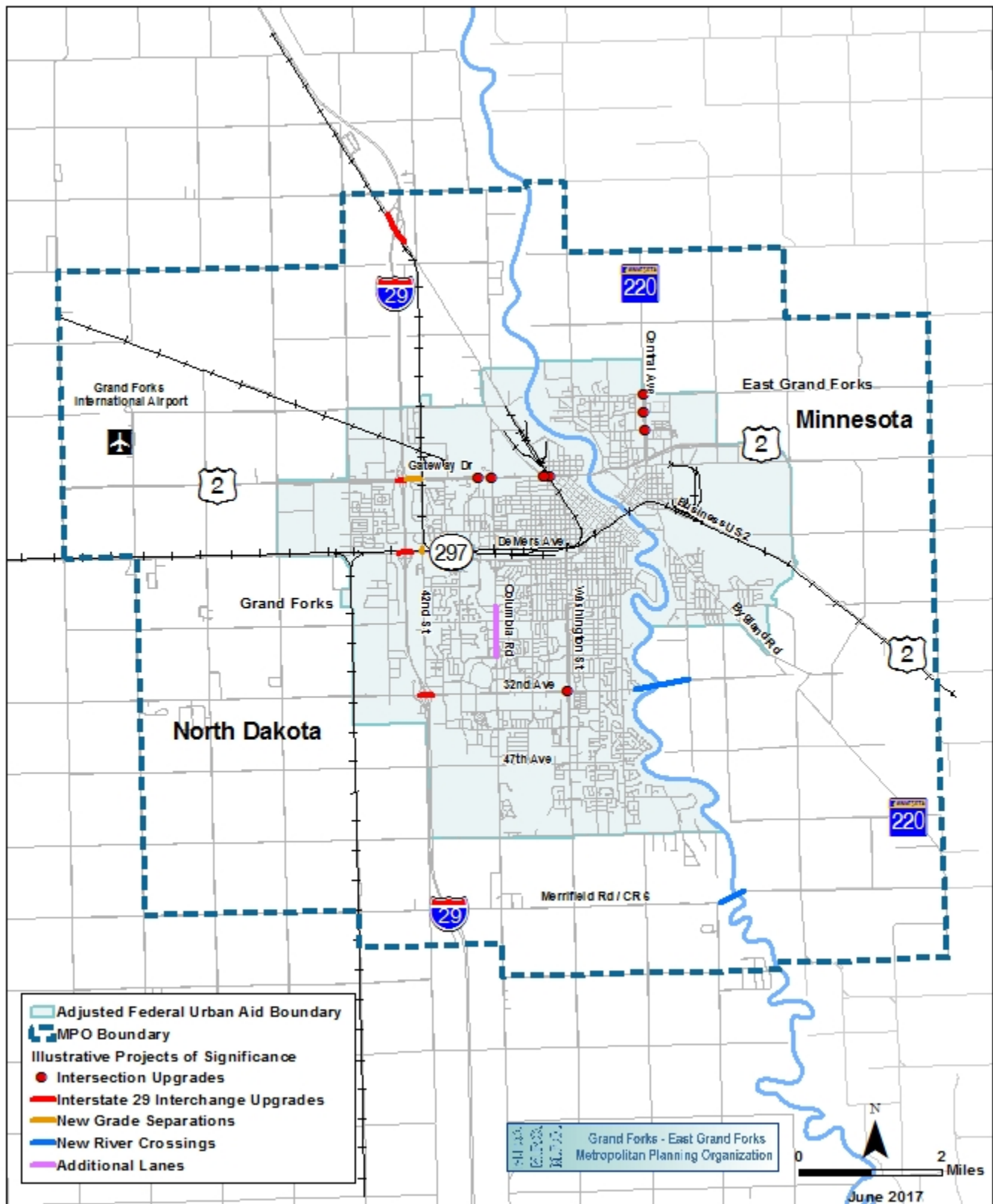
Project Type	Project Description
State of Good Repair	Non-NHS Federal Aid Eligible Streets/Highways
Intersections	32nd Avenue/South Washington Street Central Avenue: 17th Street to 23rd Street US 2 (Gateway Drive): Washington Street to Mill Road US 2 (Gateway Drive): Cambridge Street to Columbia Road
Additional Lanes	Columbia Road: 14th Avenue S. to 24th Avenue S.
Interstate 29 Interchange Upgrades	North Washington



Project Type	Project Description
	US 2 (Gateway Drive) DeMers Avenue 32nd Avenue
New Grade Separations	US 2 (Gateway Drive) east of Interstate 29 42nd Street: North of DeMers Avenue
New River Crossings	32nd Avenue Merrifield Road



Figure 7-6: Summary of Illustrative Projects of Significance





Right-of-Way and Corridor Preservation

Right-of-way for future transportation infrastructure is a valuable asset and difficult to obtain. As the Grand Forks-East Grand Forks area continues to grow and develop, local partners should work together to preserve right-of-way for public use when project locations become certain and property becomes available. Local government can help preserve right-of-way by identifying transportation right-of-way needs in local comprehensive and zoning plans in coordination with transportation providers. Other strategies include advanced purchase, subdivision techniques, official mapping, and corridor signing; these strategies should be carefully implemented in coordination with project development and environmental documentation. Preserving right-of-way can reduce project costs and streamline project development.

In addition to preserving right-of-way, local partners should work together to preserve corridor capacity. Local government can preserve corridors by adopting and implementing access management guidelines that can be implemented through the development review process.

Environmental Mitigation Considerations

The GF/EGF MPO's transportation planning activities are performed at the regional level and projects identified in this plan require more detailed scoping and design analysis in order to adequately determine social, economic, and environmental impacts. Environmentally-sensitive areas, including wetlands, species of concern, and identified cultural sites are shown in Figure 7-7. Many of these sensitive areas require a project-level analysis to determine potential impacts and mitigation activities. Some areas are yet to be identified and will only become known once a project-level analysis is completed. When a programmed project is ready for project implementation, the project sponsor will be responsible for conducting the necessary analyses as required by state and federal regulations to determine the type, location, and impact to environmentally sensitive areas within the project study area.

As part of long-range transportation plans, MPOs are required to consult with Federal, State, and Tribal land management, wildlife, and regulatory agencies on possible environmental mitigation activities that may be appropriate for the types of system improvement projects identified in the plan. The GF/EGF MPO solicited input from several regional agencies as part of this plan update. Agencies were notified via a letter and requested to provide input on the projects and proposed environmental mitigation activities identified during the planning process. There were 50 different agencies from which comments were solicited.

Environmental Mitigation Activities

The GF/EGF MPO and its jurisdictional partners are committed to minimizing and mitigating the negative effects of transportation projects on the natural and built environments. Not every project will require the same amount of review or mitigation. For example, preservation or State of Good Repair projects typically have no or limited impacts as they are located within previously disturbed or built environments. New roadways or expansion projects have a greater likelihood for impacts as the areas of disturbance are greater in size and may extend beyond current road right of ways. The GF/EGF MPO and its planning partners understand that project specific mitigation efforts will depend on how severe the impact on environmentally sensitive areas is expected to be.

Considerations should be made during the project design phase to avoid environmentally-sensitive areas, where feasible. If avoidance is not possible, strategies to minimize off-site disturbance in sensitive areas should be strongly considered, to preserve air and water quality, to limit tree removal, to minimize grading and other earth disturbance, to incorporate Best Management Practices (BMP) for erosion and sediment control, and limit noise and vibration impacts. Impacts that cannot be avoided or minimized should be mitigated. The mitigation planning process should solicit public input and offer alternative designs or alignments and mitigation strategies for comment by the GF/EGF MPO, state and local governments.



For major construction projects, such as new roadways, or for projects that may have a metropolitan-wide environmental impact, context sensitive solutions should be considered. This process should include considerable public participation and alternative design solutions are used to lessen the impact of the project.

The following three steps process will be used by the GF/EGF MPO and its planning partners to determine the type of mitigation strategy to apply for any given project, as it advanced from the planning stage:

1. Identify environmentally sensitive areas throughout the project study area.
2. Determine how and to what extent the project will impact these environmentally-sensitive areas.
3. Develop appropriate mitigation strategies to lessen the impact these projects have on the environmentally-sensitive areas.

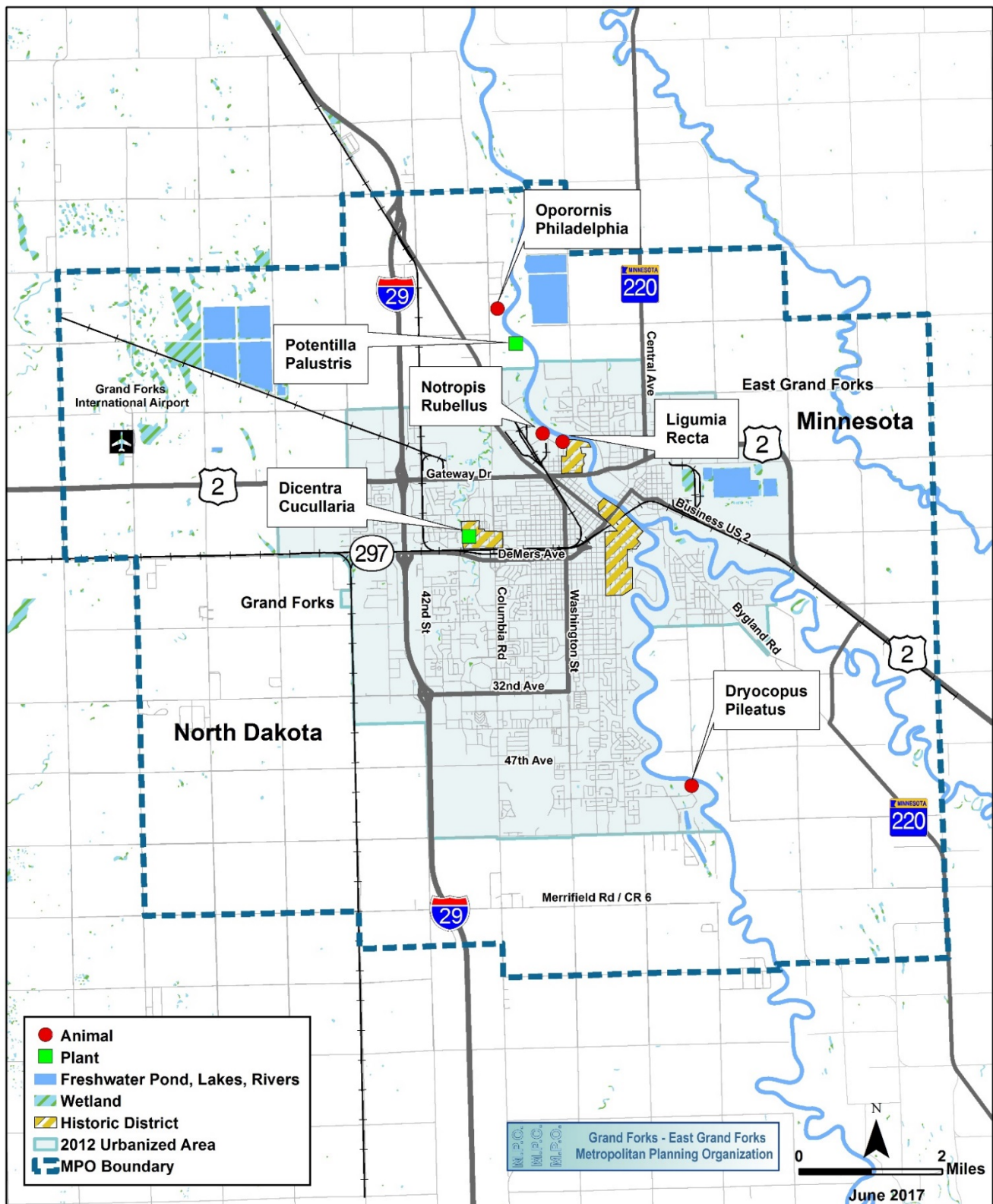
Table 7-18 details mitigation activities that will be considered by the GF/EGF MPO as projects move through the project development process. Sensitive environmental features identified in Figure 7-7 will need to be considered as Current Revenue Scenario projects identified in Appendix F move forward through future environmental review and project development processes.

Table 7-18: Environmental Mitigation Activities

Environmental Concern	Potential Mitigation Activities
Wetlands or Water Resources	Mitigation sequencing requirements involving avoidance, minimization, compensation (could include preservation, creation, restoration, in lieu fees, riparian buffers); design exceptions and variances; environmental compliance monitoring
Forested and Other Natural Areas	Avoidance, minimization; replacement property for open space easements to be of equal fair market value and of equivalent usefulness; design exceptions and variances; environmental compliance monitoring
Agricultural Areas	Avoidance, minimization; design exceptions and variances; environmental compliance monitoring
Endangered and Threatened Species	Avoidance, minimization; time of year restrictions; construction sequencing; design exceptions and variances; species research; species fact sheets; memoranda of agreements for species management; environmental compliance monitoring
Ambient Air Quality	Transportation control measures, transportation emission reduction measures
Neighborhoods, Communities, Homes, and Businesses	Impact avoidance or minimization; context sensitive solutions for communities (appropriate functional and / or aesthetic design features)
Environmental Justice (EJ)	Avoidance, minimization; engage EJ populations in the planning process; follow procedures in MPO's Environmental Justice Program Manual
Cultural Resources (historical properties, cemeteries, cultural areas, etc.)	Avoidance, minimization; landscaping for historic properties; preservation in place or excavation for archeological sites; Memoranda of Agreement with the State Historical Society of North Dakota and the Minnesota Historical Society; design exceptions and variances; environmental compliance monitoring
Parks and Recreation Areas	Avoidance, minimization, mitigation; design exceptions and variances; environmental compliance monitoring



Figure 7-7: Sensitive Environmental Features



Source: Grand Forks-East Grand Forks MPO



Environmental Justice

Executive Order 12898 directs Federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects, including the transportation planning process, on the health or environment of minority and low-income populations to the greatest extent practical and permitted by law. USDOT Order 5610.2(a) sets forth the USDOT policy to consider environmental justice (EJ) principles in all (USDOT) programs, policies, and activities. It describes how the objectives of EJ will be integrated into planning and programming, rulemaking, and policy formulation. The Order sets forth steps to prevent disproportionately high and adverse effects to minority or low-income populations through Title VI analyses and EJ analyses conducted as part of Federal transportation planning and NEPA provisions. Disproportionate is defined in two ways: the impact is predominantly borne by the minority or low-income population group, or the impact is appreciably more severe than that experienced by non-minority or non-low-income populations.

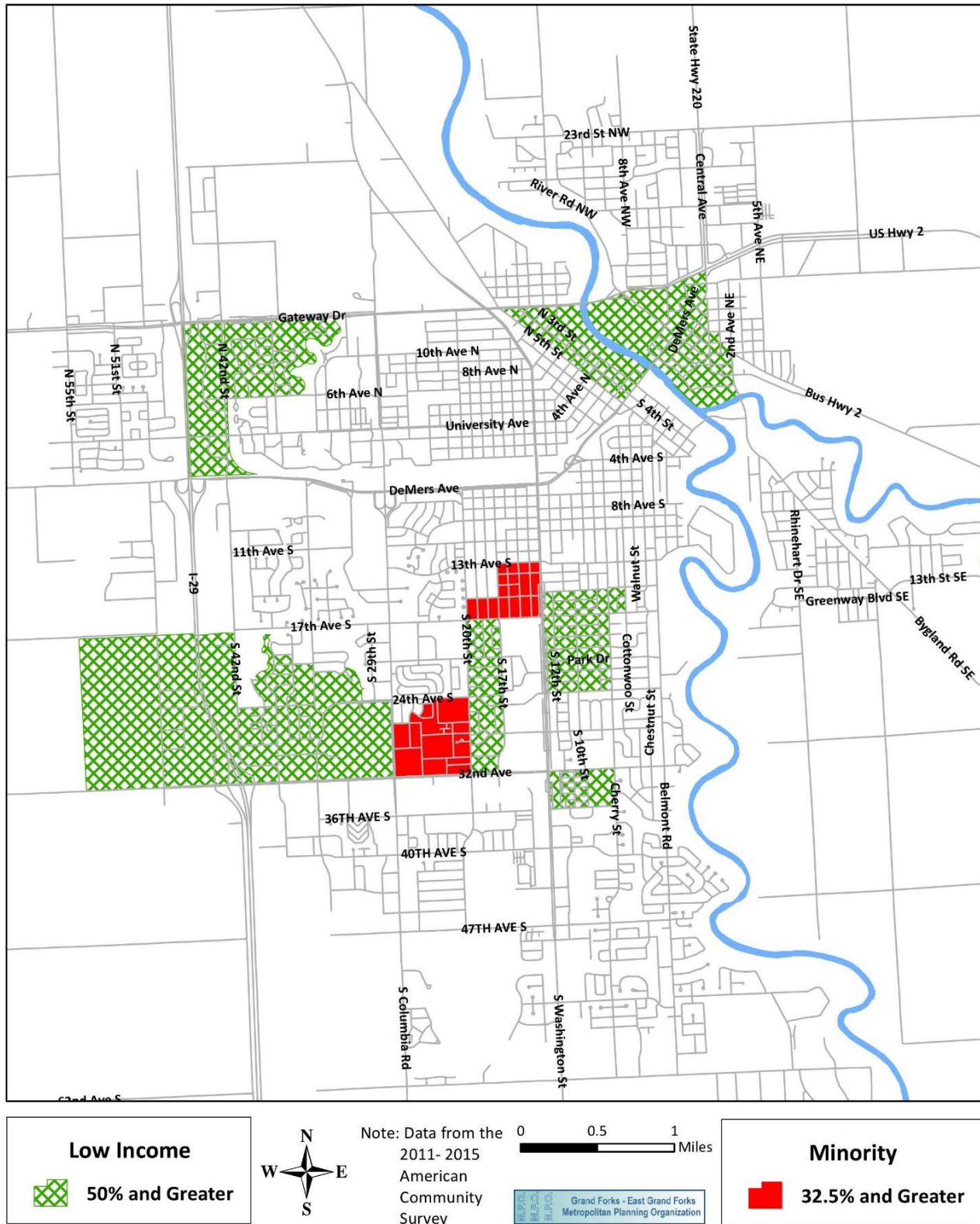
The MPO addresses Environmental Justice to ensure non-discrimination concerning enacted transportation-related laws, regulations, and policies. The MPO has developed an Environmental Justice Program Manual designed to provide guidance in meeting EJ mandates and structuring a public participation plan at the project or study level. To certify compliance with, and to address environmental justice, the MPO:

- Identifies residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed.
- Ensures that the long-range transportation plan and the transportation improvement program (TIP) comply with the tenets of Environmental Justice.
- Utilizes public involvement processes to eliminate participation barriers and engage minority and low-income populations in transportation decision making.

According to the most recent Environmental Justice Program Manual, minority populations in Grand Forks were most concentrated east of Columbia Mall between 24th Avenue South and 32nd Avenue South and north of Grand Cities Mall between 13th Avenue South and 17th Avenue South. As illustrated in Figure 7-8, concentrations of poverty greater than 50 percent are also located near the two shopping centers, as well as near both downtown areas. As illustrated in Figure 7-9, the fiscally constrained, Current Revenue Scenario projects are not concentrated in environmental justice communities. These areas will be evaluated further during the future project development process for the Current Revenue Scenario projects identified in Figure 7-9 and Appendix F.



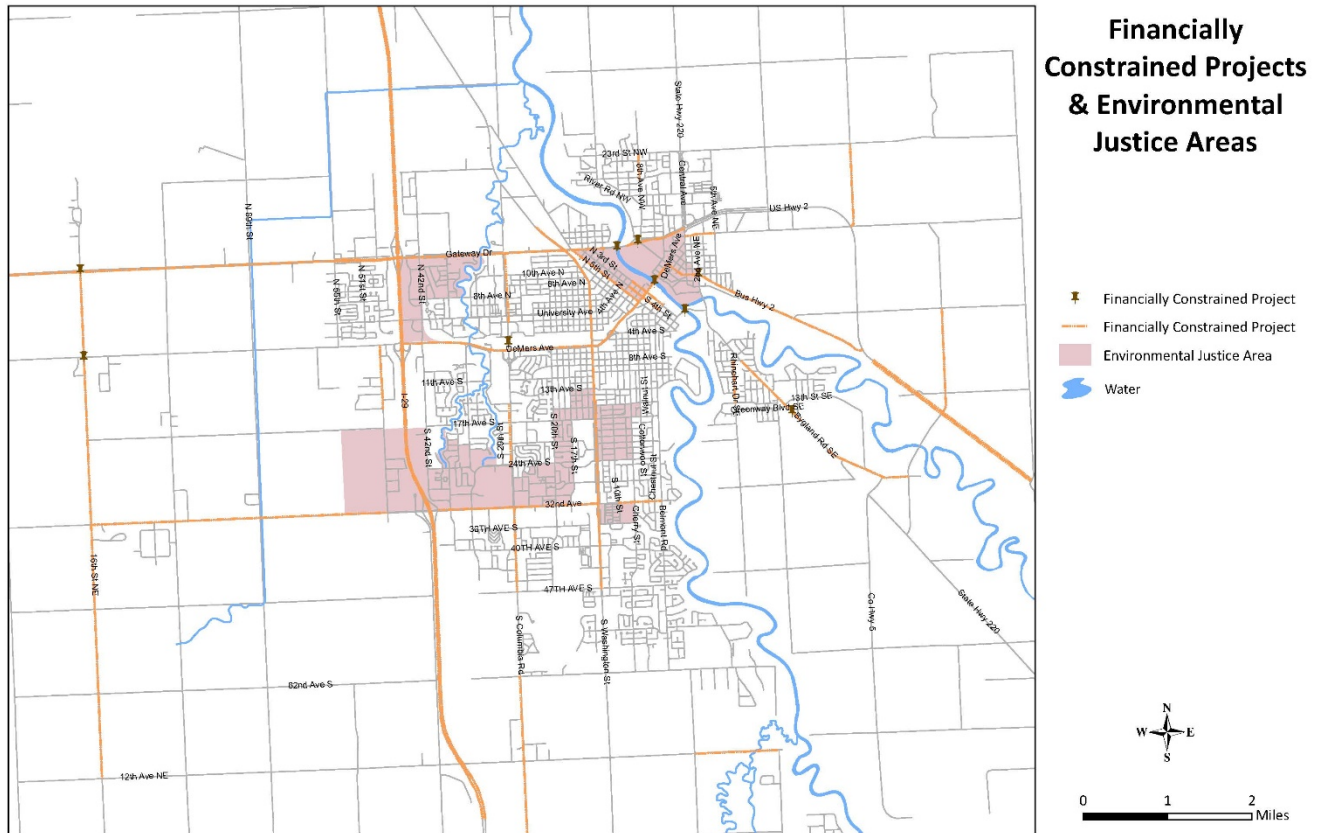
Figure 7-8: Environmental Justice Populations



Source: Grand Forks-East Grand Forks MPO



Figure 7-9: Environmental Justice Populations



Source: Grand Forks-East Grand Forks MPO Performance Based Planning

MAP-21 and FAST Act requires incorporation of performance based planning in the development of the Grand Forks – East Grand Forks MPO metropolitan transportation plan. The requirement in these US Laws defined that the Plan shall include, to the maximum extent practicable, a description of the anticipated effect of the Plan toward achieving the performance measures by linking them with the investment priorities.

Performance-based planning is an approach to applying performance management principles to transportation system policy and investment decisions. This approach provides a link between short-term management and long-range decisions about policies and investments that an agency makes for its transportation system. Performance-based planning is a system-level, data-driven process to identify strategies and investments. For MPOs, performance measures provide a nuanced means of assessing progress toward meeting the intent of the Plan.

MAP-21 and FAST Act place increased emphasis on performance management within the Federal Aid highway program, including development of national performance measures with targets set by State DOTs and MPOs. The Grand Forks-East Grand Forks MPO performance measures and targets are discussed in Chapter 3.

The 2045 Street/Highway Plan implements the now promulgated required national performance measures. The Plan integrates the safety plans developed by partner agencies, including each state's Strategic Highway Safety Plan and more localized strategic highway safety plans that apply state-level emphasis areas and strategies consistent with local context and intent to implement. The 2045 Plan also identifies projects for Highway Safety



Improvement Program (HSIP) funding (see Table 7-8 and Table 7-13). These projects are expected to have a positive impact toward meeting safety targets in North Dakota.

This plan also acknowledges the need to update plans that prioritize safety-related projects for HSIP funding. A concern with these safety plans, particularly on the Minnesota side, has been the lack of MPO inclusion in the safety planning process. The most recent Minnesota Strategic Highway Safety Plan greatly improved MPO engagement, but this practice has not carried forward with each respective District and/or County Safety plan update. Further, the Minnesota process for programming funds from the Highway Safety Improvement Program has historically neglected the active engagement of MPOs. Routinely, MnDOT solicits, vets and programs projects without involvement from Greater Minnesota MPOs. This plan recommends improvements to the HSIP project solicitation process, and efforts are underway to improve it.

The MPO regularly completes corridor specific studies. Safety is often one of the leading issues that create the need for the more in-depth analysis of the corridors transportation system. As a standard operating practice, the MPO conducts these studies through the lens of the needs of all users regardless of mode dominance. Lately, some specific studies on the Minnesota has led to adopting future improvement projects that should be prioritized for investment and amended into this Plan.

The MPO conducted a project identification and selection process to assist it in planning for projects that help the region meet its performance targets. Each possible project was reviewed through criteria pertinent to the project's likely funding source. Safety is also considered.

The 2045 Street/Highway Plan emphasizes projects that support State of Good Repair for pavement and bridges on the Interstate, non-Interstate National Highway System, and Federal Aid-Eligible System in North Dakota and Minnesota (see Table 7-4, Table 7-5, Table 7-6, Table 7-7, Table 7-10, Table 7-11, and Table 7-12). These projects are expected to have a positive impact toward meeting pavement and bridge condition targets in North Dakota and Minnesota.

The Grand Forks-East Grand Forks MPO understands it is in the early stages of developing a fully compliant, performance-based MTP. As multiple years of data is collected for the performance measures and their targets, the MPO will monitor performance and evaluate if trends are moving toward meeting the targets. The Grand Forks-East Grand Forks MPO commits to making adjustments to planning strategies to meet the performance targets if the desired results are not being met.