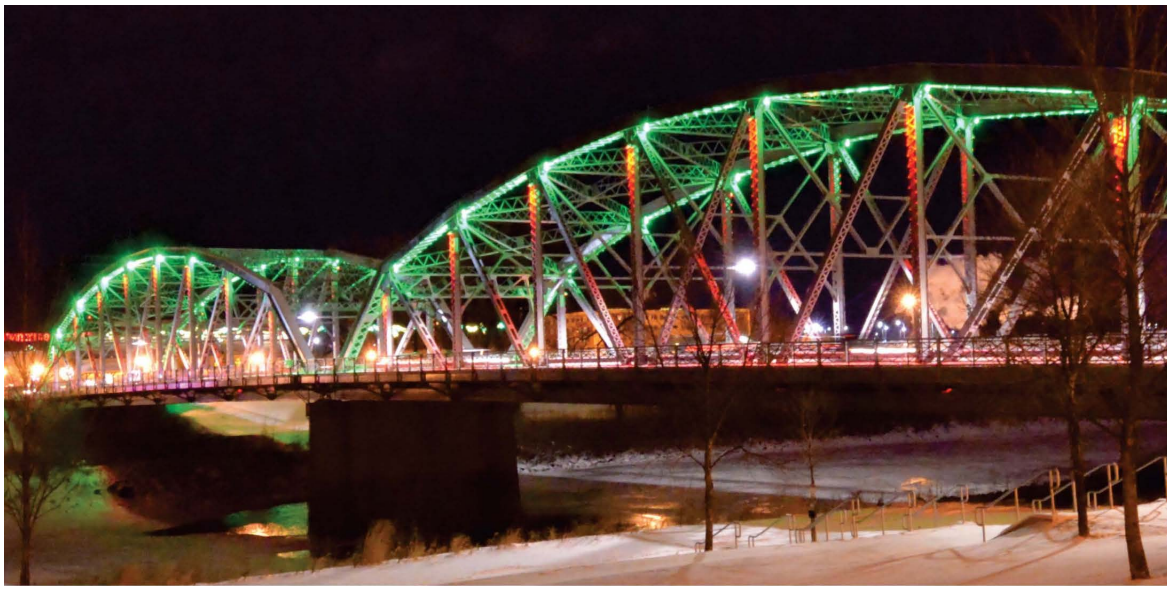
2045 Metropolitan Transportation Plan

Overcoming Barriers
Strengthening Connections



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Ensuring Opportunities
Planning One Community

M.P.O. M.P.O. M.P.O.

Grand Forks - East Grand Forks
Metropolitan Planning Organization

January 31, 2019

Overcoming Barriers Strengthening Connections

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Ensuring Opportunities Planning One Community

Grand Forks-East Grand Forks 2045 **Metropolitan Transportation** Plan

January 2019

Grand Forks-East Grand Forks Metropolitan Planning Organization

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The preparation of this document was funded in part by the United States Department of Transportation with funding administered through the North Dakota Department of Transportation, Minnesota Department of Transportation, the Federal Highway Administration, and the Federal Transit Administration. Additional funding was provided through local contributions from the governments of Grand Forks, East Grand Forks, Grand Forks County, and Polk County. The United States Government and the States of Minnesota and North Dakota assume no liability for the contents or use thereof.

A RESOLUTION ADOPTING THE YEAR 2045 METROPOLITAN TRANSPORTATION PLAN FOR THE GRAND FORKS - EAST GRAND FORKS METROPOLITAN AREA

WHEREAS, the U. S. Department of Transportation requires the development of a metropolitan transportation plan by a metropolitan planning organization for each urbanized area and area expected to have growth over a twenty-year period; and

WHEREAS, the Grand Forks-East Grand Forks Metropolitan Planning Organization (MPO) has been designated as the policy body with the responsibility of performing transportation planning in the Grand Forks - East Grand Forks Metropolitan Area; and

WHEREAS, the MPO is designated by the Governors of North Dakota and Minnesota as the body responsible for making transportation planning decisions in the Grand Forks -East Grand Forks Metropolitan Area; and

WHEREAS, the existing metropolitan transportation plan was adopted in 2008 and, as in accordance with 23 U.S.C. 134 and 23 CFR 450.322, is being updated to remain current, maintain a twenty-year horizon and comply with new requirements from FAST; and

WHEREAS, the metropolitan transportation plan, in accordance with 23 CFR 450.322, is multi-modal in scope and accounts for all travel modes in the four sections of the plan: Street & Highway, Transit, Pedestrian, and Bicycle; and

WHEREAS, a 2040 long range transportation plan was adopted in December 18, 2013; and

WHEREAS, the MPO has worked with the North Dakota Department of Transportation, which is its lead agency for metropolitan planning activities, to ensure compliance with FAST; and

WHEREAS, the metropolitan transportation plan, in accordance with 23 CFR 450.322, shall be financially constrained to demonstrate that proposed projects have existing and/or reasonably projected sources of funds; and

WHEREAS, the MPO followed its adopted Public Participation Plan to proactively involve the public early and often in the transportation planning process and held a public hearing at the appropriate time for each action regarding the Metropolitan Transportation Plan; and

WHEREAS, the By-Laws of the MPO allow the MPO Executive Board to take action upon adoption of the Bicycle and Pedestrian Element of the Metropolitan Transportation Plan sixty (60) days after said plan had been submitted to the representative city or sooner if the representative cities adopted the said plan prior to the 60 day period; and

WHEREAS, the Technical Advisory Committee of the MPO held public meetings on the proposed Metropolitan Transportation Plan; and

WHEREAS, the Planning Commission for Grand Forks, North Dakota, held a public hearing on January 2, 2019, on the proposed Bicycle and Pedestrian Element of the Metropolitan Transportation Plan; and

WHEREAS, the Planning Commission for East Grand Forks, Minnesota, held a public meeting on January 10, 2019, on the proposed Bicycle and Pedestrian Element of the Metropolitan Transportation Plan; and

WHEREAS, the City Council for East Grand Forks, Minnesota, held a public meeting on January 15, 2019, on the proposed Bicycle and Pedestrian Element of the Metropolitan Transportation Plan; and

WHEREAS, the City Council for Grand Forks, North Dakota, held a public hearing on January 22, 2019, on the proposed Bicycle and Pedestrian Element of the Metropolitan Transportation Plan; and

WHEREAS, the Executive Policy Board of the Grand Forks-East Grand Forks Metropolitan Planning Organization considered the actions taken by the local governmental agencies; and

NOW, THEREFORE, BE IT RESOLVED, by the Executive Policy Board of the Grand Forks - East Grand Forks Metropolitan Planning Organization adopts the proposed Year 2045 Bicycle and Pedestrian Element as presented with the following amendments:

1-23-19
Date

Clarence Vetter
Chairman

Earl Haugen,
Executive Director

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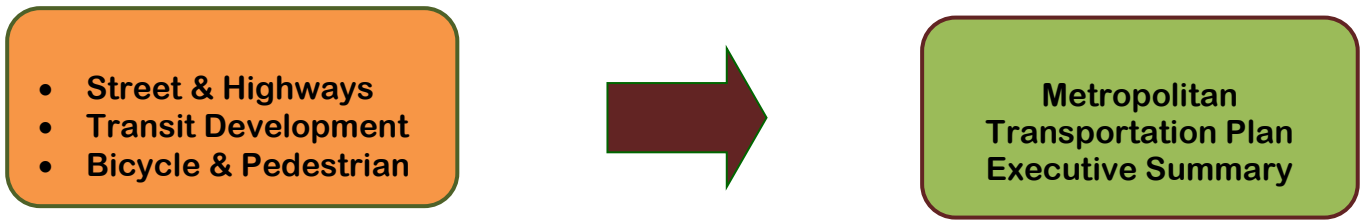
The Grand Forks/East Grand Forks (GF/EGF) Metropolitan Transportation Plan identifies existing and future needs for maintaining a robust regional, multimodal transportation system in the near- and long-term future. This plan was successfully developed through ongoing collaboration among Grand Forks, East Grand Forks, Polk County, Grand Forks County, North Dakota Department of Transportation (NDDOT), Minnesota Department of Transportation (MNDOT), the Cities Area Transit (CAT), the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), citizens and businesses throughout the region, and the Grand Forks-East Grand Forks Metropolitan Planning Organization. With input from these stakeholders, the Metropolitan Transportation Plan outlines and identifies outcomes and standards to advance the locally identified issues, visions, goals, and performance targets.

The Executive Summary that follows presents the modal elements of the region's multimodal transportation system, as illustrated in Figure 1. This accounts for changes in the metropolitan area since the last plan that was adopted in 2013. Actions and strategies outlined here are the Grand Forks/East Grand Forks Metropolitan Planning Organization's three modal plan elements summarized into this Executive Summary. Those three modal elements are the Street/Highway Plan (adopted December 2018), Transit Development Plan (adopted July 2017and amended in November 2018) and the Bicycle and Pedestrian Plan (adopted January 2019). The three documents work together to guide planning and funding for multimodal transportation in the Grand Forks/East Grand Forks metropolitan area. Figure 2 shows the Study Area.

The Grand Forks-East Grand Forks Metropolitan Transportation Plan (MTP) entails three elements:

Figure 1: MTP Elements



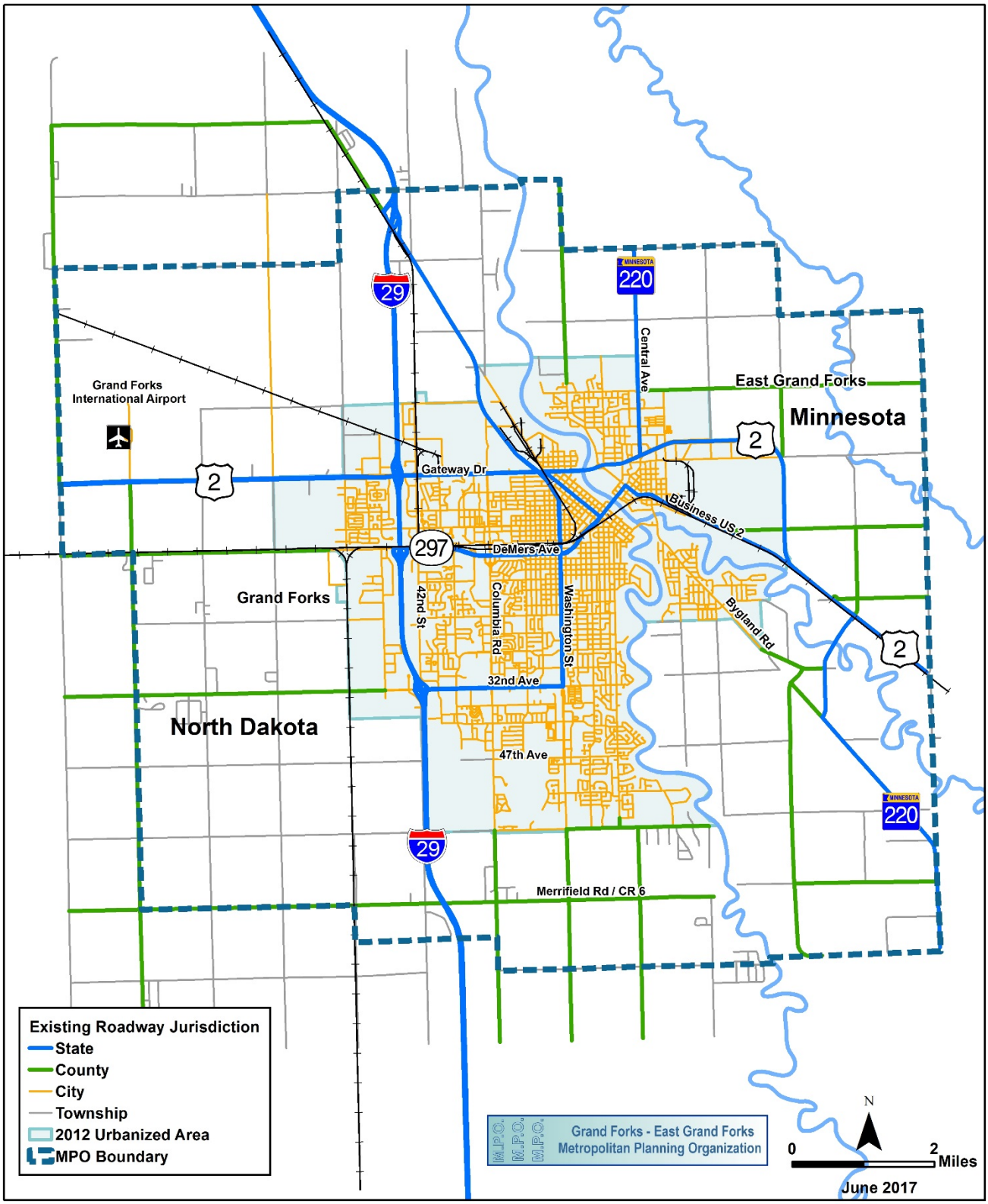
Fixing America's Surface Transportation Act (FAST Act)

This plan is structured to address the planning requirements in the FAST Act that advance a streamlined, performance-based, multimodal transportation system and planning process. Guiding principles of that legislation aim to improve safety, maintain infrastructure quality, reduce traffic congestion, and accordingly improve efficiency of the system and freight movements, while minimizing environmental impact and reducing delays in project delivery.

To be consistent with federal requirements, the GF/EGF MPO aims to:

- Utilize performance-based planning and programming focused on national transportation goals to improve transportation investment decisions and increase accountability of the Federal Highway Programs.
- Position programs within a streamlined and simplified program structure with a smaller number of broader core programs.
- Comply with federal prioritization of the National Highway System (NHS) and its maintenance.
- Identify "State of Good Repair" projects that improve ride quality or extend the life of a roadway, as opposed to expanding the system.

Figure 2: Grand Forks-East Grand Forks Study Area



Source: Grand Forks-East Grand Forks MPO

The Metropolitan Transportation Plan Update Process

The Grand Forks/East Grand Forks MPO leads the region's multimodal transportation planning process. This Plan is guided by goals and performance measures that grew out of community values. These objectives represent a wide range of social, technical, environmental, and economic factors that influence the region's transportation system.

Vision, Goals, Objectives, Standards, Performance Measures and Targets

The metropolitan transportation plan's (MTP) vision, goals, objectives, standards, performance measures and targets are critical in the planning process because they define the region's desired outcomes resulting from plan implementation. The Plan's vision, goals, objectives, standards, performance measures and targets were developed in coordination with North Dakota Department of Transportation (NDDOT), Minnesota Department of Transportation (MnDOT), the Federal Highway Administration, the Technical Advisory Committee (TAC), Executive Policy Board, and general public.

The Plan's goals align directly with the ten federal transportation planning factors, the federal livability principles and the national transportation performance goals. They also build on the goals, objectives, standards, performance measures, and performance targets adopted in the previous plan. Several goals, performance measures, and performance targets were updated to address requirements in the Fixing America's Surface Transportation Act (FAST Act), the most recent federal transportation reauthorization bill passed in 2015.

FAST Act Requirements

Federal law identifies seven (7) national performance goals (source: 23 USC § 150). Each Grand Forks-East Grand Forks goal area is consistent with one or more national performance goal; this alignment is shown in Table . The Grand Forks-East Grand Forks goals are not listed in order of priority. The national performance goals, in order of alignment frequency with the Grand Forks-East Grand Forks goal areas are:

- Freight movement and economic vitality – In alignment with ten (10) Grand Forks-East Grand Forks MPO goals
- System reliability – In alignment with nine (9) Grand Forks-East Grand Forks MPO goals
- Safety – In alignment with nine (9) Grand Forks-East Grand Forks MPO goals
- Infrastructure condition – In alignment with eight (8) Grand Forks-East Grand Forks MPO goals
- Congestion reduction – In alignment with eight (8) 2040 Grand Forks-East Grand Forks MPO goals
- Environmental sustainability – In alignment with seven (7) Grand Forks-East Grand Forks MPO goals
- Reduced project delivery delays – In alignment with six (6) Grand Forks-East Grand Forks MPO goals

The national performance goals are prescribed by law, and the MPO-identified objectives, measures, and metrics should not conflict with these national performance goals. Federal law creates flexibility for states and MPOs to define the exact means and methods used to track progress toward achieving locally identified outcomes. Each MPO is required to conduct a robust planning process that results in goals, objectives, measures, and metrics that are compatible with the national goals and are priorities for the local community. The MPO goals were designed to match local interests, while still supporting the national goals. The scope of each MPO goal was compared to each national performance goal. If there was any overlap in the scope of the MPO and the national goals, then it was noted that the federal goal was satisfied by a given MPO goal.

Table 1: Grand Forks-East Grand Forks Goal Areas and Alignment with National Performance Goals

MPO Goal Number	MPO Goal (also Federal Transportation Planning Factors)	MPO Goal Statement	National Performance Goal(s) Satisfied
1	Economic Vitality	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.	■ Congestion reduction ■ Freight movement and economic vitality ■ Reduced project delivery delays ■ Safety ■ System reliability
2	Security	Increase security of the transportation system for motorized and non-motorized uses.	■ Freight movement and economic vitality ■ Infrastructure condition ■ Safety ■ System reliability
3	Accessibility and Mobility	Increase the accessibility and mobility options for people and freight by providing more transportation choices.	■ Congestion reduction ■ Environmental sustainability ■ Freight movement and economic vitality ■ Infrastructure condition ■ Reduced project delivery delays ■ Safety ■ System reliability

MPO Goal Number	MPO Goal (also Federal Transportation Planning Factors)	MPO Goal Statement	National Performance Goal(s) Satisfied
4	Environmental/ Energy/Quality of Life	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.	▪ Congestion reduction ▪ Environmental sustainability ▪ Freight movement & economic vitality ▪ Infrastructure condition ▪ Safety ▪ System reliability
5	Integration and Connectivity	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.	▪ Congestion reduction ▪ Environmental sustainability ▪ Freight movement and economic vitality ▪ Infrastructure condition ▪ Reduced project delivery delays ▪ Safety
6	Efficient System Management	Promote efficient system management and operation by increasing collaboration among federal, state, local government to better target investments and improve accountability.	▪ Congestion reduction ▪ Environmental sustainability ▪ Freight movement and economic vitality ▪ Infrastructure condition ▪ Reduced project delivery delays ▪ System reliability

MPO Goal Number	MPO Goal (also Federal Transportation Planning Factors)	MPO Goal Statement	National Performance Goal(s) Satisfied
7	System Preservation	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.	■ Congestion reduction ■ Environmental sustainability ■ Freight movement and economic vitality ■ Infrastructure condition ■ Reduced project delivery delays ■ Safety ■ System reliability
8	Safety	Increase safety of the transportation system for motorized and non-motorized uses.	■ Congestion reduction ■ Freight movement and economic vitality ■ Infrastructure condition ■ Reduced project delivery delays ■ Safety ■ System reliability
9	Resiliency	Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.	■ Congestion reduction ■ Environmental sustainability ■ Freight movement and economic vitality ■ Infrastructure condition ■ Safety ■ System reliability ■ Resiliency

MPO Goal Number	MPO Goal (also Federal Transportation Planning Factors)	MPO Goal Statement	National Performance Goal(s) Satisfied
10	Tourism	Enhance travel and tourism.	▪ Environmental sustainability ▪ Freight movement & economic vitality ▪ Safety ▪ System reliability

The FAST Act also retained and strengthened federal emphasis on performance-based transportation planning. This performance-based approach is meant to improve accountability of federal transportation investments, assess risks related to different performance levels, and increase transparency. The FAST Act requires[1]:

- States
  - Undertake performance-based transportation planning that integrates standards and targets encompassing every national, statewide, regional and local entity
- Metropolitan Planning Organizations (MPOs)
  - Link the investment priorities contained in the Statewide Transportation Improvement Program (STIP) and Transportation Improvement Program (TIP) to achievement of performance targets.
  - Establish targets in the key national performance areas to document expectations for future performance, and document the performance targets and measures in the MPO's metropolitan transportation plan
  - Coordinate these targets with states to ensure consistency to the maximum extent practicable. Metropolitan planning organizations may adopt state-identified performance targets, or federal law allows MPOs to identify their own set of performance targets for the measures.
  - In their transportation plans, MPOs need to describe these performance targets, evaluate the condition and performance of the transportation system, and report on progress toward the achievement of their performance targets.
  - Integrate the MPO planning process and the goals, objectives, performance measures, and targets set by the states in the strategic highway safety plan, the highway asset management plan, and the State freight plan. This integration helps deliver performance elements as part of the MPO's investment decision-making processes. Federal rules do not require explicit integration of these elements in the

[1] Source: Federal Register. Vol 81, No. 103. May 27, 2016. Rules and Regulations. p.34051.

development of the MPO's long-range transportation plan (LRTP) nor the transportation improvement program (TIP).

- Identify how they will cooperatively implement these performance-based planning provisions with States. The MPO(s) and the State(s) must jointly agree on and document in writing the coordinated processes for the collection of performance data, the selection of performance targets for the metropolitan area, the reporting of metropolitan area targets, and the reporting of actual system performance related to those targets. The documentation must also describe the roles and responsibilities for the collection of data for the national highway system.

States or MPOs may also develop and report on additional measures; neither Minnesota nor North Dakota state statutes require MPOs to adopt state-level performance measures.

While there are federal requirements for performance-based planning, the federal rules focus on nationally-significant near-term measures and performance. Long-term performance and local priorities, like those addressed in an MPO's long-range transportation plan (LRTP), may be better addressed through additional performance measures and targets. Federal and state rules allow for this flexibility in the MPO LRTPs.

Vision

The vision for the Grand Forks – East Grand Forks MPO covers all modal elements for the region's transportation system.

"A community that provides a variety of complementary transportation choices for people and goods that are fiscally constrained."

The vision was crafted during the update process for the Transit and Pedestrian/Bicycle elements of the 2045 MTP, which involved input from the Technical Advisory Committee, Policy Board, and the general public.

Plan Goals, Objectives, Standards, Performance Measures and Targets

These goals, objectives, standards and performance measures were reviewed by GF/EGF MPO staff, staff from each state DOT, and the public. They generally reflect the needs and issues of the GF/EGF area. Additional elements of these performance measures include the provision of targets, action initiatives, and monitoring activities to ensure the next Metropolitan Transportation Plan update in 2024 understands past performance and builds upon it. The Grand Forks-East Grand Forks goals are not listed in order of priority.

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 2: Objectives and Standards for Goal 1 Economic Vitality

Objective	Standards
1. Coordinate land use and transportation planning, programming, and investments between agencies.	■ Strengthen and connect existing communities by focusing street and highway system expansion in areas that are contiguous to currently developed areas. ■ 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. ■ 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. ■ 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.
2. Enhance the area's economic competitiveness through the movement of goods and services.	■ Develop and maintain roadway connectivity that is appropriate for the facility type and land-use environment. ■ Protect operational capacity of interstate and state highways through the GF/EGF MPO area and support the growth of regional intermodal freight capacity.
3. Support efficient local and regional street and highway connections for freight and rail movement.	■ Participate in state and national freight planning efforts. ■ Build and maintain relationships with area businesses to increase the understanding of their freight needs. ■ Improve connections to freight terminals (e.g., air and multimodal), especially the last 1-2 miles of access. ■ 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. ■ Support integrated network of streets, roads, and highways that provide direct routes for freight and rail.
4. Consider economic development efforts in the transportation and programming process.	■ Invite economic development officials to collaborate in the transportation system alternatives analysis process provide documentation of the alternatives' screening process to local economic development officials for review. ■ Recognize and respond to economic changes at the local, regional, state and national level that influence the metro area's transportation system.

Objective	Standards
5. Provide transit service within 1/4 mile of residential areas and to major activity and employment centers.	■ None
6. Integrate economic development plans, programs and initiatives into the development of the transit planning process.	■ None
7. Improve the understanding of CAT among key economic development, community development and community building groups and organizations through periodic outreach and marketing.	■ None
8. Prioritize access to employment centers and commercial districts/main streets as critical connections that promote community and economic development.	■ Establish bicycle and pedestrian connections to businesses, schools and other walk or bike trip generators and destinations by prioritizing bicyclist and pedestrian flow patterns between different types of land uses. ■ Promote the bicycle and pedestrian system to attract and retain quality residents and commerce. ■ Promote a bicycle friendly workplace by supporting the installation and availability of showers, changing facilities, lockers, bicycle parking to actively promote commuter bicycling. ■ Promote the existing Greenway Trail System and the Red River State Recreation Area as facilities complementing the bicycle and pedestrian system as an exceptional feature of the Cities of Grand Forks and East Grand Forks; and as a way to attract and retain quality residents and commerce. ■ Recognize and consider legal and social challenges to connectivity such as land availability and environmental concerns in any prioritization process. ■ Provide pedestrian and bicycle transportation choices to increase access to nutritious food and health-related goods and services.

Table 3: Performance Measures and Monitoring Activities for Goal 1 Economic Vitality

Performance Measures	Performance Target
1. Land use and economic development initiatives consistent with the LRTP and TIP development initiatives consistent with the LRTP and projects.	▪ Ninety percent (90%) land use and economic development initiatives consistent with the LRTP and TIP projects.
2. Communication/coordination improvement between freight operators and transportation officials.	▪ Communication/coordination improvement between freight operators and transportation officials via minimum of semi-annual meetings.
3. Service Availability	75% of the service area population ▪ within ¼ mile of transit route.
4. Service Availability	75% of service area population covered ▪ by service area.
5. Estimated % of residences within a ¼ mile of walking distance from an existing pedestrian facility	Increase to 100% in next 5-years
6. Estimated % of residences within 2-miles biking distance of an existing bicycle facility	100% of residences in both cities are inside 2-miles buffers.
7. Estimated % of jobs within a ¼ mile of walking distance from an existing pedestrian facility. Except Airport	GF: Increase to 100% in 5-years EGF: TBD
8. Estimated % of jobs within 2-miles biking distance of an existing bicycle facility	99.9% of jobs in both cities are inside 2-miles buffers. Except GF Airport

Action Initiatives

- Document local, state and national freight initiatives that influence the region's transportation system.

Monitoring Activities

Annually

- Track growth corridors through building permits and platting activities.
- Map the locations of major employment centers, including existing and proposed developments, and identify types of transportation available.
- Document locations and conditions of current freight routes.
- Evaluate the LRTP's effectiveness and consistency with new development and economic development decisions.

- Hold at least two joint meetings annually between the freight community and transportation agencies.
- Track number of new developments with multimodal connections.

EVERY TWO YEARS

- *Assess the accessibility & proximity of pedestrian, bicycle, and transit infrastructure and services to origins and destinations (e.g., employment, shopping, recreation, entertainment, etc.).*
- *Assess the number of jobs located within ¼ mile walking distance from sidewalks or 2 miles biking distance from any bikeway facility.*
- *Link investments in land use and transportation as they account for Office, Retail and Other Completed Annual Development (ft²).This measure tracks office, retail, residential, hotel, and other completed developments by square footage in the area's bicycle corridors.*

Commercial developments are attractors of Shopping-based trips. These sorts of trips depend on several factors:

- Number of Retail Workers
- Type of Retail Available
- Area of Retail Available
- Location

Among others, these factors serve to explain number of trips and corresponding mode share. The objective is to measure the amount of land consumed by new pedestrian and bicycle-related transportation infrastructure and/or new development served by new transportation infrastructure. Therefore, generate maps and other visualization tools to illustrate number of jobs (employment activities) as they related to (distance from, travel time, densities, and number of destinations) located within walking and biking distances and radius from employment and destinations supporting economic development.

EVERY FIVE YEARS

- Evaluate the LRTP's effectiveness and consistency with local comprehensive plans.
- Track the increase in households or jobs by TAZ to identify potential employment and residential growth areas and to assist in the prioritization of future transportation projects.
- Conduct a freight assessment of the GF/EGF MPO area and update the freight section of the LRTP.

Goal 2: Security

Goal statement: **Increase security of the transportation system for motorized and non-motorized uses.**

Table 4: Objectives and Standards for Goal 2 Security

Objective	Standards
1. Identify and maintain security of critical street and highway system assets.	■ Support improvement projects that do not compromise the security of identified critical street and highway assets. ■ Evaluate and manage the security of the transportation network, especially in critical areas. ■ During security threats or events, coordinate traffic operations consistent with the Grand Forks-East Grand Forks Bridge Closure Management Plan.
2. Support state and regional emergency, evacuation, and security plans.	■ Incorporate state and regional emergency, evacuation, and security plans into transportation plans, project development, and project selection processes. ■ Develop an implementation plan that responds to various disaster events that might occur within the region including evacuation routes and contingency planning. ■ Coordinate efforts with local emergency/security/hazardous materials groups.
3. Identify and incorporate state and regional emergency, evacuation and security plans into transportation plans and TIP project selection.	■ None
4. Ensure all applicable employees undergo incident response training.	■ None
5. Identify and implement programs to improve the security for both the users and the existing bicycle and pedestrian facilities.	■ Provide a forum for security/safety agencies to coordinate surveillance and strategies that will prevent, reduce the impact of harmful activities on the components of a multi-modal transportation system. ■ Develop measurable data points to evaluate the security of the on-road and off- road facilities in critical areas of the bicycle system and pedestrian network. ■ Continue encouraging police on bikes program to patrol bicycle and pedestrian facilities to enhance system's and user's security.

Table 5: Performance Measures and Monitoring Activities for Goal 2 Security

Performance Measures	Performance Target
1. Blockage of emergency transportation routes.	▪ 75 percent of emergency transportation routes remain unblocked.
2. Incident clearance time.	▪ Clearance time for federal aid eligible route incidents under three year average of 30 minutes.

Action Initiatives

- Identify and map emergency transportation routes.
- Maintain coordination with regional/emergency/security/hazardous materials movement plans and personnel.
- Refine and update any GF/EGF MPO transportation security plans or studies.
- Track at least every year, every two years and at least every five years the installation and proper functioning of the following elements of the bicycle system and pedestrian network:
  - Number of street lights installed
  - Number of hours spent by police on bicycles annually (only if the Police Departments feel that this performance measure is reasonable in their eyes)
  - Number of intersections with traffic signal preemption for emergency vehicles
  - Number of intersections with backup power

Monitoring Activities

Annually

- Collect traffic incident response and clearance times.
- Collect detailed flood/emergency traffic incident information (where, when, why).
- Map future roadway projects, both capacity expansion and state of good repair, in comparison to flood prone, low lying, future land use, and critical/sensitive environments.

EVERY TWO YEARS

Sidewalk Inspections are an important tool to assure pedestrian's walkability, accessibility and mobility. It is suggested, that Walkability Audits or similar activities be undertaken by Local government's staff, in cooperation with related stakeholders, including MPO staff to:

I. To document and visualize the presence/absence/condition of the sidewalk network and bicycle system. Walkability Audits or Checklist or similar tools available may serve to support unbiased examination /evaluation of the walking and biking environment.

II. To identify concerns for pedestrians and bicyclists related to the safety, access, comfort, and convenience of the environment. In addition to identifying problem areas, an audit can be used to identify potential alternatives or solutions (such as engineering treatments, policy changes, or education and enforcement measures)."

EVERY FIVE YEARS

- Evaluate coordination with regional/emergency/security/hazardous materials movement plans and personnel.

Goal 3: Accessibility and Mobility

Goal statement: **Increase the accessibility and mobility options for people and freight by providing more transportation choices.**

Table 6: Objectives and Standards for Goal 3 Accessibility and Mobility

Objective	Standards
1. Mitigate excessive travel delays.	■ Evaluate all new roadway construction and roadway reconstruction for viability of fiber installation to support future interconnection of traffic signals. ■ 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. ■ Identify, map, report, and regularly update corridor congestion levels in the MPO area using volume, capacity, level of service, and amount of delay. ■ Consider and implement as appropriate innovative intersection improvements, such as roundabouts, that do not stop cross traffic.
2. Maintain an acceptable level of service for all streets and intersections during peak hours.	■ Strive to deliver level of service C or better at intersections, including peak travel periods (with the understanding that local and state agencies accept a lower level of service D threshold for determining deficiencies at intersections). ■ 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.
3. Consider advances in autonomous vehicle and connected vehicle technology in the transportation planning and programming processes.	■ Participate in national and state autonomous vehicle and connected vehicle planning efforts. ■ Support implementation in autonomous vehicle and connected vehicle technology that collectively provides increased transportation options for people and freight. ■ 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.
4. Increase ridership on the Fixed Route system through improved information availability and service quality.	■ None
5. Manage system demand between Fixed Route and Demand Response system	■ None

Objective	Standards
through eligibility screening and better coordination with hand demand users.	
6. Operate 40 percent of fixed routes at 30-minute headways.	■ None
7. Encourage transit travel time to be competitive with auto, no more than three times auto travel.	■ None
8. Provide a complete bicycling and pedestrian network that connects to destinations and other transportation modes and facilities (e.g., remove barriers, add crossings, fill gaps, and connect spurs to existing networks).	■ Provide connections that meet pedestrian's and bicyclist's expectations (continuity, directness, convenience, and linkages with other routes) when designing, extending, or improving pedestrian system and bicycle networks. ■ Identify and rank existing gaps in the pedestrian network and bicycle system to prioritize filling system's gaps. ■ 3.1.3 Improve bicyclist and pedestrian way finding signage. ■ 3.1.4 Improve bike and pedestrian maps to facilitate user's access, connections, mobility and regular enjoyment of the system. ■ 3.1.5 Recognize and consider social, financial and legal challenges.
9. Enhance existing pedestrian and bicycle infrastructure to address the unique mobility, access, and connectivity needs of bicyclist and pedestrians and other non-motorized user's in local neighborhoods and communities.	■ 3.2.1 Support coordination on best practices and options to advance inventories, condition assessments, in-fills and repairs of existing pedestrian network and bicycle system's facilities. ■ 3.2.2 Follow FHWA and ADA requirements when retrofitting existing transportation facilities where pedestrian and/or bicycle access to bridges, roadways, terminals and access points is limited; alternative options and safe and convenient connections are provided for the betterment of pedestrian and bicycle users.
10. Increase access to the sidewalk network and bicycle's system facilities for all users and assist them in ensuring mobility, well-being and quality of life without undue burden placed on any community.	■ 3.3.1 Support and develop multimodal connections that provide equitable access to goods, services, opportunities and destinations. ■ 3.3.2 Identify and work towards the elimination of physical barriers and system's gaps to walking and biking in transportation disadvantaged communities. ■ 3.3.3 Identify physical and demographic local and other mobility, planning, connectivity barriers that may impact people's ability to walk or bike.

Table 7: Performance Measures and Monitoring Activities for Goal 3 Accessibility and Mobility

Performance Measures	Performance Target
1. Interstate truck travel time reliability	■ For 2020 and 2022, a ratio of 1.5 or less when comparing the 95th percentile and 50th percentile truck travel times in five different time periods throughout the day on the Interstate
2. Interstate travel reliability	■ For 2020 and 2022, 90% of person-miles traveled on the Interstate are reliable
3. Non-Interstate travel reliability	■ For 2020 and 2022, 85% of person-miles traveled on the non-Interstate National Highway System are reliable
4. Span of Service for Fixed Route	■ 18 hours a day for six days a week.
5. Span of Service for Demand Response	■ 18 hours a day for six days a week.
6. Service Frequency	■ 30-minute headways on 40% of routes.
7. Ridership on Fixed Route	■ Increase ridership 5% per year.
8. Ridership on Demand Response	■ 5% reduction in three years; 10% in 5 years.
9. Transit-Auto Travel Time Difference	■ Transit travel time should be no more than 3 times auto travel time.
10. Number of ADA curb ramps installed into existing sidewalks / shared use paths annually & every five years	■ EGF: After 10 years, 40% of accessibility features that were constructed after January 26, 1991, would be ADA compliant. ■ GF: 44 Ramps Retrofitted /Year
11. Miles of sidewalk installed annually	■ EGF: Install at least 0.25 Miles/Year or 1.25 Miles in five years. ■ GF: 1.0 miles of new/repaired sidewalks (GF) per year for the next five years.
12. Miles of proposed bicycle facilities installed annually	■ GF: Build 2-Miles per year or 10 Miles of planned Bicycle Facilities in the next five years ■ EGF: Build 0.5 Miles per year or 2.5 Miles of planned Bicycle Facilities in the next five years
13. Commute Mode Share	■ Increase Commuting Share by 25% in next five years by 5% per year by Mode for Grand Forks at Existing: Bicycle 1.0 =1.25; Walked 4.1=5.1 East Grand Forks at Existing: Bicycle 0.1 =0.125; Walked 2.0 =2.5

Action Initiatives

- Expand and maintain implementation of traffic counting method utilizing cameras at signalized intersection.

- Update Metropolitan Intelligent Transportation System Strategy Plan and Regional Architecture.
- Consider the characteristics of the performance measures described to measure Access to Community Destinations (Goal 1) and inventory data required local jurisdictions and related stakeholders should maintain an inventory of sidewalk facilities, signalized intersections, pedestrian signals, and audible signals to increase the safety of sidewalk and roadway users, including children and those members of vulnerable populations.

Monitoring Activities

Annually

- Track percent of roadways that are regularly congested during weekday and peak-hour periods.
- Evaluate average commute times.
- Assess travel times on key corridors.
- Conduct turning movement counts at key intersections identified in a current study or identified with possible delay of service.
- Evaluate LOS.
- Track at least every year, every two years and at least every five years bicycle and pedestrian system access to key local destinations – including transit, schools, home/work, Greenway trail, and commercial destinations by reporting on the condition of the following elements:
    - Number of new ADA curb ramps installed annually
    - Number of ADA curb ramps retrofitted into existing sidewalks/shared use paths annually
    - Miles of sidewalk installed annually
    - Miles of bicycle facilities installed annually
    - The assessment should consider the requirements outlined by the Americans with Disability Act (ADA) for connecting pedestrian infrastructure (including sidewalks and pathways), to be equitably accessible for persons with disabilities and/or mobility devices. These measures are a requirement of an ADA right–of-way Transition Plan that each agency must have and maintain.

EVERY TWO YEARS

Elaborate a plan to complete all necessary curb ramps, and report on progress toward ADA compliance. Finding results will be communicated to decision-makers and stakeholders through the Performance Measure Report produced by MPO staff.

Measure reliance on the Single-Occupancy Vehicle (SOV) to determine typical household expenditures in transportation and other data sources used to measure mobility.

Using housing, employment, and transportation data, -if possible- measure the total number of jobs that may be accessed within a ¼ mile of walking distance or 2-mile biking distance of existing or planned pedestrian and or bicycle facilities.

EVERY FIVE YEARS

- Track the volume/capacity ratios, level of service, and the amount of delay on key corridors.
- On a ten-year basis, evaluate mobile phone network origin-destination data to track trip distance, purpose, etc.; and compare against outward growth.
- Evaluate Transportation Improvement Programs (TIP)/State LRTP projects to determine their effectiveness in supporting accessibility and mobility.
- Local jurisdictions and related stakeholders should maintain an updated inventory of sidewalk facilities, signalized intersections, pedestrian signals, and audible signals to increase the safety of sidewalk and roadway users, including children and those members of vulnerable populations.

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 8: Objectives and Standards for Goal 4 Environment/Energy/Quality of Life

Objective	Standards
1. Avoid, minimize, and/or mitigate adverse social, environmental, and economic impacts resulting from existing or new transportation facilities.	■ Initiate corridor preservation and right-of-way acquisition procedures, to strengthen communities and avoid or minimize significant social, environmental, and economic impacts. ■ Incorporate elements of the Environmental Justice (EJ), Title IV and Limited English Proficiency (LEP) plans into the GF/EGF transportation planning process. ■ Prioritize transportation improvements that reduce existing transportation impacts on the environment through context sensitive solutions. ■ 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.
2. Maintain and improve quality of life along streets and highways.	■ 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. ■ Identify and avoid, minimize, and mitigate the impact that transportation and development projects have on historical sites and areas of cultural or historical significance. ■ 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.

Objective	Standards
3. Maintain and improve regional air quality.	■ 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. ■ Evaluate air quality monitoring on a regular basis and incorporate mitigation strategies in all transportation and land use plans. ■ Conduct a regional Greenhouse Gas (GHG) Inventory. ■ Recognize the role of transportation choices in reducing emissions and support state and regional goals for reducing greenhouse gas and air pollutant emissions.
4. Avoid, minimize and/or mitigate adverse social, environmental, and economic impacts resulting from existing or new transportation facilities by incorporating elements of the Environmental Justice, Title VI and Limited English Proficiency plans.	■ None
5. Integrate CAT into development of quality of life initiatives such as updates to Downtown Vibrancy Report or other community livability efforts.	■ None
6. Integrate CAT as a consideration into future updates to the UND Climate Action Plan.	■ None
7. Increase alternate fuel vehicles in the CAT fleet.	■ None
8. Promote walking and biking to help achieve public health goals to improve air quality, and increase access to physical activity and healthy food to help reduce the risk of chronic diseases.	■ Promote the use of the existing pedestrian network and bicycle system as an opportunity to help reduce emissions and traffic congestion. ■ Promote the use of the existing pedestrian network and bicycle system as an opportunity to help increase current level of bicycling and walking mode shares. ■ Promote “zero emission” technological innovations that increase interest in walking and biking, such as software applications, as well as, “zero emission” bikes, mobility devices and bike-share programs.
9. Reduce travel time and improve access jobs and community destinations.	■ Improve walking and cycling conditions on the existing bicycle system and pedestrian network. ■ Promote cycling activities and walking commute campaigns to highlight number of workers and worksites with the highest commutes by non-motorized modes.

Objective	Standards
10. Promote walking and biking to help achieve local, regional, state, and federal environmental goals to reduce vehicle miles traveled, reduce greenhouse gas emissions, and improve air quality.	■ Prioritize work with local jurisdictions to assess infrastructure investments and transportation option programs that encourage walking and biking for short and moderate distance trips. ■ Communicate the value of walking and biking and their relationship to health outcomes. ■ Provide pedestrian and bicycle transportation choices to help people improve their diet with access to healthy, nutritious food, healthy goods and services.
11. Support the implementation and promotion of a Bike Share program to increase mobility options and access to destinations throughout the community.	■ Support Bike Share as an amenity to improve access to destinations such as the Downtown and UND. ■ Help promote Bike Share as a way to attract business investment, talent retention, and tourism to the community. ■ Support Bike Share as a mobility option to improve access to transit and destinations.
12. Strengthen the integration of walking and bicycling into community planning to enhance livability, health, transportation, the environment, and economic development.	■ Update City policies and ordinances to foster desired walking and biking outcomes. ■ Encourage local land use policies and practices that support increased bicycling and walking and add to the overall livability and vitality of communities. ■ Continue delivering training activities to educate stakeholders including staff and leadership on the benefits of active transportation to our community. ■ Improve local standing on the Bicycle Friendly Community Program, and work toward meeting the required attributes that make a community bicycle friendly. ■ Initiate process to apply for to the Walkable Friendly Community Program, and work toward meeting the required attributes that make a community walkable friendly.
13. Assure transportation disadvantaged communities are served and included in decision making.	■ Utilize mapping tools, Census data, and/or other information sources to identify underserved areas, looking at demographic characteristics to assess transportation needs associated with disadvantaged communities. ■ Encourage Safe Routes to School projects (both education and infrastructure) to address bicycle and pedestrian needs near “Title 1” designated schools. ■ Identify physical barriers and system gaps to walking and biking in the system; particularly, in Environmental Justice communities. ■ Encourage people from all walks of life to participate in transportation decision-making.

Table 9: Performance Measures and Monitoring Activities for Goal 4 Environment/Energy/Quality of Life

Performance Measures	Performance Target
1. Transportation-related CO2 emissions.	▪ By 2045, reduce transportation-related CO2 emissions by 10 percent below 2010 levels. A reduction of 17,579 tons of transportation- related CO2 emissions is needed every five years.
2. Time/cost of project delivery.	▪ Reduce the time/cost of project delivery by 20 percent.
3. Population characteristics such as low income, minority percentage, gender, disabled percentage and percentage having Limited English Proficiency (LEP)	▪ Maintain EJ, Title VI, LEP plans to ensure they reflect current and future demographics, as well as community needs
4. Percent of transportation-disadvantaged population within a 2-miles biking distance to an existing bike path, or shared use path.	▪ 100% of Environmental Justice population in both cities is inside 2-miles buffers.
5. Percent/Increase/ Decrease of walking trips	▪ Increase by 550 (15% number of bicyclists and pedestrians) on the Greenway
6. Percent increase/decrease of bicycle trips	▪ Increase by 30 (10% annually) –in the next five years- the number of Elementary students biking or walking to school as measured at the Bike-Walk to School Day

Action Initiatives

- Reach agreements/MOUs on linking the planning process with the environmental permitting to reduce the time/cost of project delivery.
- Improve livability by applying measures such as:
  - Context sensitive design including matching design speeds, traffic calming elements, lane widths, and non-motorized elements to surrounding land uses on roadways and bridges
  - Delivering integrated street/highway construction projects that address bicycle, pedestrian, transit, and other infrastructure elements in one construction project

- Coordinating transportation construction projects to avoid simultaneous construction on facilities that serve as alternate routes

Monitoring Activities

Annually

- Monitor the percent of transportation investment in EO #12898 Environmental Justice census tracts and evaluate any disproportional impacts as defined EO #12898.
- Evaluate the effectiveness of traffic calming measures.
- Evaluate EJ, Title VI, and LEP plans' effectiveness in supporting the GF/EGF MPO's transportation planning process.
- Distribute information through PSAs, Public Presentations, and awareness campaigns.

EVERY TWO YEARS

Regularly monitor and evaluate the implementation of strategies suggested to promote Active Transportation modes of transportation as they help pedestrian and bicyclists to meet their daily exercise and transportation needs.

In cooperation with relevant local government staff and stakeholders support health coalitions and community stakeholders in their activities to assess the impact of transportation on health outcomes.

EVERY FIVE YEARS

- Evaluate sustainability principles and their effectiveness with TIP projects.
- Conduct a greenhouse gas inventory of transportation related emissions.
- Update EJ, Title VI and LEP plans.
- Evaluate timeline from planning process to delivery of transportation projects to determine linkage between planning and environmental permitting.
- Maintain a list and location of environmentally sensitive properties.
- Evaluate whether agreement/MOUs were reached.
- In cooperation with relevant local government staff and stakeholders, support health coalitions and community organizations in their efforts to establish partnerships to regularly assess and quantify the health impact of physical activity attributable to transportation activities whether for economic, recreational or leisure purposes. Stakeholders may choose the most appropriate measure to represent progress. According to the Transportation Health Impact Analysis (HIAs), some strategies recommended to assess the impact of transportation on health outcomes include:
    - Encourage Safe Routes to School programs to enable children to walk and bike to school safely.
    - Construct a connected network of multi-use trails.
    - Accommodate all roadway users with comprehensive street design measures such as "complete streets," including sidewalks, bicycle lanes, and share-the-road signs that provide safe and convenient travel for all users of the roadway.

- Separate motor-vehicle traffic from non-motorized traffic with physical barriers, such as the construction of bicycle boulevards.
- Prioritize infrastructure improvements near transit stops and public transportation stations.
- Provide safe and convenient bicycle and pedestrian connections to public parks and recreation areas.
- Promote safe roadway crossing through use of small block sizes, pedestrian refuge islands, and cross-walks.
- Provide streetscape amenities such as benches, landscaping, lighting, and public art.
- Encourage way-finding with signs, maps, and landscape cues to direct pedestrians and bicyclists to the most direct route.
- Encourage bicycle parking at workplaces and transit stops.
- Encourage the development of street-level shopping and restaurants along pedestrian and bicycle routes.
- Educate bicyclists and pedestrians on state and local laws, as well as on safe practices.
- Most of these proposed strategies are included in the current Element update as standards to achieve established goals and objectives.

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 10: Objectives and Standards for Goal 5 Integration and Connectivity

Objective	Standards
1. Effectively coordinate transportation and land use by promoting the sustainability and livability principles, goals, and objectives from local land use plans.	■ Identify priority corridors and nodes for infill development, densification, or transit-oriented development. ■ Increase the use of multi-modal transportation by providing additional transit service and reducing bicycle/pedestrian network gaps. ■ Promote transportation improvements that support access to employment centers, especially those that provide a mix of employment opportunities (e.g. jobs and income levels). ■ Promote higher land use densities.
2. Provide a balanced mix of local, collector, and arterial streets to help meet local and regional travel needs.	■ Map and update street and highway functional classification based on consistency with adjacent land uses, street/highway design, road authority jurisdiction, and use. ■ Map and invest in the Minnesota Critical Urban Freight and NDDOT Strategic Freight corridors. ■ 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. ■ Regularly update and implement access management guidelines for the region's street and highway system.
3. Expand transit service hours to better serve existing and future potential users.	■ None
4. Improve bus stop infrastructure to include shelters, bicycle parking and pedestrian amenities where warranted.	■ None
5. Improve access to transit via sidewalks, multi-use paths and dedicated bicycle facilities around transit stops.	■ None
6. Ensure transit stops are accessible for all pedestrians and bicyclists.	■ None
7. Engage in coordinated outreach with key agencies and consortiums to better coordinate Demand Response	■ None

Objective	Standards
services with social and human service providers.	
8. Train employees on customer service to minimize passenger complaints	■ None
9. Invest in bicycle and pedestrian routes that improve connectivity and access to community destinations.	■ Provide direct and convenient connections to residential areas and schools, work sites, neighborhood shopping, and transit stops. ■ Sidewalk Gaps in Urban Areas: Along properties with deficient pedestrian accommodations, and where redevelopment is not expected to take place within five years, continuous pedestrian passage should be provided by the local jurisdictions in advance of complete redevelopment.
10. Improve access to transit, via sidewalks and walkways around transit stops, designated on-road and off-road bike routes.	■ Build and maintain partnerships with Cities Area Transit Agency to facilitate network connections with non-motorized travelers. ■ Coordinate with Cities Area Transit Agency to ensure that an existing and planned transit service is integrated in facility design and identify opportunities to remove physical barriers for non-motorized transportation in access to transit and at destinations. ■ Ensure transit stops are accessible for all pedestrians and bicyclists, including those with mobility and visually impaired disabilities, to reach their destinations. ■ Support pedestrian and bicycle routes connections to transit and to other modes of transportation and their facilities. ■ Support “first and last mile” connections to improve access to transit for people who walk and bike, to facilitate a seamless and convenient travel experience, and to attract more transit riders. ■ Ensure that opportunities to remove physical barriers for pedestrians and bicyclist in access to transit facilities are identified when improving the pedestrian network and bicycle system.
11. Promote complete streets and the application of context-sensitive complete streets treatments, including during construction and rehabilitation of new and existing facilities and networks.	■ Consider adopting a Complete Street Policy to balance the competing needs of different transportation modes within the unique contexts of each roadway. ■ Support best practices for complete streets, and initiate a technical assistance program to help local agencies develop street designs that are sensitive to their surroundings and context. ■ Take steps to improve crosswalks, transit stops, and along main access routes to transit with higher priority for environmental justice communities.

Table 11: Performance Measures and Monitoring Activities for Goal 5 Integration and Connectivity

Performance Measures	Performance Target
1. Daily vehicle miles traveled	■ By 2045, reduce daily vehicle miles traveled per capita by 10 percent below 2010 levels. A reduction of approximately 2,885 daily vehicle miles traveled is needed every year.
2. Service Hours per Capita for Fixed Route	■ 0.46
3. Service Hours per Capita for Demand Response	■ 0.31
4. Number of Shelters Installed	■ Shelters at stops with at least 20 boardings per day, major transfer points and facilities serving disabled and or senior populations.
5. Bicycle Parking at Transit Stops	■ Bike parking at stops with at least 20 boardings per day or more
6. Continuous Walking Route and Crossings	■ Pedestrian facilities within ¼ mile of stops with at least 20 boarding's per day.
7. Public Transportation and Human Services Coordination	■ Update Coordinated Plan once every five years; establish outreach targets in coordination with the Coordinated Plan. Assess annually.
8. Passenger Complaints for Fixed Route	■ Six complaints per 100,000 boarding's.
9. Passenger Complaints for Demand Response	■ Six complaints per 100,000 boarding's.
10. Percent of transit shelters on fixed routes that are accessible and are adjacent to bike network	■ Increase to 70% in the next five years (25 of 35 shelters)
11. Percent of fixed-route transit vehicles equipped with racks to accommodate bicycles	■ Target 100%

Action Initiatives

- Maintain a functional classification system that identifies the proper adjacent land uses, access control, traffic signal spacing and truck routes.
- Assess land use plans to examine how they affect transportation.
- Assure completeness, integration and connectivity of the bicycle system and pedestrian network.
- Identify and remove physical barriers and close gaps that may curtail user's ability to reach their destinations.
- Assure integration of transit to the pedestrian network and bicycle system to improve connectivity between low income and minority populations to major employment and activity centers.
- Evaluate the level of transit, pedestrian and bicycle activity continuously

Monitoring Activities

Annually

- Measure the amount of new streets and lane miles added within the region by functional classification.

- Track growth corridors through building permits and platting activities.
- Track land development patterns and map potential compact developments that may be supported by multimodal transportation.
- Review all development proposals.
- Obtain daily vehicle miles travelled data.

EVERY TWO YEARS

- Use a "check list" approach, and endeavor to document and visualize the presence/absence/condition of:

    a. Sidewalks and walkways around transit stops,

    b. Designated bike routes and directional signage,

    c. On-board bike racks,

    d. Better wayfinding signs for transit access to improve accessibility for the disabled and other residents.

Stakeholders will assess whether the presence/absence/condition of those elements in proximity to bus stops, proximity to school zones and access to multi-use pathways and to the Greenway Trail Network contributes to improvements in the system and network integration and connectivity.

The "check list" approach should document and visualize construction and repair activities and assess whether these improvements contribute to system and network integration and connectivity. The "check list" approach should be implemented at the neighborhood or school boundary level or at a geographic scale that makes advancing the proposed exercise more "doable."

EVERY FIVE YEARS

- Collaborate with local agencies to track the outward expansion of development through statistical and visual means.
- Assist in the update in land use plan.
- Update inventory of all the components of a pedestrian network and bicycle system and track number of miles added each year to baseline network of:
    - Sidewalks, trails, shared roadways, multi-use pathways, on-street/off street facilities.
    - Elaborate an updated inventory of new and/or renovated curb ramps

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 12: Objectives and Standards for Goal 6 Efficient System Management

Objective	Standards
1. Implement best practice programming and innovative financing alternatives.	■ Include inflation in project cost estimates and report project costs for the forecast year(s) of expenditure. ■ 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. ■ For projects significantly benefitting private entities, develop and implement a cost sharing model to help fund street or highway projects. ■ Assess developers for the costs of street and highway improvements associated with new developments, where appropriate.
2. Involve all local partners in the transportation planning process.	■ 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. ■ Participate and invite nontraditional partners in the transportation planning process. ■ Execute agreements necessary (e.g., MOUs, cost sharing, service contracts, etc.) to facilitate regional traffic management strategies. ■ Incorporate environmental stewardship considerations and environmental agency coordination into the planning and implementation of transportation improvements. ■ Collaborate with local and state agencies in setting performance measures and targets for urban and rural areas.
3. Cooperate across jurisdictional boundaries to create an integrated transportation network.	■ Establish multijurisdictional protocols for special events (e.g., events and parades). ■ Encourage region-wide coordination among traffic, emergency, and maintenance agencies (e.g., police, fire, DOTs, and public works). ■ Continue to develop and maintain a regional travel demand forecast model for use in forecasting future corridor levels of service. ■ Encourage member jurisdictions to continue participation in the GF/EGF MPO's transportation planning activities.
4. Maintain and update the regional ITS architecture	■ Implement, where applicable, Active Transportation Demand Management techniques using existing and/or new ITS infrastructure. ■ Develop and implement coordinated signal timings between jurisdictions and along new corridors. ■ invest in ITS infrastructure that can record travel times, traffic volumes, turning movements, and other various data points.

Objective	Standards
	■ Implement, where appropriate, monitoring systems as part of transportation facilities, such as bridges that monitor fatigue, tampering, or failure
5. Annually review Title VI, Riders Guide, Service Schedules and related processes to ensure consistency with all requirements.	■ None
6. Review and track public participation to improve information availability and decision making.	■ None
7. Establish twice annual working meetings and roundtables with key human and social service agencies and other organizations who utilize CAT services or provide ancillary service in the MPO area.	■ None
8. Improve efforts to attract and retain riders through marketing, information and quality of service.	■ NOne
9. Annually evaluate Demand Response processes to ensure ADA compliance and cost-effective management.	■ None
10. Carry out goals and objectives stated in the respective Land Use Plan to increase transit supportive developments.	■ None
11. Develop process to incorporate new service to transit supportive developments. This process should include service and assessment options.	■ None
12. Collaborate across city and state boundaries to create a seamless transportation networks including service and performance management.	■ None
13. Track performance measures annually to determine progress.	■ None
14. Provide an efficient and cost effective transportation system.	■ Consider the installation of bike and pedestrian facilities during street repair, renovation, or construction to reduce cost, improve connectivity and ease of access.

Objective	Standards
	■ Promote stakeholder's involvement in coordinated transportation planning and prioritization processes. ■ Compare performance of local pedestrian, bicycle and transit systems (bike on racks & other connectivity related programs) to similar communities. ■ Distribute pedestrian and bicycle facility improvements and investments throughout the community. Ensure all neighborhoods or subareas receive the appropriate emphasis regardless of their geographic location.
15. Identify potential sources of funding to financially support each proposed improvement included in the GF/EGF MPO Transportation Plans.	■ Recognize financial and fiscal constraints by identifying all available funding sources and corresponding amounts. ■ Identify funding sources that can be used for operations, maintenance, and preservation of existing bicycle system and pedestrian networks and supporting facilities.

Table 13: Performance Measures and Monitoring Activities for Goal 6 Efficient System Management

Performance Measures	Performance Target
1. Comparison of programmed dollar amounts to actual obligated dollar amounts.	■ Have no greater than 25 percent variance when comparing programmed dollar amounts to the actual obligated dollar amounts for projects listed in the GF/EGF MPO TIP.
2. Public Participation Plan - attendance at meetings, prior notice, key points of decision.	■ Increase the effectiveness of the GF/EGF MPO Public Participation Plan in informing, education and engaging the public in transportation decisions.
3. Information Availability	■ Standard requirements: Title VI, Riders Guide, Service Schedules, Trip Reservation Process
4. Planning Requirements	■ Identified and analyzed as part of TDP. Service expansions determined through alternatives analysis.
5. Public Transportation and Human Services Coordination	■ Update Coordinated Plan once every five years; establish outreach targets in coordination with the Coordinated Plan. Assess annually.
6. Passengers per Service Hour for Fixed Route	■ 15.62
7. Passengers per Service Hour for Demand Response	■ 2.70
8. On-Time Performance for Fixed Route	■ 90% of schedule stops on time (within 5 minutes).
9. On-Time Performance for Demand Response	■ 90% on-time within published pickup window.

Performance Measures	Performance Target
10. Advance Reservation Time for Demand Response	▪ Minimum two hours in advance.
11. Reservation Negotiation Window for Demand Response	▪ Maximum: Up to one hour before/after requested time.
12. Trip Denials for Demand Response	▪ Must follow ADA trip denial definitions and process.
13. Trip Cancellations for Demand Response	▪ Bus or vanpool trips should only be canceled from lack of riders or weather.
14. Cost per Revenue Hour for Fixed Route	▪ $91.12
15. Cost per Revenue Hour for Demand Response	▪ $74.72
16. Cost per Ride for Fixed Route	▪ $5.83
17. Cost per Ride for Demand Response	▪ $27.66
18. Farebox Recovery for Fixed Route	▪ 15%
19. Farebox Recovery for Demand Response	▪ 15%
20. Number successful Applications for Transportation Alternatives or Safe Routes to School Grants per every year.	▪ Target: 1Application for each city

Action Initiatives

- None

Monitoring Activities

Annually

- Compare the actual project expenditures to the amounts programed in the local and state investment plans (e.g., CIPs and STIPs). These comparisons should assist in determining whether cost adjustments may be appropriate in the annual listing of obligations identified in the TIP.
- Evaluate the cost sharing opportunities for transportation projects.
- Conduct a customer satisfaction survey through various means of outreach (e.g., online, mailings and open houses). This activity should be done on an annual or bi-annual basis.
- Compare annually the amount of obligated funds to actual expenditures for projects listed in the GF/EGF MPO TIP.

EVERY TWO YEARS

- **Compare the actual project expenditures to the amounts programed in the local and state investment plans (e.g., TIPs and STIPs).**
- **Determine whether cost adjustments may be appropriate in the annual listing of obligations identified in the TIP.**
- **Evaluate the cost sharing opportunities for transportation projects.**
- **Establish % of active transportation funding invested in disadvantaged communities.**
- **Determine the % of funds obligated for transportation projects.**
- **Compare annually the amount of obligated funds to actual expenditures for projects listed in the GF/EGF MPO TIP.**

EVERY FIVE YEARS

- Evaluate the GF/EGF MPO's Public Participation Plan and its effectiveness under federal and state guidelines to engage community members and stakeholders from various groups.
- Evaluate the Long Range Transportation Plan for its effectiveness in public-private partnerships.
- Evaluate the Financial Planning Forecast in the LRTP.

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 14: Objectives and Standards for Goal 7 System Preservation

Objective	Standards
1. Identify sufficient funding for the program of projects included in GF/EGF MPO transportation plans.	▪ Inform project finance planning and fiscal constraints by identifying all available funding amounts and their sources. ▪ Identify funding that can be used for operations, maintenance, and facility construction. ▪ Assign more likely construction, operation, and maintenance funding to near-term projects. ▪ 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. ▪ Provide technical assistance to local jurisdictions in applying for state and federal funding programs.
2. Cost-effectively preserve, maintain, and improve the	▪ Maintain pavement, signal systems, signage, striping and other features of the transportation system to a level that permits safe and multimodal traffic operations.

Objective	Standards
existing street and highway system.	■ Continue pavement management programs that include monitoring, reporting, and integrating reporting across jurisdictions. ■ 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. ■ 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) ■ Identify and implement, where appropriate, new pavement technologies. ■ When developing the transportation improvement program (TIP), prioritize improvement of the existing transportation network over construction of new infrastructure.
3. Achieve "State of Good Repair" performance levels agreed to between MnDOT, NDDOT and the MPO.	■ None
4. Ensure daily transit operations without interruption for fleet maintenance or repair.	■ None
5. Implement and periodically update Transit Asset Management plan.	■ None
6. Preserve, maintain, and improve the existing bicycle system and sidewalk network.	■ Increase support for bicycling and walking as travel modes through installation, and maintenance of dynamic lighting and traffic calming devices, especially in congested areas, school zones, central business districts, activity centers and high volume bicycle/pedestrian/automobile roadways. ■ Report on the condition of the roadways supporting the on-street bicycle network. ■ Support the existing pedestrian system by reporting on the condition of sidewalks, curb ramps, and crosswalks and other features of the sidewalk network. ■ Provide adequate facilities (such as sidewalks, crosswalks, shoulders, and bike paths/lanes) for non-motorized users. ■ Prioritize on-road and off-road bicycle system and sidewalk network repairs to meet the minimum accepted conditions.
7. Improve the cost-effectiveness of maintenance and preservation of the existing pavement.	■ Maintain pavement, sidewalks, and crosswalks; curb ramps, signal timing, and other features of the sidewalk network and bicycle's system characteristics to a level that permits safe, direct bike and pedestrian movements, and facility continuity. ■ Schedule preventative maintenance and overlays before sidewalks and bikeway surfaces are deteriorated.

Table 15: Performance Measures and Monitoring Activities for Goal 7 System Preservation

Performance Measures	MPO Performance Target
1. Percent of Interstate pavement in good condition	▪ 75.6%
2. Percent of Interstate pavement in poor condition	▪ 3%
3. Percent of non-Interstate NHS pavement in good condition	North Dakota ▪ 58.3% Minnesota ▪ Two-year target: 50% ▪ Four-year target: 50%
4. Percent of non-Interstate NHS pavement in poor condition	North Dakota ▪ 3% Minnesota ▪ Two-year target: 4% ▪ Four-year target: 4%
5. Percent of NHS Bridges in good condition	North Dakota ▪ 60% Minnesota ▪ Two-year target: 50% ▪ Four-year target: 50%
6. Percent of NHS bridges in poor condition	North Dakota ▪ 4% Minnesota ▪ Two-year target: 4% ▪ Four-year target: 4%
7. Road Calls	▪ New data collection system implemented in 2017. Measure for one year and set target in cooperation with MPO
8. Fleet Maintenance	▪ At least 75% of all regular fleet available for operations.
9. Spare Ratio	▪ Spare vehicles to peak requirement less than 20% (fixed)
10. Equipment	▪ 50% of vehicles meet or exceed useful life
11. Rolling Stock	▪ 20% of vehicles meet or exceed useful life
12. Facilities	▪ 50% of facilities at TERM rating of 3.0 (adequate) or better by the year 2025

Performance Measures	MPO Performance Target
13. Percent good and poor pavement condition rated for Non-National Highway System (NHS) roads with on road bike facilities	■ Increase to 40% the miles rated as good (Currently 15% rated Good) ■ 5% miles rated as poor (Currently 0% rated Poor)
14. Percent of Bridge Structures NHS/Non-interstate leading to bicycle facilities. The focus is on Bridge Structures that are part of network	■ Increase to 100% the number of bridge structures with Multi-use trails rating condition equal to or greater than 60

Action Initiatives

- Develop a common pavement condition reporting system for the Interstate and non-Interstate National Highway System in North Dakota and Minnesota
- Maintain and update the Pavement Management Systems for the metro area so it can be utilized to guide decisions on which type of pavement work makes best use of funds available to ensure state of good repair and reduce yearly average maintenance costs by evaluating the effectiveness and cost-benefit of preservation and maintenance projects.
- Incorporate and evaluate bridge inspection reports into biennial performance reports.
- The objective is to support the efforts made by local jurisdictions and related stakeholders to:
  - Develop comprehensive programs to preserve, maintain, and improve the condition of the existing bicycle system and sidewalk network.
  - Implement critical analysis of physical condition and state of repair for pedestrian and bicycle facilities.
  - Assure facilities located on the pedestrian network and bicycle roadway system are walkable, rideable and accessible to all users regardless of their ability.
  - Advance an inventory of improvements made by local jurisdictions and related stakeholders to maintain and / or modernize critical components of the existing pedestrian network and bicycle system including existing traffic signals, wayfinding signs, and related elements to improve safety and mobility.

Monitoring Activities

Annually

- Track the number “ride-quality deficient roadway” miles and “distress deficient roadway” miles in the GF/EGF region and compare to overall Grand Forks County, Polk County, MnDOT and NDDOT system.
- Track the percentage of federal funds programs that is put toward existing and new infrastructure.
- Support and assist in the preparation of applications and their submission to funding sources that promote safe bicycling, pedestrian and trail facilities and related activities for all ages.
- Track the percentage of federal funds programs that is put toward existing and new bicycle and pedestrian infrastructure.

EVERY TWO YEARS

- Review bridge inspection report.
- Track the number of miles of "good, satisfactory, and poor" quality miles of roadway in the GF/EGF region and establish how the results support bicyclist's access to the roadway system.
- Track the number of Improvements made by local jurisdictions to modernize modernize critical components of the existing pedestrian network and bicycle system including existing traffic signals, wayfinding signs, and related elements to improve safety and mobility.

EVERY FIVE YEARS

- Update pavement system for metro area.
- Evaluate Transportation Improvement Programs (TIP)/State LRTP projects to determine their effectiveness in achieving system preservation.
- Update Pavement Quality Index program for metro area, and
- Establish how the performance review results support bicyclist's ride ability and access to the roadway system.
- Identify the maintenance of the bicycle and pedestrian network that facilitates access to the system to vulnerable populations, support safe walking and biking to and from school, and allow for recreational opportunities.

Goal 8: Safety

Goal statement: **Increase safety of the transportation system for motorized and non-motorized uses.**

Table 16: Objectives and Standards for Goal 8 Safety

Objective	Standards
1. Keep vehicles from encroaching on the roadside in rural areas	■ 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. ■ Continue to install enhanced shoulders, lighting, delineation (for example, Chevrons), or pavement markings for sharp horizontal curves in rural areas. ■ Continue to install improved highway geometry for horizontal curves. ■ Increase skid-resistance pavement surfaces. ■ Continue to install shoulder treatments. ■ Eliminate shoulder drop-offs from paved road to unpaved shoulder. ■ Shoulder edge. ■ Widen and/or pave shoulders.

Objective	Standards
2. Minimize the likelihood of crashing into an object or overturning if the vehicle travels off the shoulder in rural areas	■ Continue to install safer slopes and ditches to prevent rollovers. ■ Remove/relocate objects in hazardous locations.
3. Reduce the likelihood of a head-on vehicle collision in rural areas	■ Continue to install centerline rumble strips and 6-inch center lines for two-lane rural roads. ■ Continue operation of alternating passing lanes or four-lane sections at key locations. ■ Continue to install cable median barrier for narrow-width medians and multilane roads. ■ Continue operation of buffer space between opposite travel directions. ■ Continue to install directional medians.
4. Reduce frequency and severity of intersection conflicts through traffic control and operational improvements in urban areas	■ Continue operation of multiphase signal operation. ■ Optimize clearance intervals. ■ Restrict or eliminate turning maneuvers (including right turns on red). ■ Continue operation of signal coordination along a corridor or route. ■ Continue operation of emergency vehicle preemption ■ Continue to install countdown timers, advanced walk phase, and other low-cost pedestrian/bicycle facility improvements. ■ Remove unwarranted signals. ■ Continue to supplement conventional red-light running enforcement with traffic signal confirmation lights and other technology enhancements that support enforcement efforts.
5. Reduce the severity of the crash	■ Continue to improve design and applications of barrier and systems to maintain flow of traffic.
6. Improve efficiency and effectiveness of aggressive driving/speed enforcement efforts	■ Strengthen speed detection and public perceived risk of being stopped and ticketed through sustained, well-publicized, highly visible speed enforcement campaigns. ■ Conduct highly visible, publicized and saturated enforcement campaigns at locations with higher incidence of aggressive driving/speed related crashes. ■ Enact/support legislation to strengthen penalties such as increased fines for right-of-way and speed violations. ■ Strengthen the adjudication of speeding citations to enhance the deterrent effect of fines. ■ 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.

Objective	Standards
7. Review crash data	■ Continue to analyze data to clearly define aggressive driving and identify factors contributing to aggressive driving.
8. Set and communicate appropriate speed limits	■ Continue to implement active speed warning signs, including dynamic message boards at rural to urban transitions, school zones, and work zones. ■ Continue operation of in-pavement measures to communicate the need to reduce speeds.
9. Ensure that roadway design and traffic control elements support appropriate and safe speeds	■ Effect safe speed transitions through design elements and on approaches to lower speed areas.
10. Improve sight distance at signalized and unsignalized intersections	■ Continue to clear sight triangles. ■ Redesign intersection approaches. ■ Change horizontal and/or vertical alignment of approaches to provide more sight distance. ■ Eliminate parking that restricts sight distance.
11. Improve driver awareness of intersections and signal control	■ Continue to improve visibility of intersections by providing enhanced signing, delineating, overhead indications, 12-inch lenses, background shields, or pavement markings/messages. ■ Continue to call attention to intersections by installing rumble strips on intersection approaches. ■ Continue to improve visibility of intersections by providing appropriate street lighting. ■ Continue to install larger regulatory and warning signs at intersections, including the use of dynamic warning signs at appropriate intersections. ■ Continue to provide dashed markings (extended left edge lines) for major road continuity across the median opening at divided highway intersections.
12. Reduce the number, severity and rate of crashes compared to previous years.	■ None
13. Develop an agency safety plan and certify the plan meets FTA requirements.	■ None
14. Identify high-incident crash locations and seek opportunities to mitigate safety issues.	■ None

Objective	Standards
15. Provide safe and well-designed streets and highways to accommodate a variety of users by meeting accepted design standards.	■ Reduce pedestrian exposure time by minimizing crossing distances when possible with the construction of bulbs outs, pedestrian islands, or other safety countermeasures. ■ Use design treatments to improve safety where speed has been a contributor to pedestrian or bicyclist crashes or where speed is thought to be a significant safety risk factor. ■ Prioritize intersection improvements, lane and roadway width, on-street parking, street trees, sidewalks, planting strips, frequency of pedestrian crossings and other street amenities such as bicycle parking that creates a safer and more comfortable walking and biking environment. ■ Keep vehicles from encroaching on the roadside in rural areas by widening and or/paving shoulders.
16. Reduce frequency and severity of conflicts through traffic control and operational improvements in urban areas.	■ Assess placement of “no right on red” sign, particularly when used in conjunction with “when children are present” signage for consistent use and continue the installation of pedestrian countdown timers. ■ Continue to install countdown timers, advanced walk phase, and other low-cost pedestrian/bicycle facility improvements ■ Continue installation of flashing signals at bicycle/pedestrian crossings and school crossings, and continue to investigate potential locations for the installation of High Activate Cross walk beacon (HAWK).
17. Continue to support the implementation of comprehensive 6E’s programs: Education, Enforcement, Encouragement, Equity, Engineering, Evaluation, and other safety related programs targeted to school-age and interested populations.	■ Encourage non-motorized transportation programs that benefit pedestrians, bicyclists, motorists, and public transit users. ■ Continue and expand bikeway and wayfinding signage on existing/future sidewalk and bicycle system. ■ Work with local stakeholders to promote sidewalk network and bicycle’s system events such as “Bike/Walk to Work/School Day,” “Ride-to-Learn” and bicycle safety courses. ■ Identify existing or develop new materials as needed to address bicycle and pedestrian needs of targeted audiences and seek creative distribution methods and partnerships to disseminate information. ■ Continue using the existing ND & MN Department of Transportation bicycle and pedestrian crash databases for analysis, monitoring and implementation of safety improvements. ■ Identify and share educational materials and other best practices that support safe behaviors for bicyclists and pedestrians and their interaction with other modes. Deliver materials through traditional networks such as the Safe Routes to School, Transportation Options programs and others, and seek new innovative partnerships and mechanisms for delivery of materials to target selected audiences. ■ Research barriers, opportunities, and best practices for safely accommodating skateboarders, roller-bladers, and others who use similar devices on the pedestrian and bicycle system.

Objective	Standards
18. Continue supporting the development and sustainability of Safe Routes to School and related programs through funding, partnerships, model programs and other technical assistance.	■ Build and maintain partnerships with public and private school districts, and other multimodal stakeholders through collaborative efforts to endorse, promote and implement Safe Routes to School Programs. ■ Take advantage of existing, and explore other state and federal funding options for bicycle and pedestrian infrastructure and non-infrastructure initiatives, including Safe Routes to School projects; support program design, grand request and program evaluation.
19. Continue to improve/enforce bicycling and walking safety measures on the existing sidewalk network and bicycle's system; particularly in areas adjacent to school zones and college campuses.	■ Increase and maintain positive support for enforcement programs for safe walking and bicycling behaviors, particularly during periods of peak public awareness. ■ Prioritize curb extension or median island to improve sight distance at signalized and un-signalized intersections in urban areas. ■ Construct roundabouts at appropriate locations. ■ Install pedestrian or bicycle or multi-use facilities at appropriate locations. ■ Continue to implement active speed warning signs, including dynamic message boards at rural to urban transitions, school zones, and work zones.
20. Support behavioral traffic safety strategies to reduce serious and fatal pedestrian and bicyclist crashes and to foster improved safety on both state and local roadways on North Dakota and Minnesota.	■ Increase coordination with law enforcement to create safe environments for bicycling and walking using a variety of resources available (e.g., enhanced enforcement of traffic laws, feedback signs), especially around schools and other high bicycle and pedestrian traffic areas. ■ Track national guidance on emerging technologies that improve pedestrian or bicycle safety (e.g. pedestrian detection in crosswalks).

Objective	Standards
21. Improve management of access near signalized and unsignalized intersections	■ Continue to restrict or eliminate parking on intersection approaches. ■ Expand driveway closure/relocations. ■ Provide longer left-turn lanes at intersections. ■ Expand driveway turn restrictions. ■ Continue to install left-turn lanes at intersections. ■ Continue to offset left-turn lanes at intersections. ■ Continue to install bypass lanes on shoulders at T-intersections. ■ Continue to provide acceleration lanes at divided highway intersections. ■ Continue to install right-turn lanes at intersections. ■ Continue to offset right-turn lanes at intersections. ■ Expand to provide right-turn acceleration lanes at intersections. ■ Expand channelized or closed median openings to restrict or eliminate turning maneuvers. ■ Close or relocate “high-risk” intersections. ■ Continue to convert four-legged intersections to two T-intersections. ■ Realign intersection approaches to reduce or eliminate intersection skew. ■ Continue to improve pedestrian and bicycle facilities to reduce conflict between motorists and nonmotorized travelers. ■ Convert 2-lane intersection to 3-lane intersection.
22. Choose appropriate intersection traffic control to minimize crash frequency and severity	■ Continue to construct roundabouts at appropriate locations. ■ Currently occurring at intersections in Grand Forks: 23th St & 40th Ave S, 34th St & 24th Ave.
23. Improve the roadway and driving environment to better accommodate drivers’ needs	■ Expand the use of advanced guide signs and street name signs. ■ Continue to increase sign and letter heights of roadway signs. ■ Provide more all-red clearance intervals at signalized intersections. ■ Provide more protected left-turn signal phases at high-volume intersections. ■ Continue to improve lighting at intersections, horizontal curves, and railroad grade crossings. ■ Continue to improve roadway delineation. ■ Continue to reduce intersection skew angle.

Objective	Standards
24. Improve Sight Distance and/or Visibility Between Motor Vehicles and Pedestrians/Bicyclists	■ Continue to provide crosswalk enhancements. ■ Continue to implement lighting/crosswalk illumination measures ■ Continue to eliminate screening by physical objects. ■ Expand signals to alert motorists that pedestrians/bicyclists are crossing. ■ Continue to improve reflectivity/visibility of pedestrians/bicyclists.
25. Reduce Vehicle Speed	■ Continue to implement road narrowing measures. ■ Continue to install traffic calming—road sections. ■ Continue to install traffic calming—intersections. ■ Continue to provide school route improvements.
26. Improve Motorist Safety Awareness and Behavior	■ Continue to provide education, outreach, and training. ■ Continue to implement enforcement campaigns.
27. Reduce Effect of Hazards	■ Fix or remove surface irregularities. ■ Provide routine maintenance of bicycle facilities.
28. Implement a multimodal transportation system that is balanced and integrated with all transportation modes to ensure safe and efficient movement of people and goods	■ Minimize congestion on roadways and at intersections. ■ Maintain roadway and other Level of Service standards consistent with regional, county, and municipal comprehensive plans. ■ Provide a balanced system with viable multi-modal options that are consistent with local comprehensive plans. ■ Provide infrastructure that supports transportation (transit riders, pedestrians, bicyclists and other alternative transportation modes). ■ Improve intermodal connectivity and access to intermodal facilities (e.g., airports, transit centers, Interstate bus system, rail, etc.) and activity centers. ■ Provide more sidewalks and bikeways. ■ Improve public transit services so they are efficient, frequent, reliable, convenient, safe, easy to use and understand, and promotes other intermodal uses.
29. Increase the safety and security of the transportation system for motorized and non-motorized users	■ Provide for safer travel by all transportation modes, including pedestrian, bicycling, transit, and automobile. ■ Encourage measures that reduce congestion. ■ Encourage strategies that improve emergency response to crash.

Objective	Standards
30. Reduce the number, severity, and rate of crashes compared to previous years by type of vehicle and transportation facility.	■ 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. ■ Identify and implement, where possible, intersection treatments that reduce crashes. ■ Support policies that prohibit/penalize distracted driving. ■ Identify funding available to improve the safety of the roadway system. ■ Coordinate with local, county, and state agencies to develop education, public health, engineering, and enforcement strategies targeted at crash reduction. ■ 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.

Table 17: Performance Measures and Monitoring Activities for Goal 8 Safety

Performance Measures	Performance Target
1. Number of traffic fatalities	■ 3 or fewer traffic fatalities by 2018 ■ No change in trend
2. Number of fatalities per 100 million vehicle miles traveled	■ 0.673/mvmt or lower by 2018 ■ No change in trend
3. Number of crash-related serious injuries	■ 18 or fewer serious injuries by 2018 ■ Decline in trend
4. Number of serious injuries per 100 million vehicle miles traveled	■ 5.933/mvmt or lower by 2018 ■ Decline in trend
5. Number of non-motorized fatalities and non-motorized serious injuries	■ 3 or fewer non-motorized fatal and serious injury crashes by 2018 ■ Decline in trend
6. Transit vehicle involved in crashes	■ 1.0 crash per 100,000 Revenue Miles
7. Number of Non-motorized fatalities	■ Zero Deaths
8. Number of Non-Motorized Serious Injuries	■ 3 or less

Action Initiatives

- Adopt Vision Zero by 2045
- Update state-, county-, and local-level strategic highway safety plans in cooperation with the MPO
- Conduct travel training as needed
- Local government's staff, in cooperation with related stakeholders, including MPO staff will:
    - Track
    - Monitor
    - Analyze, and
    - Map

Monitoring Activities

Annually

- Establish safety performance targets in cooperation with state DOTs and local road authorities
- Evaluate intersection crash frequency for all nodes with significant commuter and freight traffic volumes, and compare to critical crash rates.
- Evaluate crash severities.
- Review crash data.
- Identify vehicle crash locations that would benefit from changes in traffic or pedestrian signal operations, raised medians, street lights, and signage.
- Evaluate Highway Safety Improvement Program (HSIP) priorities and their effectiveness in addressing GF/EGF MPO safety needs.
- Report the number of times travel training programs were conducted.
- Annual Average number of fatal, serious injuries or property damage claims of bicyclists and/or pedestrians.
- Annual Average number of fatal, serious injuries or property damage claims of bicyclists and/or pedestrians.
- The number of crashes per volume of bicyclists and/or pedestrians over the year (crash rates)
- The location and number of bicycle-involved and/or pedestrian-involved crashes every year.

EVERY TWO YEARS

- Establish partnership with stakeholder agencies to evaluate 6E's community outreach efforts to increase safety and awareness of laws regulating roadway usage for pedestrian, bicyclist and motorist.
- Report on the efforts made by agencies and civic departments to advance campaigns in the following areas: Educational, enforcement, encouragement, equity and evaluation activities

EVERY FIVE YEARS

- Evaluate Transportation Improvement Programs (TIP)/State LRTP projects to determine their effectiveness in achieving safer roadway system.

Goal 9: Resiliency and Reliability

Goal statement: **Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.**

Table 18: Objectives and Standards for Goal 9 Resiliency

Objective	Standards
1. Reduce street and highway system vulnerability to snow and storm water	■ Maintain passable streets and highways under all reasonable weather conditions. ■ Strategically design and maintain the street and highway system to operate under all reasonable weather conditions. ■ 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.
2. Support the region's resilience and travel reliability through efficient detour and evacuation routes	■ During river flood events, reroute traffic consistent with the Bridge Closure Management Plan, or revised to respond to significant, observed delays or changes. ■ 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. ■ Provide auxiliary power sources to operate traffic signals when mainline power is interrupted.
3. Consider reduction of surface parking and other related impervious surfaces through the better utilization of CAT as a demand management tool during the land development process.	■ None
4. Avoid transit routing on roadways that are frequently subjected to closure due to flooding.	■ None
5. When routes are on roadways frequently subjected to closure due to flooding, collaborate with city, county and state departments of transportation to inform route changes and operations to minimize impacts.	■ None

6. Focus on adapting the transportation system to increase reliability and resiliency to the current and future impacts of extreme weather.	■ Maintain standard traffic control practices to facilitate bicycle and pedestrian movement in construction zones. ■ Maintain a paved surface and remove temporary signs, debris, and other obstructions from the edge of the roadway after each day's work to ensure the safety of bicycle and pedestrian users. ■ Ensure access to pedestrians, bicyclists and disabled people whenever pedestrian and bicycle facilities are affected by construction. ■ Provide a systematic assessment and public notification of areas impacted by severe weather. ■ Advance a thorough survey of flood protection and adaptation strategies suitable for different neighborhood types as they relate to the sidewalk network and bicycle's system.
7. Maintain sidewalk and bicycle routes promptly to ensure that pedestrian and bicycle facilities remain usable for all.	■ Consider reviewing existing snow removal ordinance and enforcement mechanism from public sidewalks. With, or without a snow removal ordinance, a program should be undertaken to remind property owners and occupants to clear snow from their sidewalks in a timely manner. ■ Conduct regular inspection and repair of street lights along local streets and undertake repair/replacement as needed.

Table 19: Performance Measures and Monitoring Activities for Goal 9 Resiliency

Performance Measures	Performance Target
1. Snow Removal: Report on a coordinated program for education and enforcement with the community	■ Reduce by 50% Number of Complaints received concerning Snow Removal ■ Reduce by 50% Length of (Lft) sidewalk cleared as a result of a complaint. ■ EGF: TBD Start system to track snow removal

Action Initiatives

- Establish agreements with local agencies on reporting closures and time length of closure.

Monitoring Activities

Annually

- Monitor the weather-related closure interruptions.

- Identify locations experiencing frequent closure.
- MPO's staff, in cooperation with local government staff and stakeholders will:
    - Collect traffic incident response and clearance times.
    - Compare traffic incident response and clearance times from year to year.
    - Collect data and report on time required to achieving bare lane conditions on main roads after winter events clear a snow storm.
    - Collect detailed flood/emergency traffic incident information (where, when, why).
    - Document security incidents involving pedestrians and bicyclists.

EVERY FIVE YEARS

- Update Bridge Closure Management Plan.
- Develop a Traffic Incident Management Plan.
- Evaluate coordination with regional/emergency/security/hazardous materials movement plans and personnel.
- Update Bike/Pedestrian Plan

Goal 10: Tourism

Goal statement: **Enhance travel and tourism.**

Table 20: Objectives and Standards for Goal 10 Tourism

Objective	Standards
1. Maintain convenient and intuitive street and highway access to major activity centers	■ 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. ■ Identify, coordinate, and communicate traffic plans for simultaneous events.
2. Seek 60-minute headways between major regional destinations.	■ None
3. Ensure CAT services are included in regional travel and tourism marketing materials.	■ None
4. Establish partnerships to encourage biking and walking tourism activities that benefit the region's economy and other areas within the Planning region.	■ Support partnerships with the Grand Forks Convention & Visitors Bureau, Downtown groups and stakeholders to stimulate tourism and economic development by educating communities about opportunities to encourage pedestrian and bicycle tourism. ■ Support walking and biking activities (for example, bringing your bike to visit), and share best practices from other state (s) or local communities that have

	successfully linked tourism, and economic development with walking and biking.
5. Establish partnerships to foster pedestrian and bicycle tourism activities within the Planning region.	■ Support stakeholders in developing bicycle and pedestrian routes to support historic bicycling and walking tours within our heritage communities. ■ Create a comprehensive website or digital map to identify routes, and to provide information on pedestrian and bicycling opportunities in the Greater Grand Forks Area. ■ Support dissemination of printed information on pedestrian and bicycle tourist activities, such as maps, and other additional materials promoting natural and historic routes, scenic locations, and neighborhood tours.
6. Develop a continuous, interconnected, and comprehensive system of bikeways and trails which includes segments in the Red River State Recreational Area Campground.	■ Construct, and promote an integrated system of bikeways, recreational and commuter bicycle and trail network that provides access to destinations, such as activity centers, schools, parks, open space, shopping areas, and employment areas, for pedestrians and cyclists as part of a multi-modal approach. ■ Support the development of bikeways, recreational facilities and trails, including recreational loops, secondary trails, and neighborhood-scale connecting routes, as in integral part of the existing bicycle and pedestrian network.

Table 21: Performance Measures and Monitoring Activities for Goal 9 Resiliency

Performance Measures	Performance Target
1. Number of Hotels adjacent to multi-use facilities	■ Increase by 2 hotels in next 5-years

Action Initiatives

- Develop agreements for data on event traffic management plans.
- Local government's staff, in cooperation with related stakeholders, including MPO staff will:
  - Tract bicyclist and pedestrian access to tourist's and historical sites and community destinations.
  - Continue to create and maintain bicycle and pedestrian facility information
  - Identify gaps in network, and create and maintain visitor's and user's inventories.

Monitoring Activities

Annually

- Assemble report on event traffic results.

EVERY TWO YEARS

Report on the activities supporting the development and dissemination of information on pedestrian and bicycle tourist activities:

- Number of maps printed and distributed to schools, community agencies, visitors Bureau, hotels
- Number of additional materials promoting natural and historic routes, scenic areas, and tours
- Number of visitors to website to request Bikeway Maps
- Elaborate visitor counts to campground, recreational, commuter bicycle and pedestrian and trail networks to address changes in number of users and visitors.

EVERY FIVE YEARS

- Review and update as needed any event traffic management plans.

Community Profile

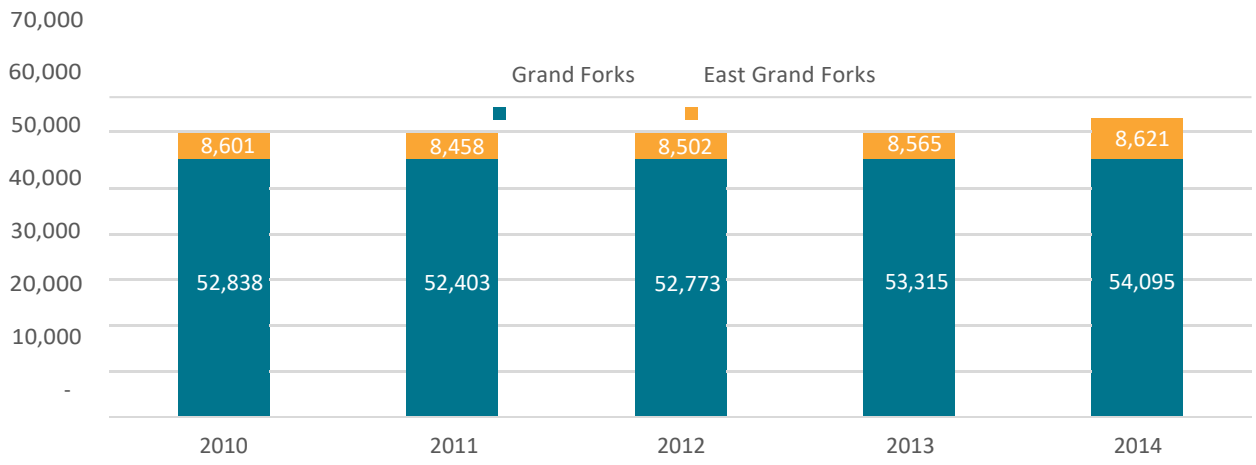
This section details the demographics and general characteristics of Grand Forks and East Grand Forks and how they relate to transit operations.

Demographics

Population And Households

Since the 2010 Census, East Grand forks' population has remained stable while Grand Forks' population has seen low, but increasing annual growth since 2011 (Figure 3). These numbers are based on the American Community Survey 5-Year Estimates, which are slightly lower estimates than the annual Census estimates used in the recently updated land use plans. Total population reached 6i2,700 in 2014; its highest level since before 2010.

Figure 3: Population for Grand Forks and East Grand Forks Cities



Source: American Community Survey 5-Year Estimates

There are nearly 23,000 households in Grand Forks and 3,500 in East Grand Forks.

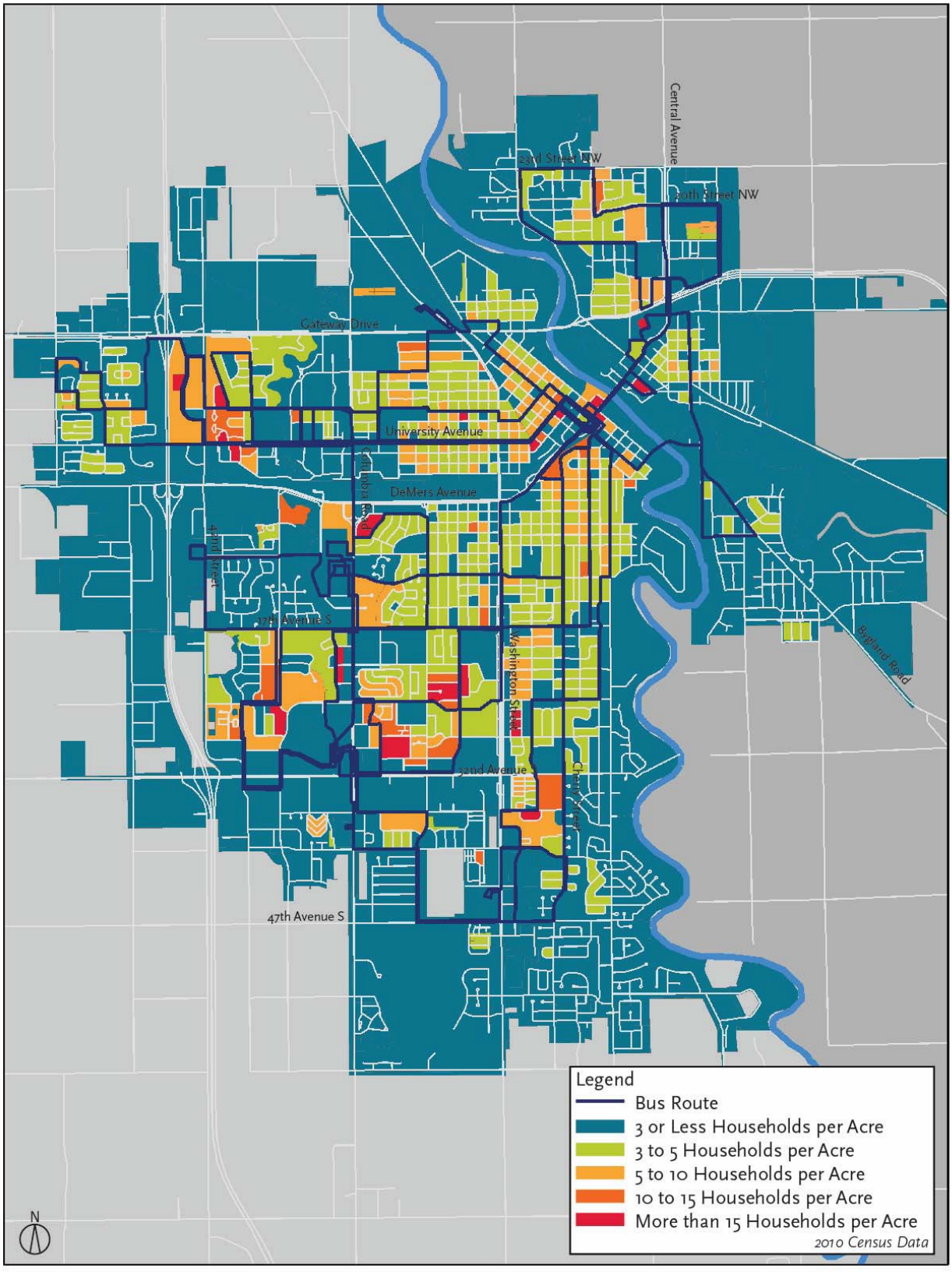
- The average household size is 2.19 in Grand Forks and 2.46 in East Grand Forks, both are lower than their respective state average.
- 22.2 percent of Grand Forks and 30.6 percent of East Grand Forks households have children under 18.
- Over half, 53.3 percent, of Grand Forks and a third, 37.2 percent of East Grand Forks housing units are renter occupied.
- Most of the metro is low density housing, less than three households per acre, but there are pockets of medium and high densities, most closely associated with the older neighborhoods and multi-family housing developments (Figure 4).

Table 22: Housing Characteristics

	Grand Forks	East Grand Forks
Households	22,844	3,460
Average Household Size	2.19	2.46
Households With Children Under 18	22.2%	30.6%
Households with Someone 60 Year or Over	24.6%	33.2%
Renter Occupied	53.3%	37.2%

Source: American Community Survey 5-Year Estimates

Figure 4: 2010 Household Density per Acre



Age

Grand Forks and East Grand Forks are younger than the United States and their respective average. The median age in Grand Forks is just 28.1 years while in East Grand Forks it is 34.1 years. Certain ages are more likely to use transit, like primary and secondary students who may bus to school and seniors who are unable or unwilling to drive themselves. These groups represent 41 percent of Grand Forks' total population and 54.8 percent of East Grand Forks' population. Another group perceived to be more inclined to use transit is the college age population, which is 25.8 percent of Grand Forks and 7.3 percent of East Grand Forks. The age profile of Grand Forks and East Grand Forks is shown in Table 23. Figure 5 shows the percent of population aged 65 or older by block group.

Table 23: Age Profile

	Grand Forks	East Grand Forks
Median Age	28.1	34.1
School Age (5 to 17)	12.5%	17.1%
18 to 24	25.8%	7.3%
Seniors (62+)	28.6%	37.7%

Source: American Community Survey 5-Year Estimates

Income

The median household income in Grand Forks just exceeds $44,000, while in East Grand Forks the median household income is just slightly above $51,000. Both Grand Forks and East Grand Forks have lower median household incomes when compared to their respective state. In terms of poverty, more than 21 percent of all Grand Forks residents have incomes below the poverty line compared to just 9.9 percent in East Grand Forks. While East Grand Forks' population in poverty is about one-half a percentage point lower than Minnesota statewide, Grand Forks' population in poverty is 80 percent higher than North Dakota statewide. The income profile of Grand Forks and East Grand Forks is shown in Table 24. Figure 6 shows the percent of population under the poverty line by block group.

Table 24: Income Profile

	Grand Forks	East Grand Forks
Median Household Income	$44,134	$51,167
Below Poverty: All People	21.4%	10.6%
Below Poverty: Under 18	21.3%	9.9%
Below Poverty: Over 65	10.3%	11.6%

Source: American Community Survey 5-Year Estimates

Vehicle Access

The inability to access a private auto is often considered one of the strongest components of transit ridership. In Grand Forks, 8.4 percent of all households do not have access to a vehicle and nearly 20 percent of 2-person or more households only have access to one vehicle. In East Grand Forks, 10.6 percent of all households do not have access to a vehicle and 23.1 percent of 2-person or more households only have access to one vehicle. Vehicle access characteristics are shown in Table 25. Figure 7 shows the percent of zero vehicle households by census tract.

Table 25: Vehicle Access

	Grand Forks	East Grand Forks
No vehicle available	8.4%	10.6%
1 vehicle available	37.9%	31.0%
2 vehicles available	35.6%	42.4%
3 vehicles available	13.3%	12.5%
4 or more vehicles available	4.9%	3.5%

Source: American Community Survey 5-Year Estimates

Figure 5: Percent of Population 65 or Over by Census Block Group

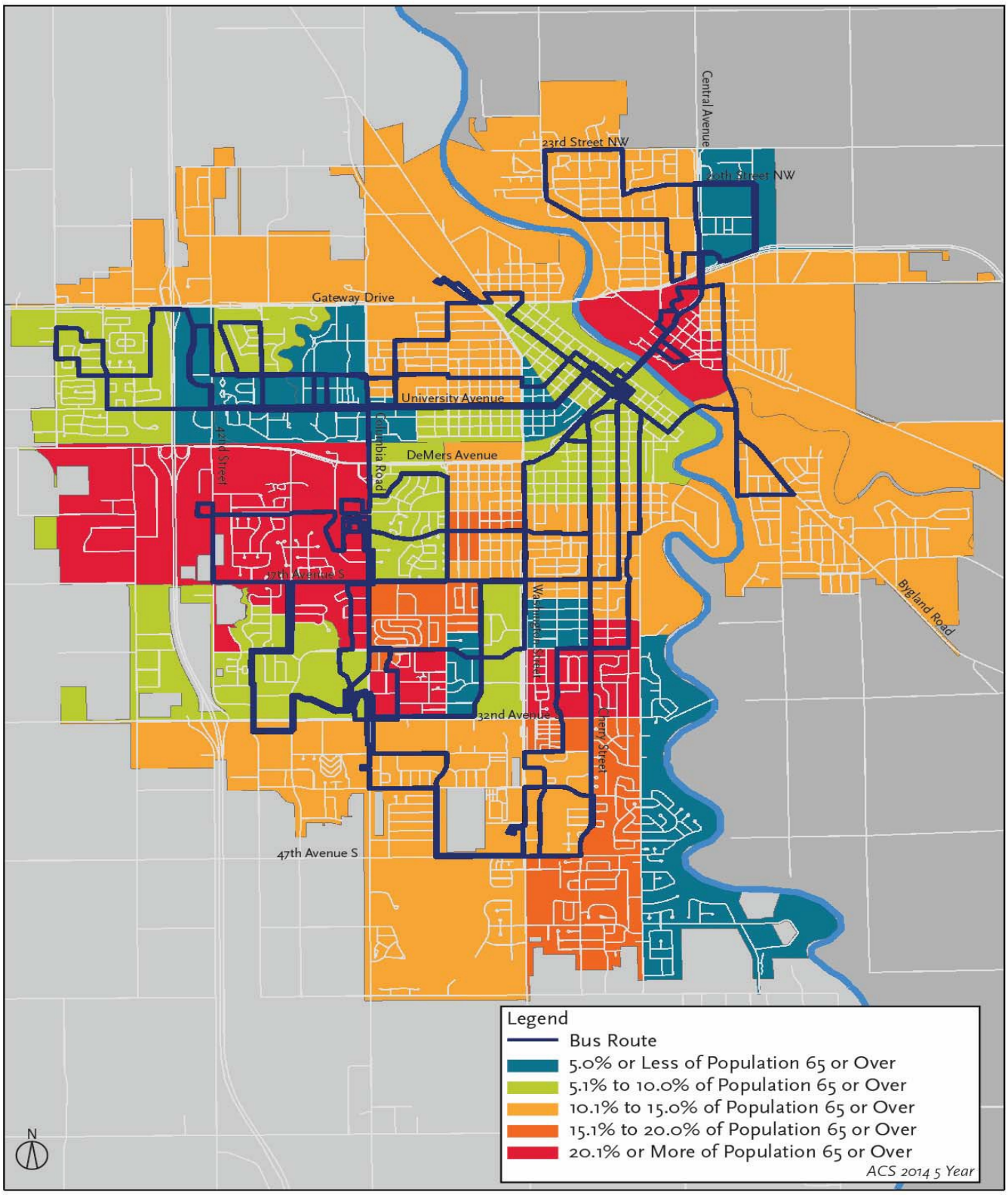


Figure 6: Poverty Characteristics by Census Block Group

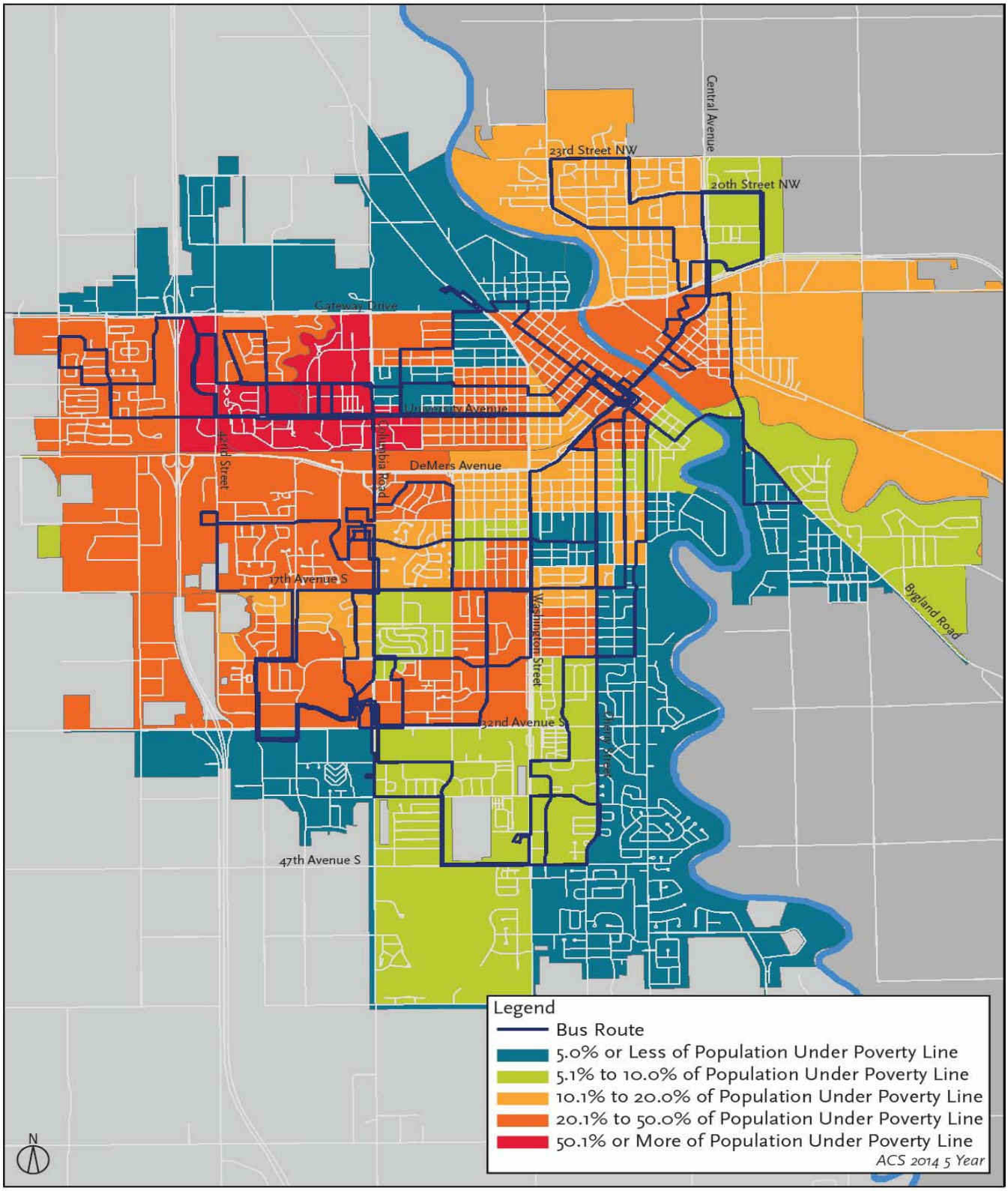
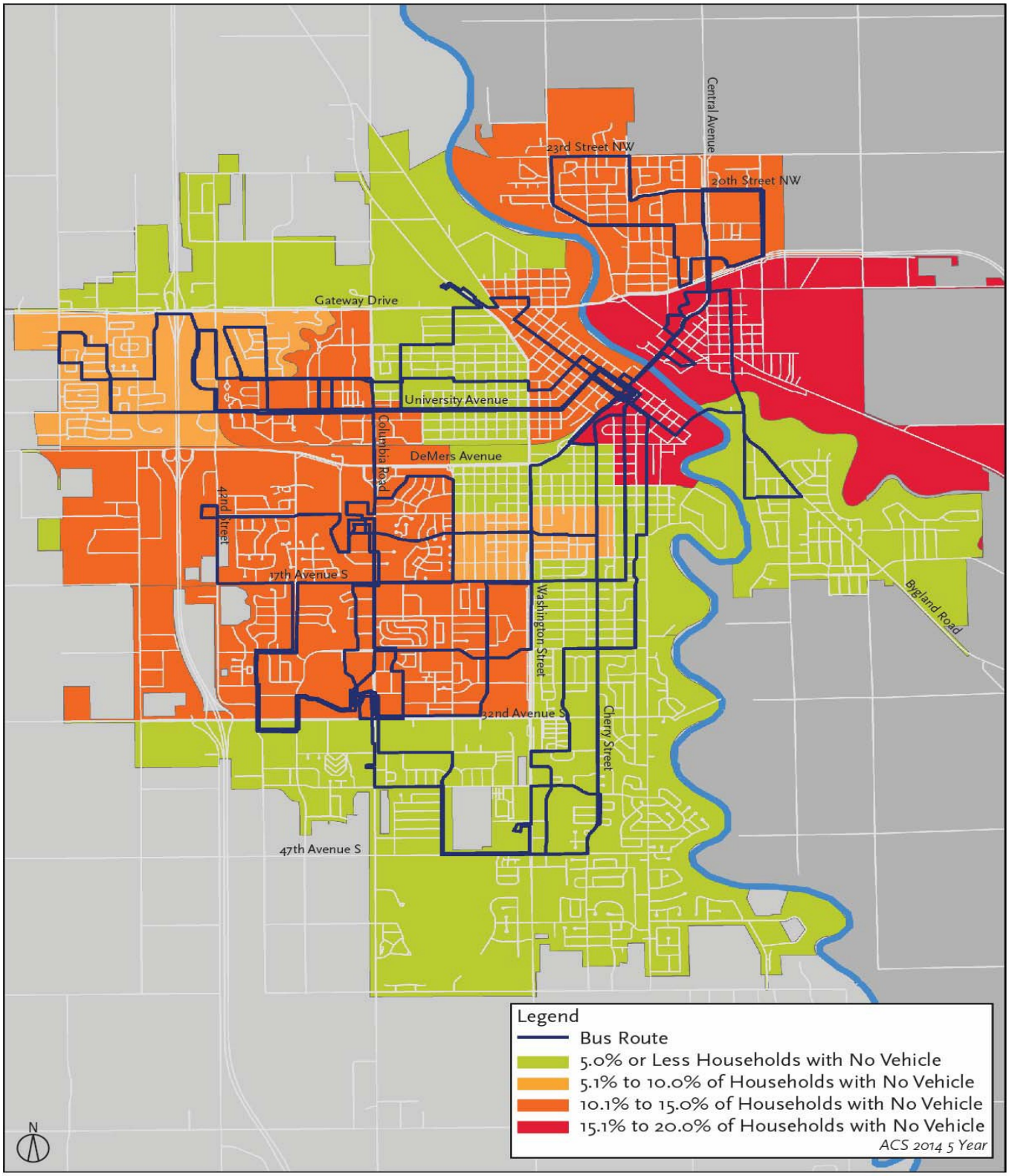


Figure 7: Zero Vehicle Households by Census Tract



Employment And Commuting

The Grand Forks – East Grand Forks Metro area has very low unemployment. In Grand Forks the unemployment rate is 3.3 percent and in East Grand Forks it is just 1.5 percent.

Just 1.4 percent of Grand Forks and 1.7 percent of East Grand Forks residents use transit for their daily commute, compared to 0.5 percent of North Dakota residents and 3.5 percent of Minnesota residents. Commuting patterns for Grand Forks and East Grand Forks are shown in Table 26.

The 2040 Long Range Transportation Plan Has a stated objective to promote alternatives to single occupancy vehicles and to reduce VMT and VHT growth rates. The 2045 Grand Forks Land Use Plan Update also includes objectives to improve access for alternative modes of transportation and continuing to build on the multi-modal transportation systems, among other alternative mode objectives.

Table 26: Commuting Patterns

	Grand Forks	East Grand Forks
Drove Alone	80.8%	85.5%
Carpooled	7.8%	7.8%
Public Transit	1.4%	1.7%
Walked	4.1%	2.0%
Other	2.1%	1.1%
Worked from Home	3.8%	1.9%

Source: American Community Survey 5-Year Estimates

Population Forecasts

Table 27 provides population forecasts to the year 2045 identified in recently adopted land use plans for the cities of Grand Forks and East Grand Forks. The Grand Forks population forecasts are based upon a 1.2 percent annual growth rate, and the East Grand Forks population forecasts are based upon a 0.9 percent annual growth rate. In total, the region's population is forecasted to increase by approximately 39 percent between 2015 and 2045.

Table 27: Population Forecasts

City	2010 (US Census)	2015 ACS Estimate	2025	2035	2045
Grand Forks	52,838	54,944	60,247*	67,879*	76,479*
East Grand Forks	8,601	8,611	9,841^	10,764^	11,773^
Total	61,439	63,555	70,088	78,643	88,252

*1.2 percent growth rate assumed per 2045 Grand Forks Land Use Plan
^0.9 percent growth rate assumed per 2045 East Grand Forks Land Use Plan
Source: 2045 Grand Forks Land Use Plan, East Grand Forks 2045 Land Use Plan

Workplace and Commuting Patterns

According to the 2015 American Community Survey, most people both live and work within the Grand Forks-East Grand Forks urbanized area. With over 35,000 jobs combined in the two cities in 2014, most employment nodes are located within Grand Forks. Major industry sectors include health care, education, retail, hospitality/food services, and manufacturing. The predominant travel mode for employers is the automobile. The mean travel time to work is under 13 minutes for Grand Forks residents and 14.5 minutes for East Grand Forks residents. MPO data indicates approximately 4,000 East Grand Forks residents commute to Grand Forks for work and approximately 4,000 Grand Forks residents commute to East Grand Forks for work.

Table 28: Workplace Location and Travel Patterns

	Percent of People that Live and Work in Same City	Percent of People that Live and Work in Same County	Travel to Work via Automobile	Drive Alone	Mean Travel Time to Work
Grand Forks	84.4%	89.7%	90.1 %	82.1%	12.9 minutes
East Grand Forks	22.3%	27.5%	94.6 %	86.7%	14.5 minutes

Source: 2015 American Community Survey

Land Uses

The recently adopted 2045 Grand Forks Land Use Plan (2016) emphasizes creating a more compact urban environment, encouraging infill development, creating mixed use areas, and coordinating development with the location of urban services. The Plan utilized the federal Ladders of Opportunity Initiative, which builds on the foundations of sustainable and livable communities to connect low-income and minority transit-dependent residents with economic and educational resources that already exist within the Grand Forks community. The Plan supports mixed use, compact development patterns which provide more transportation choices and strives to increase the share of non-automobile trips.

With a focus on more compact development, the 2045 Grand Forks Future Land Use Plan (Figure 8 and Figure 9) reallocates and reduces overall acreages for the City's growth tiers compared to the 2040 Future Land Use Map. The three-level tier system for managing timing and sequencing of growth includes: Tier 1 (including existing city limits), where all projected growth within the planning horizon will be accommodated; Tier 2 (Urban Reserve Area), which only allows residential development on existing platted lots and if no other Tier 1 land is available; and Tier 3, agricultural preservation area. The 2045 Future Land Use Map is intended to prevent "sprawl" and to create a pattern of development which provides efficient growth creating quality compact urban places including improved accessibility and mobility. Growth is focused primarily to the south and west of the City adjacent to existing land uses.

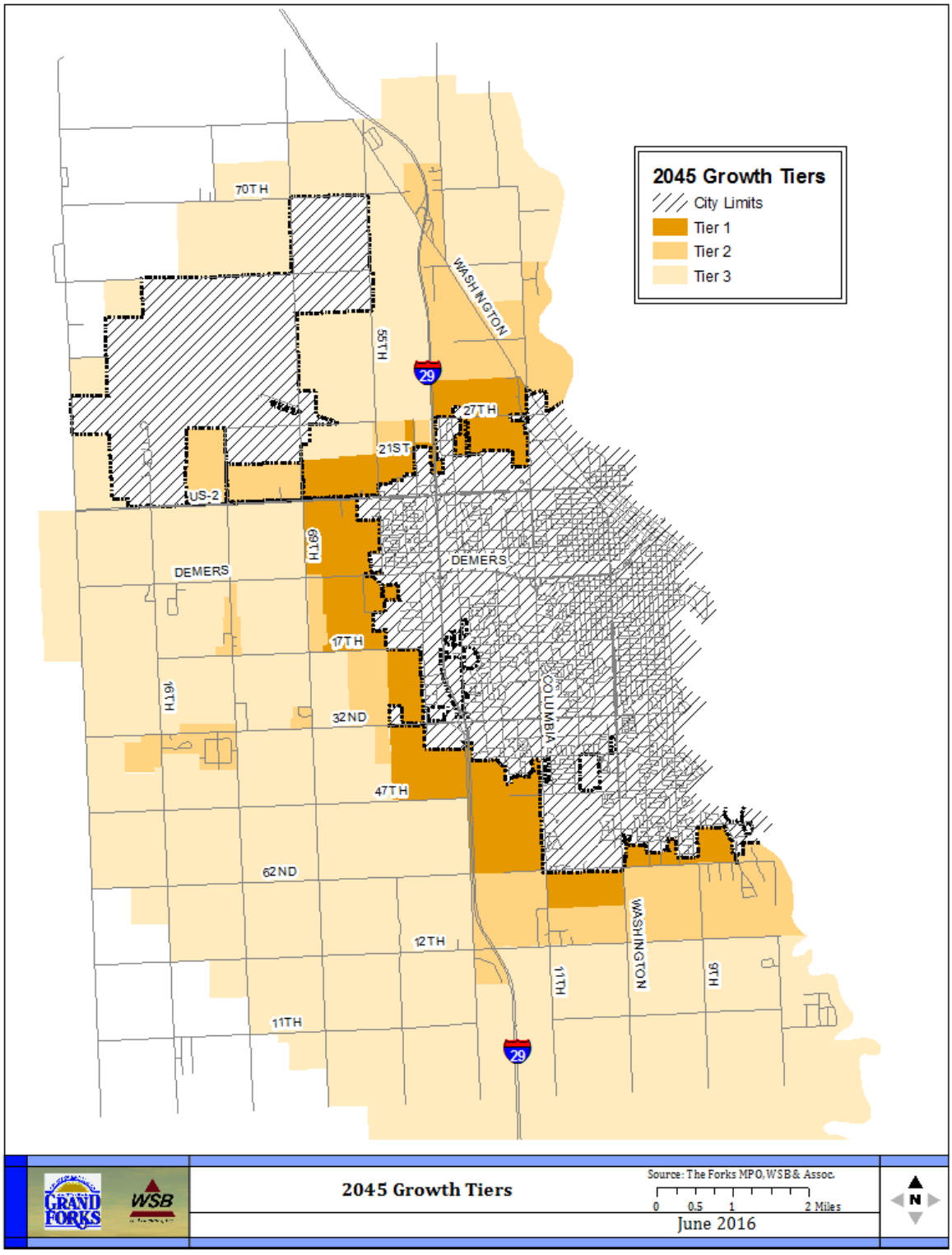
The East Grand Forks 2045 Land Use Plan (Figure 10 and Figure 11), also recently adopted in 2016, promotes compact, infill development and responsible greenfield development. The City of East Grand Forks utilizes the existing flood protection system as an interim growth boundary, with phased land available to accommodate anticipated growth within the planning horizon. The Plan includes three new land use categories: mixed use, commercial/industrial, and medium density residential. Mixed use districts, whether utilized for infill or greenfield development, will enable the City to become more compact and walkable, provide the choice for a living

arrangement that is different from that which dominates in neighborhoods of single-family detached housing, and soften transitions between higher and lower intensity land uses. East Grand Forks growth is focused primarily north along TH 220, to the east along US Highway 2 and also to the south of Rhinehart Drive near the Red River.

Both the 2045 Grand Forks Land Use Plan and the East Grand Forks 2045 Land Use Plan incorporated livability principles into their planning processes in order to enhance the livability of the community while improving access to employment, goods and services. Livable communities provide a mix of affordable housing, increase transportation options, and lower transportation costs while protecting the environment. Linking transportation and land development results in neighborhoods that are more prosperous, allow people to live closer to jobs, save households time and money, and reduce pollution. The following six principles of livability were utilized as developed by the federal Partnership for Sustainable Communities:

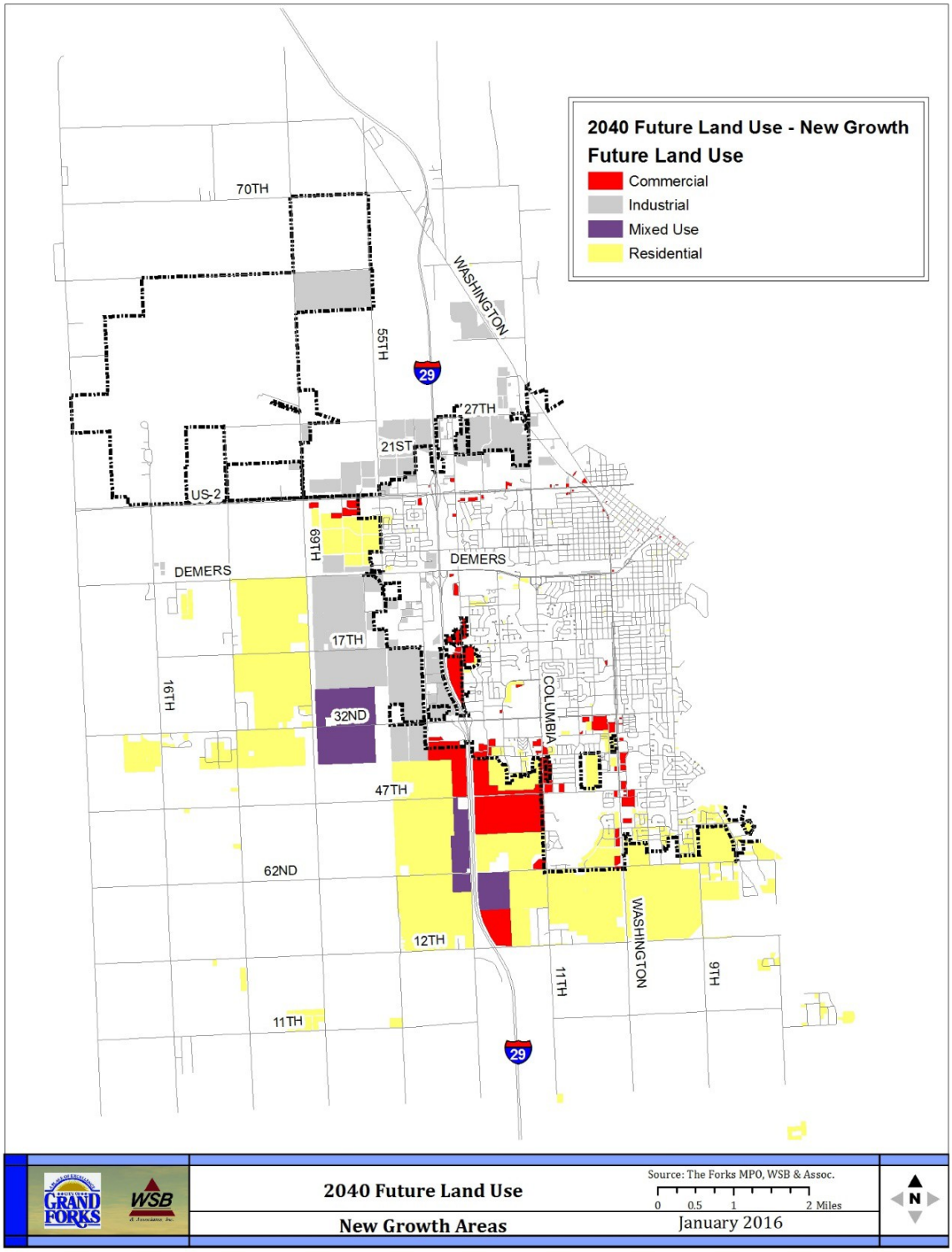
- Provide more transportation choices;
- Promote equitable affordable housing;
- Enhance economic competitiveness;
- Support existing communities
- Coordinate and leverage federal policies and investment; and
- Value communities and neighborhoods.

Figure 8: 2045 Grand Forks Future Land Use Growth Tiers



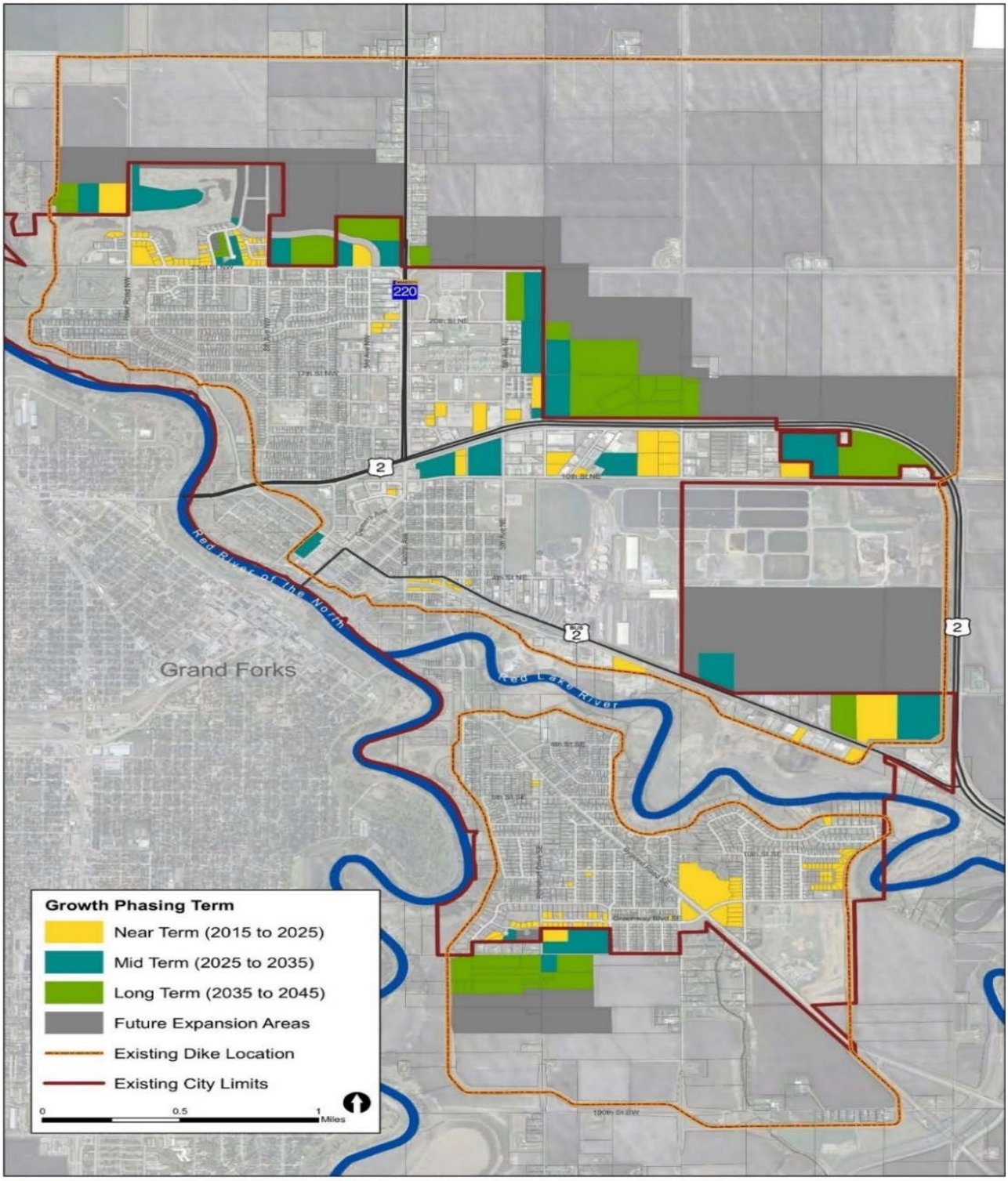
Source: 2045 Grand Forks Land Use Plan

Figure 9: 2045 Grand Forks Future Land Use New Growth Areas



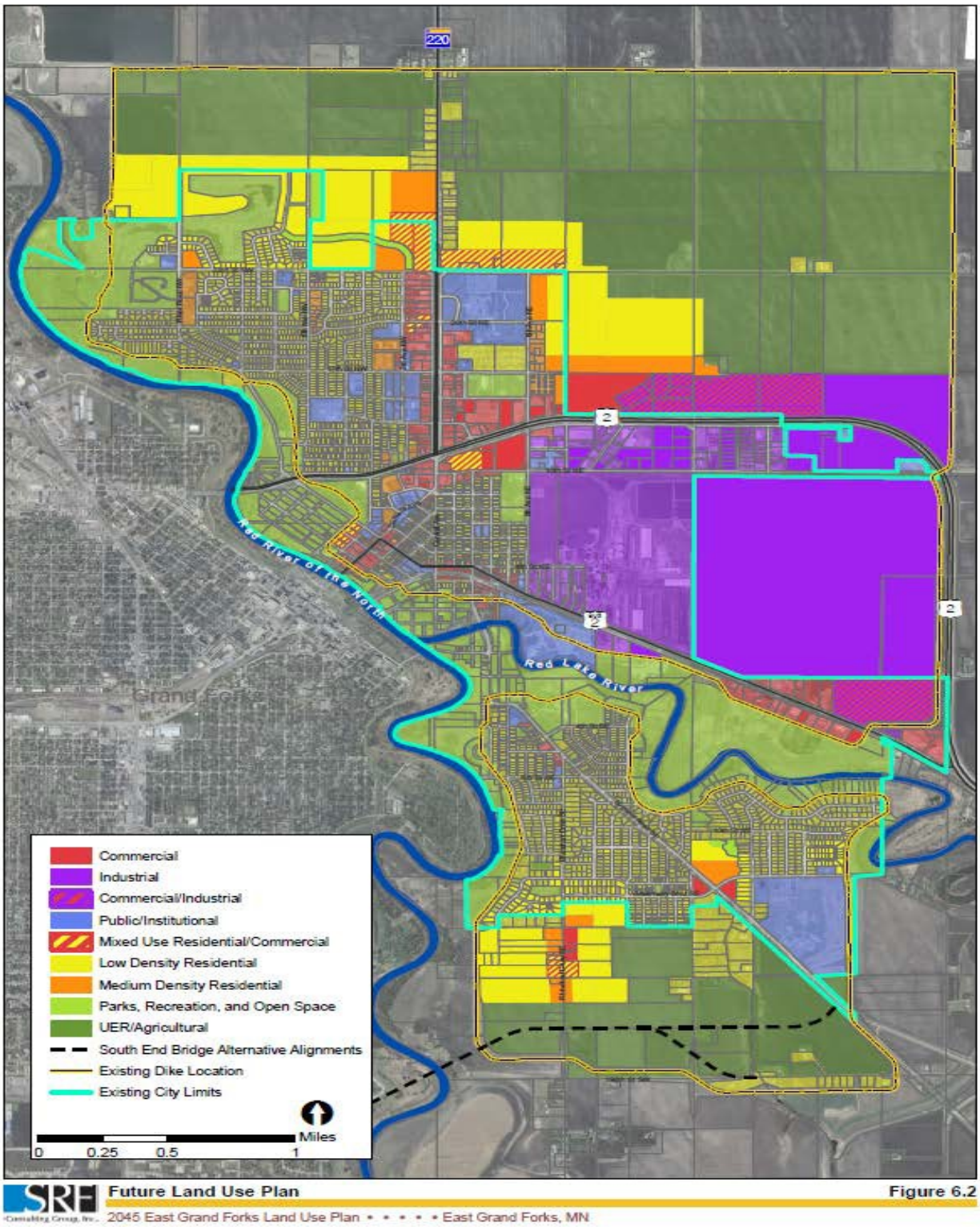
Source: 2045 Grand Forks Land Use Plan

Figure 10: East Grand Forks 2045 Future Land Use Growth Phasing



Source: East Grand Forks 2045 Land Use Plan

Figure 11: East Grand Forks 2045 Future Land Use



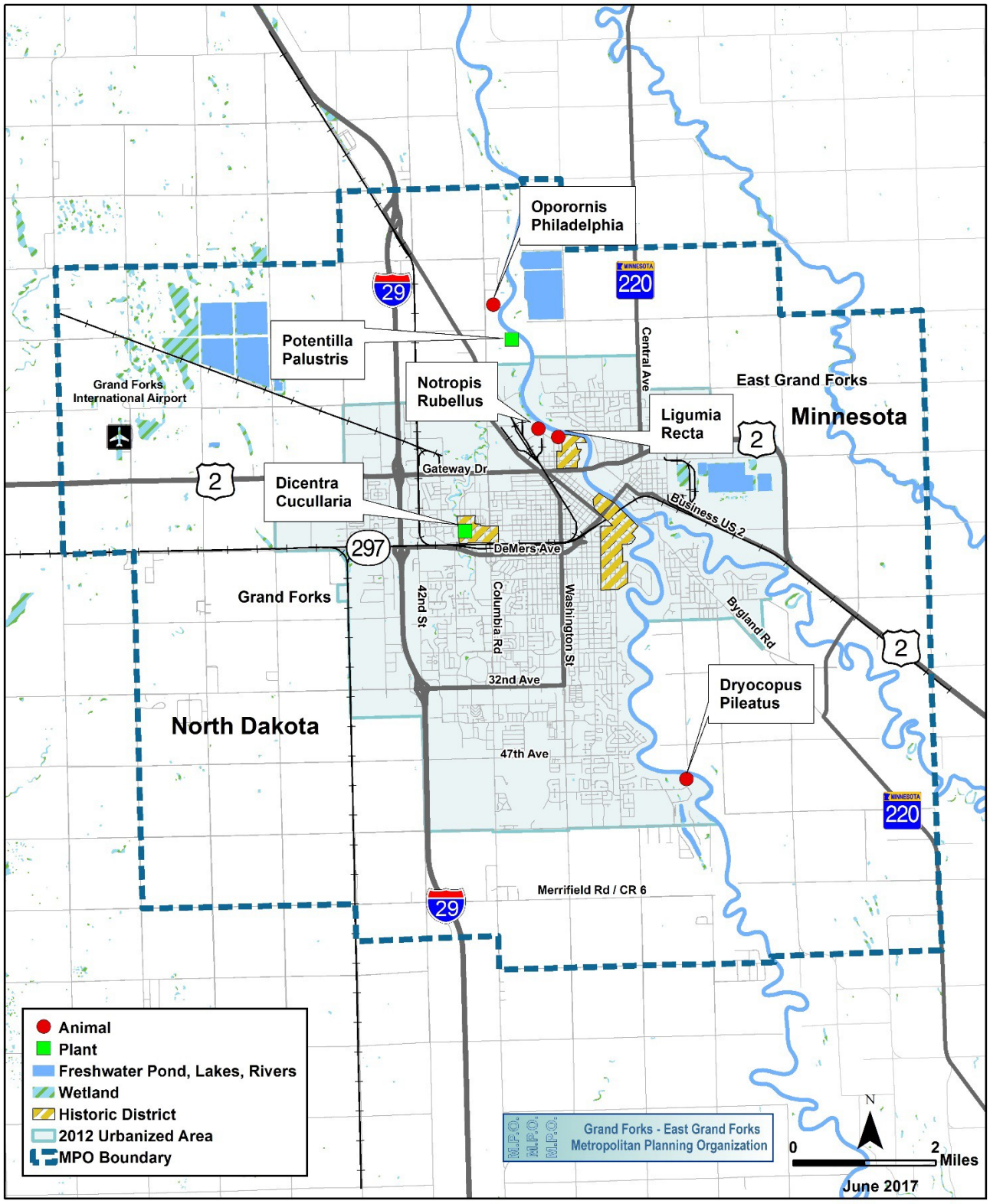
Source: East Grand Forks 2045 Land Use Plan

Natural and Environmental Resources

There are numerous environmentally-sensitive areas found throughout the Grand Forks-East Grand Forks region. An overview of some of the identified sensitive areas, including wetlands, species of concern, and identified cultural sites, is provided in Figure 12.

Many of these sensitive areas are too small or too numerous to map at a metropolitan-level and can only be clearly identified through a project-level analysis. 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 to move into the design and engineering phase, 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.

Figure 12: Environmental Constraints



Source: Grand Forks-East Grand Forks MPO

Carbon Footprint

A pound of carbon dioxide (CO_2) emitted today from a gas powered motorized vehicle may still be in the atmosphere decades to hundreds of years from now. Therefore, measuring greenhouse gases associated with transportation systems is closely linked to CO_2. However, this level of assessment is difficult to measure, considering data availability and scale. To evaluate change over time in the metropolitan area's carbon footprint from a transportation perspective, the analysis from the 2040 Street and Highway Plan was updated to compare the number of vehicle miles traveled (VMT) for passenger cars and light trucks.

The assessment looked at 2015 and 2010 VMT data. VMT was extrapolated out to determine an estimate for GHG emissions (see Table 29). The results document an increase in VMT between 2015 and 2010. VMT had been leveling off nationwide since the economic recession in 2008. However, low gas prices and an improved economy have led to increases in VMT. Long-term trends are uncertain due to changes in energy production, improved gas mileage and increased electrification/hybrid technologies in new vehicles, and the potential impact of ride sharing and automated technologies. Therefore, VMT should be continually monitored to determine if travel behaviors are changing within the region.

Table 29: Carbon Footprint for Vehicle Miles Traveled

	Total Vehicle-Miles Traveled by Year by Passenger Cars and Light Trucks[2]	Average Miles of Travel per Gallon of Fuel Consumed[3]	Gallons of uel Consumed by Year by Passenger Cars and Light Trucks	letric Tons of Carbon Dioxide or CO_2 Equivalent
006	269,698,500	20.04	13,458,009	19,642
010	265,428,000	20.04	13,244,910	17,747
015	294,365,293	22.0	13,380,241	18,950
006-2010 ifference	**(-4,270,500)**	**(no change)**	**(-213,009)**	**1,895)**
010-2015 ifference	**(+28,937,293)**	**(+1.96)**	**(-135,331)**	**+1,203)**

Source: FHWA Highway Statisticsfor Urbanized Areas 2015 and 2010
https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

In the region, the increase in VMT resulted in an increase in carbon emissions over the five-year period. This increase is quantified into measurable outcomes by using the Environmental Protection Agency's (EPA) Greenhouse Gas Equivalent Calculator (see Table 31). For example, the increase in VMT and CO_2 equated to the 258 additional passenger vehicles on the transportation network annually. The increase in CO_2 emissions results in an increase in the metropolitan area's carbon footprint from an environmental perspective.

[2] Assumes Passenger cars and light trucks account for approximately 90% of vehicles on Grand Forks-East Grand Forks roads.

[3] In 2007, the weighted average combined fuel economy of cars and light trucks combined was 20.4 miles per gallon (FHWA 2008). In 2015, the weighted average combined fuel economy of cars and light trucks combined was 22.0 miles per gallon (FHWA 2017).

Table 30: Carbon Footprint Equivalence

	Carbon Footprint Equivalence for VMT from Passenger Cars and Light Trucks of Value Increase from 2015 to 2010
258	Annual CO_2 emissions from the number of passenger vehicles
135,366	CO_2 emissions from the number of gallons of gasoline consumed
2,785	CO_2 emissions from the number of barrels of oil consumed
15.9	CO_2 from the number of tanker trucks worth of gasoline
6.6	CO_2 emissions from burning of the number of railcars worth of coal

Source: Based on EPAs Greenhouse Gas Equivalencies Calculator
https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Financial Plan

Introduction

This section examines the sources of funding that will be available for transportation investments within the region in the coming years and the general areas of expenditure for those revenues. This section presents the revenues that can reasonably be expected to be available and investment spending that will occur under what is known as the "Current Revenue Scenario".

As identified in past Street/Highway Plans, an inadequate level of transportation funding continues to be a major issue facing the region. Under the Current Revenue Scenario, expectations are that highway system pavement and bridge conditions will continue to decline, and that highway congestion will continue to grow.

This chapter summarizes the revenue forecasting methodology and results, and demonstrates how available revenues align with the investments identified in this plan.

It should be noted that funds were identified for 2023 to 2045 only. Projects identified as existing and committed are constrained based on funds identified for those projects in the 2019-2022 Transportation Improvement Program (TIP).

Fiscal Constraint & Revenue Forecasting Requirements

Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, the long-range transportation planning process in metropolitan areas was transformed away from "needs" based analyses, with little-to-no consideration given to the transportation funding amounts, to a financially-constrained project / program planning approach. Fiscally-constrained means that anticipated investments are equal to or less than forecast revenues.

The fiscal evaluation element of the MPO planning process has continued to evolve. Subsequent congressional re-authorizations of TEA-21 in 1998, SAFETEA-LU in 2005, and MAP-21 in 2012 have required an increased level of financial analysis, so that MPOs clearly demonstrate that projects and program activities included in their transportation plan were reasonably fundable for both the near- and long-term.

This remains even truer today. The Fixing America's Surface Transportation Act (FAST Act) passed in 2015 places an even stronger emphasis on performance-based planning, preserving the National Highway System (NHS), and documenting that sufficient funding is available to address "state of good repair" (preservation projects) before expansion or discretionary projects are programmed. State and local policy also emphasize that street and highway preservation needs are critical and should be considered a primary investment.

Revenue Forecast Methodology – Street/Highway Element

The methodology for developing future funding estimates was developed by the Grand Forks-East Grand Forks MPO in cooperation with state DOTs and local counties and cities. Federal and state policy allow for development of region-specific methodology, which is summarized below. All state and local partners accepted the resulting revenue forecasts.

Step 1: Establish Historical Transportation Improvement Funding Programs and Amounts

The GF/EGF MPO worked with the state DOTs and local agencies to review past Transportation Improvement Program (TIP) funding and future revenue forecasts, when available, to establish a "reasonable" baseline for forecasting future revenue streams. The TIP assessment considered past obligated dollars for expansion and preservation projects that occurred on the federal aid system (e.g., functionally classified roadways) dating back to 2013. The assessment also considered projects programmed in the 2019-2022 Transportation Improvement Program (TIP) for the Minnesota and North Dakota sides of the GF/EGF MPO, and projects planned in the MnDOT 10-Year Capital Highway Investment Plan 2019-2028.

The revenue data was further screened to evaluate if past funding sources could reasonably be expected to continue into this Plan's time horizon. Many sources are expected to continue including:

- Federal assistance to each State DOT
- Various federal funding pass through programs to local governments, e.g., Urban Program (North Dakota), Highway Safety Improvement Program, and the Area Transportation Partnership programs (Minnesota)
- State funding sources, e.g., gas tax and license tab fees
- Local revenue streams, e.g., property tax and sales tax.

Special revenue streams were not included, such as bonds, special assessments, or grants (e.g., Safe Routes to School, Local Road Improvement Board Grant), because they are not considered reasonably consistent future revenue streams.

The baseline revenue for federal, state, and local programs is presented in Table 31 for North Dakota and Minnesota. This information supplements the revenue forecast in the 2019-2022 Transportation Improvement Program and establishes the base forecast.

Table 31: Annual Anticipated GF/EGF MPO Revenues from Historic Sources – Annual (2018 Dollars except where noted)

Funding Program	North Dakota	Minnesota
Highway Safety Improvement Program	$530,500	$25,500
Interstate Program	$320,000	None
Urban Regional Program	$2,800,000	Not applicable
Urban Roads Program	$2,458,000	Not applicable
Statewide Performance Program (SPP)	Not applicable	Varies by project $3.2 million to $13.6 million (year of expenditure dollars)
MN District Risk Management Program	Not applicable	Varies by project $720,000 to $3.2 million (year of expenditure dollars)
East Grand Forks City Sub-Target of Federal Funding	Not applicable	$860,000 every fourth year starting in 2018
State Match	$390,000	Varies by project $180,000 to $3 million (year of expenditure dollars)
Federal Allocation to Grand Forks County	$80,000	Not applicable
Grand Forks County Match	$25,000	Not applicable
City of Grand Forks Existing Revenues	$2,550,000	Not applicable
East Grand Forks State Aid	Not applicable	$315,000
Polk County, MN State Aid	Not applicable	$100,000

Step 2: Establish New Transportation Improvement Funding Programs and Amounts

The 2045 Street/Highway plan includes two new revenue sources identified by MPO partners, the federally- funded Urban Grant (Main Street) program and a new City of Grand Forks sales tax. These sources are summarized in Table 32.

The Main Street program is a new competitive grant program administered by the North Dakota DOT and funded by Federal Highway Administration, with the intent of spurring investment in already developed areas. In coordination with NDDOT, the GF/EGF MPO estimated the MPO area will receive a portion of the annual program funding available in North Dakota, equal to its share of the North Dakota urban population. For the purposes of this plan, NDDOT directed the GF/EGF MPO to include Watford in the state's total urban population. Grand Forks made up 13 percent of the 2016 American Community Survey 5-year Estimated North Dakota urban population, and the GF/EGF MPO estimated it will receive the equivalent of $600,000 annually, which is 13 percent of the annual $4,600,000 program funding.

The City of Grand Forks also passed a new sales tax in November 2017 to fund public works projects, including Streets and Highways. The new sales tax supplements the existing City of Grand Forks streets/highway revenues and is set to sunset in the year 2037. For the purposes of this plan, the GF/EGF assumed the equivalent of $2,350,000 annually (2018 dollars).

Table 32: Annual Anticipated GF/EGF MPO Revenues from New Sources – Annual (2018 Dollars)

Funding Program	North Dakota	Minnesota
Main Street Program	$600,000	Not applicable
City of Grand Forks Sales Tax	$2,350,000	Not applicable

Step 3: Establish Revenue Growth Rates

The GF/EGF MPO worked with the state DOTs and the local agencies to establish inflation rates for each revenue source. These are summarized in Table 33.

Table 33: GF/EGF MPO Revenue Inflation Assumptions – Annual

Inflation Rate by Funding Program	North Dakota	Minnesota
Federal Funding (includes State Match)	2.0%	2.2%
State Funding (non-federal match)	2.0%	1.9%
Local Funding	2.0%	1.9%

Step 4: Identify Future Available Revenues

The GF/EGF MPO inflated each revenue stream annually through the program sunset year or 2045-planning horizon, whichever year came first. This information provided year-by-year revenue forecasts for 2023-2045 for each side of the GF/EGF MPO that are presented in Street/Highway Element Appendix E. Funds forecast at the federal, state, and local levels assume reauthorization or otherwise continued collection and disbursement of the source revenue (gas tax, property tax, sales tax, etc.).

The Street and Highway Plan incorporates the following revenue assumptions and State policies:

- The 2019-2022 Transportation Improvement Program for the Grand Forks-East Grand Forks metropolitan area
- The Minnesota Department of Transportation prepares their own revenue forecasts and disbursements by MPO area
- Area Transportation Partnership (Minnesota) generally provides funds to East Grand Forks project every four years. The Minnesota revenue forecasts account for this allocation starting in 2018, and includes a state match corresponding to 20 percent.

Revenue Estimates

Based on these revenue assumptions, the GF/EGF MPO can reasonably anticipate approximately $425 million dollars of revenue over the 23-year planning horizon. Table 34 shows the forecast funds by timeband--short- range (2023 – 2027), mid-range (2028-2037), and long-range (2038-2045). These revenues are in addition to those forecast in the Grand Forks-East Grand Forks 2019-2022 Transportation Improvement Program.

Table 34: Funding Estimates by Timeband in Year of Expenditure Dollars

Timeband	North Dakota	Minnesota	TOTAL
2019-2022 Transportation Improvement Program	$62,640,000*	$12,308,000	$74,948,000
Short-Range (2023-2027)	$69,969,000	$15,805,000	$85,774,000
Mid-Range (2028-2037)	$162,543,000	$18,910,000	$181,452,000
Long-Range (2038-2045)	$125,340,000	$32,857,000	$158,197,000
TOTAL (2023-2045)	$357,851,000	$67,572,000	$425,423,000

*Includes $1.3 million in federal funding available through the NDDOT Urban Main Street program in years 2021- 2022

Revenue Forecast Methodology – Transit Element

This section provides an overview and summary of the five-year (2018-2022) financial analysis related to implementation of the recommended operational strategy for CAT. The fiscally constrained implementation of the TDP would result in the implementation of the Cost Constrained Scenario for Grand Forks and East Grand Forks.

This plan provides guidance to move towards implementing the Cost Constrained Scenario by the 2nd Quarter of 2018. The system restructure proposed by the TDP allows for a new route structure to be implemented, with varying levels of new revenue investment by each major CAT funding partner. However, based on existing funding projected to be available, it is recommended that the Cost Constrained Scenario be implemented as outlined in Alternatives Analysis element of the TDP.

Assumptions

Assumptions used in the development of this element of the TDP are as follows.

- Implementation of the TDP starts April 1, 2018, and therefore cost for calendar year 2018 are assumed at ¾ of those shown in the Operational Analysis in the Alternatives Analysis chapter above. Operations costs were initially inflated in the Operational Analysis, so for this element of the TDP, they again grown four percent annually from 2019 on. Revenue projections match those discussed below.
- The selection of April 1, 2018 as the implementation window was developed to match recent funding provided by MnDOT to support CAT service improvements in East Grand Forks.
- Revenue assumptions were based on the current approved 2017-2020 Grand Forks – East Grand Forks Transportation Improvement Program (TIP). These revenue assumptions were augmented to account for recent 100 percent State funding provided to the East Grand Forks by MnDOT. Revenue projections for East Grand Forks also assume slightly elevated annual revenue as reported by MnDOT for the years 2020 and 2021 (and extrapolated to 2022) to support with TIP and STIP development.
- The tripper service should be discontinued and reevaluated in coordination with area agencies and human service stakeholders.

Operations

Operational costs are broken out by system. Based on MnDOT funding provided to East Grand Forks, the Cost Constrained Scenario is fully fundable through the year 2019 in East Grand Forks. Implementation of the Cost Constrained Scenario for Grand Forks is essentially cost neutral through the five-year planning horizon.

Grand Forks

Table 35 shows the overall operation analysis for the Grand Forks portion of the TDP for the years 2017 to 2022. No new funds are needed for the Grand Forks portion of the CAT system to implement the Cost Constrained Scenario over the life of the TDP. If Grand Forks were wishing to reach the Cost + Scenario, total new Grand Forks revenue to support implementation of the Cost + Scenario is projected to be between $225,000 and $330,000 annually over the five-year life of the TDP. Not moving forward with the Cost + Evening Service implementation would reduce this by between $97,000 and $150,000 annually over the life of the TDP.

2018 Update

Table 36 has been updated to reflect the most current cost of service and estimated incoming revenue. Grand Forks has implemented the Cost+ Scenario of the proposed new route alternatives. The City was also to find some cost savings when implementing this new route structure. The final routes look different from the ones proposed in this plan due to test runs and on the ground verification of current ridership. The riders had a month and multiple meeting opportunities to provide input. This input also change routing and time tables that are part of the final route structure.

Table 35: Grand Forks Financial Analysis

2018 Operation Cost Table- Grand Forks

Grand Forks						
	2017	2018	2019	2020	2021	2022
Other	$338.4	$345.20	$372.20	$379.64	$387.24	$394.98
Local	$1,765.1	$1,703.57	$1,615.3	$1,669.7	$1,725.6	$1,783.1
State	$250.0	$210.0	$255.0	$255.0	$255.0	$255.0
Federal	$1,112.0	$1,134.2	$1,155.5	$1,178.6	$1,202.2	$1,226.2
Total Revenue	***$3,465.5***	***$3,393.0***	***$3,398.0***	***$3,483.0***	***$3,570.0***	***$3,659.3***
Cost of Service	*$3,468.6*	*$3,393.0*	*$3,398.0*	*$3,483.0*	*$3,570.0*	*$3,659.3*
Total Shortfall/Surplus	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0

**All Values Shown as $1,000s*

East Grand Forks

Table 36 shows the overall operational analysis for the East Grand Forks portion of the TDP for the years 2017 to 2022. For years 2018 and 2019, East Grand Forks can meet anticipated revenue needs to support the Cost Constrained Scenario. Even with the assumption in increased revenues from MnDOT over life the planning horizon, East Grand Forks will run between $135,000 and $150,000 deficit following loss of the one-time MnDOT money. Therefore, Table 10-2 shows the investment in new services ending at the end of 2019. New funds would be needed to operate the Cost Constrained Scenario following the end of the two year MnDOT funding.

2018 Update

Table 37 has been updated to reflect the most current cost of service and estimated incoming revenue. MnDOT has committed to increasing the funding to East Grand Forks from MnDOT. Initially, MnDOT was only going to fund the additional service for a two year period. MnDOT is now indicating they will fund the added service for the remaining years as well. With the implementation of the new routes, a new cost allocation model was produced. This allowed for a easier understanding of the division of the cost and fare box revenue.

Table 36: East Grand Forks Financial Analysis

2018 Operational Costs Table- East Grand Forks

East Grand Forks						
	2017	2018	2019	2020	2021	2022
Local	$99.3	$105.6	$101.2	$103.2	$105.3	$107.5
State	$226.5	$294.0	$448.8	$457.8	$466.9	$476.3
Federal	$80.6	$85.0	$85.0	$86.7	$88.4	$90.2
Total Revenue	*$406.4*	*$484.6*	*$635.0*	*$647.7*	*$660.7*	*$674.0*
Cost of Service	*$406.4*	*$414.6*	*$550.0*	*$563.8*	*$577.8*	*$592.3*
Total Shortfall/Surplus	$0.0	$70.0	$85.0	$84.0	$82.8	$81.7

**All Values Shown as $1,000s*

Planned Improvements – Street/Highway Element

- *Current Revenue Scenario Planned Investments*

Current Revenue Scenario investments for 2023-2045 are summarized in Table 37 and Figure 13. 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.

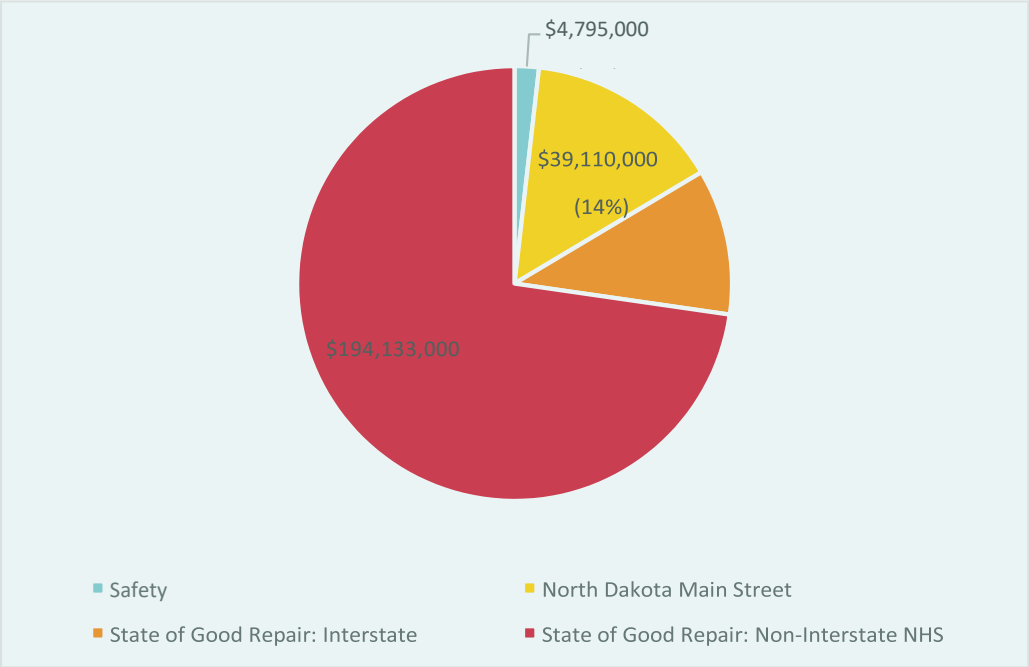
The City of Grand Forks local projects will be identified by the City Council. Any project being financed locally and needing federal approval must be amended into this fiscally constrained Current Revenue Scenario.

Table 37: 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 13: 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 38 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 38: 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 39 provides a summary of the City of Grand Forks federally funded State of Good Repair projects by time period.

Table 39: 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 40 provides a summary of City of Grand Forks Main Street projects by time period.

Table 40: 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 41 summarizes these projects by time period.

Table 41: 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 42 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 42: 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 43 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 43: 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

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 44, these State of Good Repair improvements total $39,500,000 through the 2045 planning horizon.

Table 44: 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 45.

Table 45: 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 46 below provides a summary of these investments.

Table 46: 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 47 provides a summary of all safety/operation projects within the Minnesota portion of the MPO by time period.

Table 47: 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 48 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 48: 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 49 summarizes the GF/EGF MPO expenditures and revenues for the North Dakota portion of the MPO planning area. Table 50 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 49: 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 50: Fiscally Constrained Program for Minnesota Portion of Grand Forks-East Grand Forks MPO*

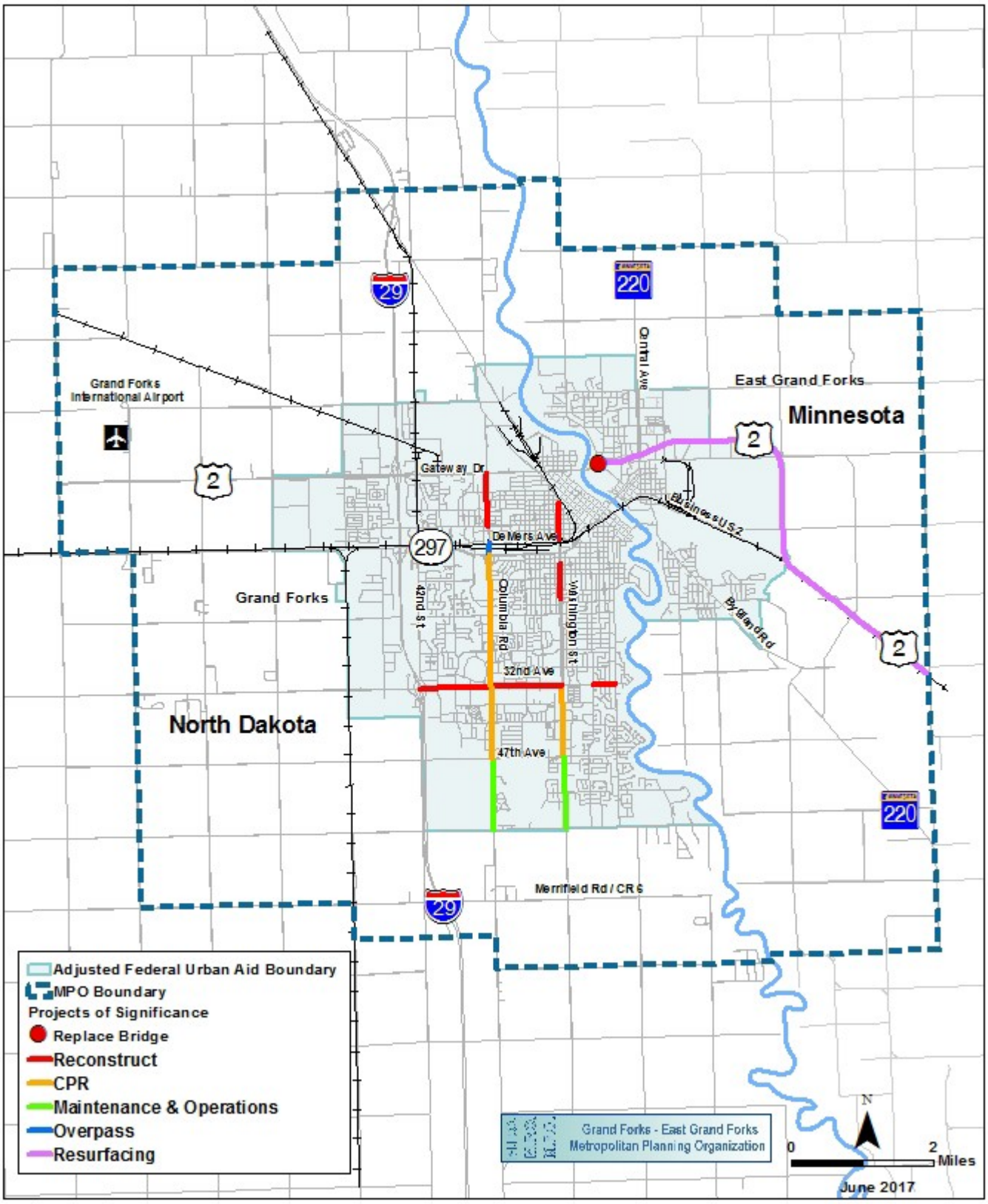
Time Period	*Planned Expenditures*			*Forecasted Revenue*		*Balance*
	MnDOT	*City of East Grand Forks*	*Polk County*	*State and Federal*	*City/County*	
Short-Range (2023-2027)	**$10,300,000**	**$2,738,000**	**$203,000**	**$11,060,000**	**$2,365,000**	**+$0.2 million**
Mid- Range (2028-2037)	**$9,000,000**	**$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 14 also highlights Current Revenue Scenario "Projects of Significance" equal to or greater than $5 million, as summarized earlier in this chapter.

Figure 14: 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 51 and in Figure 15.

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:

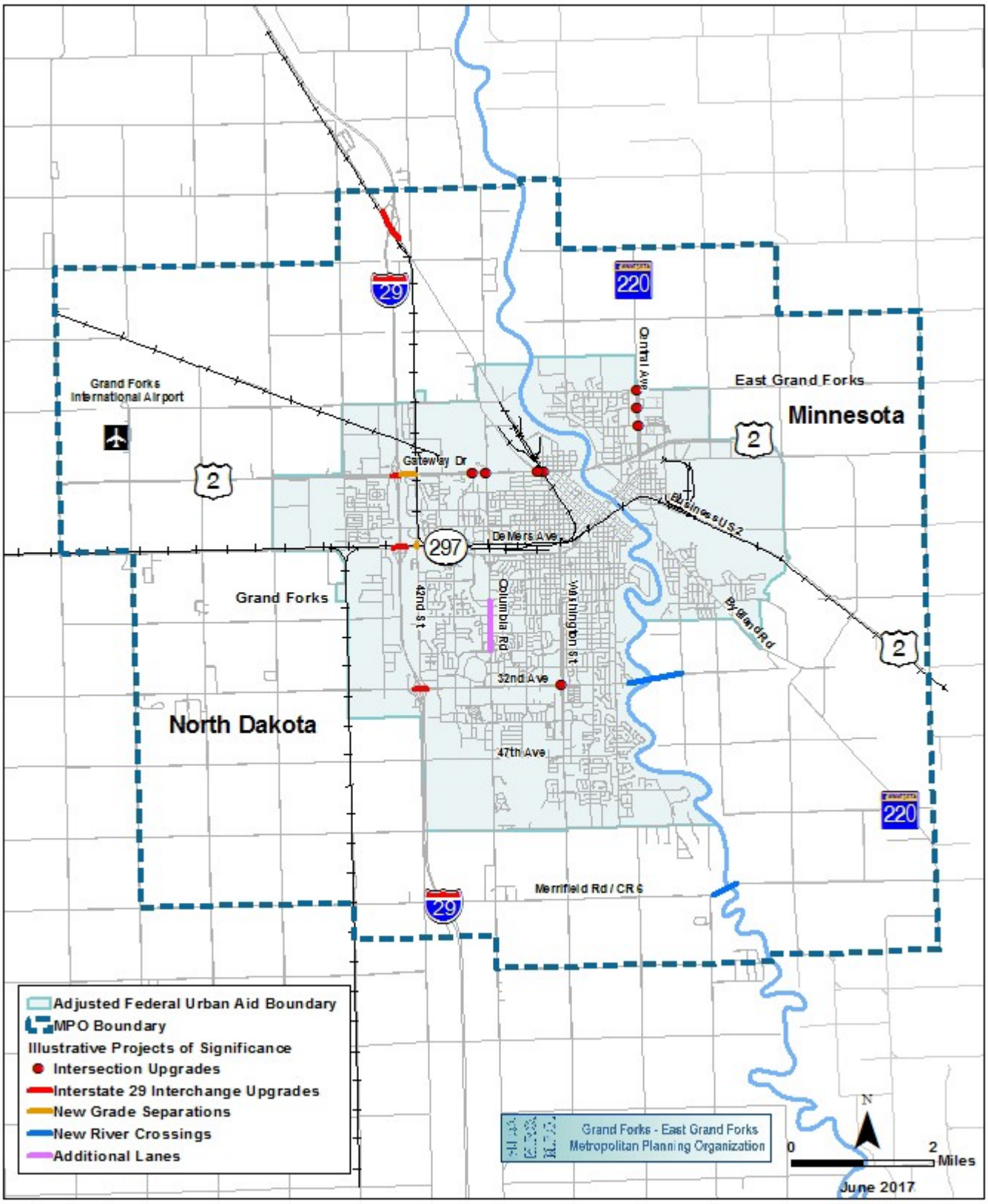
- Continue to explore for additional funding sources for a river crossing.
- Political leaders in North Dakota and Minnesota should work collaboratively to communicate the need for funding to state and federal political leaders.
- Local land use authorities should take steps to preserve corridor right-of-way 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 51: 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
	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 15: 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 16. 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.

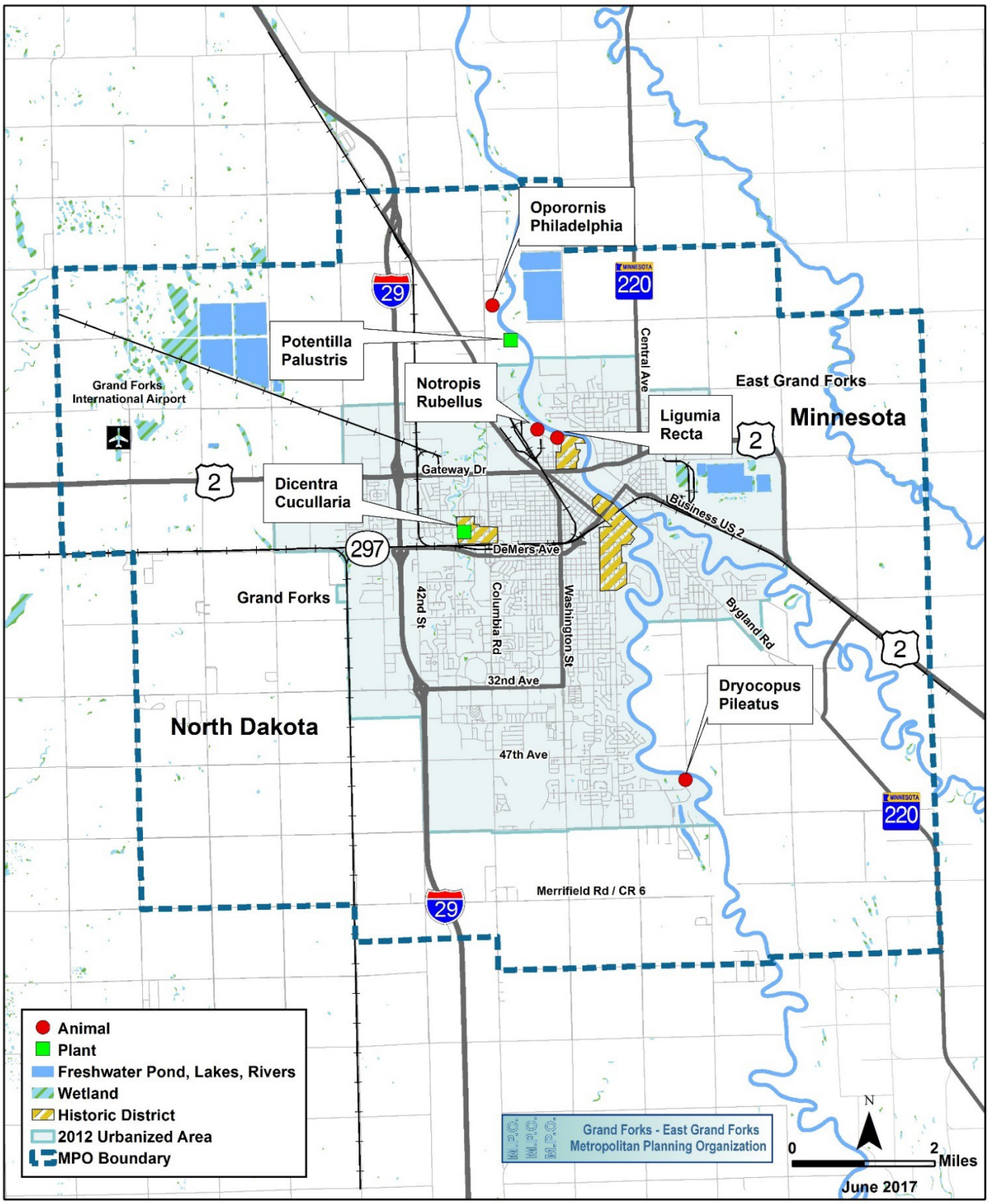
For major construction projects, such as new roadways, or for projects that may have a metropolitan-wide environmental impact, context sensitive solutions should be considered. This process should include considerable public participation and alternative design solutions are used to lessen the impact 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 52 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 16 will need to be considered as Current Revenue Scenario projects identified in Appendix F move forward through future environmental review and project development processes.

Figure 16: Sensitive Environmental Features



Source: Grand Forks-East Grand Forks MPO

Table 52: 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

Planned Improvements– Transit Element

To develop a range of potential system investment options, three Operational Alternatives were proposed for CAT: Each system builds upon the route framework discussed earlier. The change in new service is measured as a function of revenue hours between the base, current system and each of the three proposed operational scenarios. Each Operation Alternative builds upon the next by adding additional levels of service by increasing frequency.

- » Cost Constrained: Implements proposed new route structure. Assumes some new service (mostly in East Grand Forks), but only to levels reasonably expected to be fundable in the immediate future. System is right sized and scaled to meet regional needs balanced with new system route structure.
- » Cost ++ Build on system restructure and focuses on improved headways and frequency of service.
- » Cost ++ Builds on Cost + by further improving service frequency.

The East Grand Forks operational alternatives remain unchanged throughout the Cost Constrained, Cost+ and Cost ++ scenarios.

Operational Scenarios

- » The Cost Constrained Scenario assumes a rough cost constrained investment relative to revenue hours and reflects investments in new revenue hours assumed to be constrained. Total new investment of $254,000 is needed to support the Cost Constrained Scenario.
- » The Cost + Scenario reflects an increased investment of approximately $1.20 million annually, which includes costs for the expansion of the Fixed Route Fleet by one (1) vehicle.
- » The Cost ++ Scenario reflects an increased investment of approximately $2.5 million annually, which includes the purchase of two (2) new Fixed Route Vehicles.

Cost + Scenario

The Cost + Scenario includes most of the weekday proposed routes operating either on 60-minute headways all day and a 30-minute headway during the peak period and a 60-minute headway during the off-peak period.

- » Route 1 is proposed to operate at a 30-minute headway all day.
- » Route 3, Route 4, and Route 5 are proposed to operate at 30-minute headways during the peak period and 60-minute headways during the off- peaks.
- » Route 8 is proposed at a 45-minute headway during the peak period only.

The Cost + Scenario includes the operation of the Route 1-night route, Route 3 night route, and Route 6 night route at 60-minute headways. Level of service information for the Cost + Scenario is shown in Table 53.

The Cost + Scenario was estimated based on the assumed level of service in Table 53. The estimated additional annual cost (beyond the cost of the current system) of the Cost + Scenario for day and night services is $526,000. Additional information regarding the cost estimate for the Cost + Scenario is shown in Table 53.

Table 53: Cost + Scenario Level of Service

Route	Weekday/Saturday	Weeknight/Saturday Night
Route 1/1U	30	60
Route 1SE	60	X
Route 1SW	60	60
Route 3	30/60	60
Route 3 (EGF)	60	60
Route 4	30/60	X
Route 5	30/60	X
Route 5 (EGF)	60	X
Route 6W	60	60
Route 6E	60	60
Route 8	45	X
Peak Vehicles	9	4

*30/60 indicates routes that run on 30-minute headways during the peak period (assumes additional cost to account for deadhead and driver change out) and 60-minute headways during the off-peak period

** Route 8 is a tripper route that runs on a 45-minute headway during the peak period

Some of the 12 current regular routes operate very effectively and efficiently, while other routes have low ridership and a high cost. New route alternatives were based on the performance of the existing route alignments and issues identified through the Existing Systems Analysis, Public Input and Issues Analysis. These alternatives have been vetted by the public, bus operators, city staff and other stakeholders and revised based on their feedback.

Proposed Route Alternatives

Operational Construct

Fixed Route alternatives were developed for weekday and Saturday service and weeknight and Saturday night service. Routes were also explored for an industrial park route and a Sunday service route but are not recommended at this time. Figure 18 shows the overview of the proposed Weekday and Saturday routes. Figure 18 shows the overview of the proposed Weeknight and Saturday night routes.

Weekday And Saturday Routes

Route 1

Route 1 is proposed to operate between the Grand Cities Mall and the 13th Avenue North Hugo's via the Metro Transit Center (MTC) and Home of Economy. The proposed route shortens and consolidates the current Routes 1 and 2. The proposed Route 1 would also provide connections to other routes at the MTC and Grand Cities Mall. Two of these proposed connections include Route 1, Route 1SE and Route 1SW. To maintain 60-minute circuity of the interlined Routes 1SE and 1SW, 30-minute service is recommended on Route 1.

Route 1U

Route 1U would be a part of the overall interlined systems recommended for Routes 1, 1SE and 1SW. The Route 1U portion of the route would provide service between the Downtown and the UND campus on a 60-minute headway. With the proposed interline for the Route 1 systems developed as part of the TDP, Route 1U would provide a one-seat ride between

the UND campus, downtown, Grand Cities Mall and destinations on the southside depending on I it were lined with the Route 1SE or 1SW.

Route 1SE

Route 1SE is a circulator in the southeast area of Grand Forks. The route would serve Grand Cities Mall, the 32nd Avenue Hugo's, Columbia Mall, Target, and 32nd Avenue Walmart. The route is proposed to interline with every other trip of the Route 1, alternative with Route 15W.

Route 1SW

The proposed Route 1SW is a circulator in the southwest area of Grand Forks. The route would serve Grand Cities Mall, the 32nd Avenue Hugo's, Columbia Mall, Target and 32nd Avenue Walmart. The route is proposed to interline with every other trip of the Route 1, alternative with Route 1SE.

Route 3

Route 3 is proposed to operate between Altru and Northland Community College via Grand Cities Mall and the MTC and the East Grand Forks Hugo's. The route merges the most productive elements of the current Routes 10 and 11 with the current Route 3.

Route 4

Route 4 is proposed to operate between the MTC and the Gateway Drive Walmart via the University of North Dakota (UND). This route is a modification and consolidation of the current service on Routes 4 and 6.

Route 5

Route 5 is proposed to operate between Northland College and the Columbia Mall via the MTC. The route is a streamlined combination of the Current Routes 5, 10, 11.

Route 6

Route 6 is proposed as an interlined route that includes Routes 6E and 6W and operates between Columbia Mall and UND.

Route 6E

Route 6E is proposed to operate between Columbia Mall and UND via Altru. The route provides a direct connection between UND and the Columbia Mall along Columbia Road. Additional Coordination with UND will be necessary as operations on campus are planned.

Route 6W

Route 6W is proposed to operate between Columbia Mall and UND via the Alerus Center. The route provides a direct connection between UND and the Columbia Mall along 42nd Street. Additional coordination with UND will be necessary as operations on campus are planned.

Route 8

Route 8 is proposed to operate between northwest East Grand Forks and the East Grand Forks Senior Citizen's Center via the East Grand Forks High School and downtown East Grand Forks. The route provides service to those wishing to travel within East Grand Forks and connects to the proposed Routes 3 and 5.

Weeknight And Saturday Night Routes

Stop level ridership data is currently unavailable for weeknight ridership. Therefore, the proposed weeknight routes are based on high demand weekday transit stops and reflect proposed weekday routes or portions of proposed weekday routes.

Route 1

The Route 1 night route is proposed to operate between the 13th Avenue Hugo's and the 32nd Avenue Walmart via the MTC, Grand Cities Mall, Columbia Mall and Target. The proposed route is a combination of the proposed weekday Routes 1SE and 1SW.

Route 3

The Route 3 night route is proposed to operate between Altru and Northland Community College via Grand Cities Mall, the MTC and the East Grand Forks Hugo's. The route merges the most productive elements of the current Routes 10 and 11 with the Current Route 3.

Route 6

The Route 6 night route is proposed as an interlined route that includes Routes 6E and 6W and operates between Columbia Mall and UND.

Figure 17: Proposed Weekday and Saturday Route Overview

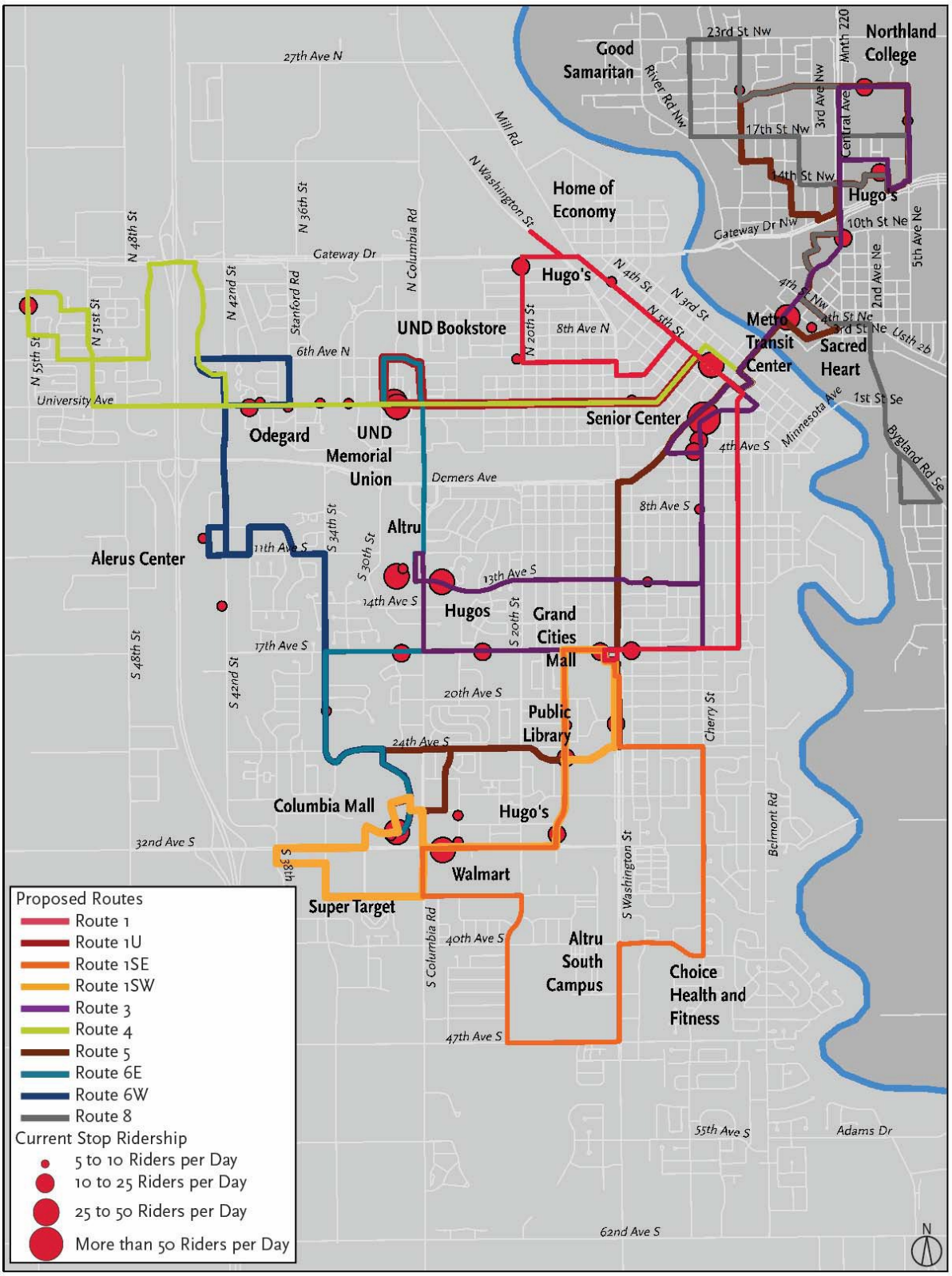
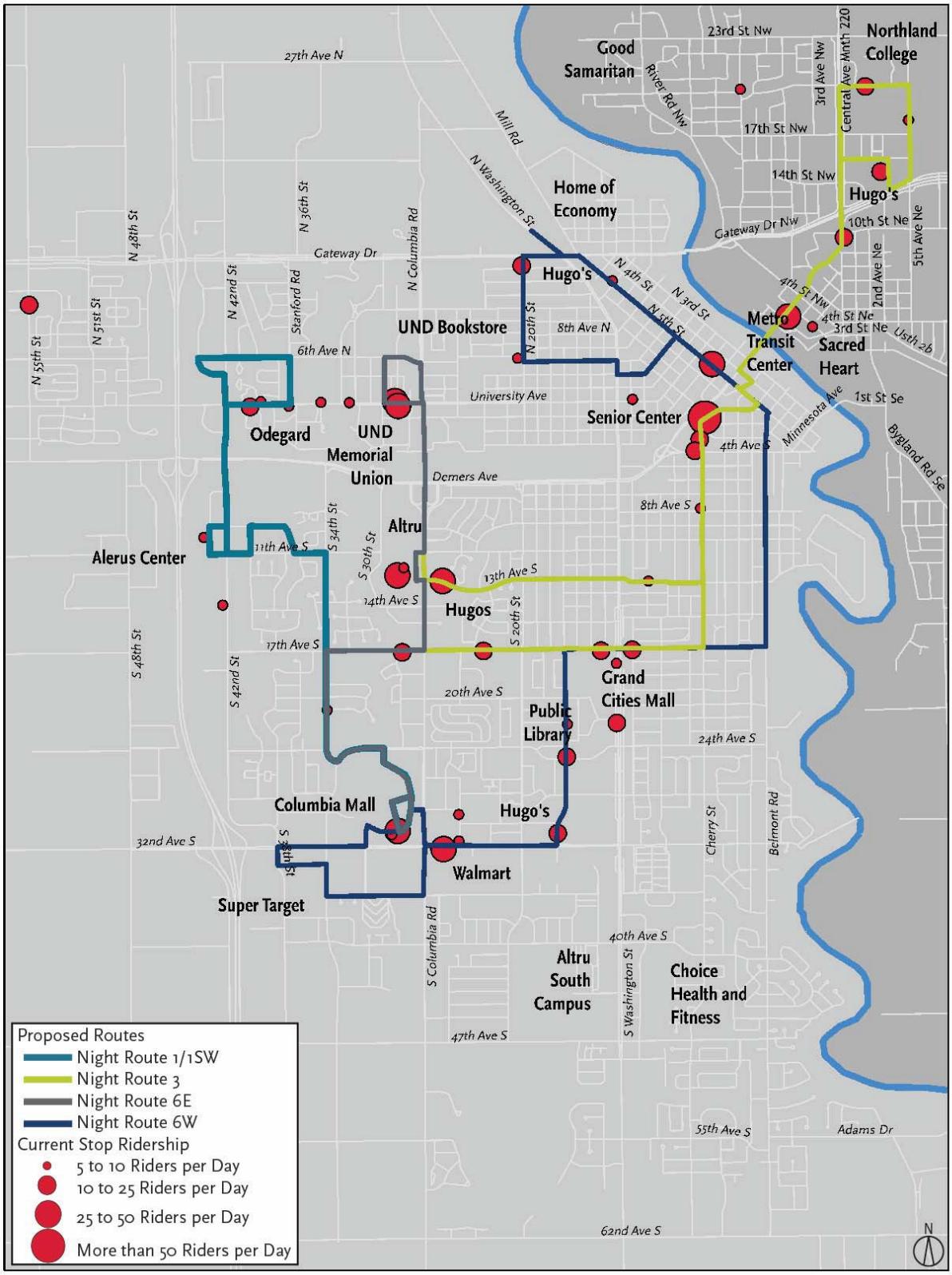


Figure 18: Proposed Night Routes Overview



Capital

Grand Forks

Table 54 shows the current projected capital expenditures needed to support the Grand Forks side of the CAT System over the life of this TDP through year 2022.

Short-Term Needs

Over the life of the TDP Grand Forks will face an estimated need for $4.0 million in capital funding to meet short-term capital needs. Nearly $1.4 million of these funds are currently programmed, with another $700,000 currently submitted for 2018 Federal funding through NDDOT. The largest chunk of this unfunded need will be four large vehicle replacements in 2022.

Long-Term Needs

The Grand Forks capital analysis is not inclusive of needed ongoing upgrades and expansion to the CAT Bus Garage. The full expansion and upgrade of the CAT Bus Garage is estimated at $8.0 million. A multi-year funding strategy for this facility is needed, and should consider the potential for a MnDOT share in the eligible portions of the facility.

Based on the Asset Management analysis developed as part of the TDP, it is suggested that an additional $1.25 million in new capital revenues are needed per year to maintain a backlog of roughly 50 percent for the next 15 years. Some of this backlog may already be addressed through capital replacements included in Table 54. Given the current split in overall service and revenue miles of the CAT System, approximately 85 percent of this backlog, or $1.062 million would be Grand Forks' burden.

2018 Update

Table 54 has been updated to reflect the most current capital investment schedule. In 2018 Grand Forks was awarded 5339 competitive grant funding for the expansion and remodel of the Transit Administration and Maintenance facility for a total cost $4.87 million. This is a one-time funding for a project that this plan could not see being done with current traditional funding sources. CAT had the floor plans redone so that the new cost of the expansion/renovation will be covered by the awarded grant amount. There have been additional 5339 formula funds being solicited for projects. CAT has a list of projects that will start working on the Transit Assets that are need of being brought back into a state of good repair. CAT will use this list to apply for future 5339 formula funds.

Table 54: Grand Forks Capital Investment Schedule

2018 Capital Investment Schedule- Grand Forks

Grand Forks							
Item	Status	2017	2018	2019	2020	2021	2022
Fixed Route Vehicles	Programmed	$784.0	$480.0	$490.0			
Paratransit Vehicles	Programmed		$107.0	$110.0			
Safety & Security	Programmed -5307	$35.0	$15.0	$15.0	$15.0	$15.0	$15.0
Fixed Route Video System	Programmed		$60.0				
Shop Mtce. Software	Programmed		$100.0				
Shop Tools/Equipment	Programmed			$16.0			
Digital Way Signs	Programmed			$25.0			
Destination Signs	Programmed			$20.0			
Transit Admin/Garage Upgrades	Programmed		$387.0	$4,784.4			
Bus Stops/Buildings Improvements/Maintenance	Programmed			$10.0			
Paratransit Vehicles	Candidate - 5310/Illustrative				$160.0		$80.0
Fixed Route Vehicles- Replacement	Candidate - 5339/Illustrative					$1,060.0	$1,250.0
Fixed Route Vehicles- Expansion	Candidate- 5339/Illustrative			$1,521.0			
Non-Revenue Vehicles	Candidate - 5339/Illustrative			$63.0		$30.0	
Capitalized Vehicle Maintenance	Candidate - 5339/Illustrative				$80.0		
Shop Tools/Equipment	Candidate - 5339/Illustrative			$20.0		$80.0	
Bus Fare Boxes	Candidate - 5339/Illustrative			$200.0			
Fare Collection Vault/Software & Servers	Candidate - 5339/Illustrative			$106.3			
Transit Admin/Garage Upgrades	Candidate - 5339/Illustrative			$150.0			
Bus Stops/Buildings Improvements/Maintenance	Candidate - 5339/Illustrative			$186.0	$20.0	$45.0	$20.0
Programmed		*$819.0*	*$1,149.0*	*$5,470.4*	*$15.0*	*$15.0*	*$15.0*
Candidate/Illustrative		*$0.0*	*$0.0*	*$2,246.3*	*$260.0*	*$1,215.0*	*$1,350.0*
Total - Grand Forks		$819.0	$1,149.0	$7,716.7	$275.0	$1,230.0	$1,365.0
**All Values Shown as $1,000s*							

East Grand Forks

Table 55 shows the current projected capital expenditures needed to support the East Grand Forks side of the CAT System over the life of this TDP through year 2022.

Short-Term Needs

Over the life of the current TDP, East Grand Forks has a total capital need of $1.23 million. Of this amount, $610,000 is currently programmed. The unfunded elements of the East Grand Forks capital analysis relate to vehicle needs in 2021 for replacement of vehicles 142 and 162.

Long Term Needs

The East Grand Forks capital analysis is not inclusive of needed ongoing upgrades and expansion to the CAT Bus Garage. Based on current services provided by CAT, MnDOT may potentially consider funding some portion of this facility. These discussions should be included in future investment planning for upgrade and expansion of the CAT Bus Garage.

The East Grand Forks capital analysis is not reflective of the needed additional investments to maintain a state of good repair. Based on the earlier discussion of the Asset Management analysis for CAT, an additional $187,000 in revenue is needed from East Grand Forks to maintain their proportional share (based on percent of system revenue miles) of the current CAT capital infrastructure.

2018 Update

Table 55 has been updated to reflect the most current capital investment schedule. This reflects the change in year when a bus replacement will happen. There has been added card/ticket vending machines to help the system improve the ability for customers to access new fare cards or reload current ones.

Table 55: East Grand Forks Capital Investment Schedule

2018 Capital Investment Schedule- East Grand Forks

East Grand Forks							
Item	Status	2017	2018	2019	2020	2021	2022
Paratransit Vehicle	Programmed		$150.0				$170.0
Fixed Route Vehicles	Programmed					$170.0	
Safety & Security	Programmed		$3.8				
Ticket Vending Equipment	Programmed			$220.0			
Bus Stops/Buildings Improvements/Maintenance	Programmed				$200.0		
Card Vending Equipment	Programmed						$250.0
Expansion Fixed Route (MnDOT 100% $)	Programmed		$460.0				
Programmed		$0.0	$613.8	$220.0	$200.0	$170.0	$420.0
Illustrative/Candidate		$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Subtotal - East Grand Forks		$0.0	$613.8	$220.0	$200.0	$170.0	$420.0
*All Values Shown as $1,000s							

Existing & Planned Bikeway Network

The construction and expansion of the existing Bicycle System in Grand Forks-East Grand Forks began in 1974. Years later, the current on-road and off-road network boasts 79.1 miles of bicycle and pedestrian facilities. The system straddles two jurisdictions located on the opposite edges of the Red River of the North. In addition, approximately 20 miles of paved multi-purpose paths in park, wildlife refuge and trails setting are contributed by the Greenway Trail System. The current existing Bikeway System accounts for:

Table 56: Existing Bike Facilities

On Street Bicycle Facilities

Facility Type	Grand Forks (Length/Miles)	East Grand Forks (Length/Miles)
Bike Lanes	1.00	0.00
Bike Routes	4.67	0.00
Sharrows	1.75	0.00

Off-Street Bicycle and Pedestrian Facilities

Facility Type	Grand Forks (Length/Miles)	East Grand Forks (Length/Miles)
Multi-use Paths	56.14	13.31
Unpaved Trails	2.26	0.00

Planned Improvements – Bicycle and Pedestrian Element

The components of the proposed 2045 Bicycle system and Pedestrian network will include:

Table 57: Carried-Over Bicycle and Pedestrian Facilities

Grand Forks—*Carry-Over* Bicycle & Pedestrian Facilities (2045)

TERM	FACILITY TYPE	LENGTH (Miles)	ESTIMATED COST
Short-term 2020-2025	Multi-use Path	2.30	$ 2,025,510
Mid-term 2026-2034	Multi-use Path	2.84	$ 3,077,561
Long-term 2035-2045	Multi-use Path	5.05	$ 7,323,681
Estimated Total		10.19	$ 12,426,742

East Grand Forks—*Carry-Over* Bicycle & Pedestrian Facilities (2045)

TERM	FACILITY TYPE	ESTIMATED LENGTH (Miles)	ESTIMATED COST
Short-term 2020-2025	Bike Lane-Sharrow	4.71	$ 19,360.65
Mid-term 2026-2034	Bike Route	2.25	$ 4,446.55
Long-term 2035-2045	Multi-use Path	3.78	$ 6,989,796
Estimated Total		10.74	$ 7,013,603

Table 58: Proposed On-road Bicycle Facilities

Grand Forks Proposed Facility Costs (2045)

FACILITY TYPE	ESTIMATED LENGTH (Miles)	ESTIMATED COST 2020-2025	ESTIMATED COST 2026-2034	ESTIMATED COST 2035-2045
Bike Route	13.46	$41,915.67	$52,964.27	$69,318.91
Bike Lane	1.47	$4,601.79	$5,814.79	$7,610.31
Estimated Total	14.93	$46,517.46	$58,779.06	$76,929.23

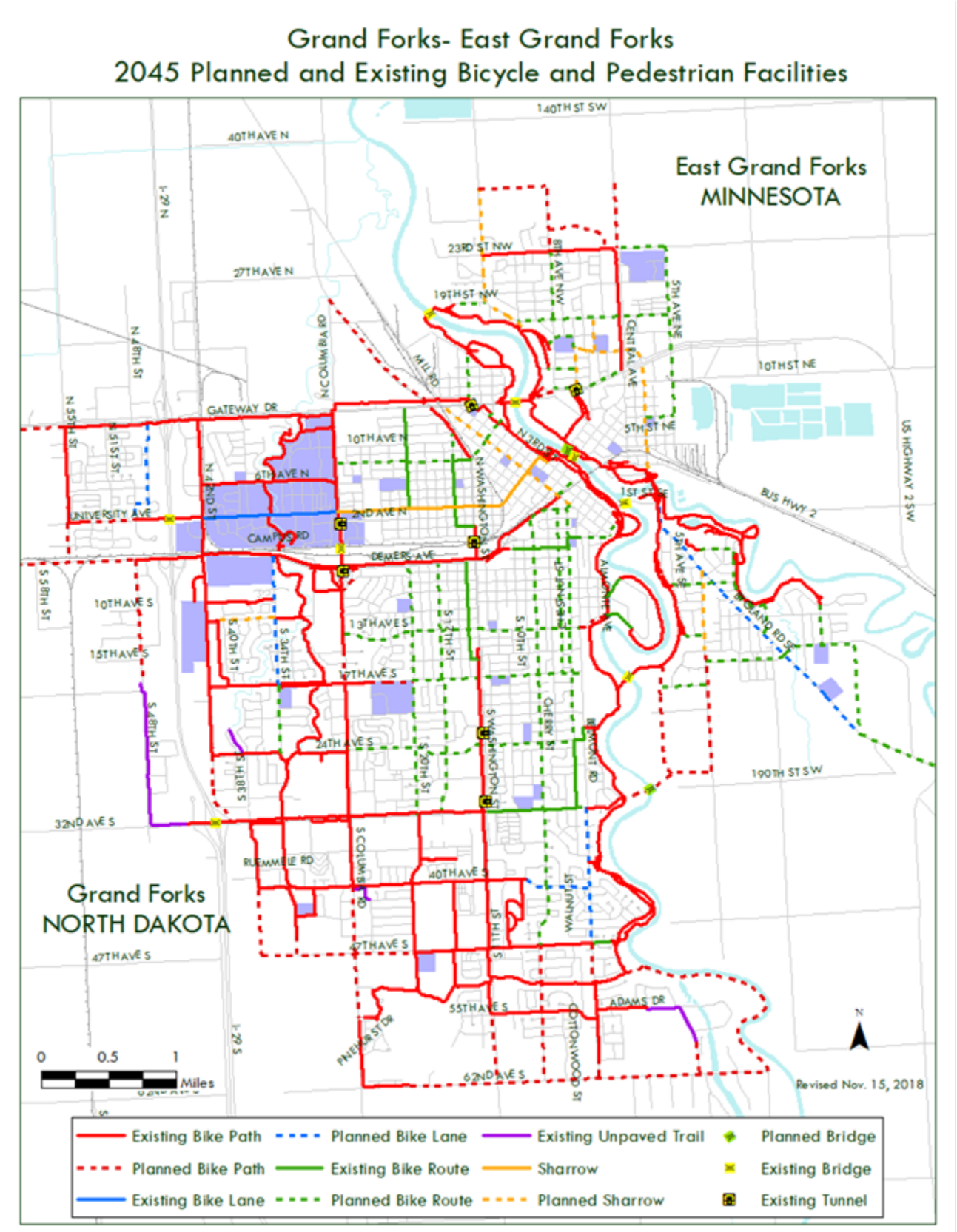
East Grand Forks Proposed Facility Costs (2045)

FACILITY TYPE	ESTIMATED LENGTH (Miles)	ESTIMATED COST 2020-2025	ESTIMATED COST 2026-2034	ESTIMATED COST 2035-2045
Bike Route	7.69	$ 17,068.22	$ 21,567.26	$ 28,226.93
Bike Lane	1.61	$ 5,264.55	$ 6,652.24	$ 8,706.36
Sharrows	5.31	$ 15,073.23	$ 19,046.41	$ 24,927.68
Estimated Total	14.61	$37,406	$47,265.91	$61,860.97

Source: EGF PROPOSED FACILITIES LIST_OCT 28 STAKE_INPUT_FN_FINALS COST_NOV_12

The addition of these segments to the 2045 Bicycle System and Pedestrian network will help local governments in their efforts to improve access to key parks, schools, and related community locations. These segments –when implemented- will enhance mobility for all users by facilitating access to commercial and / or industrial areas where access & mobility could be restricted or severely limited for pedestrians and bicyclists.

Figure 19: Existing and Planned Bicycle and Pedestrian Facilities



Environmental Justice

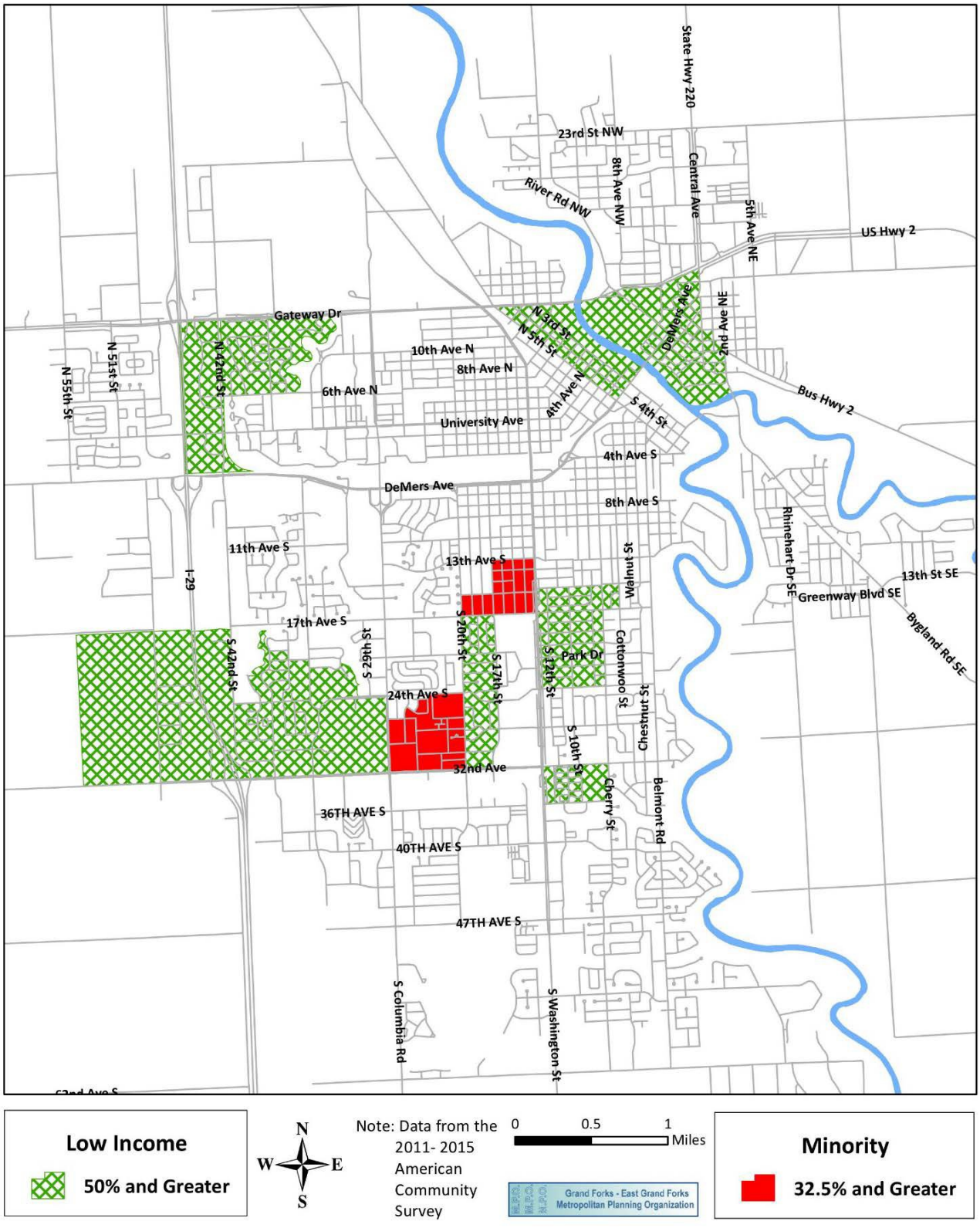
Executive Order 12898 directs Federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects, including the transportation planning process, on the health or environment of minority and low-income populations to the greatest 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.

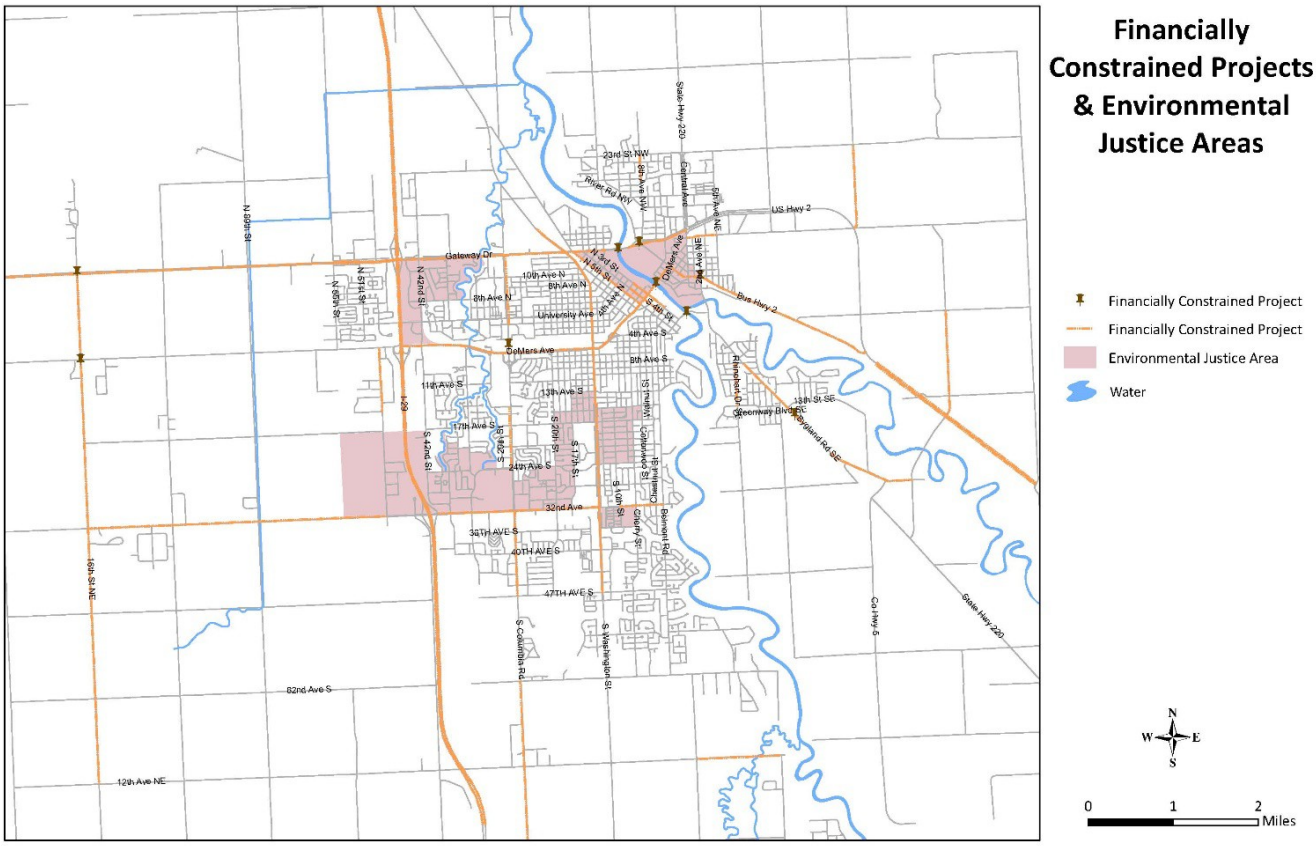
According to the most recent Environmental Justice Program Manual, minority populations in Grand Forks were most concentrated east of Columbia Mall between 24th Avenue South and 32nd Avenue South and north of Grand Cities Mall between 13th Avenue South and 17th Avenue South. As illustrated in Figure 20, 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 21, 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 Street/Highway Element Appendix F.

Figure 20: Environmental Justice Populations



Source: Grand Forks-East Grand Forks MPO

Figure 21: Environmental Justice Populations – Financially Constrained



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

Environmental 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 to identify detailed social, economic, and environmental impacts. These analyses will be performed as projects are further developed.

The GF/EGF MPO solicited input from several 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. Agencies were notified via 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. 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.

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.

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 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 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. These projects are expected to have a positive impact toward meeting pavement and bridge condition targets in North Dakota and Minnesota.

In June 2017, after close coordination with both states and including several discussions occurring at numerous MPO Technical Advisory Committees (TAC) and Executive Board meetings, the Forks MPO adopted Transit Asset Management (TAM) targets specific to the MPO study area. The general purpose of the Forks MPO is to establish a uniform transportation plan and program for planning investments in the transportation system. Further, one overall transportation plan covering the entire metropolitan area, including area for future growth, establishes the goals, objectives, and standards to achieve the plan.

The two transit operators have been working on TAM documents. A deadline of October 1, 2018, existed for transit operators to submit a TAM. An option for the transit operators was to join a state sponsored TAM (Tier II Group TAM). During the month of September, 2018, a decision was made to join the ND TAM. Despite East Grand Forks being in Minnesota and that there exists a MN TAM, the decision was to have it participate in the ND TAM. The lead agency is Grand Forks as East Grand Forks purchases

transit services from them. This decision came too late to process respective approvals to meet the October 1st deadline. Each transit operator has requested an one month extension to submit a TAM. Once the Forks MPO receives the TAM, it will work with its partners to determine whether an adjustment is needed to the TDP targets. One distinguishing factor is that the transit operator TAM targets are an annual target whereas the MPO targets are considered five year targets.

As the TAM PM is an annual target setting requirement, the States, transit operators, and Forks MPO have identified methods to assist in achieving target setting. Annually, assessment of each asset condition is to be documented. This work is reported to the National Transit Database. This annual report will provide the basis for the annual target setting and the reporting of progress towards achieving the state of good repair.

The current metropolitan Transit Development Plan is the 2045 Plan. It was developed and adopted under the guidance available for the MAP-21 and FAST ACTs. The established measures specific to TAM were not finalized until after the 2045 Plan was adopted. In that Plan, the Forks MPO did establish performance targets regarding TAM. State of Good Repair is one of the explicit goals of the 2045 Plan. Many objectives were adopted to support this goal. In addition, standards were approved that assist in reaching the objectives and overall goal.

These measures and targets were developed prior to the final federal required measures and target setting process. Therefore, an exact comparison cannot be made. The Forks MPO is currently updating the 2045 Plan. Under this process, the new Plan will implement the now promulgated required national performance measures. Particular attention is being done to integrate the various TAM plans being promulgated by respective agencies.

As stated previously, the national TAM performance effort is to achieve a state of good repair. The predominant program that Congress has created to achieve this is the FTA 5339 Program. Most notably, each state has an adopted TAM Plan. As noted above, the North Dakota TAM Plan has been adopted by our two transit operators even though one is located in Minnesota. State of good repair targets are identified within each and specific strategies are adopted.

The Forks MPO MTP – TDP Element has been recently amended to update the potential capital projects to maintain a state of good repair for transit assets. This list will be the primary candidate projects for the annual solicitation of federal and state capital funds. Periodically, new, unanticipated funding solicitations are made and this list will be reviewed and adjusted if appropriate.

The Forks MPO has a project selection process adopted to assist it in planning and programming projects. Each possible project is reviewed through several criteria pertinent for the projects likely funding source. State of good repair is one of the primary considered criteria for transit capital requests. The application form requests the project sponsor to indicate whether the proposed projects are furthering the respective TAM plans that exists.

In the current TIP, the FTA 5339 program has many projects programmed towards state of good repair for transit assets. Several vehicle replacements are on schedule to keep the fleet up-to-date. Equipment is programmed as well as components of facilities. A recent award will bring the main Public Transportation Facility into a state of good repair. Significant investment is being made to modernize,

renovate and expand the facility. Candidate projects are currently being vetted through the TIP process for bus shelters, equipment and other items to bring additional assets into a state of good repair.

Besides the FTA programs, the state Of Minnesota provides state funds to assist the East Grand Forks transit operator to maintain state of good repair. Minnesota funds have been used and are programmed to be used to purchase replacement vehicles and replacement fare machines.

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.