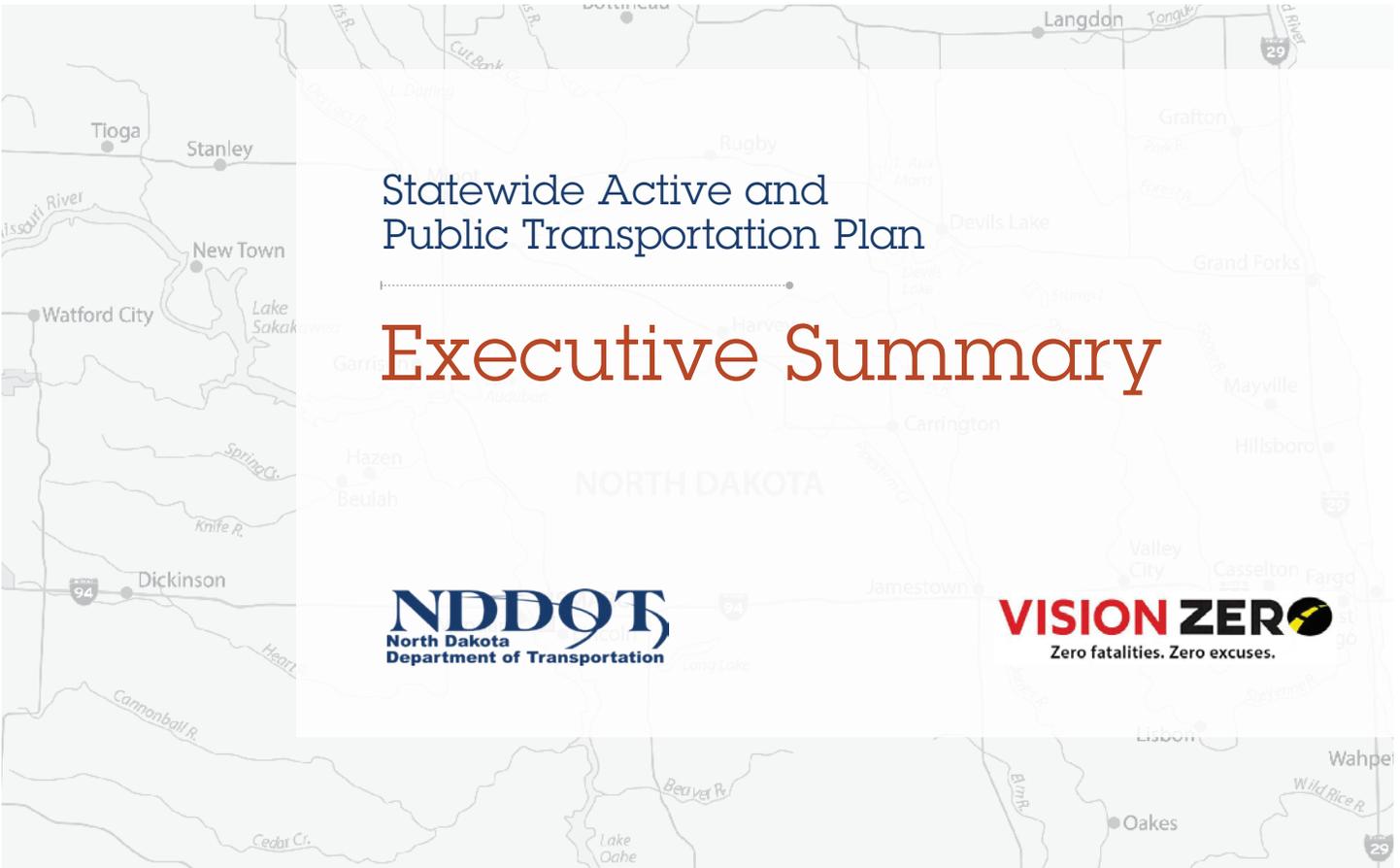


ND Moves



active & public transportation plan

NDDOT



Statewide Active and Public Transportation Plan

Executive Summary

NDDOT
North Dakota
Department of Transportation

VISION ZERO
Zero fatalities. Zero excuses.



North Dakota Department of Transportation

Thomas K. Sorel
Director

Doug Burgum
Governor

April 25, 2019

Fellow North Dakotans,

The development of this Statewide Active and Public Transportation Plan, or **ND Moves**, was a collaborative effort of the North Dakota Department of Transportation (NDDOT), North Dakota Department of Health, and North Dakota State Parks and Recreation. Public engagement was used to shape every aspect of this plan. We are greatly appreciative of our partners, the public, and **ND Moves** stakeholders for providing valuable input in shaping this document.

Consistent with the NDDOT statewide strategic transportation plan, **TransAction III**, and Vision Zero Initiative, alternative modes of travel are being assessed and included as important elements in our integrated transportation system. **ND Moves** reviews and identifies existing and emerging needs and recommended strategies for the future of biking, walking, and public transit across the state.

NDDOT presently manages approximately 7,400 miles of highway throughout the state and leveraging these assets for additional public benefit is in every North Dakotan's best interest. Public transit, bike, and pedestrian systems provide an opportunity to increase citizen options by integrating additional uses safely into those statewide rights-of-ways. Public benefits, such as health and economic opportunity, are enhanced due to improved transit and trails systems.

Knowing public desires and needs is critical to devising a vision for these modes that is practical, valuable, safe, and flexible. State, regional, and local stakeholders were engaged in this process to help identify needs and opportunities and provide direction on the overall vision for North Dakota's transportation system. Ultimately, **ND Moves** provides recommendations on ways to update or establish guidance on NDDOT design, programming, and policies to help improve walking, biking, and transit systems and services; additionally, it provides support and guidance recommendations to local communities wishing to improve their own systems and services in these modes.

THOMAS K. SOREL, DIRECTOR

17/sbm/sas

Executive Summary

Introduction

What is ND Moves?

The North Dakota Department of Transportation (NDDOT), together with project partners, has developed a Statewide Active and Public Transportation Plan branded as ND Moves. This plan is intended to serve as a guide and a resource for accommodating active and public transportation in the development of state and local transportation systems and programs. It establishes recommendations and an implementation framework to address the identified needs and opportunities of active and public transportation in North Dakota. The plan addresses multiple modes of mobility including public transit, walking, and bicycling—identifying needs and opportunities across the transportation spectrum for all users. This combined assessment of active transportation and public transportation is also intended to leverage existing state assets (namely right-of-way and facilities) and better integrate these two system types to provide greater public benefits.



The plan considers needs and improvements over the next **20 years**. It is intended to be used as a guide by state, regional, and local transportation providers, but also as a resource for local jurisdictions interested in developing or revising active and public transportation plans and facilities. Figure 1 is a summary of Plan elements.



Figure 1 - Summary of Plan Elements

Vision, Goals, and Objectives

To meet the guidance established by Fixing America's Surface Transportation (FAST) Act, ND Moves was developed with a performance management element. The FAST Act established a set of national goals to guide the development of transportation investments and focuses on a performance-based approach to transportation planning. These goals are discussed further in the Chapter 5: Performance Management Plan in the ND Moves Final Plan.

Through existing conditions analyses and public engagement, primary issues were identified for the active and public transportation network in North Dakota. These issues were compared to national planning goals to develop a set of modal specific (active and public transportation) goals.

Goals and Objectives

The resulting active and public transportation goals cover a range of measures, including accessibility, asset management and sustainability, marketing and communications, safety, data and technology, and community health.

Active Transportation Goals

Eight goals (listed in Table 1) were identified for active transportation. For each goal, objectives and performance measures were developed to monitor system performance. For each performance measure, long-term performance goals were identified based on the 20-year horizon of this plan.

Table 1 - Active Transportation Goals

GOAL THEME	GOAL
Mobility and Accessibility	Increase active transportation use in North Dakota
Modal/Funding Priority	Dedicate appropriate funds to promote active transportation infrastructure, education, and encouragement programming
Asset Management and Sustainability	Maintain the state's existing active transportation network and grow these resources to encourage environmental and economic sustainability
Marketing and Communications	Proactively communicate with North Dakota citizens, other public agencies, transportation advocates, and other stakeholders to implement the plan
Modal Integration	Coordinate the growth of active and public transportation networks to enable seamless multimodal travel throughout the state
Safety	Facilitate a system in which all users feel safe
Technology	Leverage transportation technologies to advance active and public transportation
Community Health	Increase the use of active transportation to improve community health outcomes

Vision

The North Dakota DOT will support the safe integration of active and public transportation facilities and services into and connecting to state facilities; offering transportation choices that connect to a variety of geographies and other transportation modes that are accessible to all North Dakotans.

Public Transportation Goals

Six goals (listed in Table 2) were identified for public transportation.

Table 2 - Public Transportation Goals

GOAL THEME	GOAL
Mobility and Accessibility	Improve public transit opportunities within and between communities
Modal/Funding Priority	Maintain or increase the amount of transportation funding dedicated to public transit
Asset Management and Sustainability	Maintain public transit assets in a state of good repair
Marketing and Communications	Increase communications and promote public transit as a viable and important mode of travel
Data Management/ Agency Coordination	Increase communication, collaboration, and coordination within the statewide public transit network
Safety	Improve public transit safety across the state

Public Engagement

Two rounds of public engagement took place between November 2017 and August 2018. The first round included a series of public open houses and an online survey asking participants to identify the biggest barriers to more successful pedestrian, bicycle, and public transit systems in their area. The top three barriers for each system include:

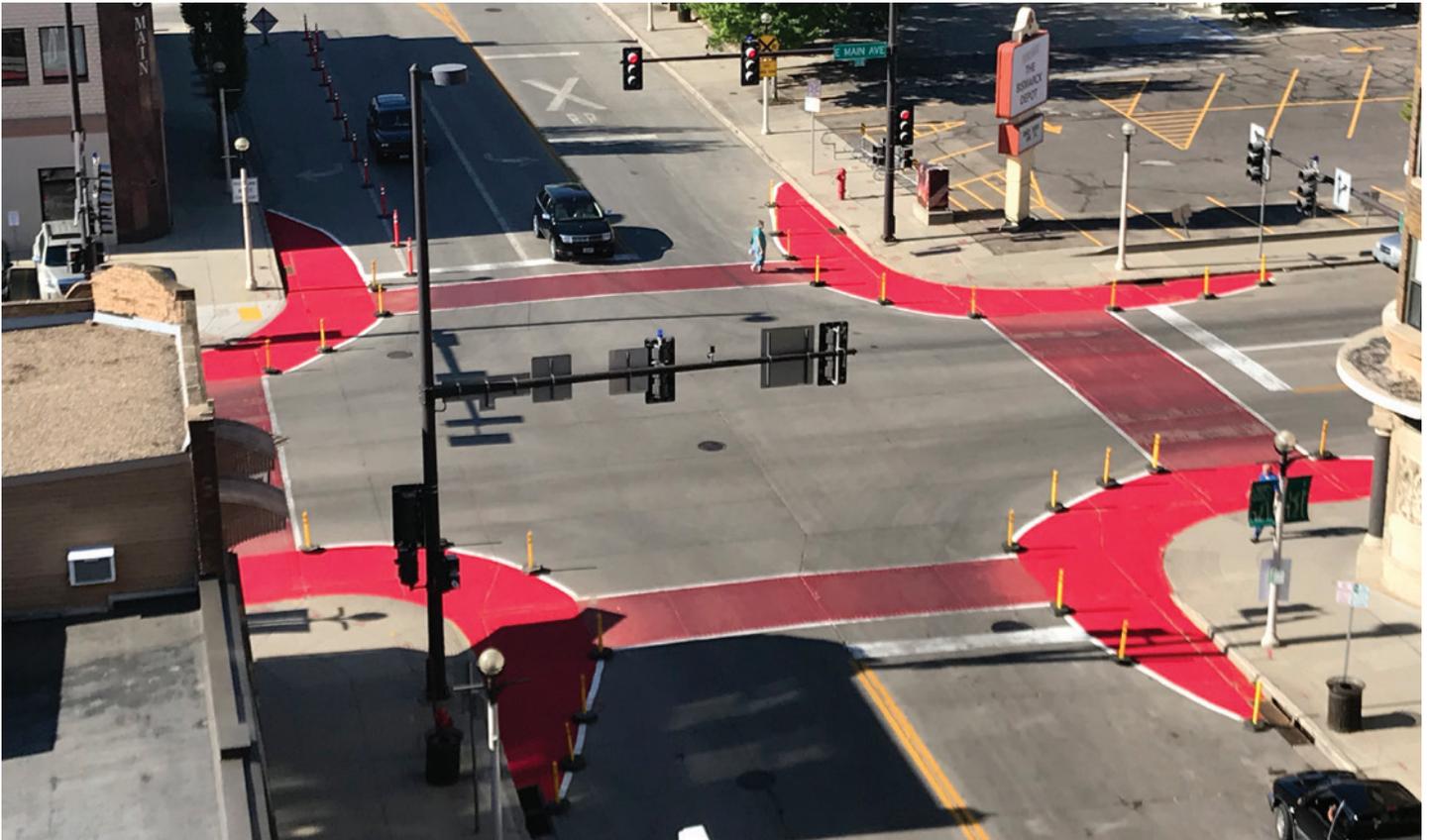


Along with a number of localized issues, stakeholders called for active and public transportation systems to be safe, accessible, and connected.

Round 2 focused on collecting input on the draft State Bike Network. It also served to confirm the vision and goals developed through Round 1 of engagement, and asked users to prioritize goals and share thoughts on the best ways to measure performance of the active transportation and public transit systems.

Demonstration Projects

Demonstration projects were installed on a short-term, trial period in nine North Dakota cities, using communities' designs for bicycle and pedestrian improvements. City staff and partners collected baseline and during-project data, solicited public and stakeholder feedback, and developed summary reports to be used as guides for similar projects in the future.



Bismarck demonstration project

More than 1,500 people took the online survey to provide feedback about the demonstration projects. Survey respondents who reported using active or public transportation felt safer as a result of the projects. Respondents who drive noticed that the installations narrowed the roadway and required people to drive more slowly past the site, consistent with the project's traffic calming goals. Similarly, several projects saw an increase in motorists yielding to pedestrians in crosswalks during the time the projects were installed.

ND Moves demonstration projects have resulted in residents talking about active transportation and telling community decision makers about a desire for more opportunities to walk and bike safely. However, some residents were confused about what the projects might look like should they become more permanently installed. Clarifying these ideas would be important for any future projects conducted by communities, NDDOT, or others.

A lessons learned document was developed to be a continuing resource for NDDOT and other agencies as demonstration projects are deployed in the future.



Existing and Projected Conditions

Existing and projected conditions for North Dakota were analyzed to gain insight on factors influencing and impacting active and public transportation across the state. Considerations included proximity of active transportation destinations to state routes, health and demographics, condition of existing systems, safety, and asset management. Emerging trends were also studied, in addition to projected conditions for the active transportation and public transit systems.

Active Transportation Destinations and Opportunities

The active transportation destinations analysis confirmed the importance of state and federal roadways for accessing education, employment, recreation, and basic services throughout North Dakota. Approximately 95 percent of all jobs in North Dakota are in census blocks within one mile of a state or federal roadway, and 85 percent are within half a mile.

As would be expected, destinations are more concentrated in more populated areas. In rural areas, destinations are sparser but spread evenly throughout the state.

Health

Community health indicators were analyzed at the county level, the smallest geographic level for which health data exists in North Dakota. Four counties have rates above the average on three or more health factors: Sioux, Rolette, Benson and Ransom. Three of those counties overlap with tribal lands, and all four include areas with high concentrations of populations likely to rely on active transportation options. Table 3 below shows a high-level summary of the findings for each community health indicator.

Table 3 - Community Health Indicators Analysis Summary

COMMUNITY HEALTH INDICATOR	HIGH-LEVEL SUMMARY OF FINDINGS
Obesity	High rates of adult obesity in North Dakota (31 percent compared to the national rate of 27.5 percent) are contributing to six of the top ten leading causes of death in the state.
Diabetes	Diabetes has been increasing in North Dakota over the past 10 years and is the seventh leading cause of death in North Dakota. Urban counties overall tend to have lower rates of adult diagnosed diabetes than rural counties.
Heart Disease Mortality	Three counties have heart disease mortality rates significantly above the state average rate of 284 per 100,000 people: McIntosh (641 per 100,000), Griggs (544 per 100,000) and Nelson (526 per 100,000).
High Blood Pressure	The prevalence of high blood pressure in North Dakota is slightly less than the United States, but still effects one in every four North Dakotans. Divide County has the highest blood pressure prevalence rate in the state at 46 percent, nearly double the state average of 24.9 percent.
Frequent Mental Distress	In North Dakota, approximately nine percent of adults report experiencing frequent mental distress. Three counties (Sioux at 16 percent, Rolette at 16 percent, and Benson at 14 percent) report a significantly higher percentage than the state average and all three overlap tribal lands.
Unintentional Injury Mortality	Unintentional injury is the fourth leading cause of death in the state of North Dakota, with the American Indian population experiencing a disproportionate rate of unintentional injury mortality. Motor vehicles and falls are the leading causes.
Pedestrians Killed by Motor Vehicles	North Dakota's pedestrian motor vehicle crash mortality rate is 2.1 per 100,000 (lower than the United States rate of 3.1 per 100,000). Benson, Steele, Sioux, and Adams Counties have the highest rates and a total of 43 people walking in North Dakota were killed by motor vehicles from 2011 to 2015.



Table 3 - Community Health Indicators Analysis Summary (continued)

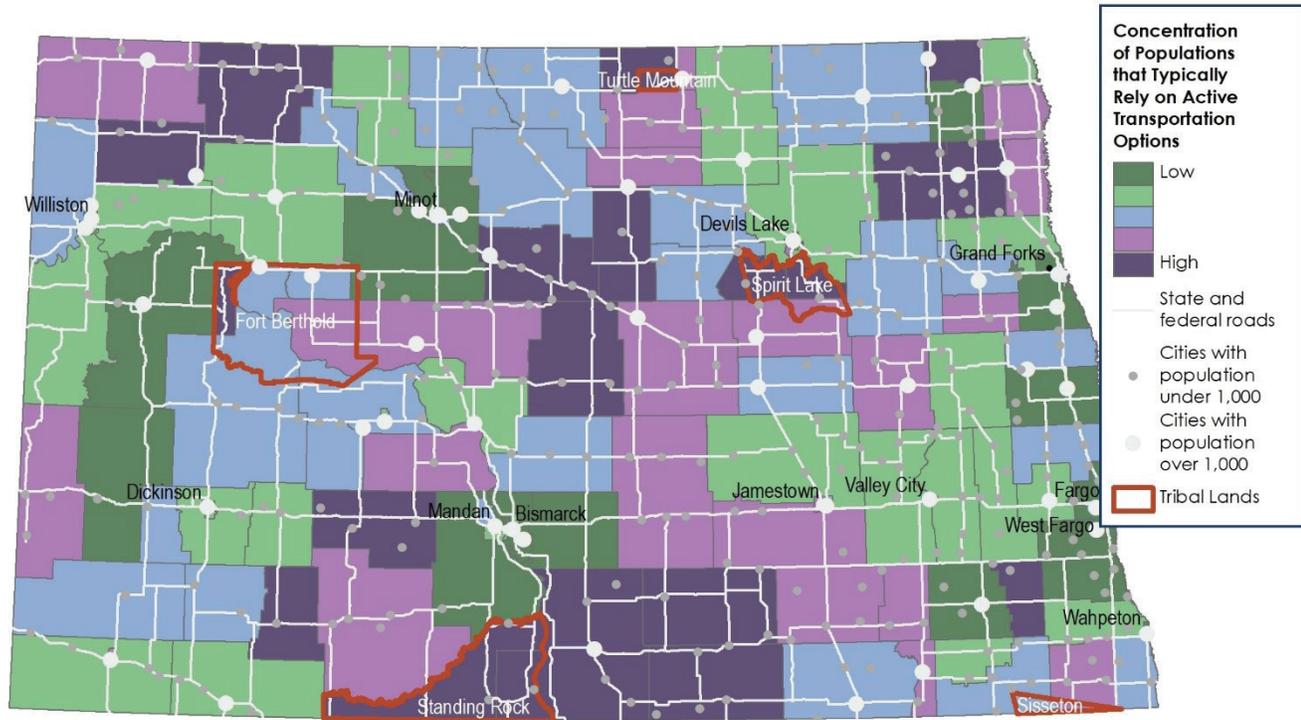
COMMUNITY HEALTH INDICATOR	HIGH-LEVEL SUMMARY OF FINDINGS
Physical Inactivity	In North Dakota, the number of adults who engaged in no physical activity outside of work is slightly higher than the national average. Divide County has the highest level of physical inactivity, whereas Cass County has the lowest.
Commute via Walking or Biking	The rate of walking or biking to work in North Dakota, 4.3 percent, is higher than the national average of 3.4 percent.
Food Access	In North Dakota, 29.4 percent of the population is considered to have low food access, higher than the national rate of 22.4 percent. The highest rates of low food access occur in Billings, Golden Valley, Hettinger, Burke, Kidder, and Nelson Counties.

Demographics

To develop an ND Moves plan that effectively serves all residents of North Dakota, populations that have heightened sensitivity to the presence and quality of active transportation facilities were analyzed. The objective was to determine where there are concentrations of populations likely to use active transportation to meet every day needs. Table 4 below shows a high-level summary of the findings for each demographic studied. Figure 2 - Concentration of Populations that Typically Rely on Active Transportation Options shows the concentrations of populations (largely in rural areas) that typically rely on active transportation options.

Table 4 - Demographics Analysis Summary

DEMOGRAPHIC CHARACTERISTICS	HIGH-LEVEL SUMMARY OF FINDINGS
Older Adults	The statewide mean of people over age 65 is 16 percent. The highest percentage of older adults are found in rural areas of the state as well as pockets of Bismarck, Devils Lake, and Valley City. The lowest concentrations are generally in major cities and tribal lands.
Children	The statewide mean of youth is 22 percent. Youth comprise larger portions of the population in census tracts near North Dakota's major cities, as well as in tribal lands and rural areas in the southwest corner of the state.
Access to a Motor Vehicle	The statewide mean of households without access to a motor vehicle is five percent. These households are largely located within North Dakota's major cities, as well as in tribal lands and rural census tracts scattered throughout the state.
Education	The statewide mean of people without high school diplomas is 10 percent. The highest concentrations of this demographic are found in rural areas of the state, including tribal lands. The lowest concentrations are generally found in and around major cities.
Poverty	The statewide mean of people living under 200 percent of the poverty line is 62 percent. The highest concentrations of this demographic are found in in census tracts that overlap with tribal lands and within Fargo, Grand Forks, Bismarck, Devils Lake, Minot, Jamestown and Valley City.
Disability	77,000 people in North Dakota are living with a disability, or about 10 percent of the population. No clear geographic pattern emerged as people with disabilities are scattered throughout the state.
Language	Populations with limited English proficiency ranges from zero percent of a census tract's population to five percent in North Dakota, with a mean of less than one percent.



ND moves active transportation & transit plan

Figure 2 - Concentration of Populations that Typically Rely on Active Transportation Options

Existing Active Transportation Infrastructure and Systems

A key component of the Urban System Analysis was to ensure a transition between the urban and rural portions of North Dakota for active transportation mobility. With data from each of the 12 urban areas across the state, ND Moves established an understanding of existing and missing active transportation infrastructure adjacent to the State Highway System in urban areas. Through resulting analysis, the project team identified a 101.9 mile gap along the Urban State Highway System in North Dakota. They determined that 45.5 percent of system gaps were related specifically to a bike gap and 54.5 percent were related to a bike + walk gap.

Limited data is available to identify gaps in non-urban incorporated areas (communities with a population less than 5,000) and rural areas. It is a recommendation of this plan to develop a system for obtaining data regarding existing facilities in these areas, and a determination of gaps and needs.

Existing Public Transit Systems

Performance metrics for the 35 urban and rural North Dakota transit providers were evaluated, to determine the existing conditions in each of these (urban and rural) systems. Among the many metrics used in this analysis, three important metrics were used to evaluate the following characteristics:

- **Service performance** was analyzed using revenue hours per capita to provide insight on how much service is provided in time relative to the amount of people living in the service area.
- **Ridership** was analyzed using passengers per revenue hour to provide insight regarding the effectiveness and on how much service is provided in time relative to the number people using the service.
- **Cost-Effectiveness** was analyzed using cost per revenue hour to measure how efficiently the services are being provided in time relative to the cost of the service.

A summary of the results for the metrics above are shown in Table 5. Results for additional metrics are included in Chapter 2 and in the ND Moves Transit Provider Profiles, June 2017.

Table 5 - Summary of Existing Public Transit Systems Analysis

SYSTEM CHARACTERISTICS	METRIC	RESULT
Service – Urban Providers	revenue hours per capita	0.21 to 0.54 hours
Service – Rural Providers	revenue hours per capita	0.02 to 2.73 hours
Ridership – Urban Providers	passengers per revenue hour	6.74 to 23.15 passengers
Ridership – Rural Providers	passengers per revenue hour	0.7 to 6.8 passengers
Cost-Effectiveness – Urban Providers	cost per revenue hour	\$37.77 to \$78.30
Cost-Effectiveness – Rural Providers	cost per revenue hour	\$21.58 to \$114.21

Safety Analysis

Since 2013, crashes involving people walking and bicycling have increased by 19 percent in North Dakota. It is unclear if this is due to an increase in pedestrian and bicycle traffic and, thus, a greater exposure to crashes. The analysis of high-risk roadways suggests that crashes are much more likely to occur in urban areas. Within urban areas, crashes are most likely to occur at intersections and on arterial roadways. While there are fewer crashes in rural areas, they tend to result in greater injury and are most likely to occur at non-intersection locations across the network.

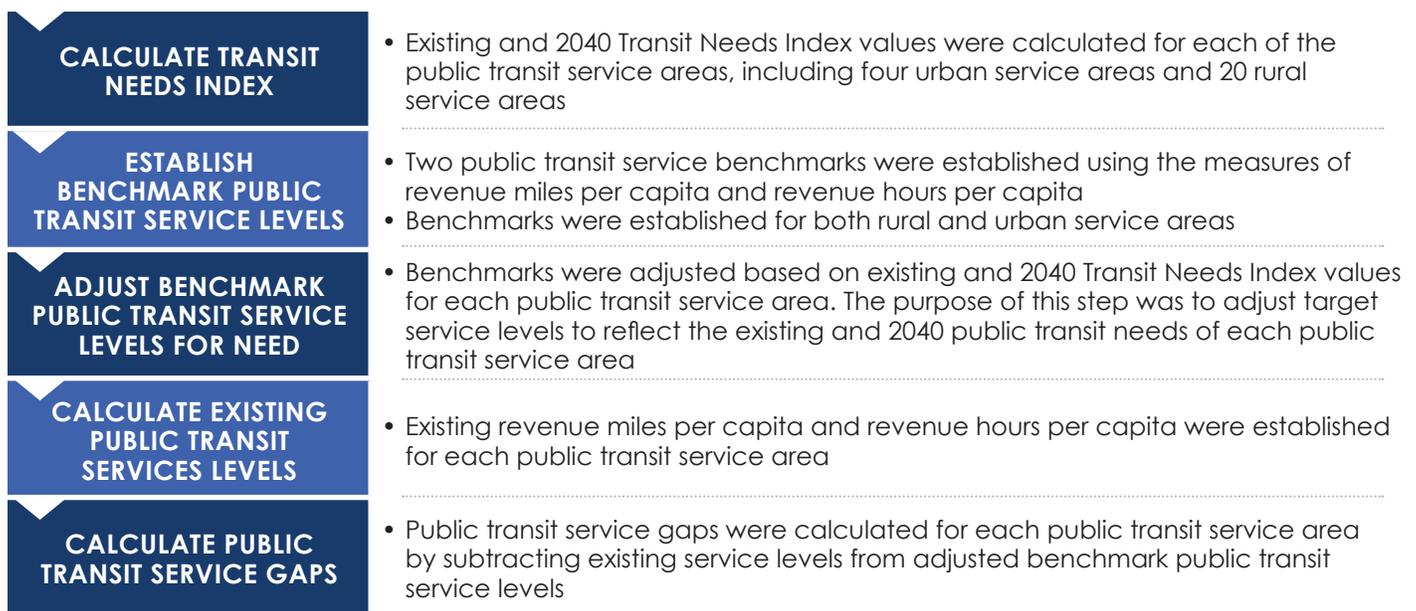
Analyses revealed that youth (age 17 or younger) are more likely to be involved in bicycle and pedestrian crashes, accounting for 32 percent of bicycling crashes and 23 percent of walking crashes. The majority of

crashes have “no clear factor” reported, but failure to yield was the most commonly reported contributing factor.

Public Transit Demand

Population growth and demographic trends are impacting the need for public transportation service across North Dakota. A five-factor Transit Needs Index was developed to identify the existing and projected need for public transit services and evaluate whether existing public transit service levels will address identified need now and in the year 2040. This process is summarized in Figure 3 - Public Transit Service Gap Calculation. Additional information on this methodology can be found in the ND Moves Existing and Projected Demand Memo.

Figure 3 - Public Transit Service Gap Calculation





The largest variations in need from the present to 2040 are visible in counties expected to experience large population changes.

Six (33%) rural public transit service areas show public transit service gaps both in the present and in 2040 when measured against both service level benchmarks. Three urban public transit service areas (Grand Forks, Bismarck, and Minot) have service gaps both in the present and 2040 when measured against either benchmark. Fargo-West Fargo (MATBUS), shows service gaps now and in 2040 when measured against the benchmark of vehicle revenue miles per capita but presents no existing or 2040 gaps when measured against the benchmark of vehicle revenue hours per capita. Summary maps for urban and rural transit service gaps are shown in Figure 4-Figure 7.

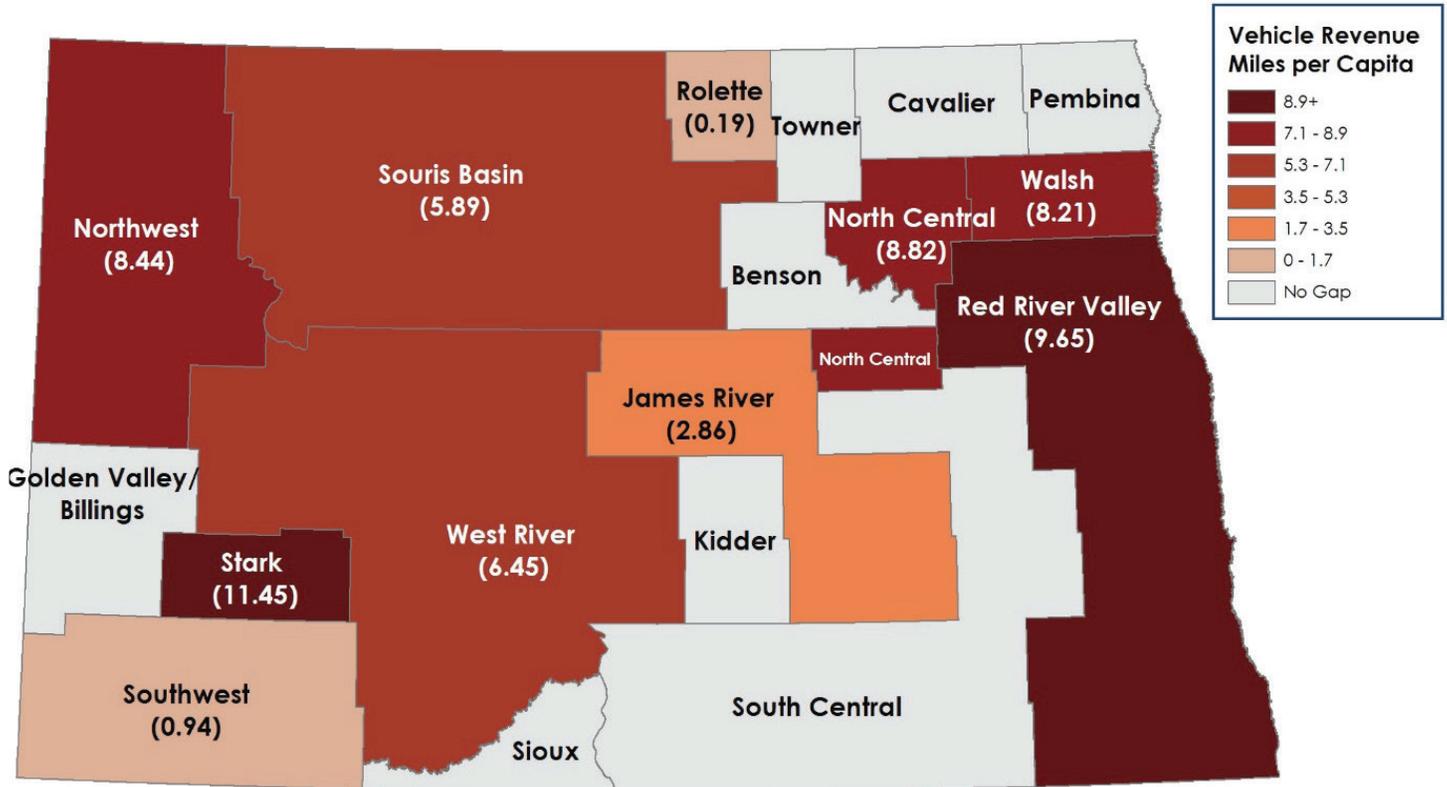


Figure 4 - 2040 Public Transit Service Gaps by Rural Transit Service Area (Vehicle Revenue Miles per Capita)

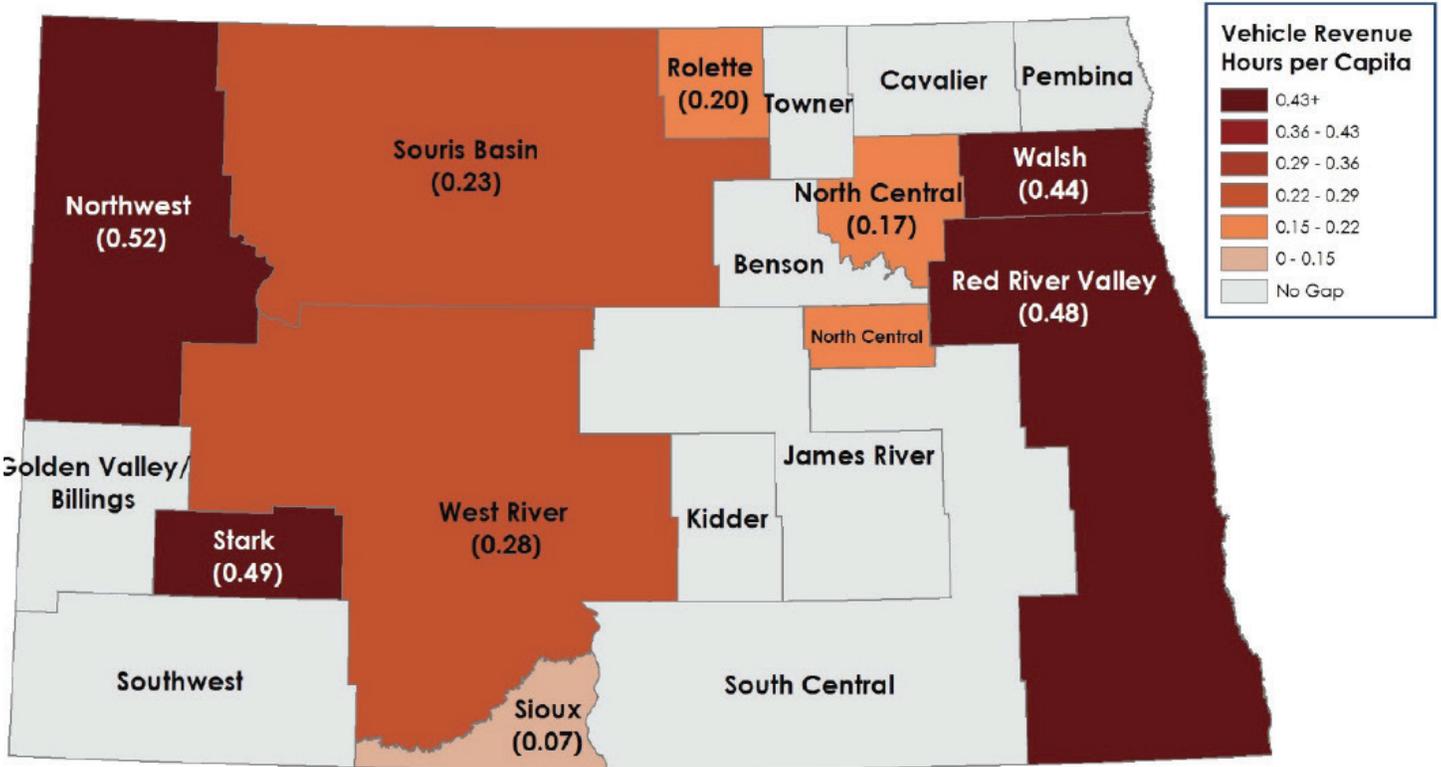


Figure 5- 2040 Public Transit Service Gaps by Rural Public Transit Service Area (Revenue Hours per Capita)

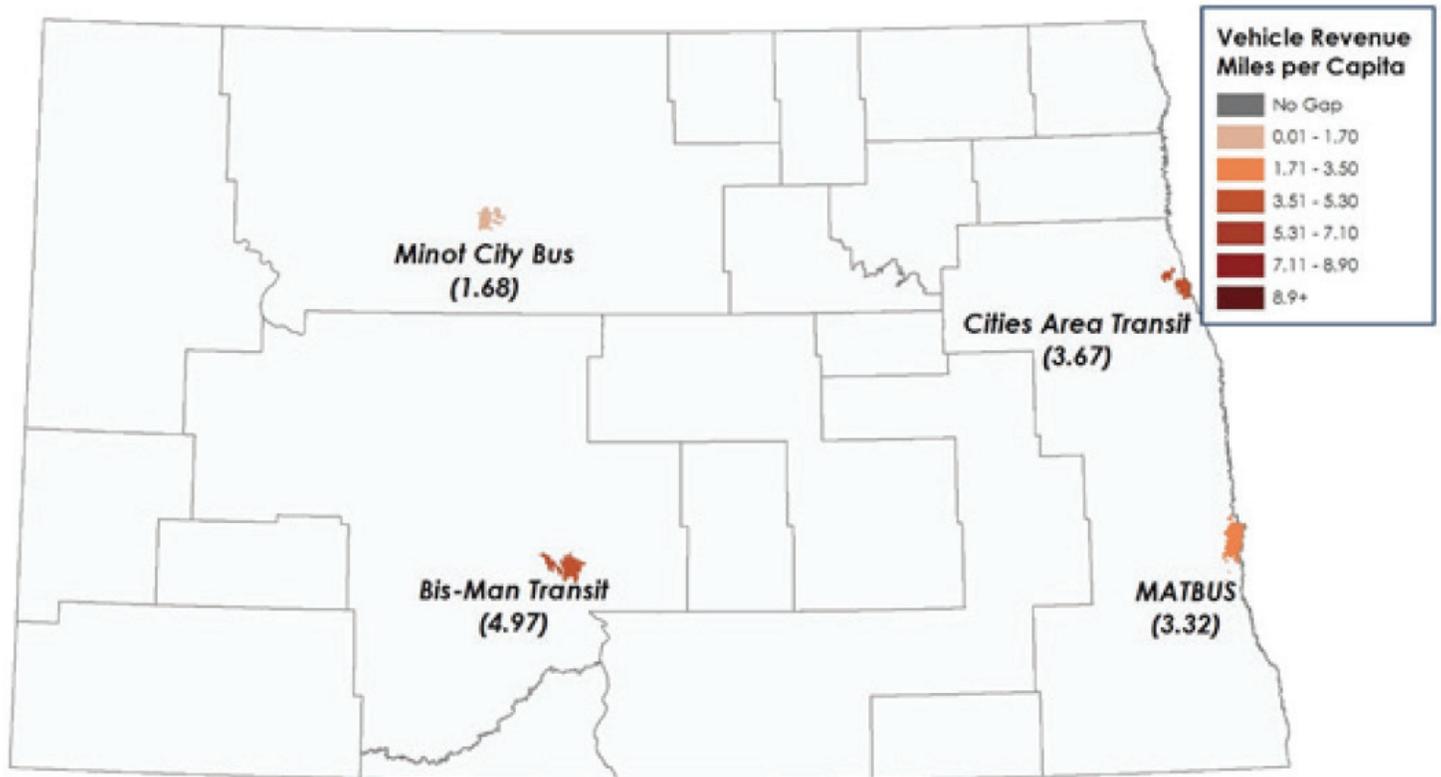


Figure 6 - 2040 Public Transit Service Gaps by Urban Public Transit Service Area (Vehicle Revenue Miles per Capita)

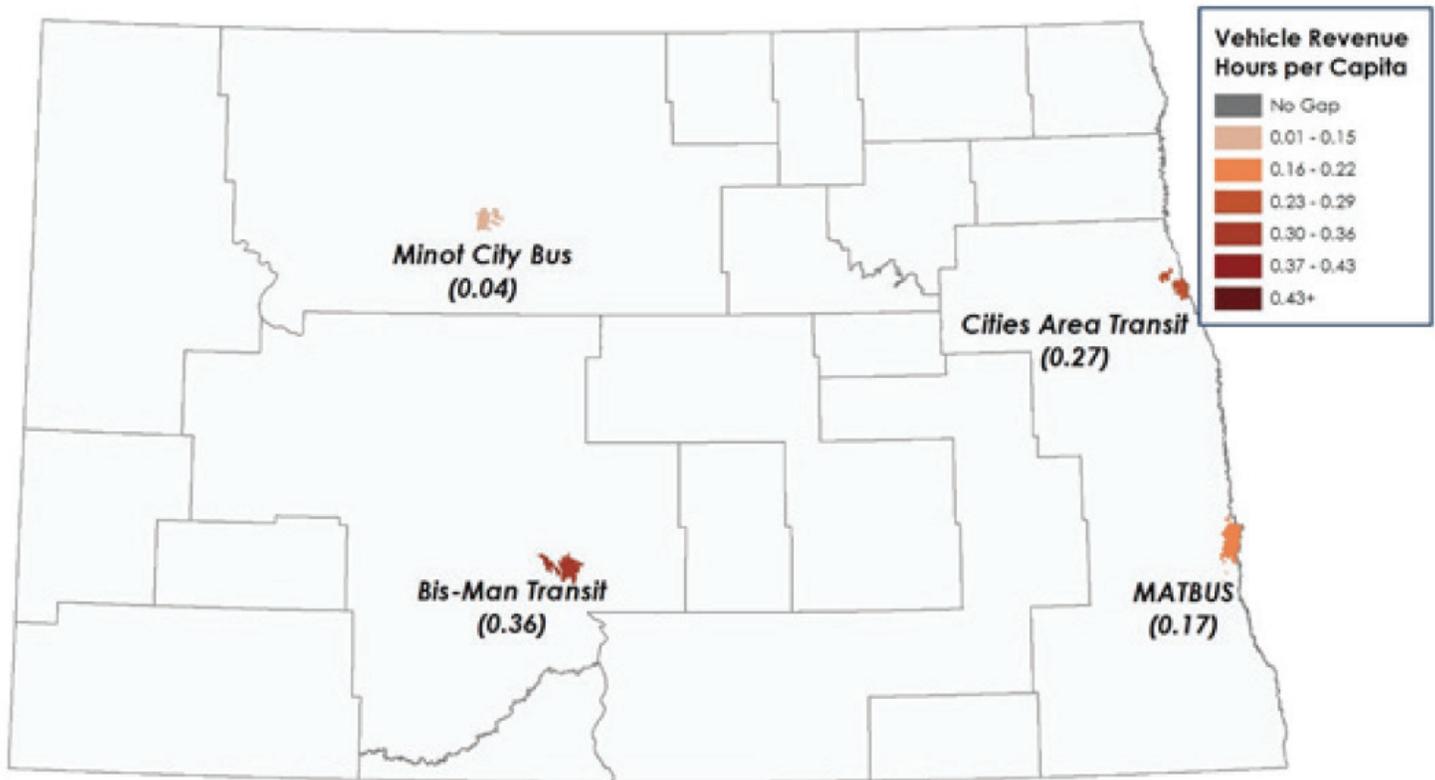


Figure 7 - 2040 Public Transit Service Gaps by Urban Public Transit Service Area (Vehicle Revenue Hours per Capita)

Public Transit Asset Management

Maintaining and replacing public transit assets is essential to the successful operations and financial sustainability of public transit in North Dakota. The existing replacement value of North Dakota's public transit system capital assets is \$62.6 million. Vehicles make up the largest single asset type at \$51.3 million in value. Facilities make up about 18 percent of asset value and systems is less than one percent of total assets. Based on the provided inventory, 33 percent of the total value of North Dakota's public transit system is in backlog, or beyond their useful life and ready to be replaced. This is largely reflective of all public transit facility assets (buildings and storage yards) being in a state of good repair, but 39 percent of vehicle assets being beyond their useful life. The current total asset value in backlog is \$20.0 million

The ND Moves Final Plan details funding and backlog management scenarios to address this gap. The models used consider a range of funding scenarios. Key takeaways from this analysis are presented, including the finding that maintaining current and/or constant funding levels will result in an increasing backlog over time.

Emerging Issues and Trends

Dynamics within North Dakota's largest communities are shifting quickly and differ greatly from conditions in smaller less urban areas of the state. In responding to these changes, it is recommended that NDDOT focus on these areas:

- **Renewed demand for walkable, revitalized communities with strong downtowns and main streets** – supported by the State of North Dakota's Main Street Initiative, with pillars of smart, efficient infrastructure and healthy, vibrant communities
- **Changing demographics and geographies** – growth in urban area population, aging rural communities, and the recent energy boom in western North Dakota all present unique challenges and opportunities
- **Shared mobility and technology** – Bikeshare, carshare and ridesharing, ridesourcing, shuttles and micro-transit, commercial delivery options, and public transit are all becoming possible on a range of technology platforms
- **Movement toward automating vehicles** – private sector technology is evolving, and governments are beginning to grapple with the safety, legal, ethical, environmental, social, and other impacts that may arise

Infrastructure and Network Recommendations

Active Transportation Recommendations

The Active and Public Transportation Facility Planning Best Practices and Recommendations document was developed as part of ND Moves to provide a reference for best practices in active and public transportation facility planning in North Dakota. This document provides an expanded range of facility design guidance and tools related to active and public transportation facilities and highlights key considerations when planning for active and public transportation infrastructure.

ND Moves also provides a framework for determining whether and which type of active transportation infrastructure is appropriate in a given context. This process (Figure 8) starts with matrices to evaluate need based on the development context (urban, suburban/commercial, rural) and the type of facility to consider. It also provides considerations for whether a facility should be installed on one or both sides of a roadway.



Figure 8 - Steps in the Facility Consideration Process

State Bike Network

As part of ND Moves, NDDOT has developed a planned State Bike Network (Figure 9). The State Bike Network is a 20-year vision to connect key transportation and recreation destinations across the state. It is primarily meant for long-distance bicycle trips, with the understanding that some network segments may be used for shorter connections between urban areas and destinations outside of built up areas, such as State Parks. As a result, the State Bike Network will primarily follow rural roadways. The identification of the State Bike Network is designed to address needs of users currently traveling longer distance across North Dakota on bike. It is not meant for casual or inexperienced bicyclists.

There are three tiers of bike corridors identified in the State Bike Network. The purpose of this categorization is to ensure that NDDOT's limited resources are used most effectively to improve bicycling conditions where improvements are needed the most. Tier designations also indicate the level of infrastructure that is desired. For example, Tier 1 and 2 bikeways follow low traffic roadways that are generally suitable for confident bicyclists. The primary design recommendation for rural Tier 1 and 2 bikeways is signage. The primary design recommendation for rural Tier 3 bikeways is a shoulder bikeway. The intent of these facilities is to provide a comfortable bicycling experience for recreational bicyclists as speeds and volumes increase.

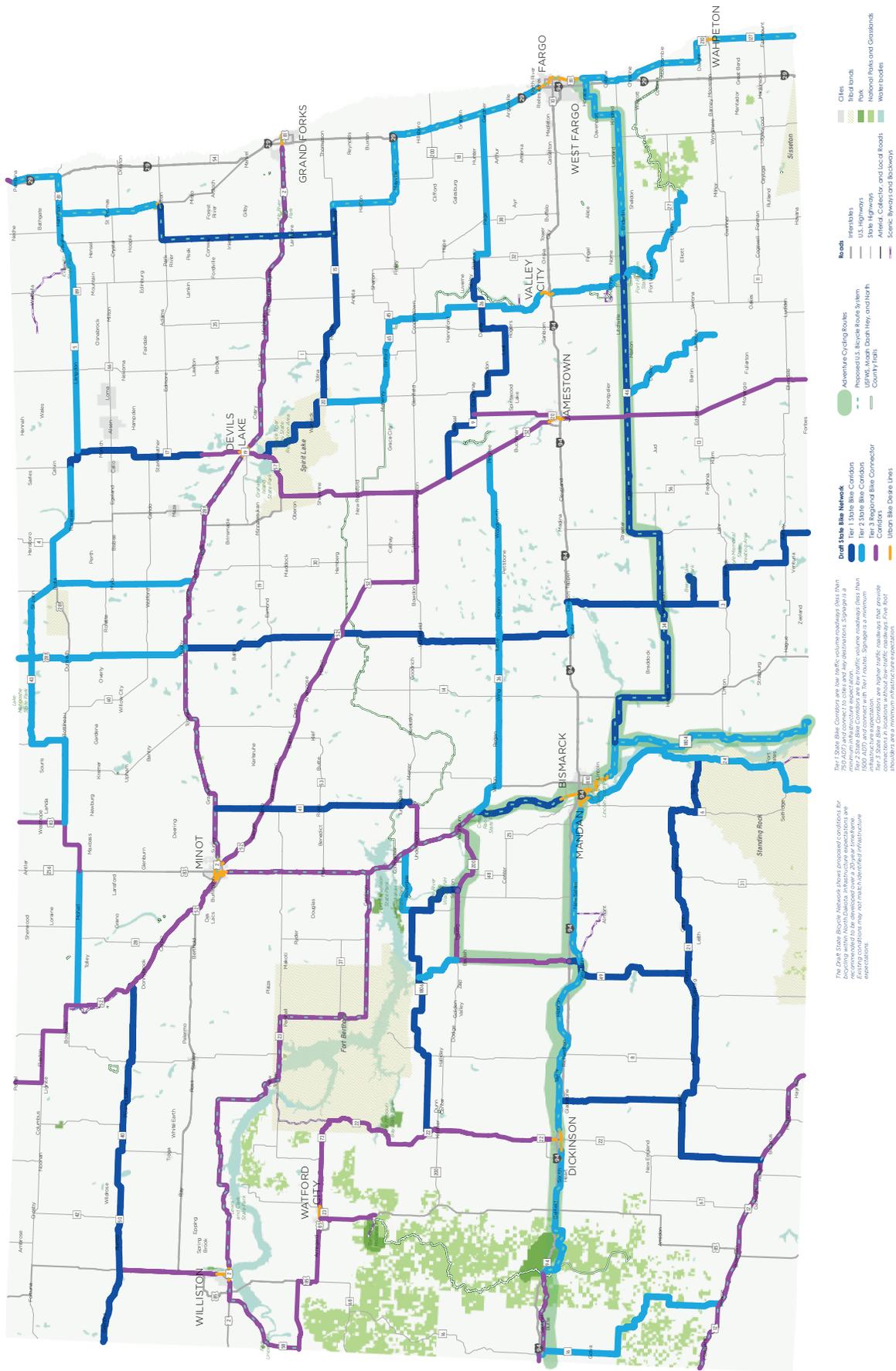
Recommendations to Address Active Transportation Network Gaps

Total urban system need is estimated at approximately \$31,900,000 to address the range of identified gaps. While the cost to address these gaps is high, most of these costs are likely to be accounted for as part of regular ongoing NDDOT and/or LPA investments in the urban state highway system.

For non-urban incorporated areas (communities with a population less than 5,000), there are 261 miles of state highway. Availability of data to identify gaps is limited, but as data continues to be collected, gaps will be identified and quantified.

Active Transportation Safety Countermeasures

ND Moves identifies a variety of countermeasures for pedestrian and/or bicycle-involved collisions. Some countermeasure treatments have the potential to reduce specific types of motor-vehicle crashes, such as left turn or rear end collisions. Treatments include a variety of bike lane types, sidewalks, shared use paths, shoulder designs, high visibility crosswalks and colored pavement treatments, mode-specific signals, and larger lane reconfigurations or roundabouts. In addition to a brief description and application guidance, relative treatment costs are also included. These relative costs are highly variable, as many pedestrian and bicycle treatments can be integrated into routine maintenance or capital projects at minimal costs.



The State Bike Network shows proposed conditions for bicycling within North Dakota. Infrastructure expectations are shown in green. Existing conditions may not match infrastructure expectations.

Tier 1 State Bike Corridors are low traffic volume roadways that don't need to be connected to other roads or destinations. Signage is a minimum infrastructure expectation.

Tier 2 State Bike Corridors are low to moderate volume roadways that don't need to be connected to other roads or destinations. Signage is a minimum infrastructure expectation.

Tier 3 Regional Bike Connectors are low to moderate volume roadways that don't need to be connected to other roads or destinations. Signage is a minimum infrastructure expectation.

Urban Bike Route Lines are low to moderate volume roadways that don't need to be connected to other roads or destinations. Signage is a minimum infrastructure expectation.

APRIL 29, 2019

NORTH DAKOTA PLANNED STATE BICYCLING NETWORK



ND Moves
active & public
transportation plan

Map produced April 2018.

Public Transportation Recommendations

Through the Active and Public Transportation Facility Planning Best Practices and Recommendations document, ND Moves provides best practices for transit facility design. These considerations address adjacent land use, boarding and alighting options, reliable and comprehensive service information, community context, and multimodal connections. In addition, there are best practices relating to roadway design, bus stops, platforms, stations, depots, and transit signal priorities.

Recommendations to Address Public Transportation Network Gaps

An estimate of existing and future system resources to support public transit in North Dakota was developed using both existing and projected needs. Resource needs were based on revenue hours per capita by both urban and rural systems separately. While urban and rural systems individually show a wide variation in service gap, the overall system resource needs were banded together to provide an overall aggregate assessment of system needs for both urban and rural systems (see 3).

Table 6 - Existing and Projected Resources Needed for Public Transportation in North Dakota

STATEWIDE		
Total Statewide Revenue Hour - Service Gap	106,440	332,797
Additional Resources Needed to Address Statewide Gap¹	\$5,546,680	\$17,538,290
Total Resources Needed (Includes Existing Funding)²	\$27,163,440	\$39,155,057

Assumes \$47.00 per revenue hour (Rural) and \$64.00 (Urban) based on state averages from 2016 data from the National Transit Database

Winter Maintenance

Designing and building facilities with winter and seasonal maintenance in mind provides high-quality, comfortable facilities for people walking, biking, and taking public transit year-round. Separated facilities like sidewalks, protected bike lanes, and trails require separate equipment to maintain, but are ultimately easier to maintain to a high standard. Providing adequate buffer space for these facilities is key to year-round use as it provides space to store snow. Facilities placed back of curb or directly on the roadway are difficult to maintain and can become narrow or impassable in winter.

For public transit users and operators, a stop, platform, or station benefits from a small area dedicated to emergency snow storage. Heavy snowfalls may not be adequately cleared immediately, but the public transit

facility shall be made fully operational soon after the weather event (28 CFR §35.133). Additionally, spacing amenities apart from each other on platforms and stations allows for a rotary power brush to clear snow between them.

In addition to design, anti-icing pre-treatment, timely plowing, and clear communication between agencies and with the public are important to efficient and effective snow removal. Establishing a winter prioritization network ensures that the best access is provided to the greatest number of people possible following a heavy storm event. It is important for state and local agencies to understand their maintenance responsibilities, best specified through a maintenance agreement.

¹ Does not include additional funding that will be needed for urban paratransit service.

² Includes existing funding for urban paratransit service but does not include additional funds needed for this service in the future

Strategic Action and Implementation Plan

The Strategic Action and Implementation Plan specifies potential next steps to implement ND Moves by outlining specific plans to address each of the following broad issue areas:

Planning – Expand efforts to improve continuous planning at the statewide, regional/MPO and local level to support active and public transportation, and local decision-making tools.

This includes partnering with other state agencies (North Dakota Indian Affairs Commission, North Dakota Parks and Recreation, North Dakota Department of Health, etc.) to achieve mutual health goals.

Action plans (including timeframes and responsible parties) were developed for each of the following issues within the broader Planning category:

- Planning Readiness
- Limited Right-of-Way and Environmental Issues
- Integrate Active Transportation into Corridor Management

Funding Programs – Strengthen and improve funding programs to support active and public transportation across North Dakota.

An action plan (including timeframes and responsible parties) was developed for the following issue within the broader Funding Programs category:

- Programming Practices

Statewide Task Force – Develop a committed statewide advisory committee to support the efforts of NDDOT in implementing ND Moves across the State of North Dakota.

Action plans (including timeframes and responsible parties) were developed for each of the following issues within the broader Statewide Task Force category:

- Statewide Active Transportation Task Force Membership
- NDDOT Coordinating Committee

Emerging Trends – Proactively address changing trends in the areas of active and public transportation in North Dakota.

Action plans (including timeframes and responsible parties) were developed for each of the following issues within the broader Emerging Trends category:

- Changing Context Around the State System
- Rapidly Changing Technology
- Downtowns and Walkable Areas



Emerging Trend – Downtowns and walkable areas (photo from Fargo, North Dakota)

Barriers – Address barriers to mobility in several contexts across the State of North Dakota.

Action plans (including timeframes and responsible parties) were developed for each of the following issues within the broader Barriers category:

- State System as a Transportation Backbone
- Limited Mobility on Urbanizing Corridors
- System Connectivity

Connections and Linkages – Strengthen the coordination between state and local transportation systems and improve access to the state’s natural and cultural resources.

This includes the development of the State Bike Network.

Action plans (including timeframes and responsible parties) were developed for each of the following issues within the broader Connections and Linkages category:

- State Bike Network
- Regional Connections
- Cultural and Historic Connections

Public Transit Mobility – Improve public transit-based mobility across the State of North Dakota, through improved intercity and regional bus systems, development of new small urban systems and expansion and preservation of existing systems.

Action plans (including timeframes and responsible parties) were developed for each of the following issues within the broader Public Transit Mobility category:

- Public Transit System Development
- Intercity (or Interregional) Public Transit Connections
- Demonstrating the Value of Public Transit

Safety, Education, and Encouragement Programs

– Continue to improve safety for active and public transportation users in North Dakota through both legal and engineering-based solutions. Enhance existing programming with new safety education and encouragement programs.

In this section, program evaluation and recommendations are provided for:

- Existing Safety Programs
- North Dakota Statewide Education and Encouragement Program
- Improving Safety
- Improving Existing Programs

An action plan (including timeframes and responsible parties) was developed for:

- Role of State DOTs in Education and Encouragement Program Delivery



Grand Forks demonstration project

In addition to the above broad issue areas, the following items are discussed in this chapter:

Active Transportation Design – A review and recommendations for incorporating ND Moves ideas into the processes, policies, and documents NDDOT uses in current design practices are provided in the following areas:

- Design Guidance Review and Recommendations
- Design Guidelines, Investment Strategy, and Design Exceptions

Traffic Laws and Statutes – There are opportunities for the North Dakota Legislature and NDDOT to further define how policies and statutes impact walking and biking

and reevaluate current policies to provide better guidance to roadway users, planners, designers, and law enforcement officials. Considerations are provided for:

- Statute Recommendations
- Policies and Funding Strategies Not Recommended

An action plan (including timeframes and responsible parties) was developed for:

- Funding Considerations

Active Transportation in Work Zones – Considerations for evaluating and maintaining travel for people walking and biking through and around construction areas on state roadways are provided.



Grafton demonstration project

Performance Management Plan

The 2015 Fixing America's Surface Transportation (FAST) Act establishes a set of national goals to guide the development of transportation investments and focuses on performance-based approach to transportation planning. To align the goals and objectives of this plan with the FAST Act, ND Moves was developed with a performance management element which relates this plan's modal specific goal themes to one or more of the seven National Planning Goals established by the FAST Act.



Defining Performance Management

Terminology used to guide the development of the Performance Management Plan includes the following:

- **Goal** — Overall guiding result or outcome related to the active and public transportation system
- **Objective** — Desired action or initiative that is perceived as meeting the intent of the overall goal. Further, the objective is designed to assist in achieving the defined performance level
- **Performance Measure** — Measure used to evaluate system performance
- **System Performance** — Current level of the performance measure
- **Long-Term Performance Goal** — Desired level of the performance measure
- **Consistency Monitoring** — Effort used to monitor, evaluate, and track performance levels

The development of a performance management element of ND Moves related to active and public transportation was based on the following key components:

- Comparison measure and indicator development within other state plans
- Comparison with other system measures from neighboring states
- Relationship with baseline funding levels and existing infrastructure levels

The project goals and associated performance measures and long-term performance goals are based on the 20-year horizon of this plan. Shorter-term goals (or performance targets) are typically developed through separate programming or investment strategies and address a specific programming horizon (typically one to five years). As such, shorter-term performance targets are not included in this plan.

Future Performance Measures

Finally, this plan includes a list of additional performance measures as a recommendation for NDDOT exploration as baseline data is calculated or becomes available. The future performance measures recommended include:

- Percent of proposed State/US Bicycle Route network meeting design and wayfinding signage recommendations
- Revenue miles of regional, interregional, and intercity public transit service
- Percentage of fixed-route buses with automatic passenger counters (urban)
- Percentage of fixed-route buses with automatic vehicle location (urban)
- Percentage of demand response buses with automated data collection device (all systems)
- Percentage of local public transit agencies that have safety and security plans that meet FTA guidance

The complete ND Moves Active and Public Transportation Plan can be found at <http://www.dot.nd.gov/plans/statewide/>