

Identifying and Satisfying the Mobility Needs of North Dakota's Transit System: Executive Summary

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Abstract

This study identifies the needs of transit agencies in North Dakota, gaps in transit service, and additional services and funding needed to meet current demand as well as projected future demand. Surveys of transit agencies and human service agencies were conducted to gather information about existing transit services, how well those services are meeting the needs of the state's residents, and the issues and challenges facing transit providers. Target levels of transit service and the funding needed to reach those targets were identified. Projections were also made based on expected population growth. Findings show a need for expansion of services across the state, especially in areas experiencing population growth, improvements in staffing, and additional vehicles.

The intent of this study is to provide North Dakota policy makers with a guide to future development of personal mobility options and to identify gaps that either exist now in mobility services or are likely to exist in the near future as the result of service modifications or changing demographics and population growth. The scope of the study includes local and regional passenger transportation.

Results can be used to identify programmatic and funding needs related to personal mobility, determine funding priorities for the use of state funds and federal funds under state control, and provide guidance to city and county governments for addressing personal mobility needs. Further, the data collected can be used by local and regional agencies to plan for new or revised local services. Lastly, the shrinking transit trust fund could mean reduced federal funding for North Dakota systems, resulting in either reduced services or an increased requirement for state and local funding. This study illustrates how this uncertainty regarding federal funding could impact state funding needs.

Population Growth, Demographic Profiles, and Mobility Needs Index

Population growth and demographic trends are impacting the needs for public transportation services across the state. The estimated statewide population climbed to 723,393 in 2013, an 8% increase from the 2010 census. Population is projected to increase to 841,820 by 2025, a 16% increase from 2013 estimates. Significant growth is expected in the western and north central parts of state, as well as in Burleigh and Cass Counties, while some counties in the northeast, southeast, and central parts of the state are expected to lose population (Figure 1).

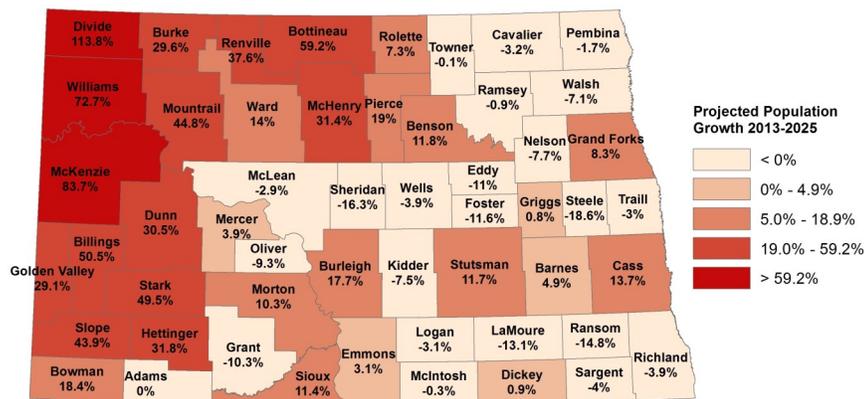


Figure 1. Projected Population Growth from 2013 to 2025

The demographic characteristics of the population are also important determinants of the need for transit services. Some of the low-population rural counties have a higher percentage of older adults or other groups that have a greater need for transit services, such as low-income households, people without access to a vehicle, and people with disabilities. For example, in McIntosh, Sheridan, and Wells counties, 29% or more of the population is 65 or older, and in Sioux, Rolette, and Benson counties, the population below the poverty line ranges from 35% to 43%. Sioux county has the highest percentage of individuals without a vehicle to drive to work.

Growth in the elderly population is expected to increase demand for transit services. Statewide, the population aged 65 or older is projected to increase 52%, from 97,477 in 2010 to 148,060 in 2025.

Taking into consideration total population and populations of seniors, people with a disability, those below the poverty line, and workers without access to a vehicle, a mobility need index, expressed with a 1-5 scale, was estimated to identify areas with the greatest needs for mobility services. The values calculated for each of North Dakota's counties are presented in Figure 2. Higher values indicate greater needs for mobility services.

Transit Agency Needs

Surveys of transit agencies and human service agencies were conducted to gather information about existing transit services, how well those services are meeting the needs of the state's residents, and the issues and challenges facing transit providers. A survey of all transit agencies in the state collected information regarding needed facility upgrades, the capacity for transit agencies to meet service requests, need for new services, and staffing needs.

Survey results suggest a need for an expansion of service. Sixteen transit agencies said there are some types of transportation services needed by their service area residents that are not currently available. Nearly all of respondents from human service agencies that were surveyed said that there are types of transportation services needed by their clients that are not currently available. Respondents from both transit agencies and human service

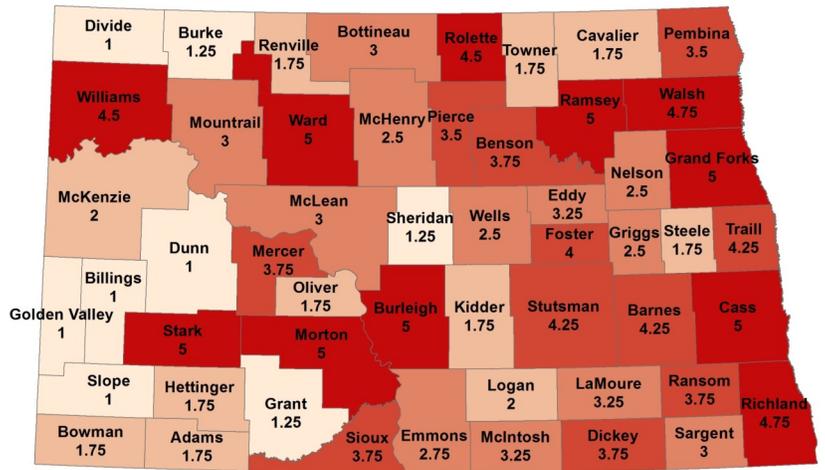


Figure 2. Mobility Needs Index Map, County Level

agencies most commonly mentioned a need for longer hours of service, weekend service, and an expansion of currently available services. Six transit agencies mentioned a need for new fixed-route service, including agencies serving Fargo, Grand Forks, Minot, Dickinson, Williston, and Sioux County. The greatest needs are for medical and work trips.

A major finding from the survey of transit agencies is the need to improve staffing. Most indicated that their staffing is inadequate for current or future needs. Many agencies mentioned difficulties in finding enough qualified staff. Transit agencies, especially those in the western part of the state, have to compete with the oil industry, which pays higher wages, for qualified drivers. Respondents from eastern regions of the state also commented on staffing issues, such as many of their employees being at or near retirement age and difficulties in finding qualified bus operators.

Some transit providers have recently increased wages in an effort to keep good drivers. Transit agencies statewide may need to continue increasing wages to attract and maintain a qualified staff that is of sufficient size. Such wage increases would increase operating costs.

Other issues facing transit agencies include the need to replace vehicles and upgrade facilities. Many vehicles statewide have surpassed their useful life and need to be replaced. A majority of transit agencies also indicated a need to upgrade vehicle storage facilities, either now or within the next five years.

Transit Gaps

Many counties have service at least 3-5 days per week. However, some areas have service just once or twice a week, and this might not be considered an adequate level of service, as reflected in the comments received by transit providers and human service agencies. Many respondents mentioned a need for more frequent service in rural areas, especially for medical trips.

Cities with a population of 4,500 to 20,000 all have demand-response service at least five days per week, but weekend services and evening services are limited. The greatest need in these communities is for evening and weekend service.

Among cities with a population of more than 20,000, Fargo-West Fargo, Bismarck-Mandan, and Grand Forks have fixed-route service six days per week, and Minot has fixed-route service five days per week. In Minot, there is demand for expanding the fixed-route service, as reflected in the survey comments. Fixed-route service in Minot is currently limited, with no weekend or evening service. As the city continues to grow, it is anticipated that demand for expanding the service will grow as well. The cities of Williston and Dickinson do not have fixed-route service but may have the demand to support such service. These cities may need to begin planning for fixed-route service. Fixed-route service in Bismarck-Mandan is also limited.

To identify gaps in service and estimate the need for additional transit services across the state, this study examined three performance measures: trips per capita, vehicle miles of service per capita, and vehicle hours per capita. Figures 3 and 4 show 2013 data for trips provided and vehicle miles per capita for different regions of the state. These figures are useful for identifying regions of the state that currently have higher levels of service and other areas in need of improvements.

Expanded Mobility Options

The performance measures were compared to national averages for similar types of transit agencies, and scenarios were estimated to determine increases in

services needed for regions to meet the benchmark values. These scenarios also considered the impact of population growth and the senior population on future transit needs, and attention was given to improving hours and days of service in areas where service is currently most limited.

Four scenarios were analyzed to determine needed increases in service and the funding required to provide that service. Scenario 1 requires that each region meets at least one of the three benchmark values. Scenario 2 adds requirements that transit services increase at a rate equal to or greater than population growth, and it also considers the senior population and requires service increases in areas with limited days and hours of service. Scenario 3 includes the requirements of Scenario 2 and requires that each region must meet at least two of the three benchmarks. Scenario 4 includes the requirements of Scenario 3 and requires that each region must increase service by at least 10%. Scenario 2 is the least costly scenario that meets the most basic transit needs. Justification can also be made for Scenarios 3 and 4, as there are needs for additional services throughout the state.

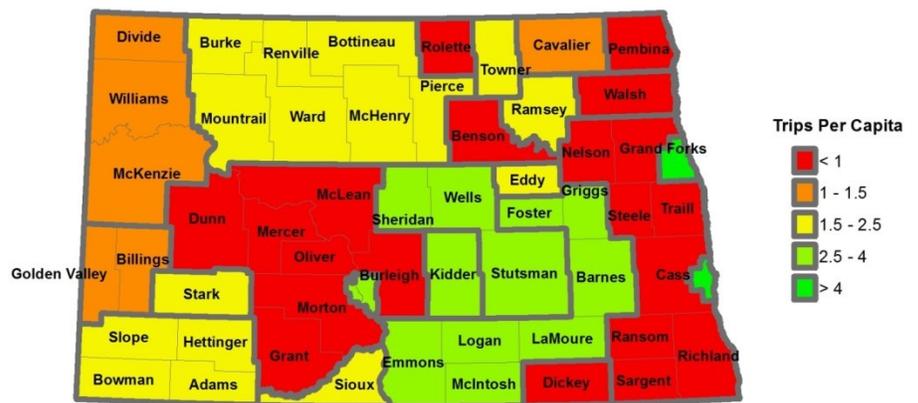


Figure 3. Trips Provided Per Capita, by Region



Figure 4. Vehicle Miles of Service Per Capita, by Region

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Table 1. Summary of Estimated Increase in Operating and Vehicle Expenses for Expanded Mobility Options, Assuming Projected 2020 Population

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Rural Transit				
Annual operating expense	\$2,836,425	\$4,026,537	\$5,657,762	\$5,957,448
% increase over 2012	30%	42%	60%	63%
Vehicle expense (one-time cost)	\$1,800,000	\$2,550,000	\$3,600,000	\$3,800,000
Urban Fixed-Route				
Annual operating expense	\$2,173,276	\$2,622,757	\$3,244,377	\$3,276,157
% increase over 2012	7%	9%	11%	11%
Vehicle expense (one-time cost)	\$6,750,000	\$8,100,000	\$9,450,000	\$9,450,000
Urban Demand-Response				
Annual operating expense	\$0	\$345,648	\$345,648	\$382,239
% increase over 2012	0%	2%	2%	3%
Vehicle expense (one-time cost)	\$0	\$260,000	\$260,000	\$260,000
Total				
Annual operating expense	\$5,009,701	\$6,994,942	\$9,247,787	\$9,615,844
% increase over 2012	9%	13%	17%	18%
Vehicle expense (one-time cost)	\$8,550,000	\$10,910,000	\$13,310,000	\$13,510,000

Table 1 provides a summary of the increased operating and new vehicle expenses estimated in each scenario. These estimates assume a 20% increase in per mile operating costs, needed to increase employee wages, and 2020 projected population. These estimates are total increased expenses without consideration of funding source. In recent years, federal funds have accounted for 47% and 39% of rural and urban operating expenses, respectively, and 80% of capital expenses. However, state and local shares may need to increase to fund expanded transit services, given that federal transit funding may become stagnant.

The estimated vehicle expenses are one-time costs needed to increase fleet sizes across the state to allow for improved service levels. However, these vehicles will need to be replaced periodically, increasing annual capital expenditures. In addition, there currently are a significant number of vehicles in the state that have surpassed their useful life and are in need of replacement.

Table 2 provides an estimate of the number of vehicles that will need to be replaced annually, on average, and the estimated cost of replacement. The table considers the current fleet, additional vehicles required under Scenario 2, assuming 2020 population, and the combined total. These are costs to be incurred in addition to the annual operating cost increases and new vehicle costs summarized in the previous table. All expenses are expressed in 2014 dollars.

Lastly, there are also significant needs for facility improvements across the state. This study identifies some of the needs but does not provide a cost estimate of needed upgrades, and prioritizing these projects is beyond the scope of this study.

Table 2. Estimated Long-Term Annual Vehicle Replacement Costs

	Number Replaced Annually	Average Annual Cost	Non-Federal Share (20%)*
Current Fleet	51	\$3,933,248	\$786,650
Additional Vehicles	11	\$1,022,085	\$204,417
Total	62	\$4,955,332	\$991,066

*Assumes current 80% federal share continues. However, state and local shares may need to increase to fund vehicle purchases, given that federal funding may become stagnant.