

North Dakota Freight Reliability and Preservation on US 52



FY 2025-2026 Multimodal Project Discretionary Grant (MPDG) Program

Project Name Project Type Future Eligible Project Costs 2024 BIP Funds Requested

North Dakota Freight Reliability and Preservation on US 52 INFRA/Rural Project \$40 million \$20 million

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Supporting Information can be found at: www.srfconsulting.com/25-26-mpdg-nddot-us-52/



North Dakota Freight Reliability and Preservation on US 52

Submitted by North Dakota Department of Transportation

FY 2025-2026 Multimodal Project Discretionary Grant (MPDG) Program

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Project Description

The North Dakota Department of Transportation (NDDOT) North Dakota Freight Reliability and Preservation on US 52 Project (Project) will rehabilitate 45.4 miles of existing asphalt pavement from west of Drake to Fessenden, consolidate access points at the intersection of US 52 and North Dakota Highway 3 (ND 3) in Harvey, add acceleration and deceleration lanes at existing at-grade railroad crossings, and add turn lanes at critical intersections from seven miles south of Portal to Carrington. The Project will enhance safety, mobility, and reliability of freight traffic on US 52 between the U.S.-Canada border crossing at Portal and Carrington. The Project is focused on reliability, safety, and traffic operations of US 52, a critical freight corridor in the north-central part of North Dakota. Of the \$40 million estimated eligible Project cost, NDDOT is requesting \$20 million (50 percent) of MPDG (INFRA/Rural) funds, with State matching funds of \$20 million (50 percent).

Current Transportation Challenges Challenge 1 – State of Good Repair

Through the Project corridor, US 52 is a two-lane asphalt highway with two 12-foot travel lanes and four- to 10-foot paved asphalt shoulders, depending upon the location. The pavement condition of US 52 through portions of the Project corridor is showing signs of advanced deterioration and degradation. Most of the corridor is in good condition based upon average ratings, however, there are an increasing number of emerging localized pavement features that require immediate and frequent attention from NDDOT District staff. For example, between US 52 reference point (RP) 141.2 and RP 185.6 there are areas of significant longitudinal cracking, transverse cracking, and shoving. The last preventative maintenance overlay in the area is over a decade old, however, the visible deterioration indicates a more significant rehabilitation project is necessary. The signs vary by specific location but are generally within a 45.4-mile stretch of US 52 as referenced above. Deteriorating pavement condition has negative effects on vehicles and freight which can lead to reduced speeds, increased vehicle maintenance costs, potential cargo damages, increased risk of accidents, and is exacerbated by heavy freight, which is a significant proportion of daily traffic through the Project corridor. US 52 is a critical heavy freight route through North Dakota, with a maximum gross vehicle weight (GVW) limit of 105,500 pounds, greater than the Interstate System (max. GVW 80,000 pounds).

Challenge 2 – Traffic Operations

US 52 is a major freight corridor through the Project area, with as much as 73 percent of daily traffic being heavy commercial vehicles such as trucks hauling freight. Freight trucks hauling hazardous material and passenger busses are subject to strict regulation and safety protocols at railroad crossings which require applicable vehicles to pull out of the main lane(s) of traffic, stop at the railroad crossing, accelerate, and merge back into traffic. Currently along the Project corridor, there are no acceleration or deceleration lanes for trucks hauling hazardous material and passenger busses to accommodate specific safety protocols at railroad crossings. Existing paved shoulder widths vary between four and 10-feet, which is inadequate for larger vehicles to effectively make this maneuver. Freight trucks and passenger buses negatively impact traffic operations at existing at-grade railroad crossings, as they cannot fully exit out of the travel lane(s), decelerate, stop, and accelerate to merge back onto US 52.

This causes traffic to slow or become delayed behind these vehicles, especially as the trucks hauling hazardous materials and passenger buses may not fully exit the travel lane.

There are several US 52 intersections along the Project corridor with existing inefficient traffic operations, including poor access management or lack of turn lanes/capacity. As traffic including <u>freight traffic continues to grow</u>, traffic operations are becoming challenged as thru-traffic slows, yields, or stops at intersections to make turning movements out of US 52 travel lanes. In the Project area, poor access management and existing intersection alignment at the intersection of US 52 and ND 3 creates more crossing conflict points and increases merging and weaving maneuvers, causing congestion, and negatively impacting traffic operations.

Challenge 3 – Safety

Between April 1, 2014 and March 31, 2024 (over the past 10 years) 653 crashes occurred on US 52 between RP 6 and RP 222. Of the crashes, 173 (26 percent) occurred within one-quarter-mile of the Project components including 19 severe, made up by 13 incapacitating (life changing) injury and six fatal crashes. US 52 is a rural two-lane undivided highway with a speed limit of 65 miles per hour (mph) through much of the Project area. According to research from USDOT's National Highway Traffic Safety Administration (NHTSA), fatality rates in <u>rural areas are 2.1 times higher</u> than urban areas for several reasons including but not limited to:

- Higher speed limits,
- Visibility and passing opportunities, and
- Run off road crashes and geographical context.

In addition to the rural two-lane highway context of US 52 in the Project area, other specific challenges impacting safety exist. For example, deteriorating pavement conditions in the Project area may <u>negatively impact</u> friction, may impact stormwater drainage causing pooling, and can decrease driver control putting people at greater risk for crashes. Additionally, operational challenges in proximity to at-grade railroad crossings and certain intersections, cause traffic to stop and or yield within the thru-lane on US 52 resulting in dangerous scenarios of driver inattentiveness or visibility challenges as drivers may cross over the centerline into oncoming traffic to avoid vehicles stopped in the travel lane. Finally, US 52 is a critical heavy freight corridor for the State, with heavy vehicle traffic comprising between 73 percent near RP 6.9, 39 percent near RP 120.5, and 25 percent near RP 222.0. According to the FHWA, crashes involving heavy vehicles or freight trucks are <u>more likely to lead</u> to fatal and incapacitating injury when a passenger vehicle or non-commercial vehicle is involved. Safety on US 52 is challenged by current freight traffic and exacerbated by operational deficiencies in several locations.

Challenge 4 – Freight Mobility & Reliability

Current US 52 transportation challenges compound to negatively impact freight mobility and reliability through the Project corridor, which is a strategic freight corridor for the state connecting major economic centers across the state, the U.S., and internationally. Pavement condition can lead to reduced speeds, increased vehicle maintenance costs, potential cargo damages, increased risk of accidents, and rapid pavement condition deterioration as heavily loaded freight exacerbates worsening pavement conditions. Traffic operations and safety challenges associated with US 52 at-

grade railroad crossings and intersections cause congestion and delay, including delays caused by traffic accidents at these locations and throughout the corridor. Existing transportation challenges negatively affect freight mobility and reliability through the 215.1-mile Project corridor.

Proposed Improvements

The Project is comprised of three major components on US 52. Improvements are listed below by NDDOT project control number (PCN).

PCN 23153 – Access Management at Intersection of US 52 and ND 3

- Realign intersection of US 52 and US 52 Business Route (US 52B) in Harvey, ND.
- Remove portions of US 52B based on new alignment.
- Remove US 52B northbound right slip lane at US 52.
- Construct/reconstruct US 52B from US 52 to ND 3 intersection in Harvey, ND.
- Mill and overlay ND 3 from US 52 to US 52B intersection.
- Remove ND 3 northbound right slip lane at US 52B intersection.
- Improvements to ancillary project components, as applicable.

PCN 23404 – Acceleration and Deceleration Lanes at Railroad Crossings, and Turn Lanes

- Construct new 12-foot acceleration and deceleration lanes with paved four-foot shoulder at six existing at-grade railroad crossings including Soo Line Railroad Company doing business as (dba) Canadian Pacific Railway (RP 6.9 and RP 143.5), BNSF Railway Company (RP 20.6), Northern Plains Railroad (RP 40.4), ADM (CPR Services) (RP 120.5), and Red River Valley and Western Railroad (RP 222.0).
 - Acceleration/deceleration lane length will be pursuant to NDDOT's Design Manual Criteria.
- Extensions or replacement of railroad crossing surface, depending on condition, to accommodate acceleration/deceleration lanes.
- Replacement of railroad crossing arms, warning signals, and bungalow.
- Extend westbound left, westbound right, and eastbound left turn lanes at intersection of US 52 and 13th Avenue near RP 120.5.
 - Results from additional railroad crossing lanes.
- New eastbound right and westbound left turn lanes at intersection of US 52 and private driveway (Agricultural Implement Dealer) near RP 118.5 (Velva, ND).
- New eastbound right and westbound left turn lanes at intersection of US 52 and Viking Avenue near RP 127.6 (Bergen, ND).
- New eastbound right and westbound left turn lanes at intersection of US 52 and private driveway (Agricultural Seed Supplier) near RP 149.9 (Anamoose, ND).
- Improvements to ancillary project components, as applicable.

PCN 23641 – Pavement Rehabilitation

- Rehabilitate 45.4 continuous miles of asphalt pavement along US 52 to a state of good repair between RP 141.2 and RP 185.6.
 - Areas of hot mix asphalt two-inch mill and two-inch overlay.
 - \circ Areas of transitional hot mix asphalt two-inch mill and two-inch overlay.

- \circ $\;$ Areas of two-inch hot mix asphalt overlay.
- Areas of subcut.
- Areas of full depth pavement repair.
- Improvements to ancillary project components, as applicable.

Project History & Current Status Project History

During development of the <u>North Dakota State Freight and Rail Plan</u>, adopted in 2023, numerous stakeholders in both public and private sectors identified US 52 as a Level One corridor with challenges for oversized and overweight vehicles servicing the state's agriculture and energy industry sectors, which drive the North Dakota economy. Through robust public engagement and analysis of the state's freight and rail network, US 52 is identified as a Level One Strategic Freight System Corridor by NDDOT. Level One Freight Corridors are determined to be the most critical fright corridors in North Dakota, necessary to sustaining the state's economic growth and competitiveness relative to International/Interstate, Regional/Intrastate, and Local movements of freight.

The Project is one of many comprehensive, recent improvement projects on US 52 and other Strategic Freight System Corridors across the state, associated with NDDOT's multimodal freight network. NDDOT has delivered success in forwarding goals and policies around state of good repair, traffic operations, safety, and freight mobility and reliability, as identified in the Department's core group of policy plans including: (1) <u>Transportation Connection</u> (LRTP), (2) <u>ND State Freight & Rail Plan</u>, (3) <u>Vision Zero</u> (SHSP), and (4) <u>Transportation Asset Management Plan</u> (TAMP).

Project Status

The Project will be constructed in one phase beginning in the 2026 construction season, depending upon MPDG award. US 52 will remain open during construction, maintaining traffic, freight traffic, and emergency vehicle accessibility. A FY 2025-2026 MPDG award will fill the funding gap and allow the Project to move forward to construction as soon as 2025 or 2026, no later than 18 months after the date of obligation of funds. The Project is comprised of the following project components, as listed below by NDDOT project control number (PCN):

PCN 23153 – Access Management at Intersection of US 52 and ND 3

<u>Preliminary engineering</u>, <u>environmental documentation</u> (Programmatic Categorical Exclusion), and <u>final design</u> are complete. No right-of-way acquisition is required.

PCN 23404 – Acceleration and Deceleration Lanes at Railroad Crossings, and Turn Lanes <u>Preliminary engineering, environmental documentation</u> (Programmatic Categorical Exclusion), and <u>final design</u> are complete. Right-of-way acquisition is in-progress for the acceleration and deceleration lanes, and turn lane improvements, with an estimated completion date of June 2024.

PCN 23641 – Pavement Rehabilitation

<u>Preliminary engineering</u>, <u>environmental documentation</u> (Categorical Exclusion by Definition), and <u>final design</u> are complete. No right-of-way acquisition is required for the rehabilitation of US 52 between RP 141.1 and RP 185.6.

Incurred Cost

NDDOT has incurred \$2,939,251 of costs to complete preliminary engineering, environmental documentation, and final design for the Project.

Project Location

The Project is located on US 52 in a very rural area of central North Dakota between RP 6.9, just south of the City of Portal and the Portal U.S.-Canada Border Crossing on the west, and RP 222.0 in Carrington on the east. Although the Project corridor is approximately 215-miles long, specific Project components will be constructed at various strategic locations as shown in Figure 1. Maps associated with the Project location may also be found <u>here</u>.

Figure 1. Project Area Map

The Project is in a very rural area of North Dakota on US 52. With portions of the Project located in small towns and rural population centers. The Project limits begin at RP 6.9 in Burke County and end at RP 222.0 in Foster County. The entire Project is located within a Rural Area, as defined by the MPDG Notice of Funding Opportunity, with Project components in Burke, Ward, McHenry, Pierce, Sheridan, Wells, and Foster Counties. The Project is not located with an Area of Persistent Poverty (APP) or Historically Disadvantaged Community (HDC) however, according to USDOT's Transportation Equitable Community (ETC) Explorer national results, a portion of the Project is in Wells County Census Tract 9598, which is designated as a disadvantaged community by USDOT. Project coordinates are defined as follows:

- Western project limits: 48°54'19.29"N, 102°32'45.58"W
- Eastern project limits: 47°27'23.45"N, 99° 7'48.93"W

Supporting Documents

SASKATCHEWAN MANITOBA 281 COUNT Kenma PIERCE COUNTY 122 Minot MCHENRY WARD COUNTY COUNTY 83 SHERIDAN WELLS COUNTY COUNTY Carrington 94 Manda Bismarck-



FOSTER

COUNTY

Jamestown

52

Links to supporting documents are included throughout this narrative. All supporting documents and MPDG grant application materials are available to view at the following webpage:

http://www.srfconsulting.com/25-26-mpdg-nddot-us-52/