Highway 11 Rainy River Slide Realignment and Resiliency Project

FY 2022/FY 2023 Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program

PROJECT OVERVIEW

MINNESOTA DEPARTMENT OF TRANSPORTATION

Project Name: Highway 11 Rainy River Slide Realignment and Resiliency Project
Project Type: Resilience Improvement
Future Eligible Project Costs: $4.52 million
PROTECT Funds Requested: $2.56 million

Contact Information:
Jon Mason, Project Manager
Minnesota Department of Transportation, District 2
3920 Highway 2 West, Bemidji, MN 56601
218-407-1917 jon.mason@state.mn.us

Supporting Information can be found at:
https://www.srfconsulting.com/mndot-hwy11rrsrr/

DEPARTMENT OF TRANSPORTATION

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I. BASIC PROJECT INFORMATION

PROJECT DESCRIPTION

The Minnesota Department of Transportation (MnDOT) is requesting $2.56 million of Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Grant funding for the construction of the Highway 11 Rainy River Slide Realignment and Resiliency Project. Located between the unincorporated communities of Loman and Indus, Minnesota, in Koochiching County, the project will address two critical slope failures along Highway 11 and the Rainy River. The project will realign 1.2 miles of the highway about 150 feet to the west (see Figure 1), removing the roadway from the slide areas and allowing MnDOT to complete the necessary work to stabilize the slopes.

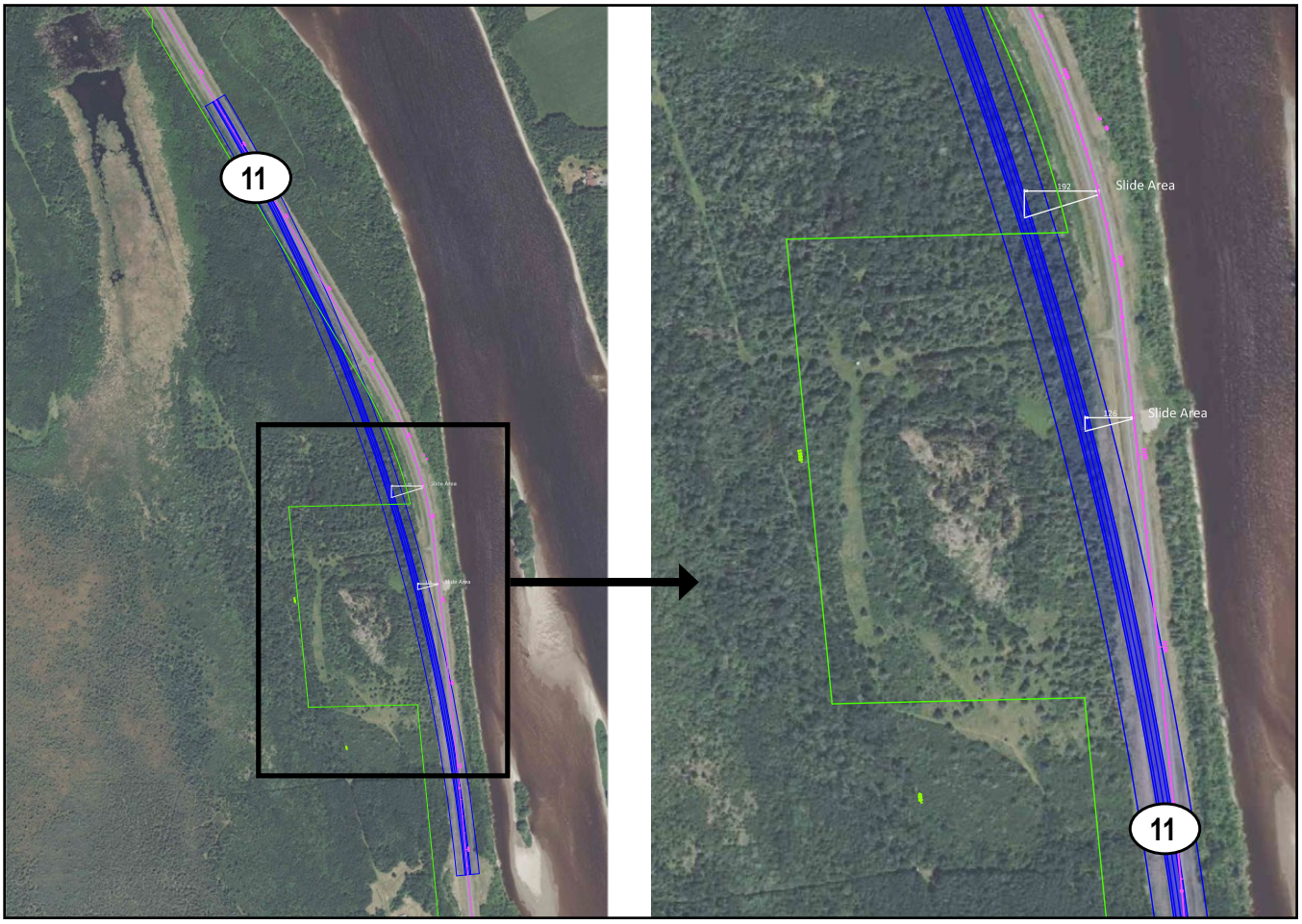
Since 2012, two locations along the project area have experienced two significant slope failures, where landslides have begun moving towards the Rainy River. Both slide events have impacted proper and safe function of the Highway and necessitated temporary fixes. In total, MnDOT has spent over $1.1 million to install temporary measures to keep Highway 11 operational.

Benefit Cost Analysis (BCA):

MnDOT expects that this project will result in quantified benefits that significantly exceed costs. The projected benefit/cost ratio for this project is:

25.75

Figure 1 Project Layout



North slide area, showing the impacts to the original road from the slide. To temporarily mitigate the impacts to the roadway, MnDOT shifted Highway 11 about 20 feet west, which can be seen on the left side of this photograph.

The slope stability issues were triggered in 2012, shortly after MnDOT reconstructed Highway 11 to address safety problems by widening the roadway shoulders and addressing roadway geometric deficiencies. After completion of the reconstruction project, MnDOT maintenance staff began to notice impacts to the roadway from the southern slide. Since that time, MnDOT has completed periodic fixes to mitigate and slow the impacts of the slide area. Those fixes have included soil nailing and foam installation to solidify slope stability and reduce the overall weight of the slide area.

The northern slide area was initially identified approximately ten years later, in spring of 2022. Since that time, the slope stability has deteriorated significantly. Due to a significant crack forming in the westbound lane, during the summer of 2022, MnDOT was forced to reduce the roadway to a single lane and control traffic using a temporary signal. As an emergency and temporary fix, the road was relocated as far west as possible within the existing right-of-way (approximately 20 feet). The temporary alignment includes deficient roadway geometrics, that create potential safety concerns, which will be remedied by this project. According to the FHWA, horizontal curves account for 27 percent of all fatal crashes.

To monitor the slide, MnDOT installed slide sensors in November 2022 that provide real time measures of horizontal displacement. Between November 2022 and August 2023, the northern slide moved approximately 48 inches, and is **currently moving at a rate of over a half an inch a day.** Testimony from MnDOT staff who have visited the site indicates that other sections within the project area have seen more movement.

If the slide continues at its current rate, MnDOT will have to close portions or all of Highway 11 in the near term future. Without PROTECT funding to complete a permanent fix, MnDOT will be forced to continue with temporary fixes, and could require near-term closure of the roadway. Highway 11 is located on the northernmost section of Minnesota, adjacent to the Rainy River and the United States and Canada border. It is the northernmost east/west highway in Minnesota, providing travel between International Falls, MN (population 5,808) and Baudette, MN (population 966) – the

North Slide Area on in early August 2023. Despite temporary action taken by MnDOT in Fall of 2022, the slide continues to move at a concerning rate.

two border crossings between the US and Canada nearest to the project area. Highway 11 serves numerous rural and disadvantaged communities, including the Red Lake Tribal Reservation to the west and a variety of unincorporated communities along the highway. Further, due to the very rural nature of Highway 11, its closure would result in reroute that would more than double miles traveled, time in the vehicle, and emissions from vehicle trips. As will be explored in more detail below, the primary detour around the slide is 126 miles.

As will be explored in greater detail throughout this application, this project will provide numerous benefits to the rural and disadvantaged community that is served by Highway 11. Those benefits include:

- Removing Highway 11 from the slide area, eliminating the risk that the slope failures require future closure of the road.
- Allowing the existing slope failures to be stabilized, reducing the flow of sediment into the Rainy River.
- Keep Highway 11 open maintaining it as a key transportation route for rural and disadvantaged communities.
- Protect Highway 11 as an important freight route that connects freight dependent industries to ports.
- Significantly reduce greenhouse gas and other emissions by avoiding the additional vehicle and truck miles that would be created by detour routes upon closure of Highway 11.
- Correct roadway geometric deficiencies left as a result of temporary measures installed in the fall of 2022.

PROJECT LOCATION

The Highway 11 Rainy River Slide Realignment and Resiliency Project is located in Koochiching County, approximately 30 miles west of the city of International Falls, MN and 40 miles east of the City of Baudette, MN (see Figure 2). The project is located in an rural area, outside of urbanized areas with a population of greater than 200,000 people. The nearest community to the project is the unincorporated community of Loman, located about five miles to the south on the highway. Highway 11 is the northernmost east/west running highway in the Minnesota, running along the US and Canada border from International Falls to Baudette, MN and beyond.

Figure 2 Project Location

Transportation Disadvantaged Tracts

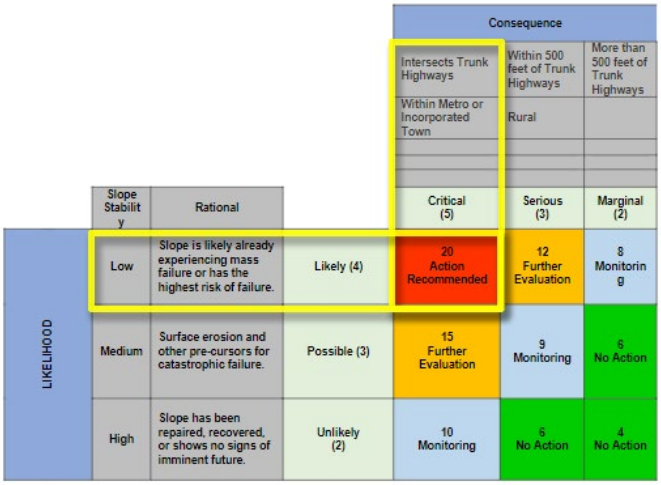
The project is located in Census Tract 7905, which is not listed as a Historically Disadvantaged Tract under the USDOT's Transportation Disadvantaged Tracts Tool. However, the tract does show a Transportation and Health Disadvantage. Additionally, the Tract is shown as disadvantaged under the USDOT Equitable Transportation Community (ETC) Explorer. These areas will be explored in greater detail under Criterion #5 Equity and Justice40.

Resilience Improvement Plan

The project is not included or prioritized in an applicable Resilience Improvement Plan (RIP). Minnesota does not have a RIP, however, MnDOT is developing a one to support PROTECT and resilience investment prioritization. A vulnerability assessment is underway with the RIP scheduled to be complete in early 2024. Once the vulnerability assessment is complete, MnDOT will develop risk management strategies and then outline categories, criteria, and a methodology for project scoring. Ultimately a prioritized list of projects where resilience enhancements can be incorporated will be included in the RIP.

Landslides were a climate vulnerability that was explored by MnDOT through multiple studies between 2017 and 2022. Most recently, a statewide slope vulnerability assessment from 2020 was conducted to identify the most vulnerable sites around the state. Through that assessment the Department developed the risk matrix shown in Figure 3. Based on the matrix, it is likely that this project will be incorporated into the RIP because the Rainy River slides are experiencing mass failure and intersects Highway 11. Under the risk model, this area falls into high likelihood of risk with critical consequences, indicating that action is recommended. .

Figure 3 MnDOT Slope Vulnerability Risk Matrix



Floodplain

The project is located outside of the 100-year floodplain. While Highway 11 runs near the Rainy River, the existing roadway is outside of the mapped floodplain and this project will move it further away. As such no elements of section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act will be implemented as a part of this project.

Development Patterns

The realignment of Highway 11 is not anticipated to impact development patterns or demographics of the project area. This project will, however, affect and benefit how communities move throughout the region. This project is necessary to maintain quality of life for those who live in the area. Closure of Highway 11 would significantly reduce access to vital goods and services. In addition, MnDOT has completed traffic forecasting along Highway 11. Forecasts indicate that this portion of Highway 11 will see increased traffic volumes over the next 20 years. Specifically, it is anticipated that Highway 11 will see 610 vehicles per day by 2045. Without completion of this project, those vehicle trips will need to be rerouted onto alternate state highways.

PARTIES INVOLVED

MnDOT is the lead applicant for the proposed project and will be responsible for the receipt and expenditure of PROTECT Grant funds. MnDOT has extensive experience with procuring and developing transportation improvement projects. With over 11,000 miles of trunk highway (including interstates) and 1,500 bridges under their ownership, MnDOT is experienced and committed implementing its vision:

Plan, build, operate and maintain a safe, accessible, efficient and reliable multimodal transportation system that connects people to destinations and markets throughout the state, regionally and around the world.

Within the last ten years, MnDOT and its partners have procured dozens of federal discretionary grants used to increase efficiency and safety on the MnDOT system.

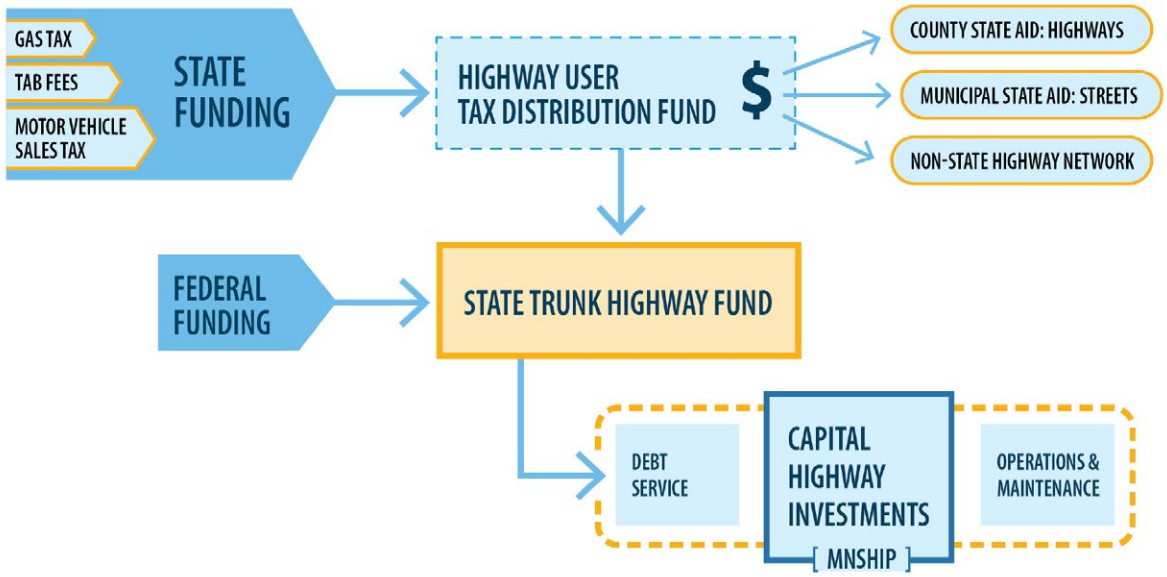
MnDOT is committed to implementing timely investments in capital and preventative maintenance treatments to extend the service life of assets while reducing lifecycle costs. Ongoing operating and maintenance (O&M) costs on the state highway system are funded by taxes and fees from four main revenue sources:

- State gas tax (motor fuel excise tax)
- State tab fees (motor vehicle registration tax)
- State motor vehicle sales tax
- Federal highway funds (highway user tax distributions and the flexible highway account)

MnDOT developed its first Transportation Asset Management Plan (TAMP) in accordance with the 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21). TAMP was then extended beyond MAP-21's minimum requirements to include the entire state highway system and other infrastructure within the right-of-way corridor. MnDOT's TAMP was a national pilot project and serves as a guide for other states.

MnDOT applies the TAMP as a guide to analyze life-cycle costs, evaluate risks, and develop mitigation strategies, establish asset condition performance measures and targets, and develop investment strategies. The TAMP will serve as a guide to ensure all necessary Project operation and maintenance is implemented.

Figure 4 MnDOT Funding Flow Chart



II. GRANT FUNDS, SOURCES AND USES OF ALL PROJECT FUNDING

1. PROJECT BUDGET

Total Eligible Project Cost: **$4,520,000**

FY 2022/2023 PROTECT Grant Request: **$2,560,000** (57 percent of total eligible project cost)

The Highway 11 Rainy River Slide Realignment and Resiliency Project's primary purpose is to address resilience problems along TH 11 between Baudette, MN and International Falls, MN, which makes its full project costs (up to the federal maximum 80 percent) an eligible use of PROTECT funding.

This funding request will fulfill a critical funding gap to construct the Highway 11 Rainy River Slide Realignment and Resiliency Project. Table 1, below, shows the project budget, sources of funding, and cost of each component of the project. MnDOT has committed to providing more than the required match ($1,813,444, 40 percent of total eligible project costs). A detailed cost estimate is included as an attachment to this application. MnDOT is applying for 80% of the estimated construction letting amount of $3,200,000. If awarded PROTECT funding, MnDOT intends to put $146,556 of eligible PROTECT federal formula funding on this project for post-letting costs.

Table 1 Project Budget

	Federal - PROTECT		Other Federal Formula		Non-Federal - State			
Project Component	**Amount**	**Percent of Total Eligible**	**Amount**	**Percent of Total Eligible**	**Amount**	**Percent of Total Eligible**	**Component Total Cost**	**Percent of Total Eligible**
Preliminary Engineering	--	0%	--	0%	$400,000	9%	$400,000	9%
Construction Engineering	--	0%	--	0%	$600,000	13%	$600,000	13%
Construction	$2,560,000	57%	--	0%	$640,000	14%	$3,200,000	71%
Supplemental Agreements/ Overrun and Incentives	--	0%	$146,556	3%	$33,444	1%	$180,000	4%
Right-of-Way	--	0%	--	0%	$140,000	3%	$140,000	3%
Project Total	$2,560,000	57%	$146,556	3%	$1,813,444	40%	$4,520,000	100%

CRITERION #1 VULNERABILITY AND RISK

This project will address two significant and active slope failures impacting the operation of Highway 11. The slope failures are in close proximity to each other and began sliding about 10 years apart (south slide 2012 and north slide 2022). Both slides have necessitated temporary fixes and are in need of a permanent solution.

A number of factors, including slope grade, vegetation, rainfall events, and soil structure impact the occurrence of landslides and slope failures. However, the most common driver for them is extreme rainfall events[1]. Additionally, recent research has connected the impacts of climate change with increased risk for landslides. Specifically, as documented by the Minnesota Department of Natural Resources (MnDNR), Minnesota has seen an increased rate of "mega-rains" since 2000. Specifically, these rainfall events have been two and a half times more prevalent since 2000 then they were in the last 20 plus years of the 20th century[2]. Without a permanent fix, increased occurrence of these events will continue to exacerbate the slide and slope stability issues along Highway 11.

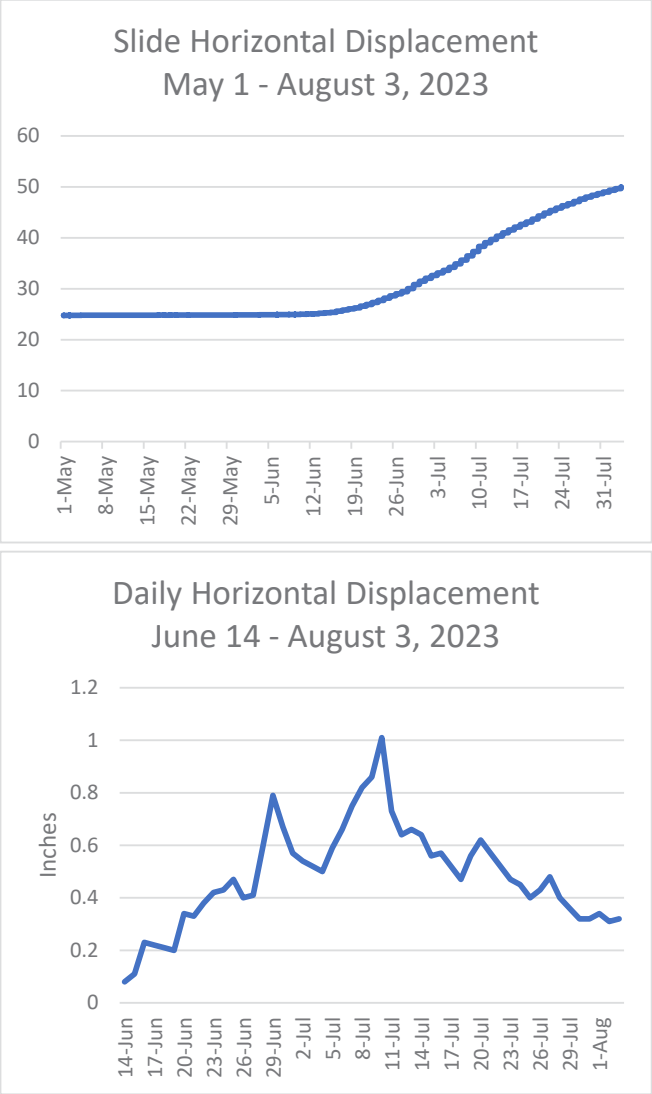
> Minnesota and the Upper Midwest will receive more precipitation, and more precipitation from large events, in response to increasing global temperatures and increased available moisture for passing storm systems.

In particular, the northern slide has demonstrated significant risk over the past year. In summer of 2022, the original slope failure was initially identified due to the presence of a pronounced crack through the center of the westbound lane (see Figure 6). MnDOT quickly responded, closing the travel lane and initiating a temporary project in an effort to keep the roadway open in the short term. In the fall of 2022, the roadway was shifted to the west, out of the immediate slide area, as far as the existing right-of-way would allow. Despite these efforts, the slope failures continue to threaten operation of Highway 11 and have already reached the edge of the new roadway (See Figure 6).

As was discussed above, MnDOT installed remote monitoring sensors to track the rate of the slide. Each monitor takes hourly readings of horizontal displacement. Between their installation in August 2022 and the end of July 2023, the northern side area has seen significant movement, being displaced over 48 inches horizontally (see Figure 5). More recent information indicates a more concerning trend. **During the month July 2023, the slide moved 17.5 total inches, a rate of 0.56 inches per day.**

As the slide continues to move, additional temporary measures will be needed to slow the rate of decline and keep Highway 11 in operation.

Figure 5 Slide Horizontal Displacement



[1] *https://www.theatlantic.com/science/archive/2022/03/climate-change-heavy-rain-landslides-flood/629404/*

[2] *https://www.dnr.state.mn.us/climate/summaries_and_publications/mega_rain_events.html*

Figure 6 Photographic history of the northern slide area.

As is shown below, despite temporary measures, Highway 11 is very vulnerable to near term closure due to the concerning rate of slide. Without PROTECT funding, the highway is at risk of being closed in the very near future.

Summer 2022— northern slide area identified. Photographs taken in August 2022 show damage to the westbound lane. MnDOT responded quickly by reducing the roadway to one lane and controlling the flow of traffic with a temporary signal and began seeking a solution to the slope failure.

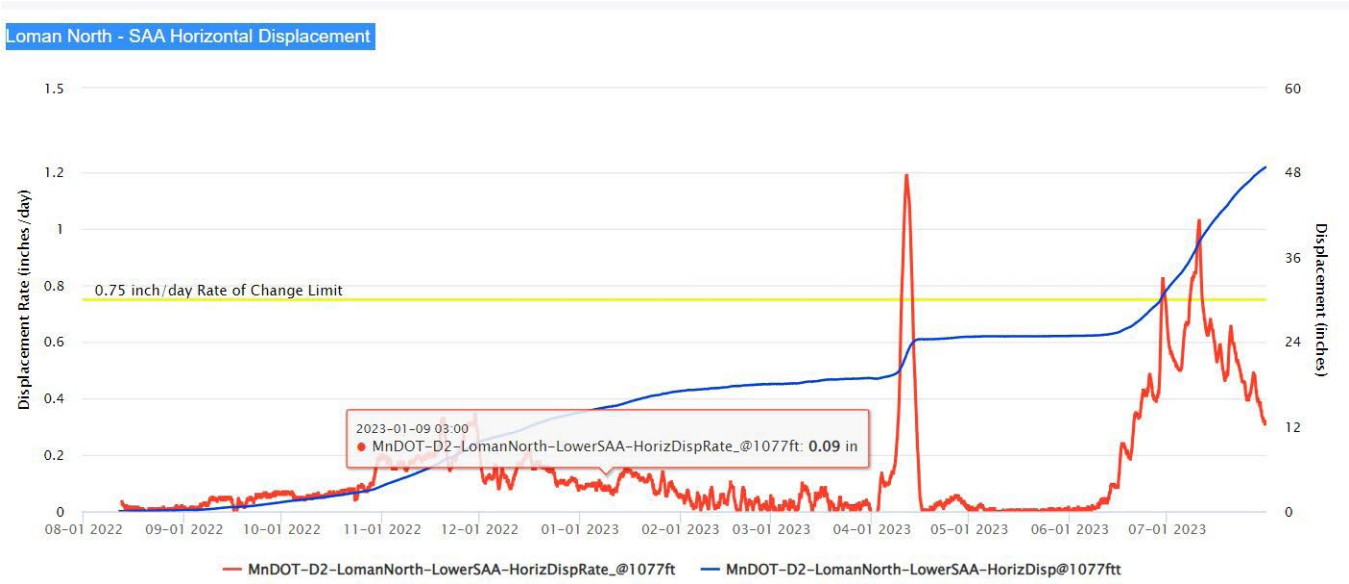
Fall 2022— to get the roadway back in operation, MnDOT moved the roadway as far as possible outside the slope failure within the existing ROW.

May 2023— MnDOT maintenance crews remove several feet of soil in an effort to reduce the driving force behind the slide to slow or stop it movement.

July 5, 2023— continued slope movement captured.

July 17, 2023— Significant slope deterioration

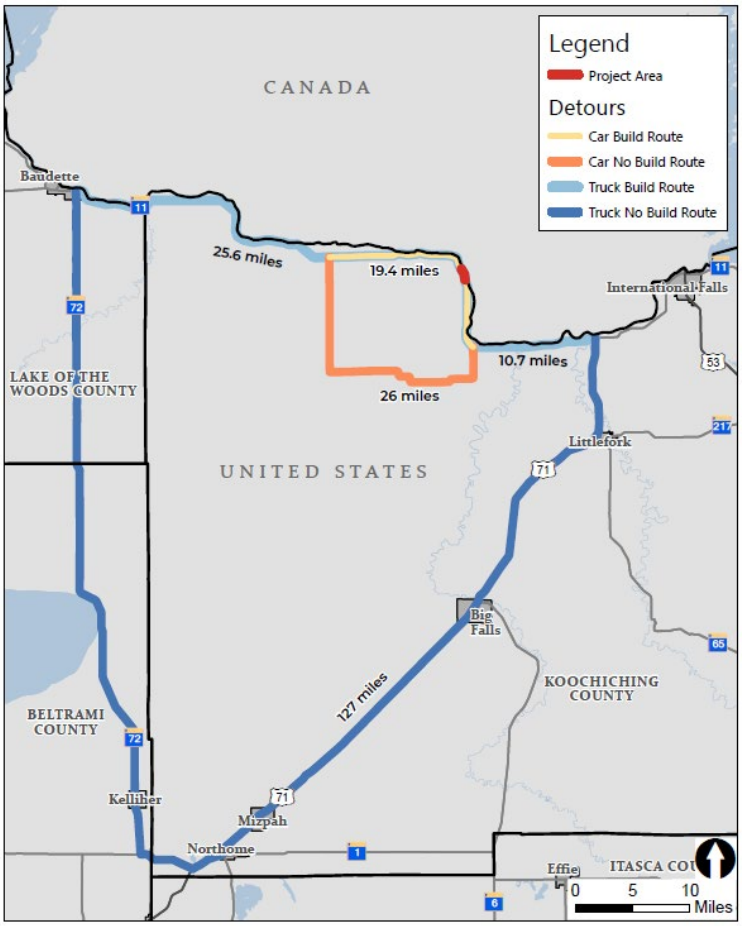
Figure 1 Slide Monitoring Dashboard



MnDOT uses an online portal to track displacement readings. The graph below shows daily readings from the north monitor since the monitoring station was installed. The blue line shows total horizontal displacement, and the red line shows daily horizontal displacement.

CRITERION #2 CRITICALITY TO COMMUNITY

Figure 7 Detour Map



Highway 11 serves a critical role in the quality of life and economic stability of many communities in the northern portion of Minnesota. Without completion of this project, the highway will have to be closed for local and regional travel, which will cut the northernmost east/west highway in Minnesota in half. With the closure of Highway 11 alternate routes would increase through traffic travel distance from 57 miles to 126 miles requiring a detour that would more than double travel distance and time (see Figure 8).

As is established under Criterion #1 Vulnerability and Risk, the slides areas affecting Highway 11 continue to worsen and threaten the continued operation of the highway.

Community Need

Despite being a very rural highway, Highway 11 is a vital transportation corridor for many communities, serving as the primary transportation asset connecting rural communities with goods, services, and economic opportunities.

As will be discussed in detail under the Equity and Justice40 Criterion, north-central Minnesota, where this project is located, has very high rates of Transportation Insecurity and Health Vulnerability.

This indicates that people living in this area are already faced with transportation obstacles and have very limited access to everyday and emergency medical facilities. Further, this indicates that these communities do not have access to other transportation options, such as regular transit service, and are dependent on the automobile to move around. If the slides are not addressed and the continued use of Highway 11 is threatened, those transportations insecurities and health vulnerabilities will be exacerbated further.

ALTERNATE ROUTES ARE LIMITED: As is shown in Figure 8, alternate routes in the area are very limited. Highway 11 closure would push all truck traffic and most vehicle traffic around a 127 mile detour, adding 70 miles to the trip. Some local vehicle traffic would use the shorter detour (adding about 7 miles to the trip), however because a portion of the route is gravel, travel time and vehicle wear and tear would be increased.

Due to the sparse transportation network and the distance between communities, every highway in northern Minnesota is necessary for supporting rural communities. Highway 11 is not exempt from that, serving as the primary road connecting numerous small and rural communities to the few urban areas that provide key goods and services. These transportation difficulties are emphasized in the District 2 Advancing Transportation Equity study, published in 2019. During interviews, many interviewees commented on the difficulty of getting from one location to another, primarily due to the distance between communities. The section of Highway 11 near Loman was used as an example by one commenter, where they cited flooding in 2014, located just south of the project area, which closed the highway for three days and necessitated a 126-mile detour route (see Figure 8).

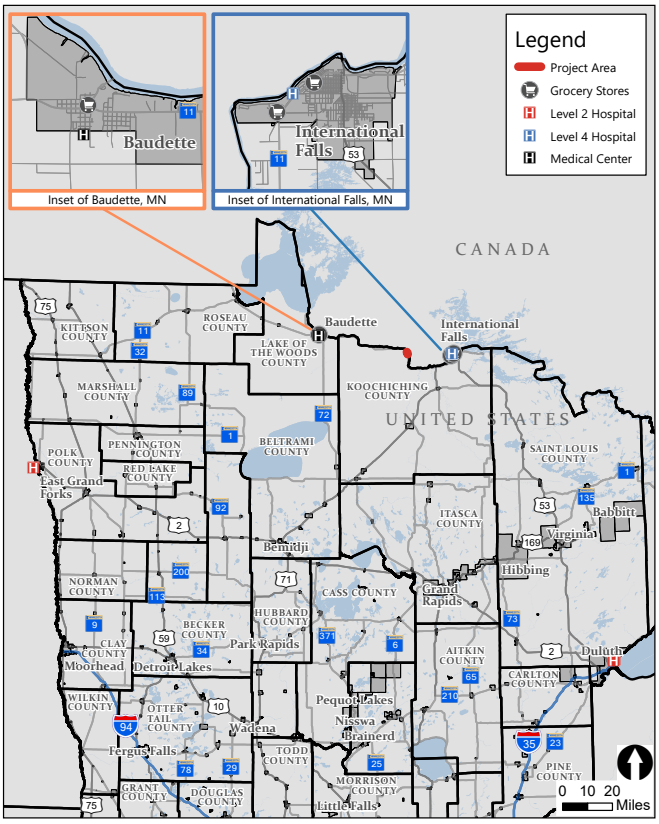
"Our Prescribed Service Area or (PSA) stretches 42 miles west of International Falls to the unincorporated community of Birchdale. If Highway 11 becomes impassable for an extended period of time, we would not be able to provide ambulance services to residents in our County."

Adam Mannausau, Fire Chief/Ambulance Director, International Falls Fire/Rescue/EMS

Access to transportation options effects all aspects of life. For residents in rural areas, having access to an efficient, safe, and operational highway network is vital for quality of life and general welfare. This topic was explored as a part of the Advancing Transportation Equity study for District 2, which states:

"Inadequate transportation options not only affect access to basic needs and services—they also affect access to other activities the contribute to wellness, including social and religious activities."

Figure 8 Location of Key Services



According to the 2020 census, over 12,000 people live in Koochiching County and 2,207 live in Census Tract 7905. Nearly all of them depend on a connected highway network throughout the region to access everyday necessities. Removing even one highway from operation will have a significant societal impact on those that live in the region. With only smaller communities in the area, services are distributed throughout the region. For example, people who live in Loman would have to travel to Baudette or International Falls to access a grocery store (see Figure 9). Similarly, the nearest department stores are located in Bemidji, MN (110 miles) and Eveleth, MN (120 miles).

Highway 11 serves a very rural community and is vital for their connection to necessary goods and services. Specifically, the nearest hospital is located in International Falls, approximately 30 miles east of the project area, while the two nearest Level 1 or 2 Trama Centers are located in Duluth (190 miles and over three hours from the project) and Grand Forks, ND (200 miles and over three and a half hours from the project area - see Figure 9).

Freight and Economic Need

In addition to the community wide importance, Highway 11 serves as an key freight corridor for the northern portion of Minnesota, carrying approximately 140-170 heavy commercial vehicles per day. It also connects two border crossings between the US and Canada, in International Falls, MN and Baudette, MN. There are no east/west highways on the 2022 MnDOT Oversize and Overweight Superload Corridors[3] Map in the northern portion of the state. As such, Highway 11 has become a roadway necessary to support industry in the area.

The largest and most prevalent industries in Koochiching County are ones that have a substantial shipping and receiving component, primarily relying on truck movement for hauling. Those include wood products (location quotient of 11.29), paper and packaging (location quotient of 49.03), and forestry (location quotient of 74.42).[4] Many of those industries, especially forestry, regularly travel Highway 11 to access shipping ports.

Generally, businesses in the district are dependent on having sound and safe infrastructure. Per the Manufacturers' Perspectives on Minnesota's Transportation System District 2 report, businesses stated that they need safe and efficient roadways for their employees and products. Businesses depend on the transportation infrastructure not only for the movement of goods, but also to allow their employees to safely travel to work sites. Highway 11 provides a key shipping and commuting corridor that supports the local economy by expanding access to jobs and allowing the shipment of goods.

Since 2012, MnDOT has issued **483 Oversize/ Overweight (OSOW) permits** for travel along Highway 11 (339 for vehicles exceeding 80,000 pounds in gross vehicle weight). Since 2018, those permits have resulted in over 300,000 OSOW trips across Highway 11.

While the number of permits issued in not extraordinary, the lack of alternative routes emphasizes the need to maintain the highway as a freight route. Without Highway 11, these trips would be diverted south, adding vehicle miles, increasing emissions, and placing additional strain on other roadways.

[3] Superload Corridors are trunk highways that are suitable or restricted for transporting Oversize/Overweight (OSOW) loads within Minnesota. Superloads are defined as over-legal loads or vehicles up to 16 feet high; or 16 feet wide; or 150 feet long; or 250,000 pounds in Gross Vehicle Weight (GVW) operating under a special hauling permit.

[4] A location quotient measures the share of an industry cluster's employment in a region as a ratio of the share of the cluster in the US as a whole. Location quotients of greater than one indicate a higher concentration employment within those industries relative to the national average.

MnDOT is progressing this project forward as quickly as possible, however, due to the rapid nature of the slide, temporary measures will likely be needed before the new alignment is completed.

CRITERION #3 DESIGN ELEMENTS

The proposed project will mitigate the impacts of the slope failures, by realigning the portion of Highway 11 that is being impacted by the slides. By realigning the road, it will be removed from the immediate slide areas, which will allow the slope failures to be remediated through the installation of slope stability measures that will reduce and eliminate any future soil instability. Since the south slide started, MnDOT has completed temporary slope stability measures to slow the impacts of the slide and stabilize the slope, however the weight of the road and the passing passenger and freight vehicles have necessitated the complete realignment of the highway. Past stability work has included the following:

- **Soil nailing:** According to a 2020 report about the technique for the International Journal of Advanced Research in Engineering and Technology, soil nailing is when a slope is reinforced by insertion of nails into soil mass which assists in providing internal strength to the soil mass. The technique is a ground adjustment method that can be utilized on either normal or uncovered inclines and includes boring openings for steel bars to be embedded into a slanted face which are then grouted set up. Mesh is then connected to the bar finishes to hold the incline face in position.
- **Foam installation:** Usually manufactured into large, lightweight blocks which have a very low density weighing just 1.15 to 1.25 pounds per cubic foot, EPS19 Geofoam has been used for more than 30 years as an effective soil stabilization method. Since this type of foam is up to 100 times lighter than other traditional fills with similar compressive strengths, geofoam allows the maximization of right-of-way on embankments. Its ease of installation has also proven to lead to the reduction of construction time and labor costs.

The anticipated service life of the highway pavement is approximately 20 years. This determination is based on MnDOT assumptions using best available data on highways engineered with similar materials and with modern construction techniques. The location of the new road will be approximately 150 feet west of the current location and far enough away from the slide area to remain unaffected by future slides or stability issues caused by erosion from floodwaters. Stabilization work will be done on the slope where sliding is currently occurring to ensure the continued stability of the realigned section of highway. Once stabilization work on the slope has been completed, naturally occurring vegetation will be planted along the slope to assist in erosion control measures.

Foam installation to help stabilize the southern slide.

Both the new section of highway and the stabilized slope will be maintained by MnDOT District 2 with consultation from the MnDOT Office of Maintenance, which provides expertise, leadership, direction, and statewide coordination services to the eight MnDOT districts for the maintenance and preservation of state highways. The estimated maintenance costs for the anticipated service life of this section of Highway 11 will be between $2,000 and $3,500 per year. Funding for these maintenance costs will come from Minnesota's Trunk Highway Fund which is the principal source of support for the trunk highway system. Revenue for this fund comes from three major sources: the state gasoline tax, motor vehicle registration taxes, and federal aid.

In most cases, increased effort and focus on preventative activities will lead to a prolonged service life and avoidance of significant capital investments until a project has fulfilled its useful service life. A detailed maintenance plan has yet to be developed for this project but will follow established MnDOT policies to ensure funded design elements will be maintained for the anticipated service life of the highway and to ensure that said design elements continue to reduce vulnerabilities.

CRITERION #4 PUBLIC ENGAGEMENT, PARTNERSHIPS, AND COLLABORATION

MnDOT is committed to completing thorough and effective public engagement for all projects, which is essential to the department's commitment to offering opportunities for meaningful input and to advance equity in transportation. MnDOT employees are expected to operate in an inclusive and transparent manner throughout the planning, program development, and project delivery process by keeping the public informed, listening to and acknowledging concerns and aspirations, and incorporating public feedback into decisions and outcomes.

MnDOT policy seeks to provide engagement opportunities robust enough to allow the public to:

- Be engaged early and often;
- Provide assistance in identifying transportation challenges and solutions; and
- Be a participant in decision-making processes.

Numerous ongoing engagement efforts by MnDOT and its partners will contribute to the success of this project. To incorporate equity considerations into planning, programming, and project development, MnDOT initiated equity studies in 2019. As a part of those efforts, Advancing Transportation Equity Studies were published for District 2 in winter 2019 and for District 1 in October 2020. As a part of those efforts, MnDOT staff set out to identify and engage with:

- Communities currently underrepresented in transportation decision-making processes;
- Communities experiencing known inequities in access or outcomes; and
- Communities facing unique transportation needs not well addressed by current approaches.
- The findings of these reports will play an ongoing role in public engagement for this project.

Beyond past engagement efforts, below are MnDOT's responses to questions from the NOFO about the agency's preliminary public engagement plan for the Project:

Question #1: *How will public engagement be conducted demonstrating engagement of diverse input such as community-based organizations during project planning and how will this input be considered during the project decision-making process?*

A: MnDOT will follow all standard public engagement policies and procedures throughout project development and construction. They will work with Koochiching County, townships, members of unincorporated communities, and the Minnesota Department of Natural Resources to communicate details about the project to the general public and other agencies, including traffic control during construction. This communication will take place via public meetings, flyers, mailings, social media posts, and landowner meetings. Members of the public will be able to submit questions and comments on the project directly to MnDOT where they will be answered in a timely fashion.

Question #2: *Describe partnerships and collaboration with community stakeholders.*

A: Throughout the development and implementation process, MnDOT will engage community stakeholders through their standard engagement procedures. On the

MnDOT District 2 construction project webpage, information about current and planned projects is available. Standard procedure dictates that one or more open houses will be hosted to allow the public opportunities to learn about and provide feedback on the project. As the project progresses, information will be shared online, through social media, and through press releases.

Beyond that, numerous opportunities for the public to provide input about regional transportation policies will be available through the Northeast Minnesota Area Transportation Partnership (ATP-1). Information about the partnership and timing of activities is available on the program website.

- September - January: Solicit projects
- Feb - April: Develop Draft ATIP
- May: Public review and comment
- June: Submit final ATIP to MnDOT Central Office
- July - August: STIP approval by Commissioner
- September - October: STIP approval by Federal Transportation Authorities

Question #3: *Describe partnerships and collaboration with other agencies (e.g., State, local, regional, Federal).*

A: This project will require right-of-way acquisition from the Minnesota DNR. MnDOT will engage with the agency on project details and need throughout the right-of-way acquisition negotiation process. Further, MnDOT will communicate with Koochiching County on project design and delivery.

Question #4: *Describe partnerships and collaboration across relevant sectors (e.g., emergency management, environmental, planning, floodplain management, health, housing and development, private sector).*

A: This project has significant impacts on water quality, tourism, and emergency management throughout Koochiching County. MnDOT has partnered with many of these organizations to help understand the role that Highway 11 plays in their operations. For example, Highway 11 serves as a hauling route for the Koochiching County Environmental Services solid waste management program. The County Environmental Services Department has provided a letter of support for the project and will continue to be involved in project development.

Additionally, Highway 11 serves a vital role in emergency management throughout the region. MnDOT has begun coordination with emergency response organizations in the area, including International Falls Fire, Rescue, and EMS. MnDOT will continue coordination with these organizations throughout project development and delivery to ensure the Highway continues to meet their needs.

Finally, Highway 11 plays an important role for the operation of a variety of industries and organizations in the area. For example, this route is commonly used for freight hauling by forestry companies and other businesses. As a part of project development, MnDOT has begun and will continue outreach to many private and public organizations throughout the area. The Headwaters Regional Development Commission, Erickson Timber Products, Scenic Rivers Health Services, Marvin Windows, Lake of the Woods Tourism, and others have all provided letters of support for the application.

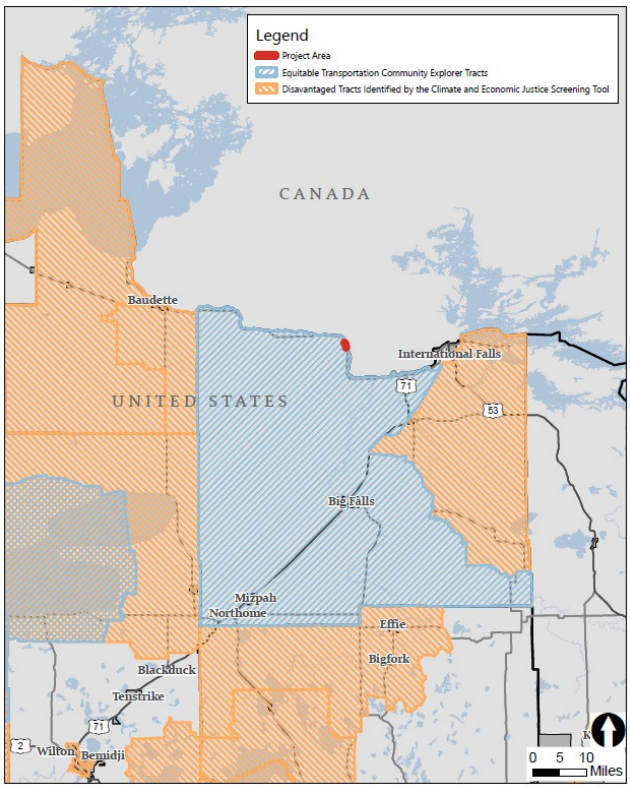
Question #5: *For (1) through (4) above, as applicable, describe the roles of these entities in the planning, design, construction, and operation of the project.*

A: The stakeholders discussed above will be given opportunities to provide feedback about the proposed project. However, due to the nature and type of project being proposed, they will have limited opportunity to impact the project design, operation, or construction of the realigned road.

CRITERION #5 EQUITY AND JUSTICE40

Highway 11 is a very rural roadway, which serves numerous rural, unincorporated, and tribal communities. Along the 70-mile stretch of highway between the cities of Baudette and International Falls, is the unincorporated communities of Clementson, Central, Border, Frontier, Birchdale, Manitou, Indus, Loman, Laurel, and Pelland. Additionally, located directly to the west of the project is the Red Lake Tribal Reservation, home to the Red Lake Band of Chippewa Indians

Figure 9 Disadvantaged Areas Map



Using the various equity and Justice40 tools available, historically disadvantaged populations have been identified in the project area and the area served by Highway 11:

- **Climate and Economic Justice Screening Tool (CEJST):** Under the Climate and Economic Justice Screening Tool (CEJST), the project is located in a Census Tract that is partially identified as disadvantaged due to the location of the Red Lake Tribal Reservation (see Figure 10). Additionally, under the tool, the Tract falls into the 96th percentile for Transportation Barriers, however, because the Tract falls at the 63rd percentile for Low Income, it is not identified as disadvantaged (if the tract were in the 65th percentile or higher for Low Income, it would be identified as disadvantaged).
- **Transportation Disadvantage Tool:** Under the Transportation Disadvantaged Tracts tool, the Tract is not listed as a Historically Disadvantaged Tract under the USDOT's Transportation Disadvantaged Tracts Tool. However, the tract does show a Transportation and Health Disadvantage.
- **Equitable Transportation Community Explorer (ETC):** Under the Equitable Transportation Community Explorer (ETC), the newest tool intended to measure community disadvantage from the USDOT, this project is located in a Census Tract that is identified as Disadvantaged (see Figure 10). In particular, the tract rates in the 98th percentile nationwide for Transportation Insecurity and the 85th percentile nationwide for Health Vulnerability.

The communities along Highway 11 are dependent on the highway for accessing vital goods and services. Without the project, Highway 11 is in danger of becoming unsafe for travel, necessitating roadway closure and requiring significant detours for community members. Due to the factors explored below, and the presence of disadvantaged communities in the area, it is expected that this project will, at a minimum, allocate 40 percent of benefits to disadvantaged communities by ensuring continued operation of the vital highway. In particular, the project will address the key points identified in the NOFO as follows:

(1) Reduce the impacts of emergency events – This is a very rural area with already limited access to timely emergency response. Highway 11 has very limited alternate options and maintaining its operation is vital for continued provision of emergency response. Highway 11 serves as an important resource for providing emergency services, but is also important in case of events where another highway goes out of service. Due to the sparse transportation network in this part of the state, there is very limited redundancy, making it vitally important to keep each highway operational.

Without this project, Highway 11 will quickly become unsafe for operation and require route closure which would reduce

access to emergency response and further limit community members evacuation options.

The International Falls Department of Fire/Rescue/EMS, which provides emergency services for much of the project area, has stated that Highway 11 is vital for their ability to provide timely emergency services. Without Highway 11, they would be unable to provide ambulance and other services to their full service area. They have provided a letter of support for the application.

(2) Improve access to critical community services – Communities close to the project are dependent on each and every highway in the area. As established in Criterion #2 Criticality to Community, northern Minnesota communities are very sparsely distributed, and residents need to travel to a variety of communities to access all necessary services (see Figure 9). For all communities in Koochiching County, Highway 11 serves as a primary roadway connecting residents to the communities with service providers. This limited access would be significantly diminished without continued operation of Highway 11. By solidifying Highway 11 as a viable transportation corridor into the future, this project will improve and maintain access to critical community services for disadvantaged and underserved communities.

Additionally, the nearest International Airport is located in International Falls. For many people, the best way to access the airport is using Highway 11.

(3) Connect Americans to good-paying jobs – In 2020, there was just under 4,500 total jobs in Koochiching County. Of those jobs, over 55 percent were located in International Falls, about 30 miles east of the project area. Additionally, the cities of Warroad and Roseau serve as two employment centers west of the project area, home to 2,470 and 1,655 jobs, respectively. For many community members, Highway 11 is the best option to access one of the area's employment centers. Without Highway 11, the next shortest route between Roseau and International Falls, using state highways, requires traveling over 60 miles south, increasing travel distances from 57 miles to 127 miles (See Figure 6).

(4) Reduce current or potential burdens – Without this project, people who live near the project area would be faced with significant burdens. This project will directly address the potential burdens by mitigating the impacts of the Rainy River slides, that are currently threatening the continued operation of the Highway. As has been established above, Highway 11 serves as a vital transportation option for communities that are already facing transportation insecurities. Eliminating the highway as a through route would increase those insecurities, by adding significant detours which will increase transportation costs and time in the car.

(5) Improve access to resources and quality of life – As has been established above, this project is located in a very rural part of Minnesota. While the number of people who live in the area is limited, they are dependent on maintaining the existing road network to access everyday goods and services. Continued operation of Highway 11 is threatened by the slope failures and without this project, would require closure in the near term. If Highway 11 were to close, access to resources and quality of life would be drastically reduced.

CRITERION #6 CLIMATE CHANGE AND SUSTAINABILITY

Air Pollution

Highway 11 is a critical route used for both personal and freight transportation in northern Minnesota. Should the highway be forced to close due to safety concerns connected to its deteriorating condition, lengthy road detours would result, causing a significant increase in emissions from traffic along the Highway. If this project is not completed, it is anticipated that additional road miles due to the required detour will result in an additional 114,425 tons of carbon dioxide (CO_2) being released into the air. That scenario would also result in an additional 196 metric tons of nitrogen dioxide (NO_2) and 3 metric tons of particulate matter ($PM_{2.5}$).

The negative health effects from air pollution are well documented. For example, according to the Minnesota Department of Health (MDH), acute exposure to $PM_{2.5}$ can result in short-term impairment of lung function and possibly death. Further, long term exposure can result in serious cardiovascular and respiratory diseases, cancers, and possibly death. These health impacts could result in increased health disparities to a community that is already been identified at a health disadvantage. This project will help protect the rural communities in the area from exposure to increased emissions. Rural communities tend to have older Minnesotans who suffer from underlying health conditions which can be exacerbated from air pollution. Additionally, many studies show that low-income and minority populations are also more vulnerable to the adverse health impacts of air pollution.

According to the MPCA's environmental justice screening tool, the project area is within an area of increased concern for environmental justice but does not currently have any pollutants above Minnesota's health benchmark.

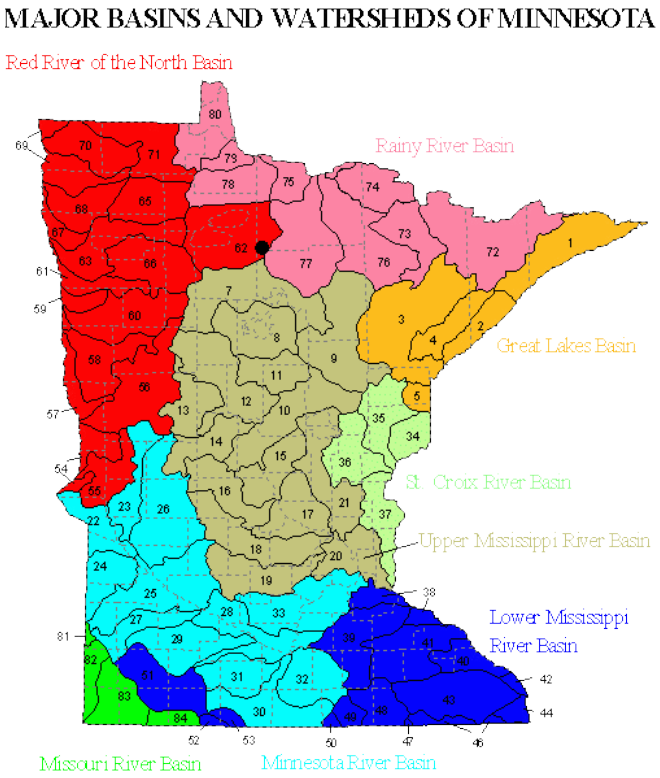
Further, these additional emissions will further contribute to the impacts of climate change. Carbon dioxide, followed by methane and nitrous oxide, account for the largest portion of greenhouse gases (GHG) released in Minnesota. While GHG emissions fell by 23 percent between 2005 and 2020, the Minnesota Pollution Control Agency (MPCA) continues to advocate for transportation projects which reduce carbon.

Water Quality

Highway 11 runs along the Rainy River and the US and Canada border through significant portions of the Rainy River Basin, one of eight major basins in Minnesota (See Figure 11). Running from the east to the west, along the US and Canada border, the Rainy River runs from Rainy Lake, east of International Falls to Lake of the Woods. According to the Minnesota Pollution Control Agency, surface water quality remains a main concern associated with Lake of the Woods.

In response to the water quality concerns, a board was formed in 2013, called the International Rainy-Lake of the Woods Watershed Board, consisting of both American and Canadian representatives. A part of the Board's efforts was the development of a Water Quality Plan of Study to help better understand water quality issues in the basin and to develop annual reports documenting water quality and Board activities.

Figure 10 Minnesota Major Basin and Watershed Map



The Rainy River is the Lake of the Woods's largest tributary, contributing about 75 percent of the inflow into the lake. In 2008, the Minnesota side of Lake was declared impaired. Updated data, included in the 10th Annual Report of the International Rainy-Lake of the Woods Watershed Board (2022), indicate that the lake remains impaired, and that there is still "persistent and significant harmful algal blooms," covering up to 70 percent of the Lake. Research indicates that sedimentation has played a role in the Lake's impairment.

Due to Highway 11's proximity to the Rainy River, all erosion from the slope failure sites flows directly into the river and eventually downstream to the Lake of the Woods. This adds to sedimentation of the lake and could be contributing to the algal blooms occurring annually. As the international effort to improve water quality in Lake of the Woods continues, it is important that all sources of possible surface water pollution are addressed. As has been discussed, in addition to the installation of drainage improvements along the highway, the realignment of the roadway is necessary to allow the

slopes to be stabilized and minimize the flow of sediment into the waterway.

CRITERION #7 SCHEDULE AND BUDGET

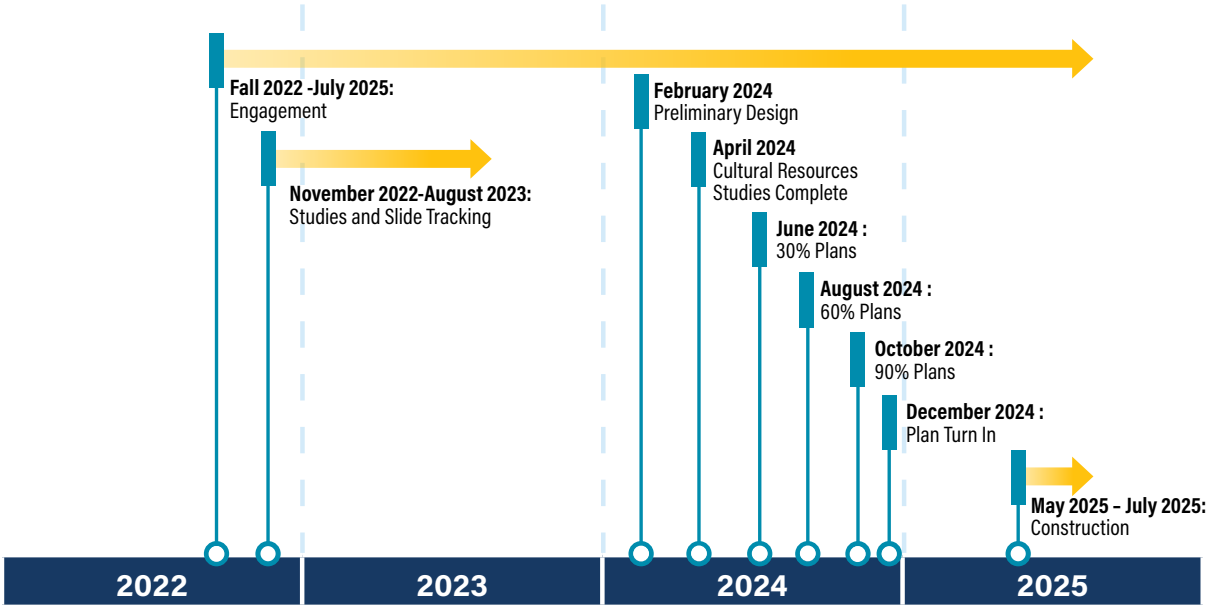
Highway 11 was previously reconstructed in 2012, shortly before the south slope failure occurred. Since that time, MnDOT has spent resources completing temporary measures to keep the highway in operation. Most recently, since the northern slide began in the summer of 2022, MnDOT spent approximately $750,000 to install temporary measures and shift the roadway about 20 feet west. As has been demonstrated by this application, those measures are not sufficient to keep the roadway in operation beyond the short term and the highway needs a permanent solution. Over the past ten years, MnDOT has been able to fund smaller fixes and temporary measures, however, a PROTECT award will provide the funding necessary to implement a permanent solution.

Schedule:

MnDOT guarantees that all necessary activities will be completed to allow FY 2022 or FY 2023 PROTECT funds to be obligated sufficiently in advance of the statutory deadline (September 30, 2025 for FFY 2022 funds and September 30, 2026 for FFY 2023 funds). As can be seen in the schedule below (Figure12), construction is anticipated to begin in spring of 2025 and end in the summer of 2025. A more detailed calendar is attached to this application.

- Studies and Slide Tracking: November 2022-August 2023
- Cultural Resources Studies Complete: April 2024
- Preliminary Design Complete: February 2024
- Final Design:
  - 30% Plans: June 2024
  - 60% Plans: August 2024
  - 90% Plans: October 2024
  - Plan Turn In: December 2024
- Project Letting: February 2025
- Engagement: Fall 2022 – July 2025
- Construction May 2025 – July 2025

Figure 11 Schedule



Project Budget:

The primary purpose of this project is to improve the resilience of the transportation system. As such, the project is eligible to be fully funded (up to the 80 percent maximum federal share) through PROTECT dollars. MnDOT is requesting $2.56 M, to help deliver this important transportation resilience project (57 percent of total eligible costs). Table 2 below, also included in the Project Budget section above, outlines the total project cost, including the amount requested from the PROTECT Discretionary Grant Program and all other funding sources and amounts. It is inflated to the year of construction (2025) and includes contingencies for potential overruns. The detailed total project cost estimate is available for review here.

Table 2 Project Budget

	Federal - PROTECT		Other Federal Formula		Non-Federal - State			
Project Component	Amount	Percent of Total Eligible	Amount	Percent of Total Eligible	Amount	Percent of Total Eligible	Component Total Cost	Percent of Total Eligible
Preliminary Engineering	--	0%	--	0%	$400,000	9%	$400,000	9%
Construction Engineering	--	0%	--	0%	$600,000	13%	$600,000	13%
Construction	$2,560,000	57%	--	0%	$640,000	14%	$3,200,000	71%
Supplemental Agreements/ Overrun and Incentives	--	0%	$146,556	3%	$33,444	1%	$180,000	4%
Right-of-Way	--	0%	--	0%	$140,000	3%	$140,000	3%
Project Total	$2,560,000	57%	$146,556	3%	$1,813,444	40%	$4,520,000	100%

CRITERION #8 INNOVATION

Innovative Technology

As the extent to the issues from the slope failures became known in the summer of 2022, MnDOT quickly responded by installing remote monitoring sensors. By installing remote monitoring systems, the Department has been able to closely track the rate of change without requiring in person measurements. The real time measurements have enabled MnDOT to have hourly readings, monitor the rate of slide, and project slide movement into the future. In addition to visual changes, data from the monitoring station can be used to confirm the extent of the issue.

Further, after completion of the project, the monitoring station can be used to ensure that the slope stability issues have been remedied.

Data from the monitoring station is included in this application as a part of Criterion #1 Vulnerability and Risk and is provided in its raw form as an attachment to this application.

This remote monitoring system has allowed MnDOT to closely monitor the horizontal displacement of the slide area.

Innovative Financing

In order to fulfill matched for federal grant awards through the IIJA, the Minnesota Legislature passed a bill in 2023 to provide $216 million from the state's General Fund to match federal funding associated with competitive grant opportunities. These funds are available, up to $10 million, to help fund the required local match for projects that have been awarded federal grant funds. This is a unique and innovative funding opportunity, available on a first come first serve basis for MnDOT and local agencies.

IV. ECONOMIC ANALYSIS

MnDOT does not currently have a Resilience Improvement Plan and the following Benefit- Cost Analysis was completed. The benefit-cost analysis provides an indication of the economic desirability of a scenario, but results must be weighed by decision-makers along with the assessment of other effects and impacts. Projects are considered cost-effective if the benefit-cost ratio is greater than 1.0.

A summary of results of the benefit-cost analysis are included in Table 3 and the full BCA technical memorandum and workbook are available as an attachment to this application.

Table 3 Benefit-Cost Analysis Results

	Initial Capital Cost (2021 dollars)	Project Benefits (2021 dollars)	Benefit-Cost Ratio (7% Discount Rate)	Net Present Value (2021 dollars)
No Build vs. Build	**$3.08 million**	**$79.36 million**	**25.75**	**$76.28 million**

V. FHWA PRIORITY CONSIDERATIONS

By addressing the critical slide areas, this project will solidify Highway 11's future as a key transportation corridor for the northern portion of Minnesota. As is discussed in detail below, the Highway 11 Rainy River Slide Realignment and Resiliency Project will meet the FHWA's Priority Considerations for the FY 2022 and FY 2023 PROTECT Program:

1. EXCEPTIONAL BENEFITS UNDER MERIT CRITERIA #5 EQUITY AND JUSTICE40

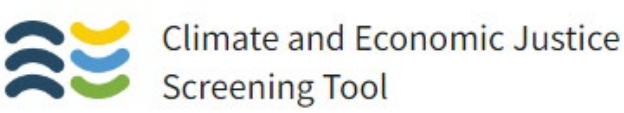
This project will play a key role in maintaining the transportation network for a variety of disadvantaged, rural communities near the project area. Should the highway be forced to close due to safety concerns connected to its deteriorating condition, lengthy road detours would result, which in turn would cause the release of additional greenhouse gas emissions and significantly impact access to medical and quality of life services for these communities.

Within the immediate project area, multiple indicators show that people living along and around this portion of Highway 11 are met with a high level of transportation insecurity and disadvantage and disparities in health outcomes. Alternate routes are very limited, adding over 60 miles to travel distances to bypass this section of Highway 11. With already limited access to medical facilities, vital community services, and goods, closure to Highway 11 would significantly reduce quality of life for these communities.

Due to the very rural nature of Highway 11, there is very limited access to alternate routes and communities are met with long travel distances to everyday and emergency medical care. Without this project, Highway 11 will have to be closed, further reducing community access to medical services.

Further, rural communities typically have substantial populations of older Americans with underlying health conditions. These conditions are often exacerbated by air pollutants that can be attributed to increased vehicle exhaust. Due to the lack of services in their area, and with either reduced or no access to telehealth services, these same residents often rely on their local transportation systems to get to and from necessary medical appointments. According to the Centers for Disease Control and Prevention (CDC), rural U.S. residents often have a higher age-adjusted prevalence of Chronic Obstructive Pulmonary Disease (COPD) – a group of lung diseases that makes it harder to breath. These same rural residents also have higher rates of hospitalizations and deaths associated with respiratory diseases such as COPD than residents who live in micropolitan or metropolitan areas. From 2018 to 2020, Koochiching County residents, where the project is located, had an age adjusted COPD hospitalization rate of 16.5. Beltrami County, located to the southwest and where the Red Lake Indian Reservation is located, had a rate of 24.1 which was higher than the statewide average.

Beyond that, studies consistently find that the impacts of air pollution are more often felt by lower income and minority populations. A 2019 report titled Life and Breath: How air pollution affects health in Minnesota by the Minnesota Department of Health and Pollution Control Agency found that Minnesotans who were more seriously impacted by air pollution included those who suffered from poverty, were disabled, were uninsured, or were Black, Indigenous, or a Person of Color (BIPOC). According to the report, "while air quality has generally improved over the past few decades in Minnesota, gaps in health impacts of air pollution based on race and other marginalizing factors persist in the state."



MEASURES OF DISADVANTAGE

According to the various tools intended to measure disadvantage, this project serves a variety of communities facing disadvantage. The primary source of their disadvantage is a very high level of transportation insecurity and a significant level of health vulnerability.

Climate and Economic Justice Screening Tool (CEJST): While not identified as disadvantaged, the Project Tract falls into the 96th percentile for Transportation Barriers and at the 63rd percentile, is just under the required threshold for Low Income.

Transportation Disadvantage Tool: The Project Tract is not listed as a Historically Disadvantaged Tract under the USDOT's Transportation Disadvantaged Tracts Tool. However, it does show a Transportation and Health Disadvantage.

Equitable Transportation Community Explorer (ETC): This project is located in a Census Tract that is identified as Disadvantaged. In particular, the tract rates in the 98th percentile nationwide for Transportation Insecurity and the 85th percentile nationwide for Health Vulnerability.

2. WORKFORCE DEVELOPMENT, JOB QUALITY, AND WEALTH CREATION

MnDOT has proactively developed a strong portfolio of Equity and Inclusion Programs in its appropriations process such as Disadvantaged Business Enterprise (DBE), Targeted Group Business (TGB), and its Equal Employment Opportunity (EEO) Program. MnDOT encourages and awards private business contracts to both minority-owned and women-owned businesses, and over the past five years, has awarded more than $173 million in prime contracts and goods purchases to under-utilized businesses, increasing from $19 million in FY16 to over $38 million FY20.

Additionally, MnDOT is committed to Minnesota's affirmative action efforts and works to ensure that the agency is providing equal opportunity to all employees and applicants in accordance with state and federal affirmative action laws along with the agency's designated plan. Additionally, MnDOT provides reasonable accommodations to qualified individuals with disabilities when such accommodations are related to performing essential functions of the job, applying, or competing for a job, or enjoying the benefits of and privileges of employment.

MnDOT's Office of Equity and Diversity also offers several Diversity, Equity, and Inclusion training programs to its employees. In accordance with 23 CFR Part 200.9(b)(11), MnDOT prepares a Title VI and Nondiscrimination Implementation Plan on an annual basis for the Federal Highway Administration and every three years for the Federal Transit Administration in accordance with FTA Circular 4702.1B. The Minnesota Human Rights Act also prohibits discrimination in the provision of public services on the basis of race, color, creed, religion, national origin, sex, marital status, disability, gender identity, sexual orientation, and status with regard to public assistance. Public services are defined to include any department or agency managed by the State of Minnesota.

Certain businesses contracting with the State of Minnesota, cities, counties, and the University of Minnesota are required to have a Workforce Certificate. Workforce Certificates require contractors to actively work to hire, train, promote, and retain people of color, Indigenous people, women, and/or people with disabilities to ensure that Minnesota's workforce

reflects Minnesota's demographics. When agencies sign a contract with a contractor, under the Minnesota Human Rights Act and Minnesota Administrative Rules 5000.3400 through 5000.3600 (Rules), the bid-award entities are required to:

- Provide each bidder and contractor with documentation describing the Minnesota Human Rights Act and Rules.
- Send a list of prospective bidders to the Minnesota Department of Human Rights (MDHR) before a bid opens.
- Include in each contract is the affirmative action clause stating the intention of the bid-award entity to carry out its responsibility for requiring affirmative action by its contractors and the consequences for failure to implement affirmative action.
- Include in each contract the contractor's obligations under the Minnesota Human Rights Act and Minnesota Administrative Rules.
- Provide information to MDHR with information or assistance deemed necessary to seek compliance with the Minnesota Human Rights Act and Minnesota Administrative Rules.
- Provide information to MDHR indicating that a business or firm is not in compliance with the Minnesota Human Rights Act and Minnesota Administrative Rules.
- Cooperate with the Commissioner of the MDHR in implementing the Minnesota Human Rights Ace and Minnesota Administrative Rules.

MDHR maintains a list of contractors that have current Workforce Certificates and Equal Pay Certificates, and contractors that have had their certificate expired, surrendered, suspended, or revoked. MDHR also posts workforce participation rates on large state construction projects on a regular basis because of the impact these projects have on employment opportunities in Minnesota for people of color, Indigenous people, and/or women.

3. CONSTRUCTION READINESS

MnDOT is prepared to deliver the project in accordance with the project schedule and the department assesses minimal project delivery risks. This project will remedy a critical issue and the department is committed to pushing it forward and delivering it consistent with the project schedule.

- **MnDOT has begun the required project studies.** While environmental documentation and cultural resources studies are yet to be completed, MnDOT has begun work on both required studies. To fulfill NEPA standards, MnDOT will be completing a Categorical Exclusion (CATEX), because the project will not have an significant effect on the human environment and, therefore, neither an environmental assessment nor an environmental impact statement is required.
- **Project limits are established.** While the project's footprint extends outside of the existing state right-of-way, all additional right-of-way is currently owned by the Minnesota DNR and the project will not require negotiations with private landowners. MnDOT will work directly with the DNR to negotiate terms of the necessary land acquisition.
- **The Project is noncontroversial and is supported by Project partners.** In recent years, MnDOT has completed a variety of construction projects along this section of Highway 11. Through those projects, MnDOT has maintained ongoing coordination with federal, state, and local agencies and local stakeholders. It is well understood by the community that continued operation of Highway 11 requires completion of this project.
- **MnDOT has secured funding sufficient to cover 20 percent of project costs**. The Minnesota Legislature passed a bill in 2023 to provide $115 million from the state's General Fund to match federal funding associated with both competitive and formula grant opportunities available through the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA).

4. FUNDING NEEDS

Over the past ten years, MnDOT has completed smaller, temporary measures to control and mitigate the impacts of the critical slope failures. Despite those efforts, and primarily due to the rapid deterioration of the northern slide, a more permanent solution is necessary in the near-term to keep Highway 11 in operation. MnDOT has the money available in its budget to complete smaller projects, however, PROTECT funding would allow them to complete this project, allowing slope stabilization measures to be installed where the road currently lies.

MnDOT's fiscally constrained capital investment plan, the 2018-2037 Minnesota State Highway Investment Plan (MnSHIP), estimates that over the next 20 years, $39 billion of investments are needed to support the state highway system, but only $21 billion will be available. As a result, there is an estimated $18 billion funding gap. This lack of funding has two major causes:

- Construction costs are growing more quickly than revenue is growing.
- Revenue growth is slowing.

If MnDOT does not receive funding from this grant opportunity, corrections to Highway 11 will not be able to be made, which would lead to an anticipated partial or complete closure of the highway by 2028. Even though Minnesota will be receiving $115 million in PROTECT Formula funds over the next five years, the majority of that formula funding has already been spoken for and is not available for projects such as this.

Approximately two percent of Minnesota's PROTECT formula funds have been set aside for resilience planning, such as developing a statewide resilience improvement plan, and ten percent will be used for development phase activities such as feasibility analysis, revenue forecasting, and environmental review. The State also plans to use the maximum amount of PROTECT formula funds for constructing new capacity projects which is limited to 40 percent of all funds. MnDOT is targeting about 90 percent for the full apportionment each year for Federal Funds, or in this case, $22.6 million per year for PROTECT formula funds.

V. ATTACHMENTS

All supporting documents and the PROTECT grant application narrative are linked throughout the narrative, but are also available to view at the following webpage:

https://www.srfconsulting.com/mndot-hwy11rrsrr/