



HIGHWAY 210 BRAINERD, MINNESOTA

Equity, Safety, and Multimodal Connectivity Project

2023 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Program

MERIT CRITERIA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Project Name: Highway 210 Brainerd, Minnesota – Equity, Safety, and Multimodal Connectivity Project

Project Type: Rural Capital Project – Road, Repair/Rehabilitation

Total Eligible Project Cost: \$54.9M

2023 RAISE Funds Requested: \$24.98M

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Supporting Information can be found at:
<https://www.srfconsulting.com/mndot-raise-mn210-brainerd/>



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MERIT CRITERIA



SAFETY

The Highway 210 Brainerd, Minnesota – Equity, Safety, and Multimodal Connectivity Project (herein referred to as the Project) will improve safety for Minnesotans who visit, work, and live in the Brainerd Lakes Area in central Minnesota. Crash analysis along Hwy 210 in the Project corridor for years 2013-2022, using MnDOT’s tool MnCAMT2, reports a total of 985 crashes in the ten-year dataset, including eight fatal and incapacitating injuries. These crashes also included 29 vulnerable roadway users (pedestrians and bicyclists). Such high number of crashes in a rural community with significant traffic volumes (up to 29,100 vehicles per day (vpd) along Hwy 210) is indicative of serious safety issues along the Project corridor. This four-mile roadway reconstruction/rehabilitation Project incorporates safety solutions both in the project planning as well as the project design components to address these challenges.



Crashes between 2013 and 2022

Project Planning Components

The Project aligns significantly well with the [National Roadway Safety Strategy \(NRSS\) plan](#). The NRSS plan identifies safer roadway design as an important strategy to successfully prevent traffic fatalities through context-sensitive design that considers modal equity among all users.

Currently, there are several modes of transportation including walking, bicycling, rolling, buses, cars, motorcycles, and freight trucks, along Highway (Hwy) 210. The Minnesota Department of Transportation (MnDOT), through meaningful public engagement, identified much-needed safety improvements both for motorists and non-motorists as the primary purpose of the Project. The Project implements Complete Streets Approach to fulfill the needs of this diverse set of users, including the underserved rural community located in the Areas of Persistent Poverty (APP) designated census tracts 9512 and 9511.

[Deaths](#) (TZD) program. The objectives and goals of this program are to eliminate serious and fatal injury crashes in Minnesota through the use of “Four Es” centered around traffic safety and implementing data driven solutions (Figure 1). The Project planning involved using the TZD program as the guiding policy and identified low-cost, high-impact solutions like adding rectangular rapid flashing beacons (RRFBs), pedestrian refuges, curb extensions, traffic bumpouts, narrowed travel lanes, marked crosswalks, signal improvements, etc. as vital components of the roadway design.

Project Delivery Components

The Project corridor was identified as a good candidate for reengineered intersection design. In November 2020, MnDOT completed a [traffic analysis](#) in the Project corridor, along 13 intersections, to investigate and determine the optimal type of traffic control required at each intersection along Hwy 210 to serve the existing conditions and future needs. The investigation included analysis of traffic operations during the AM, PM, Friday, and summer peak hours for the existing year (2019) and forecast year (2045) traffic conditions. It also included assessing the traffic control volume warrants, intersection and roadway safety, and traffic operations.

The analysis found that the crash rate in the Project corridor was either above the critical rate (at N 6th Street intersection) or approaching the critical rate (at NW 4th Street, N 4th



EDUCATION



ENFORCEMENT



ENGINEERING



EMERGENCY MEDICAL
& TRAUMA SERVICES

Figure 1 “Four Es” of the Towards Zero Deaths Program

In 2003, MnDOT partnered with the Minnesota Departments of Public Safety and Health to create the [Towards Zero](#)

Street, Gillis Avenue/13th Street SE, and 8th Avenue NE intersections) implying that the corridor has a sustained crash problem. Nearly 50 percent of the crashes were rear end crashes, likely due to congestion along the corridor during peak traffic demand periods. Additionally, it was noted that between 2014 and 2018, 10 pedestrian and bicyclist crashes were reported.

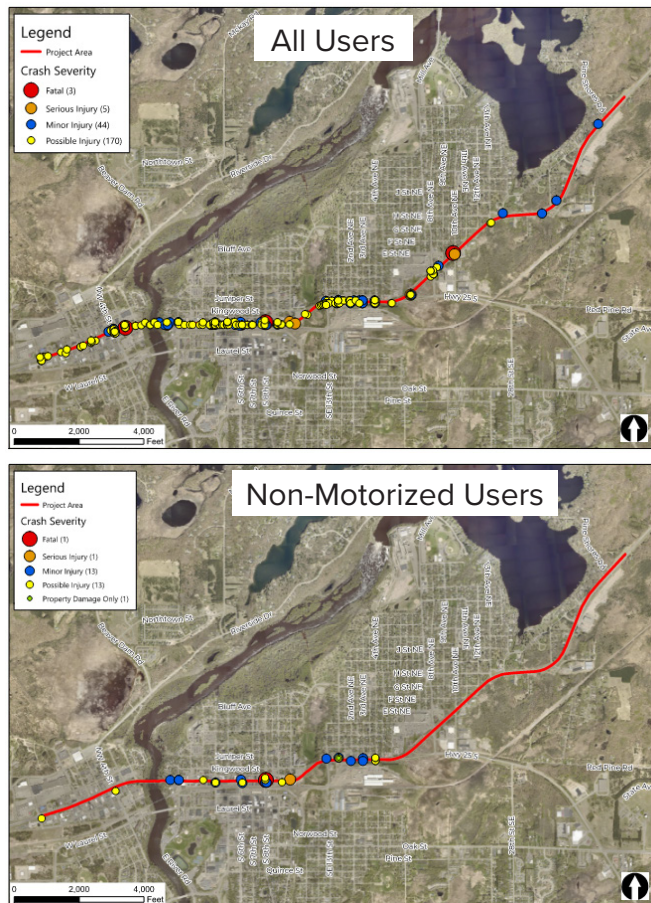


Figure 2 Crash Maps for All Users and Non-Motorized Users Only in the Project Corridor (2013-2022)

Reducing Fatalities and Severe Injuries

In August 2022, MnDOT completed [Intersection Control Evaluation](#) reports on all 13 intersections within the corridor. The objective of this study was to analyze alternatives that reduce fatalities and/or serious injuries in the corridor and to bring them below the state-wide average, particularly for underserved communities in the APP census tracts. A matrix of options was developed and analyzed further based upon the existing and forecasted traffic volumes, traffic control criteria, safety, and operations analysis for each intersection. Optimal types of intersection controls

were recommended at each intersection. It was found that the corridor also has a total of 30 vehicle access points per mile. Reducing the number of accesses and restricting the types of turns from these access points was recommended to reduce the crash rates.

For example, the existing junction between Minnesota Highway 25 (Hwy 25) and Hwy 210 is unintuitive, requiring drivers to navigate along 8th Ave NE in some areas. When traveling from the west, the existing signal at Hwy 210/8th Ave NE intersection is the first signal while [transitioning](#) from a high-speed, low-density general industrial zone to a low-speed, high-density residential/commercial zone. This leads to several rear end crashes as the stoplight can be unexpected for some drivers. The proposed improvement at these intersections included construction of twin roundabouts that will be instrumental in calming traffic as it enters Brainerd. It will also reduce severe right-angle crashes as drivers will be required to slow down while entering the intersection.

Protecting Non-Motorized Travelers

Hwy 210 is lined with more than 125 businesses, daily destinations, academic institutions, and two major healthcare centers. Walking is an important transportation mode in this rural city center, as also identified through MnDOT's [Priority Areas for Walking](#) score for the region. The current pedestrian infrastructure poses significant safety concerns for non-motorized travelers. The sidewalks are as narrow as four feet in the [West Segment](#) of the Project. These sidewalks [lack enough width](#) for pedestrians passing each other safely which can cause potential collision with incoming vehicular traffic. The Project proposes a minimum of seven feet of sidewalk width along the north side of Hwy 210, with wider segments in areas of increased pedestrian and cycling demands, namely Bridge, Central, and East Mall/Railyard Segments.

Other Project improvements such as raised medians will replace the two-way left turn lane in the Central segment to enhance motorized and non-motorized safety. Additionally, pedestrian refuges allow pedestrians and cyclists to focus on crossing one direction of traffic at a time. The Project will construct 25 pedestrian refuges throughout the Project corridor, offering a safer mode to cross Hwy 210. It also lowers [wait times](#) for pedestrians trying to find a gap in traffic.

The Project will resolve the existing safety challenges along the corridor by implementing a context-sensitive design that will improve equity and safety for all modes of travel. It will also improve traffic operations and travel time reliability, reduce weaving conflicts, and build a pedestrian/bicyclist infrastructure that will provide safer movement for all users including the vulnerable population. The projected crash cost saving because of the Project, over 20 years, is over \$13.4 million discounted at a rate of seven percent.

Table 1 Twenty-Year Crash Summary

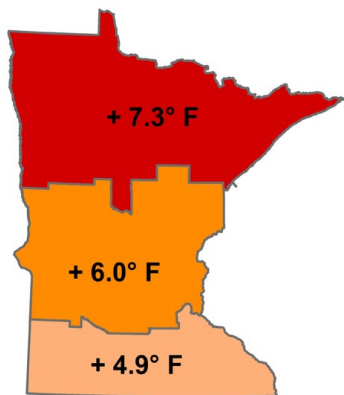
| Average Annual Severe Crashes Avoided | Average Annual Total Crashes Avoided | Total Discounted Crash Savings (Year 2021 Dollars) |
|---------------------------------------|--------------------------------------|--|
| 3 | 587 | \$13.42 million |

ENVIRONMENTAL SUSTAINABILITY

Brainerd is a historic manufacturing town in central Minnesota. Its city center is home to underserved and low-income populations in [census tracts 9511 and 9512](#) which are designated as APP tracts.

Minnesota's Decarbonization Plan

Climate change is an important concern for many Minnesotans. In 2007, the State of Minnesota passed the Next Generation Energy Act (NGEA) that established goals for the state to reduce greenhouse gas (GHG) emissions by 80 percent before 2050. Progress towards this goal has



been unsteady, and since 2016 GHG emissions from transportation, homes, and industry have been neutral or increasing. In December 2019, Governor Tim Walz established a Climate Change Subcabinet and a Climate Change Advisory Council to refocus towards reaching the NGEA goals.

This initiative led to the development of [Minnesota Climate Action Framework](#) that prioritizes the following actions for clean transportation:

- increase funding for non-motorized transportation
- increase transit services and multimodal transport options

- develop a Clean Fuels Standard to incentivize increased investment in cleaner fuels such as ethanol, biomethane, lower-carbon biofuels, renewable fuels, etc.
- implement the Regional Electric Vehicle (EV) Midwest Memorandum of Understanding to establish an EV charging network across the Midwest
- develop a Minnesota Strategic Electric Vehicle Plan

This Framework also accounts for modal and user equity in policy decisions such that the benefits and burdens of transportation spending, services, and systems are distributed equitably and ensures that all Minnesotans can access the places they need to travel safely, conveniently, and affordably.

Project Delivery Components

Environmental Justice Analysis

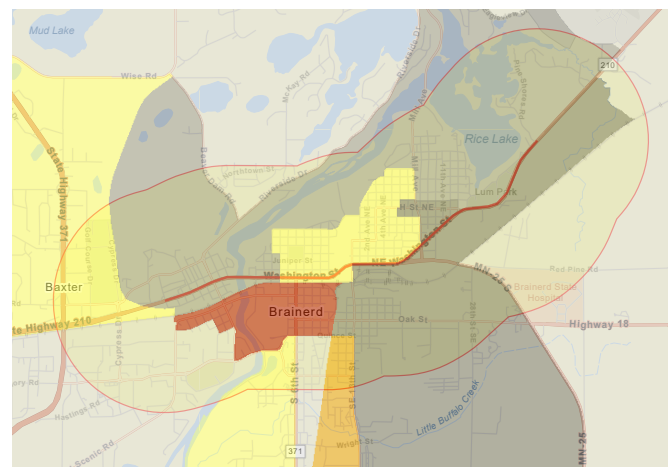


Figure 3 [Low Income Population within One Mile](#)

As part of the Categorical Exclusion Determination (CATEX) process and in compliance with Executive Order (E.O.) 12898, Federal Actions to Address Environmental Justice

in Minority Populations and Low-Income Populations, the Project underwent an Environmental Justice (EJ) Analysis. The data for the analysis was determined using the demographic data compiled using U.S. EPA's EJSCREEN tool, 2014-2018 ACS estimates, field review, input from local agency partners, and extensive public outreach, and other known concentrations of low-income and/or minority residents. It was found that there is a significantly higher percentile of low-income populations within one mile of the Project area compared to the national data (Figure 3). It was also noted that this population is affected by proportionally higher risk of environmental justice indices such as unemployment rate, less than high-school education, low life expectancy, proximity to wastewater discharge and Superfund sites, etc. Further analysis demonstrated that there are numerous daily destinations such as schools, parks, public and subsidized housing etc. along the Project corridor and a significant need for non-motorized transportation facilities that benefits the underserved communities in the Project area.

Reducing Transportation-Related Pollution and GHG Emissions

Co-benefits of action

Connected communities and clean fuels support many additional benefits:



- Jobs in installing and maintaining clean fuel infrastructure and manufacturing clean transportation technology
- Healthier communities from more active transportation and reduced pollution
- Safer communities with fewer traffic accidents
- More accessible transportation that supports the movement of all Minnesotans, regardless of physical abilities
- Cleaner air and water
- Economic growth in rural communities

The Project supports the goals of the Minnesota Climate Action Framework through investment into affordable, multimodal transportation options. The Project improvements include constructing Americans with Disabilities Act (ADA) compliant, Complete Streets Approach based active transportation infrastructure for people walking, bicycling,

rolling, and taking transit options through the historic downtown. Additionally, the Project will utilize recycled materials throughout construction process to minimize the carbon footprint due to construction. Improving travel time reliability will reduce idle time on the roads, thereby lowering GHG emissions.

Table 2 Reduction in GHG Emissions

| Emission Type | Reduction |
|-------------------|-----------|
| CO2 (metric tons) | 11,638 |
| NOx (kg) | 10,298 |
| SO2 (kg) | 71 |
| PM2.5 (kg) | 229 |

Avoiding Adverse Environmental Impacts

The Project is located along the commercial area of Brainerd with historic and current uses of gas stations, auto repair shops, and various other businesses that generate and store petroleum and/or hazardous chemicals. Some of these businesses have abandoned their original sites leaving behind toxins in soil and/or water. The EJ Analysis noted several facilities, within a one-mile buffer of the Project corridor, including one Superfund site (BN Car Shop) (Figure 4). Potentially contaminated materials encountered during construction will be handled and treated in accordance with applicable state and federal regulations. Remediating the contaminated soils will also reduce pollution of the local water bodies, improving cleanliness for swimming and fishing. While there are minimal wetland impacts (0.8 acres) noted in the CATEX documentation, the Project will minimize those impacts as well as expand the existing wetlands by up to 1.5 acres.

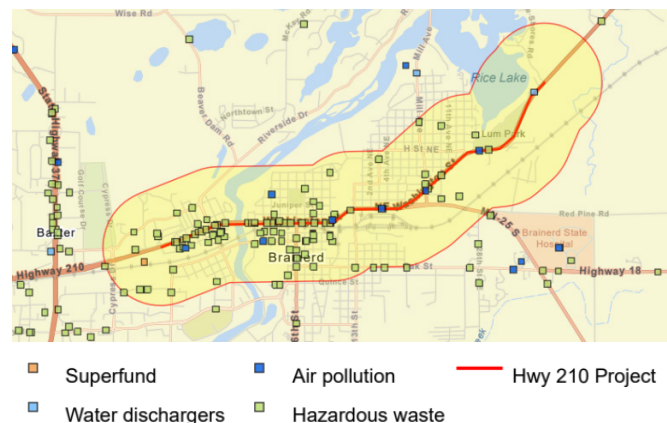


Figure 4 EPA Regulated Facilities within a Half-Mile Area

The existing water main and sanitary sewer infrastructure along the Project corridor dates back to the original roadway construction. The remediation of the contaminated soils and replacement of sanitary sewers will prevent the chance of water and soil contamination.

The existing stormwater system along the Project corridor lacks mitigation ponds and as a result water flows directly into wetlands and water bodies.

This also leads to draining of ice melt chemicals and car fluids directly into the water bodies and cause water pollution. The Project will implement a stormwater pollution prevention plan (SWPP) to filter rainwater runoff before discharge. Adding seven filtration and rate-control ponds to collect runoff is a key part of the SWPP.

Implementing Transportation-Efficient Land Use and Design

Rural transportation is often centered around passenger vehicles because destinations are further away than in urban areas. The Project Engagement identified 72 percent of people in Brainerd drive as their primary mode of transportation. The common perception is that walking and bicycling along Hwy 210 is perilous. The Project will encourage walking and bicycling as alternatives to driving by improving safety and access. A major Project improvement is widening of sidewalks and trails throughout the Project corridor. In addition, pedestrian crossings will be improved through the construction of raised medians and pedestrian refuges. Trail connections will be added to facilitate circulation from residential neighborhoods to the [Paul Bunyon State Trail](#). Corridor beautification will entice users to spend more time in the pleasant space created by walkable development patterns and accessible green space.



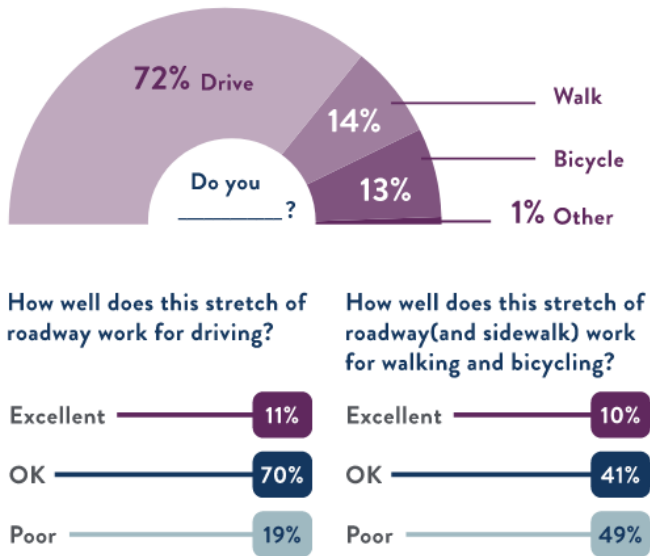
QUALITY OF LIFE

Improving the quality of life for the residents and visitors of the Brainerd Lakes Area is a primary purpose of the Project. Several residents in the underserved communities lack access to personal vehicles, instead relying on buses, transit-on-demand, and non-motorized transportation. The Project will expand equitable access to the many daily destinations along the Project corridor.

Proactively Addressing Transportation Equity

Equitable access to transportation is essential for individuals to work, live, and maintain community connections. In 2017, MnDOT adopted the [Statewide Multimodal Transportation Plan](#) (SMTP), a long-range plan that identifies objectives, performance measures, strategies and actions to improve the quality of life, economic competitiveness, and environmental health through improvements to the statewide transportation system. Additionally, [Advancing Transportation Equity Initiative](#), a directive from the STMP, aims to engage public individuals and groups to better understand current transportation barriers and needs for underserved communities. Inputs from the underserved communities, obtained through meaningful engagement, recognize that there is a heavy reliance on private vehicles and inadequate transportation options currently in Minnesota. The Project aims at increasing affordable transportation options through Complete Streets Approach that integrate walking, bicycling, and transit choices.

Increasing Affordable Transportation Choices



During the [public engagement](#) for the Project, 27 percent of the responders stated that they primarily walked or biked for transportation, and 49 percent reported that the quality of active infrastructure was rated as “poor”. To mitigate this identified need of the community, the Project improvements include several enhancements to sidewalks, trails, and

pedestrian crossings along the entire corridor. Widening of sidewalks in the West, Bridge, and Central Segments will increase safety and thereby, the usage of the corridor by pedestrians and bicyclists. Trail expansions in the East Mall/Railyard and East Segments will connect residential neighborhoods to the downtown businesses for non-motorized users. The upgradation of sidewalks and intersections to ADA compliant standards will benefit visually impaired pedestrians, while also improving equitable access for wheelchair users who face significant barriers in navigating the current four-foot sidewalks in the West segment. Walking and bicycling will be a safer and easier option because of these proposed improvements. This will also improve public health through increased affordable, active transportation choices.



Public engagement identified adding concrete barrier separation on the Mississippi River Bridge as the most requested pedestrian improvement to allow pedestrian safety and mobility in winter months. The Project meets the needs of the community by implementing this request as a design component.

Improved Access for Daily Destinations

Hwy 210 creates a barrier for pedestrian mobility as it cuts through downtown Brainerd, splitting the city into north and south halves. Currently, there is either a lack of or gaps in the existing active transportation infrastructure along the corridor which further complicates mobility.

The Project improvements, mentioned above, will directly remedy the lack of current multimodal infrastructure, reduce automobile dependence, and improve access for people with disabilities. The Cities of Brainerd and Baxter also have an active [Safe Routes](#)

[to School \(SRTS\)](#) plan that encourages students to walk and bike to schools, which benefits the health, safety, and access for students as well.



MOBILITY AND COMMUNITY CONNECTIVITY

The Hwy 210 corridor is critical for local circulation for both motorized and non-motorized users. Beginning in 2020, MnDOT conducted active and meaningful community engagement to identify gaps in existing network and to address these challenges through a deliberate, equitable, and comprehensive design approach based on Complete Streets and Universal Design.

Listening to Community Voices

The **top 5** elements people would most like to see addressed are:

- 1 Overall traffic safety
- 2 Moving through town
- 3 Access to businesses
- 4 Crossings
- 5 Walking safety and comfort

Residents of the Brainerd Lakes Area [identified](#) safety, mobility, and connectivity as the primary needs along the Project corridor. As preliminary design progressed into 2021, the proposed improvements were presented to the public to gauge perception and identify if existing gaps have been addressed. The reaction was extremely positive, with 50 percent of the respondents feeling positive or neutral towards the overall improvements. An important takeaway was the desire to increase winter-time safety on the Mississippi River Bridge, as workers/residents without access to cars need to cross the bridge every day to reach their destinations. Additionally, pedestrian improvements were identified as a higher need for residents as several users use the corridor for daily non-motorized transportation.

Improving System-wide Connectivity

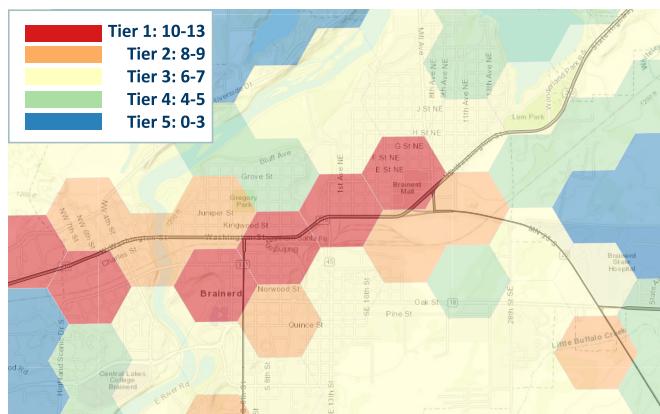


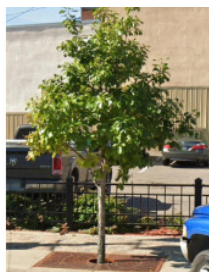
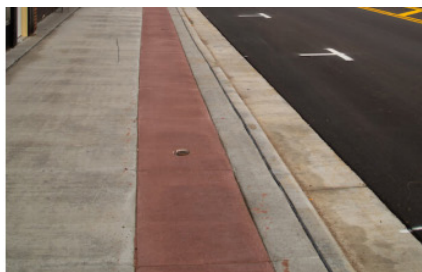
Figure 5 PAWS Score for the Project Corridor

The need for improved ADA compliant pedestrians and bicyclist connections identified through public engagement was found to overlap with quantitative measurement of pedestrian infrastructure demand along the entire Project corridor, including the underserved communities in the APP census tracts 9511 and 9512. The Priority Areas for Walking Score (PAWS), a MnDOT tool to measure the need for prioritizing active transportation infrastructure over other modes of transportation, identified a high demand for pedestrian infrastructure (Figure 5). The Project improvements consists of several design elements, discussed further below,

that proactively address the needs of the community by incorporating several elements of Universal Design and Complete Streets Approach.

One of its key goals of the Minnesota [Statewide Multimodal Transportation Plan](#) identifies providing transit services to all counties in the state to meet the needs of transit users. MnDOT recognizes that it is important to increase equitable access to essential services for low-income and elderly populations who are often isolated and need to traverse larger distances in rural communities compared to urban. The Brainerd & Crow Wing County Public Transit agency provides [Dial-A-Ride services](#) for intra-city and intra-county mobility in the Brainerd Lakes Area. These buses operate with no specific stops and can transport users directly to their destination at an affordable cost. Additionally, regional bus services offering longer distance transit to other rural Minnesota communities, the Twin Cities metro area, and Chicago, operate from the Westgate Mall bus stop in the West Segment, one block north of the Hwy 210/Baxter Drive intersection. The Project improvements will enhance system-wide connectivity with access to transit and mobility on-demand travel options.

Complete Streets Approach and Universal Design



The Project implements principles of the [Complete Streets Approach](#) and [Universal Design](#) in the Project design elements through use of wider sidewalks, raised medians, pedestrian refuges and curb extensions, ADA compliant upgrades, marked crosswalks, RRBs, and improved lighting and landscaping, among others. The Project corridor is redesigned as a vital public space with a focus on healthy, equitable design that can aggressively address unsafe road conditions, while also creating streets that support equitable mobility and sustainable transportation choices. Some of the challenges and solution are discussed below:

- **Wider sidewalks and pathways:** Many of the existing sidewalks are dangerous and inaccessible. While four-foot widths are the [acceptable minimum standard](#), they are hardly ideal or safe for pedestrians when located off the back of curb. These sidewalks lack enough width for pedestrians to safely pass each other. The Project proposes, a minimum of seven- and up to ten-foot wide multiuse trails, along the north side of Hwy 210.
- **Pedestrian safety refuges:** Raised medians will serve many important functions in the Project. For pedestrians, these medians will be safe refuges for crossing Hwy 210

while facilitating pedestrian mobility. Pedestrian refuges will be constructed in 25 spots along the corridor, mainly to retain pedestrian crossings at intersections that are right-in/right-out. It allows pedestrians to cross Hwy 210 without having to walk several blocks to the nearest stoplight, or attempt crossing at unexpected locations. It also offers a safe place to rest for those who have trouble crossing the entire width of a highway in a single stretch. It makes walking a more pleasant and likely choice for transportation.

- **Multimodal improvements:** Curb extensions are an important traffic-calming improvement that makes intersections safer for pedestrians as well as motorists. Also known as bump-outs, they extend the curb radius to the edge of the traveled lane, often on minor streets. It prevents cars from parking close to the intersection and improves visibility for both pedestrians and turning

vehicles. Curb extensions are being implemented at Baxter Dr, NW 7th St, N 6th St and N 9th St, and N 10th St. Two crashes involving vehicles and pedestrians were reported at N 6th St, also noted as the second most crash-prone intersection in the corridor.

- **Clearly defined spaces:** The Project will add marked crosswalks with tactile paving materials to clearly define the intended function of driving, walking, and crossing spaces with contrasting materials to allow people to understand the design. These improvements will benefit not only the residents and workers but also the numerous visitors of the Brainerd Lakes Area.

The Project modernizes downtown Brainerd through a Complete Streets Approach while bringing equity, and enhancing safety, mobility, and access for all modes of travel through this historic town.



ECONOMIC COMPETITIVENESS AND OPPORTUNITY



8,913 miles¹



427 bridges



367 miles



2 cargo airports



1,009 miles

Multimodal Transportation Network in Central Minnesota

According to the MnDOT [District 3 Freight Plan](#), freight-dependent industries created 25 percent of central Minnesota's Gross Domestic Product (GDP) in 2015. Much of the economic activity in central MN is centered around two areas: the St. Cloud metropolitan region, one of the fastest growing metro regions in Minnesota; and the Brainerd Lakes area, which is home to a significant tourist industry. All the different multimodal freight options (highway, rail, pipeline, and air cargo) are utilized in transporting freight across the region. However, most freight in Minnesota (~ 58 percent by tonnage and ~ 67 percent by value) moves by truck. Therefore, interregional corridors such as Hwy 210 are keepers of safe and efficient movement of freight and critical in ensuring travel time reliability for supply chain operations. Hwy 210 carries 1,150 freight vehicles per day, as recorded by the 2021 HCAADT counts.

Facilitating Tourism in Brainerd Lakes Area



Famously termed as, Minnesota's Vacationland and Playground, and home to the legendary [Paul Bunyan](#), the Brainerd Lakes Area is a quintessential [vacation destination](#) due to its historical, geographical, and recreational importance. Founded in 1871, downtown Brainerd is home to the charming Railyard district, rustic candy shops, fun museums, and several cultural events. Located two hours north of the Twin Cities metropolitan area, the Brainerd

Lakes area is the perfect distance for weekend getaways. Additionally, the sprawling lattice of lakes in the area provides perfect recreational opportunities for swimming, water sports, and fishing. The surrounding forests are home to many [trails](#) for walking, biking, and off-road driving. The winter is equally as popular for recreation because of [ice fishing](#) on the lakes and snowmobiling on the trails.

Hwy 210 is Brainerd's Main Street, with an annual average daily traffic (AADT) of 25,000 vehicles per day. Several of Brainerd's local theaters, shops, and restaurants are adjacent to Hwy 210. Traffic slows down to 35 mph through this business-lined corridor. The Project will revitalize the corridor by enhancing safety, walkability, and traffic calming and will maintain the roadway in a state of good repair for future years. It will also [improve the luster](#) of this corridor, last updated in 1985, through the following proposed improvements:

- landscaping of the roundabouts, including planting of native grasses,
- planting of trees in along the boulevards,
- new streetlights and stoplights,
- colored concrete accents in medians and along sidewalks, and
- ornamental fences along parking lots.

The improvements to pedestrian mobility will help retain and expand the influx of tourists. The city center remains a beloved gathering spot for vacationers to rest after exploring the surrounding lakes, parks, and trails.

Freight Mobility in Economic Zone



Source: MN DEED, Quarterly Census of Employment & Wages, 2nd Quarter 2022

The Project supports the mobility of persons and goods through the Brainerd Lakes Area, while serving the wider population of Crow Wing County. Census tract 9511 and 9512 are designated opportunity zones, set forth by the [Tax Cut and Jobs Act of 2017](#) as well as designated

APPs. These economic opportunity zones are low-income communities that Governor Walz wants to prioritize for economic investment and development.

Brainerd Lakes Area is identified as a [major freight-dependent manufacturing, retail trade, and construction cluster](#). Hwy 210 is the principal arterial for freight carriers traveling through and into the cities of Brainerd and Baxter, with the 2021 HCAADT count of 1,150 vpd. The Brainerd Lakes Regional Airport is the only airport in central Minnesota that receives regular cargo shipments. It is located 2 miles north of the Project area on Hwy 210. Freight carriers from the airport use Hwy 210 to transport cargo into Brainerd and beyond.

The Project will improve travel time reliability along this significant freight corridor due to the following improvements:

- increased length of left turning storage lanes will prevent queuing and congestion,
- improved traffic flow due to better signal timings,
- addition of twin roundabouts at the East Mall/Railyard Segment will streamline traffic flow from Hwy 210 to Hwy 25,
- addition of right-in/right-out and 3/4 intersections will reduce conflict points, and
- removal of on-street parking will eliminate conflict points and congestion.

Supporting Local Employment

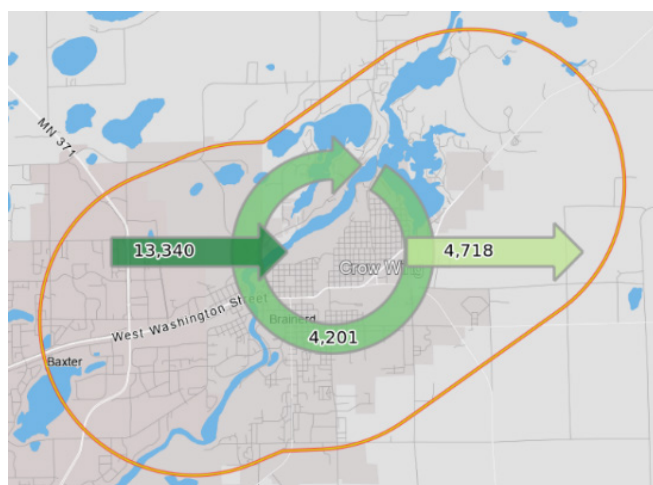


Figure 6 Inflow-Outflow Analysis

The neighboring cities of Brainerd and Baxter form a regional employment center. Most residents live and work within the city limits. Additionally, a high number of non-residents commute here for employment. Within a two-mile radius of the Project, approximately 13,350 people commute here for work and approximately 4,700 people commute out (Figure 6). There are also 4,201 residents who both live and work within two miles of the Project corridor.

The Project corridor acts as a key link for employee commutes, freight inputs/outputs, and as the major route leading to and from the significant employers such as Essentia Health, Burlington Northern Santa Fe (BNSF) Machine Shop, FedEx, Brainerd School District, etc. Several of these employers provide a choice to join a union for their employees and hire locally. The Central Minnesota Build Trades Council for unionization of construction workers in central Minnesota is in the East Mall/Railyard Segment. The Project will also generate employment as MnDOT partners with several local contractors and businesses as per their Equity and Inclusion Programs detailed in the Partnership and Collaboration Criteria below.

The Project improvements will build a resilient infrastructure which will ensure increased travel time and trip reliability in future. This in turn will lead to expanding the capacity of critical supply chain bottlenecks and will positively impact the economic health of the local, regional, national, and global communities. The travel time and trip reliability benefits due to the Project results in cost savings of over \$73 million.



STATE OF GOOD REPAIR

Prioritizing Improvements within the Existing Footprint

The Minnesota Department of Transportation owns and operates over [14,000 miles](#) of state highways, including Hwy 210. MnDOT's maintains a high level of asset performance that makes the system safer and more reliable for Minnesotans. This Project meets the goal of USDOT and MnDOT to improve the condition and safety of existing state-owned transportation infrastructure within the right-of-way, before proposing projects that add new general purpose travel

lanes serving single occupancy vehicles. The investment made by the USDOT, MnDOT, Crow Wing County, City of Brainerd, City of Baxter, and the Minnesota Department of Natural Resources (MnDNR) will ensure that the current state of failing infrastructure is restored, upgraded, and maintained to build a safe transportation network that reduces future maintenance needs and lower life-cycle costs.

Addressing Current and Projected Vulnerabilities

The entire four-mile stretch of this corridor displays severe cracking, rutting, and patchy pavement, and is nearing the end of its service life. In the Central Segment, previous mill-and-overlay repairs are quickly unraveling due to the extreme freeze-thaw cycles of Minnesota's climate. Additionally, old concrete medians have been mostly buried on the East Segment due to repeated bituminous overlays without proper milling to manage adjacent pavement thickness. The environmental assessment found that the pavement in Central and East Mall/Railyard Segments will require reconstruction as the service life can no longer be extended with resurfacing. The current weighted average of ride quality index (RQI), an index of roadway smoothness, along eastbound and westbound Hwy 210 in the Project corridor is 3.1 and is classified as "good". Pavements are normally designed for a terminal RQI value of 2.5. MnDOT aims to maintain at least 70 percent of its roadways in good condition. Based on the current AADT volumes, population growth, and forecasted traffic growth, it is projected that if the Project is not built, the RQI will further regress towards the terminal value.



The Project improvements address current and projected vulnerabilities, through either reconstruction or rehabilitation of the corridor and upgradation of the pedestrian infrastructure to ADA compliant standards, which not only provides much needed safety enhancements but also ensures efficiency of transportation network in the future, mobility of goods, improved accessibility and mobility of people, and accelerated economic growth. Therefore, the Project is a sound investment as it maximizes and preserves the long-term value of Hwy 210 and the surrounding transportation network, by sustaining its long-term performance under growing traffic volumes in the Brainerd Lakes Area.

MnDOT Transportation Asset Management Plans (TAMP)

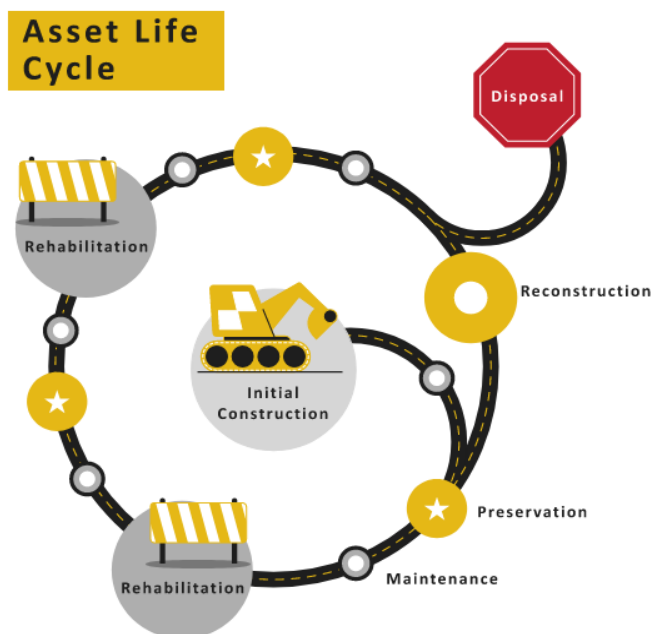


Figure 7 Annual Life Cycle

MnDOT has a demonstrated history of fully funding maintenance improvements and has established the agency as a leader in asset management. 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) which was updated to its current form in December 2022. MnDOT's TAMP expanded beyond minimum requirements per MAP-21 to include the entire state highway system as well as other infrastructure within the right-of-way corridor. MnDOT's TAMP was a national pilot project and serves as a guide for other states (Figure 7). MnDOT applies the plans 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 asset management plans will serve as a guide to ensure all necessary Project operation and maintenance is implemented.

Operations and Maintenance Funding

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, and
- Federal highway funds (highway user tax distributions, flexible highway account, and County State Aid Highway fund).

Operations and Maintenance Cost

MnDOT estimates that operation and maintenance of the Project, over 20 years, will amount to roughly \$2.45 million after discounting. Detailed analysis of the operation and maintenance activity cost estimates is available in [Benefit-Cost Analysis Memo](#).

PARTNERSHIP AND COLLABORATION

While Hwy 210 provides vital connections to the key destinations in the Brainerd Lakes Area, it has also been viewed as a barrier to the local movement of non-motorized travelers as it splits the city of Brainerd into north and south halves and due to the lack of safe pedestrian and bicycle infrastructure. Since 2020, MnDOT has actively engaged residents and community-based organizations to ensure equity considerations for underserved communities are meaningfully integrated throughout the lifecycle of the Project. MnDOT, Project partners, and local stakeholders including the underserved communities have participated in activities directly related to improving pedestrian/bicycle/vehicular movement and safety through a deliberative, inclusive, and comprehensive design/planning approach discussed below.

Lack of timely follow up sidewalk clearing after storms makes this area absolutely treacherous. Understand that this is an important issue for those people who do not drive and rely on crossing the Washington St bridge to conduct their business or get to work just like those people in the cars. The frozen evidence is very clear in the boot prints and bicycle tracks like fossils. MnDOT needs to make this a priority responsibility under current and future conditions.

Planning And Policies

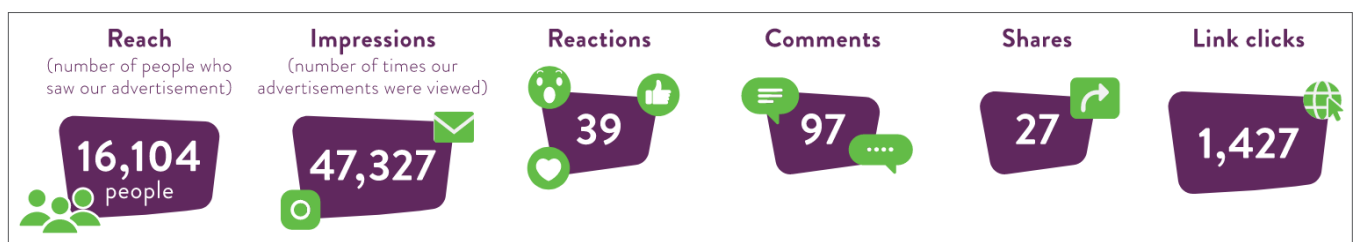
Public Involvement Plan

In 2019, MnDOT drafted a [public involvement plan](#) for the Project that outlines the recommended tasks associated with public involvement and outreach. The goals of the plan were to meaningfully engage under-represented

and underserved community members, conduct targeted outreach, record community inputs, establish appropriate community expectations, and to provide clear and consistent communication with the identified stakeholders. The outcomes of the plan are discussed further below.

MnDOT's Equity and Inclusion Programs

MnDOT has proactively developed a strong portfolio of several Equity and Inclusion Programs such as Disadvantage Business Enterprise (DBE), Targeted Group Business (TGB), Equal Employment Opportunity (EEO) Program, among others. MnDOT encourages and awards private business contracts to minority- or women-owned businesses. MnDOT has awarded more than \$173 million in prime contracts and goods purchases with under-utilized businesses in the past 5 years to mitigate its contracting disparity, increasing from \$19 million in FY16 to over \$38 million in FY20.



Based on the Project planning described above, the Project adopted and prioritized elements along each Segment that would bring equitable development through public involvement, collaborative problem solving, and would make a visible difference in underserved, under-resourced, and overburdened communities.

Project Elements

Equity-Focused Community Outreach and Public Engagement

The ongoing efforts of a broad range of Project stakeholders are responsible for every aspect of design, development, and funding for this Project. A large percentage of the population living within one mile of the Project corridor consists of underserved communities. Public engagement and community outreach activities were initiated to assess whether potential adverse effects of the proposed project fall disproportionately on underserved communities in APP designated census tracts 9511 and 9512 and Justice40 tract 9510. Issues that were considered included social impacts,

traffic impacts, visual impacts, safety impacts, and right-of-way impacts, for each Segment in the Project corridor. Extensive outreach has been ongoing since November 2020.



Figure 8 Community Engagement Open House

Outreach to residents has been a priority through the course of preliminary design. Virtual Public Involvement has accompanied open house meetings in three separate rounds of public engagement surveys from November of 2020 to October of 2022. Outreach format includes the Project website, press release, community presentations,

targeted focus groups, in-person/hybrid/virtual events, pop up events, surveys, promotional stickers around Brainerd, flyers at the County Fair, direct mailing/emailing, social media, newspaper, and television ads etc. The information provided at each event generally includes project information, improvements and benefits, updates, schedule, opportunity for comments and feedback, and links for in-person and virtual engagement. The community engagement consisted of all populations in Brainerd including Caucasian, African American, Hispanic, and Native American. In total, 1245 unique responses were received, with feedback concerning a variety of topics such as traffic flow, walkability, business access, safety, bicycle access, winter maintenance, and roundabouts.

Addressing Equity and Barriers to Opportunities by Increasing Walkability and Accessibility

Hwy 210 creates a barrier for pedestrians as it cuts through downtown Brainerd. The Project includes new active transportation infrastructure in the form of ADA compliant multiuse trails and sidewalks along the Project corridor. These improvements directly remedy the lack of current multimodal infrastructure, reduces automobile dependence, and improves access for people with disabilities. The Project improvements will proactively prepare the area to incorporate several elements of Universal Design and [Safe Systems](#) approach such as wider sidewalks, green spaces, ADA compliant upgrades, marked crosswalks, raised medians and pedestrian refuges, and improved lighting and landscaping, among others.

Direct Partnership with Underserved Communities

In accordance with the goals of MnDOT's Equity and Inclusion programs, MnDOT will issue small contracts well-suited for under-utilized businesses; simplify contracting processes and documents and incorporate equity into reporting systems; track all contracts to identify progress and gaps in terms of equity; train and incentivize offices to identify work well-suited for under-utilized businesses; train small businesses on MnDOT requirements and specifications; and collaborate with tribal and local partners to connect under-utilized businesses to opportunities in the wider marketplace.

Project Partners

The Project is overwhelmingly supported by various public and private organizations including Crow Wing County, the

City of Brainerd, the City of Baxter, Minnesota Department of Natural Resources (MnDNR), and several other local institutions. Additionally, the Project is also supported by various members of Congress both at federal and state levels. The letters of support can be found [here](#).



INNOVATION

Innovative Technology

Electric Vehicle Infrastructure

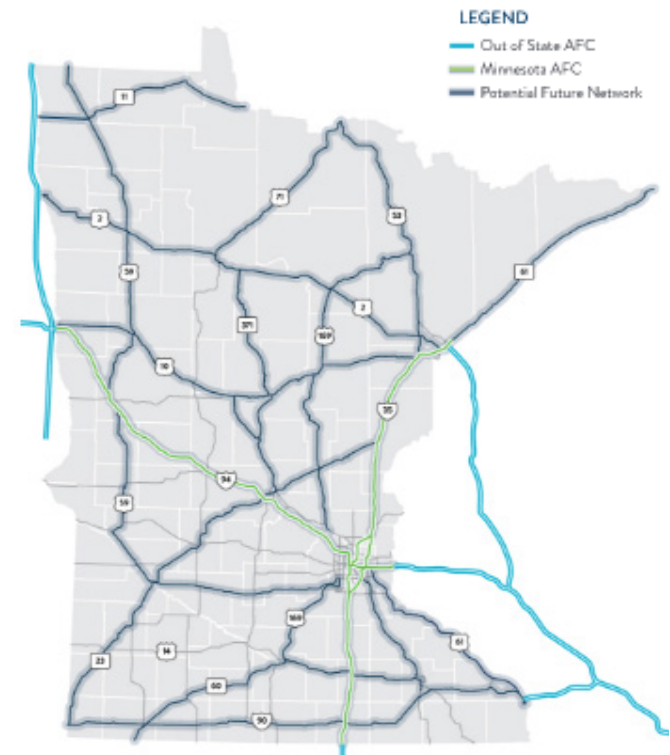


Figure 9 EV Corridor in Minnesota

The Minnesota Department of Transportation developed the [Minnesota Electric Vehicle Infrastructure \(MEVI\) Plan](#) in July 2022, in coordination with the public and stakeholders, to build on past efforts for advancing electric vehicles (EV) and electric vehicle infrastructure. Minnesota will receive \$68 million in federal funds from the National Electric Vehicle Infrastructure Formula Program over five years. To allow EV drivers to conveniently travel anywhere in Minnesota, the state would need a network of 85 DC fast charging stations installed at 50-to-70-mile increments on key state transportation corridors. Hwy 210 is identified as a potential future network, in MnDOT's MEVI Plan, for expansion of charging network based on critical economic connections within the state, as well as the number of vehicles using a particular roadway (Figure 9).

Innovative Public Engagement

The Project Engagement phase was scheduled to start in early 2020. However, due to the COVID-19 pandemic, the engagement strategies had to be modified to seek engagement with the community despite existing social challenges. This shift resulted in a virtual, hybrid, and in-person engagement strategy that actually led to higher engagement with community. The innovative public engagement solution brought equity to the process, met the community needs, and broke down barriers in connecting/engaging the community.

Fiber Optics Conduit Deployment

Rural internet access is a growing concern with rural communities far less likely to have access to reliable internet service. Fiber-optic rings can vastly improve internet service in rural areas and support economic development opportunities. MnDOT, in collaboration with Crow Wing County and the City of Brainerd, will provide infrastructure in form of conduits which houses cables to facilitate communications/Broadband internet, Intelligent Transportation Systems (ITS), and/or to assist future Connected and Automated Vehicles (CAV), in Brainerd.

Rectangular Rapid Flashing Beacons (RRFB)

The Project improvements include installing Rectangular Rapid Flashing Beacons (RRFBs) as a strategy to enhance safety by increasing driver awareness of pedestrians in crosswalks. RRFBs consist of two rapidly and alternately flashing rectangular yellow indications that are attached to supplement the pedestrian warning sign or school crossing sign at a crosswalk. The RRFB is activated either manually when a pedestrian pushes a button or passively by an automatic pedestrian detection system. Further, the RRFB will be ADA compliant and have a speech push-button that says, "Yellow lights are flashing" when the RRFB is activated.

Innovative Project Delivery

Transportation Management Plans for Mitigating Risks

A project-specific transportation management plan (TMP) will be implemented to maintain acceptable levels of safety, accessibility, and mobility. The plan will minimize traffic congestion near the work zone because of temporary roadway closures and detour routes. The TMP will also identify a variety of management strategies to mitigate negative impacts on traffic. These strategies will include increased incident management and vehicle removal capabilities, intelligent transportation system (ITS) technologies to divert traffic and inform travelers of delays and encourage alternate routes, work zone traffic simulations to forecast impacts on traffic flow and congestion, alternative scheduling and phasing including nighttime construction, and scheduling work to minimize lane closures and delays during peak traffic hours.

Civil Information Management Software/3D & 4D Modeling

The Project designers use innovative Civil Information Management (CIM) software for preliminary modeling and visualization of the Project to understand and mitigate impacts. This allowed stakeholders and partners to make decisions through visuals in real-time. The Project will continue to utilize CIM software to model and visualize the project, aid in traffic management during construction, provide tools for underground clash detection, as well as increase transparency of the project.

Innovative Financing

MnDOT recognizes that transportation investments directly and indirectly foster economic growth through the provisioning of construction jobs, enabling goods to be transported through a commerce friendly network of corridors and providing mobility to citizens; MnDOT is committed to investing in our roads and bridges that contribute to a growing economy and will continue supporting commerce.

SUPPORTING DOCUMENTS

All supporting documents and the RAISE grant application narrative are also available to view at the following webpage:

<https://www.srfconsulting.com/mndot-raise-mn210-brainerd/>