US Highway 212

Rural Freight Mobility and Safety Project

Submitted by Carver County, Minnesota

2020 Better Utilizing Investments to Leverage Development (BUILD) Program

Project Name **US 212 Rural Freight Mobility and Safety Project**
Total Project Cost : **$55,531,600**
2020 BUILD Funds Requested **$7.2M**

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Supporting Information can be found at:
https://www.srfconsulting.com/us-212-build-grant/

CARVER COUNTY

US Highway 212

Rural Freight Mobility and Safety Project

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. PROJECT DESCRIPTION

US Highway 212 (US 212) is a regional and national highway system that runs from Wyoming to Minnesota, officially designated in 1926. This grant application proposes expansion and safety improvements to the section of US 212 between the rural communities of Cologne and Carver in Carver County (herein referred to as the "Project Corridor"). The Project Corridor contains aging pavement that has not been expanded or reconstructed in 90 years since its original paving in 1930. US 212 is part of the National Highway System (NHS) and National Highway Freight Network (NHFN), providing a major freight connection for 22,000 square miles of rural Minnesota and South Dakota, whose largest source of employment is manufacturing. US Highway 212 is identified by the Minnesota Department of Transportation (MnDOT) in the Minnesota State Freight Investment Plan as a **Critical Rural Freight Corridor** and was also identified in the Metropolitan Council's Regional Truck Highway Corridor Study as a **Tier 1 Freight Corridor**. Western Minnesota does not have Interstate (or Interstate-like) access to the Twin Cities. Instead, this large area relies on US 212 to provide interstate commerce connectivity from these rural areas to the multi-state economic hub of the Twin Cities. Figure 1 illustrates the relationship of the Project to the regional and multi-state transportation network.

Figure 1 Project Location in Relationship to Regional Transportation Network

The Project would reconstruct and modernize the existing depression-era bottleneck in the Glencoe to Twin Cities area from a rural two-lane undivided highway to a four-lane divided, multi-service expressway. This segment of two-lane, undivided highway between Cologne and Carver prevents US 212 from being a continuous, four-lane expressway. This gap in the Corridor creates bottlenecks in the interstate freight supply chain and safety issues resulting from narrow lanes, narrow shoulders, limited turn lanes, conflicts with rural farm equipment, troubled intersections, and traffic merge issues from a four-lane divided highway to a two-lane undivided highway (highlighted in this video).

Carver County, in partnership with the Minnesota Department of Transportation (MnDOT), the Southwest Corridor Transportation Coalition (SWCTC), its 41 communities, local chambers of commerce, and elected officials, is proud to submit this $7.2 million BUILD grant request to partner with the US DOT and FHWA to help eliminate the freight inefficiencies, reduce rural highway fatalities, and strengthen rural access to economic opportunities in the Twin Cities Metropolitan Area.

The Project total future eligible project cost is $55.5 million and complies with the requirements of a rural project. The Project will expand approximately five miles of roadway from a two-lane rural highway to a four-lane expressway between the Cities of Carver and Cologne.

Proposed Improvements

The US 212 Freight Mobility and Safety Project ("the Project") will modernize and expand approximately five miles of rural highway roadway within Carver County. The Project includes several elements that are intended to increase mobility and access for rural communities, improve freight reliability, and reduce crash severity and frequency.

The Project will update the functionally obsolete two-lane cross-section to a multi-faceted modern four-lane expressway. It will address critical safety issues and conflicts, reconstructing key intersections as Reduced Conflict Intersections (RCIs). Other improvements include the addition of full width shoulders, turn lanes at north-south roadway intersections, replacement of bridges over Carver Creek, new access roads and several access closures or changes in accordance with current MnDOT access management guidelines. Figure 2 illustrates the proposed project improvements.

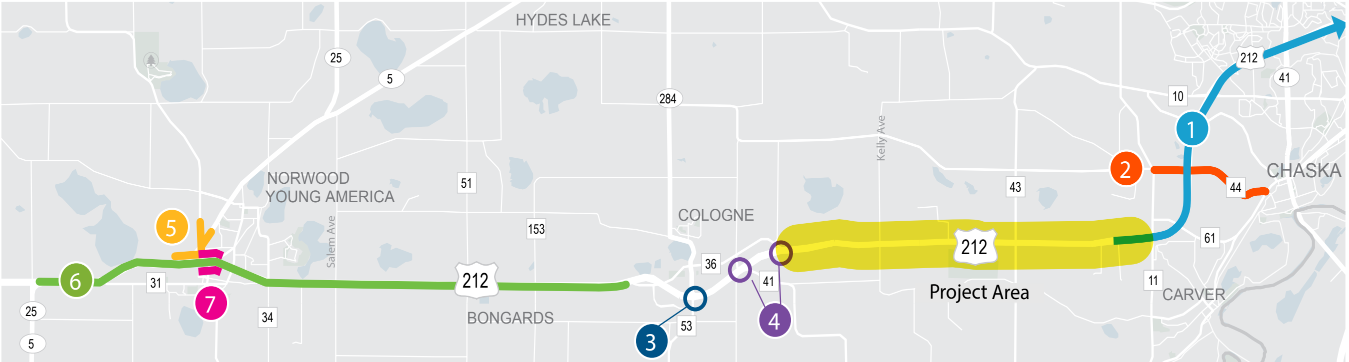
Figure 2 Project Elements

Project History

MnDOT and Carver County have partnered to develop a vision for the Corridor and implement mobility and safety improvements on US 212. The County in partnership with MnDOT, local communities, businesses, elected officials and interested citizens completed the US Highway 212 Corridor Study in 2013 which identified a long-term vision for the Corridor and short-term safety improvements. This study identified expansion of the two-lane, undivided section of US 212 as a critical priority in achieving a seamless freight corridor.

The County and its partners have made several critical investments in the Corridor to improve safety and mobility. In 2009, MnDOT upgraded a portion of US 212 from a two-lane highway to a four-lane limited access highway from the eastern terminus of the Corridor to the City of Eden Prairie. Carver County, MnDOT and local communities have committed to several other improvements in the Corridor. Figure 3 identifies improvements that have been completed or will be constructed in 2020.

Figure 3 Project History



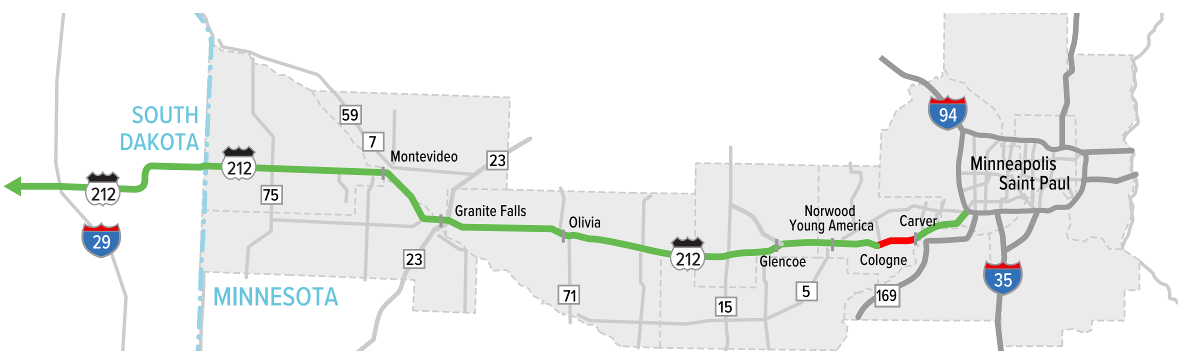
1. US 212 2-Lane to 4-Lane Conversion. **Completed 2009**
2. US 212/County Hwy 44 Interchange **Completed 2019**
3. US 212/County Hwy 53 Reduced Conflict Intersection **Completed 2012**
4. US 212/County Highway 36 to 41 Reduced Conflict Intersection **Completed 2019**
5. TH 5/TH 25/County Hwy 33 Intersection Improvements **Construction 2020**
6. US 212 Pavement Rehab and Intersection Improvements **Construction 2020**
7. US 212 Pedestrian Underpass **Construction 2020**

II. PROJECT LOCATION

US 212 spans 138 miles from the South Dakota state line to I-494, connecting regional traffic from the urban Twin Cities and Western Minnesota rural communities to the rest of the Great Plains. US 212 serves as a primary route linking Minnesota's economic regional trade centers.

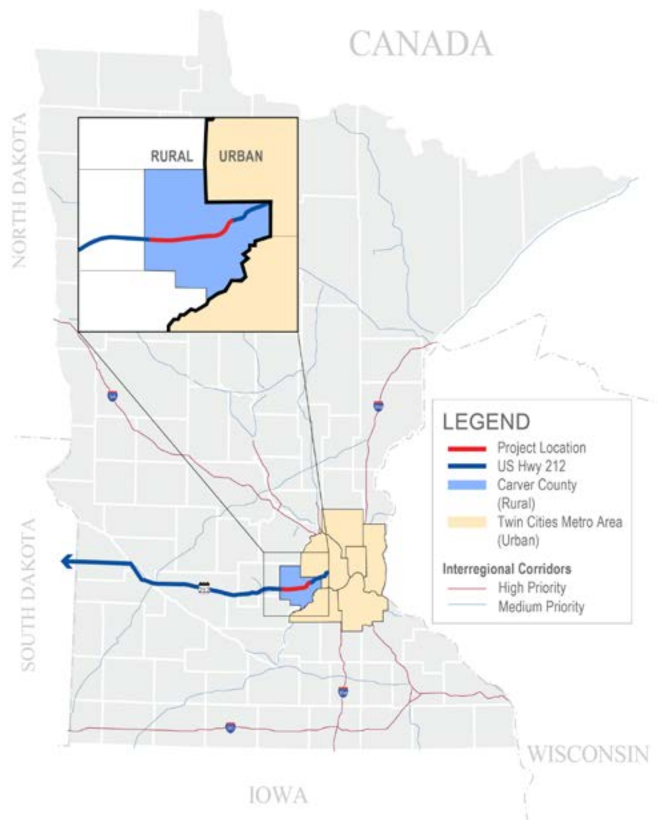
The Project is located approximately 25 miles west of the Minneapolis – St. Paul, MN-WI (Twin Cities) Urbanized Area and is designated as a Rural Area. The Project includes five miles of US 212 between the Cities of Cologne and Carver in Carver County, Minnesota. Figure 4 depicts the project location.

Figure 4 Project Location



Geospatial Information: US 212 from approximately .1 mile west of County Road 36 (44.774537° N, 93.756740° W) to approximately 0.3 miles west of County Highway 11 (44.77708° N, 93.64248° W)

Figure 5 Rural Project Location



Rural Communities:

The entire project corridor is in a rural area, outside of designated urbanized areas such as the Twin Cities Metro Area (see Figure 5). The Project intersects communities whose economies depend upon manufacturing and agricultural industries. The proposed safety and capacity improvements will strengthen the rural transportation infrastructure and support the ROUTES initiative by reducing rural fatalities and facilitating the efficient movement of goods and people. Table 1 provides population data on the communities within the Project Corridor.

Table 1 Project Corridor Demographics

Location	Benton Twp.	Cologne	Carver	Dahlgren Twp.
Population	777	1,825	4,629	1,315

Source: American Community Survey, 2018

III. GRANT FUNDS, SOURCES AND USES

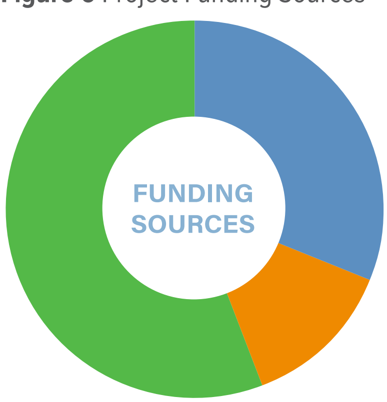
Project Budget

Total Project Cost: $55.5 million

BUILD Grant Request Amount: $7.2 million (13 percent of project cost)

This funding request is the final piece to the total project funding package. All funding identified below is available and is formally committed to this project (see documentation including MnDOT Letter of Support, MHFP Award Letter, and Carver County Resolution).

Figure 6 Project Funding Sources



Carver County is committed to contributing $7.4 million dollars from the 16½ percent local option sales tax and $20 excise tax, a new funding source adopted in 2017. MnDOT has allocated $18.9 million. Table 2 presents the project budget. Detailed construction costs estimates are available here.

Non-Federal: $17,380,656 BUILD: $7,201,014 Other Federal: $30,950,000

Table 2 Project Budget

	Project Element	Non-Federal Dollars	Non-Federal Project Percentage	BUILD Dollars	BUILD Project Percentage	Other Federal Dollars	Other Federal Project Percentage	Total Cost Estimate
Future	**US 212 Project**							
	Right-of-Way	$5,000,000	100%	$0	0%	$0	0%	$5,000,000
	Construction	$9,974,386	23%	$3,316,014	7%	$30,950,000	70%	$44,240,400
	Contingency (10%)	$0	0%	$3,885,000	100%	$0	0%	$3,885,000
	Construction Administration	$2,406,270	100%	$0	0%	$0	0%	$2,406,270
	Subtotal	**$17,380,656**	**31%**	**$7,201,014**	**13%**	**$30,950,000**	**56%**	**$55,531,670**

Federal Participation (Maximum 80/20)		
Non-Federal	$17,380,656	31%
BUILD Request	$7,201,014	13%
Total Federal Funding	$38,151,014	69%
Total Future Project Cost	$55,531,670	

Total Project Costs	$55,531,670

Funding Sources

Non-Federal Funding Source

County Funding

$7.4 million

Carver County has served as the champion of the Project and is committed to provide 13 percent of the future project cost. The Carver County Board of Commissioners adopted a resolution to approve the request for BUILD funding and to commit to the local match for the Project. Local funding from Carver County is dedicated to the Project and leverages a new, non-federal revenue source passed by Carver County in 2017. Carver County adopted a ½ percent sales tax and $20 excise tax on vehicle purchases to finance the local share of this project. The ½ percent sales tax provides federal revenue dedicated for transportation improvements within the County. This project is specifically identified to receive these local funds in the County's adopted Transportation Tax Plan, which designates eligible projects for the tax revenue. Based on current projections, $7.4 million from this new revenue source will be available for the project by 2023.

State Funding

$18.9 million

MnDOT has committed to providing $18.9 million to support the project, of which $9.9 is non-federal. MnDOT has programmed dollars for spot improvements and preservation (pavement rehabilitation) throughout the corridor. If the County is successful in securing BUILD Grant dollars, portions of these MnDOT programmed dollars (approximately $14 million) will be reallocated towards the project which are identified in the MnDOT Metro District 10-Year Capital Highway Investment Plan (2019-2028). If awarded, all BUILD dollars and respective match funds will be spent on construction (with a 10 percent contingency).

Additionally, MnDOT is committed to providing State funding for this highway project, which is under their jurisdiction. Since the roadway is a US Highway, future ongoing maintenance and operations of the new facility will be managed by MnDOT. Section IV, Criterion 2 provides additional details about MnDOT's operation and maintenance project commitment.

Other Federal Funding Sources

The Project was submitted for INFRA funding in FY 2020-2021. Carver County and MnDOT have previously secured the following funding for additional improvements within the US Highway 212 Corridor.

Minnesota Highway Freight Program (MHFP)

MHFP
$15 million

In 2017, Carver County was awarded $15 million in federal Minnesota Highway Freight Program (MHFP) funding through MnDOT. Subsequently, the project was added through the MnDOT and Metropolitan Council transportation planning processes to the 2020-2023 State Transportation Improvement Program (STIP) and the Metropolitan Council's 2020-2022 Transportation Improvement Program (TIP) as state project number 010-596-012.

Metropolitan Council Regional Solicitation

The Metropolitan Council, the Twin Cities regional metropolitan planning organization, administers the Regional Solicitation program, a competitive process where federal funds are allocated to local governments, state agencies, and transit providers to fund regional transportation needs. In 2018, Carver County was awarded $7 million in federal Regional Solicitation funding to support the Project.

$7 million

Committed Investments Not Part of this BUILD Request

MnDOT and Carver County have partnered to implement safety and preservation improvements within an approximately three-mile segment of US 212 through the City of Cologne. This segment was previously reconstructed as a four-lane highway. Improvements proposed within this portion of the Corridor that are not included as part of this BUILD grant request are described below.

US Highway 212 Preservation Project

MnDOT is currently advancing a preservation project to resurface the existing pavement, construct a median barrier, rehabilitate two bridges and install lighting to improve safety and improve pavement conditions within this portion of the Corridor. This project is planned to begin construction in 2023.

US 212/County Highway 36 and 41 Reduced Conflict Intersections

MnDOT reconstructed the intersections of US 212 and County Highway 36 and County Highway 41 as Reduced Conflict Intersections (RCIs) in 2019 to address safety issues within the Corridor.

BUILD Funding Need

Carver County, in partnership with MnDOT and local communities, has secured approximately $48.3 million in non-federal and other Federal funding to invest in the Project.

If the BUILD grant is not awarded, the expansion improvement proposed from a two-lane rural highway to four-lane divided highway with wider shoulders would be significantly delayed. The geometry of the roadway would be unchanged, meaning the Project Corridor would see projected increases in the crash cost and crash frequency. None of the planned innovative and safety improvements would be constructed.

The County has secured $30.9 million in other Federal funding to leverage for the future of this Project. This funding is programmed for 2022 and may be jeopardized if the project is delayed beyond this date. Securing the BUILD funding ($7.2 million) required for the Project would ensure that the County is able to take full advantage of the Federal funds awarded to date.

IV. PRIMARY SELECTION CRITERIA

Safety

The existing geometry of the Corridor (as shown in Figure 7) contributes to serious safety issues and results in one crash approximately every two weeks (based on data from the past ten years). Specific issues identified in the US Highway 212 Corridor Study include:

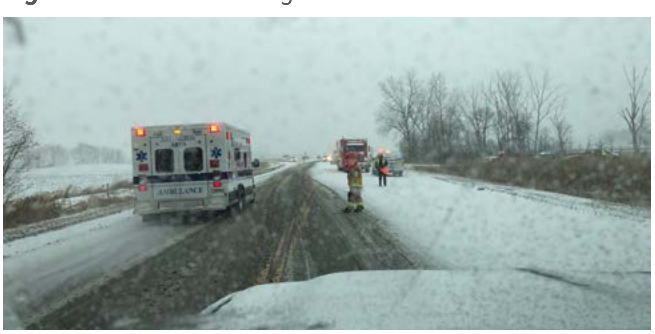
- Transitions from two lanes to four lanes
- Lack of turn lanes on US Highway 212
- Traffic turning on to US Highway 212
- Lack of passing lanes
- Limited right-of-way, including narrow shoulders

Figure 7 Existing Intersection

Figure 8 Snow drifts along US 212

Furthermore, the open agricultural landscape of the Corridor often results in increased volumes of congestion and safety hazards during snow events, as shown in Figure 8. Blowing and drifting snow can lead to lane blockages, icy conditions, and narrow travel lanes. Snow events tend to lead to increased crash rates, especially for run off the road crashes (see Figure 9). In the ten-year crash data (January 2009 - January 2019) 30 percent of the crashes occurred during snow- or ice-covered road conditions.

Figure 9 Fatal Crash along US 212



Minnesota's 2024-2029 Strategic Highway Safety Plan (Draft) (SHSP) examines the distribution of severe crashes across roadway types and identifies specific design and engineering strategies that can reduce deaths. From 2018 to 2012, rural roadways in Minnesota accounted for 1,126 severe crashes involving intersections, or 38 percent of the state total. Of these, over two-thirds (763) occurred on two-lane roads with speed limits of 45 miles per hour or greater.

Over the same time period, rural roadways in Minnesota accounted for 2,067 severe lane-departure crashes, or 65 percent of the state total. Of these, over three-fourths (1,563) occurred on two-lane roads with speed limits of 45 miles per hour or greater. The project will implement design interventions identified in the SHSP to reduce the number of lane departures and crashes. These interventions include adding shoulder rumble strips and stripes, widening shoulders, reducing conflict points, and implementing four-lane sections at key locations.[1]

High Crash Corridor

Several crashes have occurred in the Corridor including fatalities and major incapacitating injuries. In total, 183 crashes have occurred within the five-mile Project Corridor in the past ten years (January 2010 to December 2019) based on MnDOT data (see Table 3). Of these crashes, sixteen led to injuries, and five crashes resulted in fatalities. Approximately 38 of these crashes involved medium to heavy freight trucks, and other freight-related vehicles. Figure 10 illustrates the severity of crashes that have occurred on US 212 within the Project Corridor and the total number of crashes by year.

Figure 10 Crash Severity (2009 – 2019)

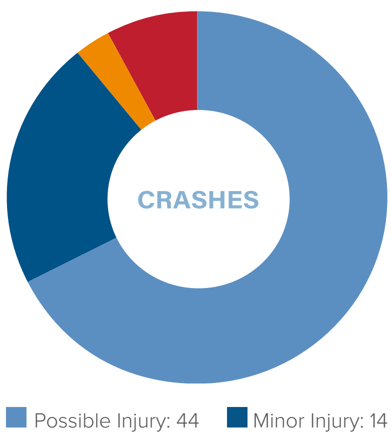


Table 3 Crashes Per Year

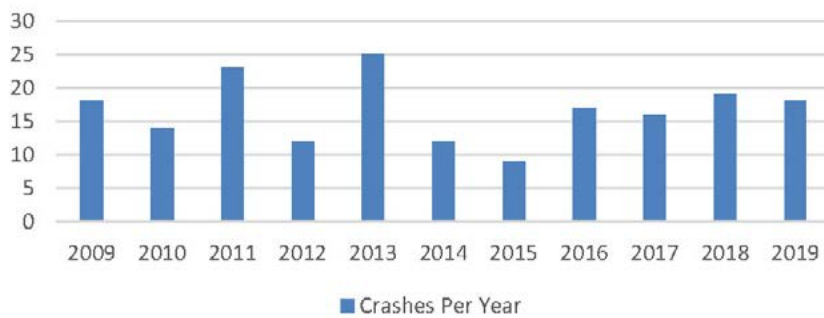


Table 4 summarizes the existing annual crash cost associated with the Corridor, projected total crash reduction, and annual crash cost savings. US 212 experiences a high number of fatal and severe injury crashes. It is anticipated that the proposed safety improvements, including RCIs, will reduce severe crashes by 51 percent. Annual crash costs associated with the existing conditions of the Corridor are estimated to be $11.4 million. As detailed in the BCA, the project is anticipated to generate substantial crash cost savings of about $5.8 million annually, and $51 million between 2025-2054.

Table 4 Crash Analysis

Existing Annual Crash Cost	Projected Total Crash Reduction	Projected Severe Crash Reduction	Estimated Annual Crash Cost Savings
$11,240,000	37%	51%	$5,830,000

Source: Minnesota Department of Public Safety. Data obtained from January 2017 through December 2019.

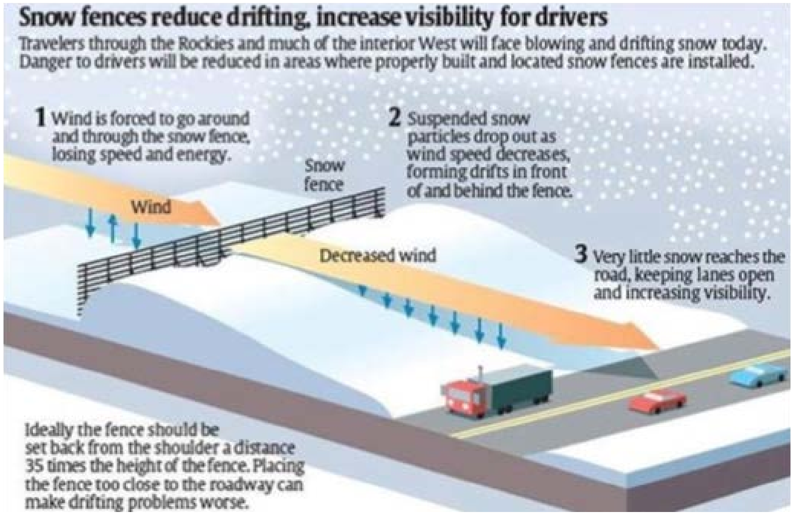
51% Reduction in Severe Crashes

Additionally, the Project will include snow fencing to increase winter driving safety by creating a barrier to snow drifting during windy conditions. Figure 11 depicts a ditch design snow fence. A detailed cross section is provided on the grant application website. The designs implemented in the project will reduce fatalities and severe crashes, directly supporting The Rural Opportunities to Use Transportation for Economic Success (ROUTES) initiative. This initiative addresses disparities in rural transportation infrastructure in order to tangibly improve safety and economic competitiveness in all parts of the country. In addition to the vehicular improvements listed above, the project improves safety for pedestrians, bicyclists and users of public transit (see Quality of Life Criiteron). Widened shoulders decrease

[1] 2014-2019 Minnesota Strategic Highway Safety Plan: http://www.dot.state.mn.us/trafficeng/safety/shsp/Minnesota_SHSP_2014.pdf

risk for pedestrians and bicyclists who utilize the roadway, and for those who board school buses or transit on the shoulder. Implementation of RCIs will reduce the number and severity of conflicts between vehicles, pedestrians and bicyclists at key intersections along US 212.

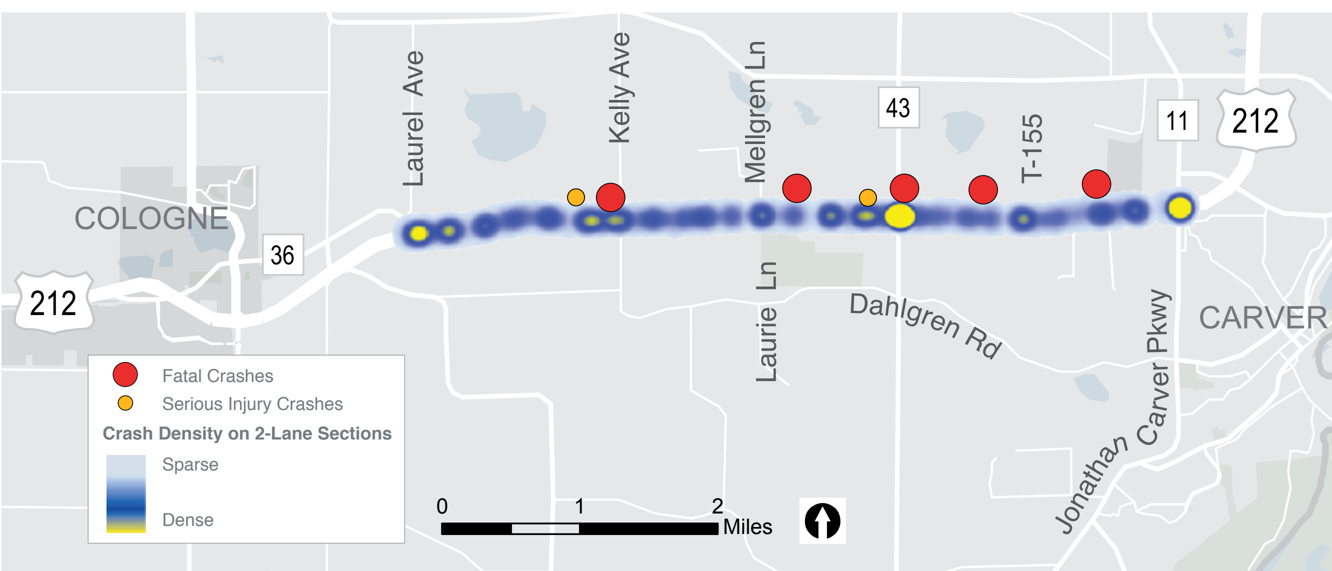
Figure 11 Snow Fence



Intersection Safety

Past studies have identified several high-risk intersections in the Corridor including the US 212 Corridor Study, Carver County Roadway Safety Plan (CRSP), Metropolitan Council's Principal Arterial Intersection Conversion Study (PAICS). These studies included the US 212 at County Highway 43 intersection. Eight right angle crashes have occurred at the intersection of US 212 and County Highway 43 in the past five years including a recent fatality in 2018. As part of this Project, an RCI is proposed for the intersection. Figure 12 illustrates crash occurrences in the Corridor and identifies the locations of crashes that resulted in fatalities and major incapacitating injuries.

Figure 12 Crash Occurrences in the Project Corridor Through 2019



To increase safety at intersections, the Project will utilize RCIs along the Corridor (see Figure 2). Implementing RCI designs will enhance safety by restricting left-turn conflict points from directly crossing multiple travel lanes at once but still allowing access in all directions. Compared to traditional four-lane divided intersections, RCIs have much less severe right-angle (or "T-bone") crashes. Studies have demonstrated a 70 percent reduction in fatalities and a 42 percent reduction in injury crashes.[2]

In 2012, an RCI was installed at the intersection of US 212 and MN Highway 284. A Study of the Traffic Safety at Reduced Conflict Intersections in Minnesota by MnDOT analyzed the type, severity and frequency of crashes both before and after RCI installation. Following implementation of the RCI, MnDOT found the intersection had a 100 percent reduction in fatalities and an 83 percent reduction in injury crashes. Table 5 summarizes the results of the before and after crash analysis of the RCI Project at the intersection of US 212 and State Highway 284. Similar crash reductions are expected with the addition of RCIs in the Project area

Table 5 US 212 and State Highway 284 RCI Before and After Crash Analysis

	3 Years Before 2009 - 2011	3 Years After 2013 - 2015	Percent Change
Total Crashes	**15**	**12**	**-20.0%**
Fatalities	3	0	**-100.0%**
Incapacitating Injuries	0	0	**--**
Non-Incapacitating Injuries	2	0	**-100.0%**
Possible Injury	4	2	**-50.0%**

Source: Leuer, D. and K. Fleming. MnDOT. *A Study of the Traffic Safety at Reduced Conflict Intersections in Minnesota*. May 2017.

State of Good Repair

The pavement condition in the Corridor is deteriorating and will reach a performance ranking of "poor" by 2027 within the Project area. Corridor pavement within the Project Corridor was originally constructed between 1929 and 1930. The aging infrastructure has not been expanded or reconstructed since 1930 (see Figure 13).

Figure 13 Examples of poor pavement conditions on the corridor

Although the road surface is currently in acceptable condition, the Depression-Era sub-grade is deteriorating the road surface at a quicker rate than typically expected. The Ride Quality Index (RQI), used by MnDOT in the 2019 Pavement Condition Annual Report to categorize performance measure categories for the NHS, is currently at a "Fair" rating (2.1 - 3.0) within the Project area. It is anticipated that the pavement will deteriorate to "poor" condition by 2027. In order to maintain a state of good repair, the Corridor needs to be reconstructed prior to 2027.

[2] FHWA. Field Evaluation of a Restricted Crossing U-Turn Intersection. June 2012. Report No. FHWA-HRT-11-067. https://www.fhwa.dot.gov/publications/research/safety/hsis/11067/11067.pdf

The project is consistent with relevant plans to maintain transportation facilities in a state of good repair and address current and projected vulnerabilities. The project is consistent with the goals and policies established in the Minnesota 20-Year State Highway Investment Plan (MnSHIP), Metropolitan Council 2040 Transportation Policy Plan, and Carver County 2040 Transportation Plan. The segment is identified as one of the projects for the Minnesota Highway Freight Program Projects 2018-2022 as well as one of the projects in the Highway Strategic Capacity Enhancements 2018-2025.

Lifecycle Costs

US 212 Operation and Maintenance Plan

MnDOT will operate and maintain US Highway 212 as it does the 12,000-mile state highway system. Long-term maintenance operations will be performed by MnDOT based upon its typical maintenance schedule for bituminous roadways. Table 6 presents key maintenance improvements that would be required during the lifecycle of the Project based on guidance from MnDOT's Metro District Materials and Pavements Engineer.

Table 6 Operation and Maintenance Schedule

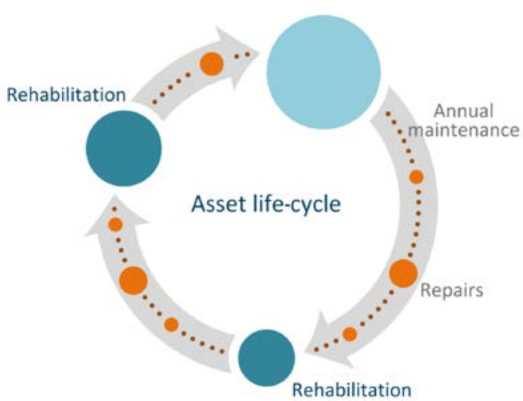
Activity	Year	Cost (per lane-mile)	Total Cost
Annual Routine Maintenance	Annual	$8,100	$162,000
Thin (2-inch) bituminous mill and overlay	20	$250,000	$5,000,000
Medium (4-inch) bituminous mill and overlay	35	$350,000	$7,000,000

Between the years of 2020 and 2057 the costs of operations/maintenance and major rehabilitation is significantly reduced in the build scenario (see detailed analysis in the BCA Workbook). As shown in Table 7, the build scenario results in almost $2.8M in savings.

Table 7 Operations and Maintenance Savings

Activity	No Build	Build
Operations/Maintenance	$2,551,500	$4,738,500
Major Rehabilitation	$15,750,000	$10,800,000
Total Costs	$17,572,000	$14,080,500
Cost Savings		**$2,763,000**

Operation and Maintenance Funding



Graphic Source: MnDOT TAMP

MnDOT will operate and maintain the improved roadway and intersections. Financial trends indicate that operation and maintenance revenues have slowed compared to previous decades. Consequently, MnDOT is committed to implementing timely investments in capital and preventative maintenance treatments to extend the service life of assets (see Figure 14) 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.[3]

1. State gas tax (motor fuel excise tax)
2. State tab fees (motor vehicle registration tax)
3. State motor vehicle sales tax
4. Federal highway funds (highway user tax distributions, flexible highway account, and County State Aid Highway Fund).

MnDOT Transportation Asset Management Plan (TAMP)

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). 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.

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.

Economic Competitiveness

Eliminate the Freight Bottleneck

US 212 is a critical highway freight corridor that provides connections for over 22,000 square miles of southwest Minnesota and South Dakota to the Twin Cities where access to the interstate highway system does not exist.

> *We support the four-lane expansion of Highway 212 in Carver County and prefer that these improvements be made in the short-term.*
>
> – United Farmers' Cooperative

Figure 15 Commercial traffic along US 212

On portions of US Highway 212, heavy commercial vehicles represent up to 15.8 percent of total daily traffic (see Figure 15) based on 2016 MnDOT traffic data (see Table 8). Freight bottlenecks contribute to a 17 percent increase in heavy commercial vehicle operational costs and negatively affect upwards of 65 heavy commercial freight generators located adjacent or in proximity of the US 212 Corridor. The substandard existing pavement quality (discussed further in the State of Good Repair Criteron) causes further operational cost increases due to shifted or broken freight. Existing freight traffic along the entire five-mile Corridor serves 85% of Minnesota counties and equally serves the Metro and Greater Minnesota Districts. Forecasted growth in heavy commercial vehicle volumes by the year 2040 will amplify the existing freight bottleneck in the Corridor.

Table 8 Average Heavy Commercial Truck Volume

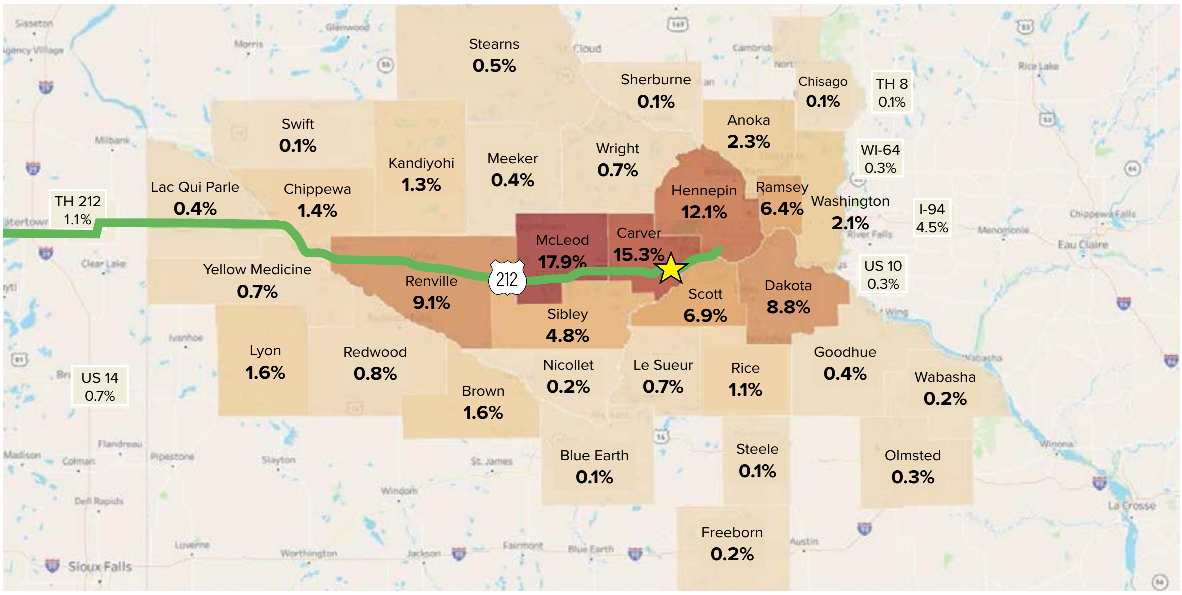
Day of Week	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Percentage	7.2	15.1	15.8	15.0	14.1	13.0	8.1

Source: MnDOT, 2018

[3] MnDOT Transportation Asset Management Plan. Chapter 8 – Financial Plan and Investment Strategies. http://www.dot.state.mn.us/assetmanagement/pdf/tamp/10ch8.pdf

An origin-destination (OD) analysis using StreetLight was completed to quantify the users of this segment of US 212 and the importance of the corridor to the region, Minnesota, and surrounding states. The OD analysis identified users of the corridor and how the corridor serves users from counties in Minnesota and surrounding states for freight. The results of the OD analysis are shown in Figure 16 below. The percentages shown on the figures represent the percentage of trips using this segment of US 212 that originated or are destined for each County and state crossing.

Figure 16 Commercial Origin-Destination Results



The results of the commercial OD analysis show this segment of US 212 supports both intrastate and interstate freight traffic. The counties of Renville, McLeod, Sibley, Carver, Hennepin, Scott, Dakota, and Ramsey each account for five percent of freight traffic on the corridor (see Table 9). With the substantial amount of agricultural land surrounding the corridor, US 212 becomes even more important during harvest season as US 212 is heavily used to deliver products to the ports in Scott County. Furthermore, almost five percent of the freight traffic using this segment of US 212 crosses the Minnesota/Wisconsin border using I-94, which shows US 212 also serves interstate freight traffic.

Table 9 Statewide Freight Travel Patterns along US 212

Area	% of Total Volume	Estimated Freight AADT	Total Freight AADT	# of Counties Served	Total Counties Served
Twin Cities Metro Area	54%	950	1,800	7	74
Greater Minnesota	46%	850		67	

**Note this data only includes freight vehicles with GPS transponders, which excludes many agricultural and "mom-and-pop" haulers*

Capacity issues along U.S. 212 cause significant mobility and safety issues for trucks traveling in the Corridor due to the lack of lane continuity, substandard shoulders, and safety issues. The existing traffic volumes currently exceed the capacity of a two-lane, undivided freeway. Within the Corridor, existing average daily traffic ranges from 13,000 to 18,500 (2018) vehicles per day. Projected traffic volumes within the Corridor will increase to 17,900 to 21,000 vehicles per day by 2040 if no changes are made.[4] If expanded to a four-lane

> *Many production inputs at our 1,500-person Hutchinson facility come via the Highway 212 corridor. Any delay in receiving these inputs hurts our bottom line.* – 3M

[4] Carver County. Draft Comprehensive Plan. Pages 4.38. https://www.co.carver.mn.us/home/showdocument?id=14307

expressway, traffic volumes are anticipated to increase to 22,000 to 27,000 vehicles per day. Based on a standard maximum daily capacity threshold of 15,000 vehicles per day of a two-lane undivided rural roadway, existing traffic volumes will exceed capacity of the Corridor. Morning and afternoon peak traffic leaves very short gaps available for side street intersection. Some of these limited gap conditions have led to fatal intersection crashes.

As part of the US Highway 212 Corridor Study, 16 major freight generators in the study area were interviewed. All 16 interviewees supported the four-lane expansion of US 212. The roadway was identified by every business interviewed as key to receiving inputs to production and shipping manufactured goods to the market.

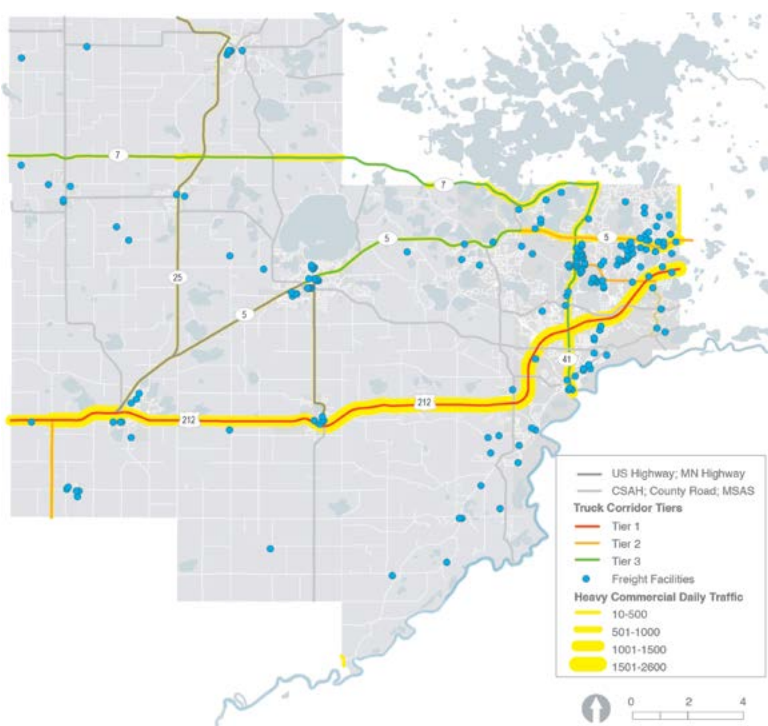
Eighty eight percent of interviewees identified transit time or speed as the most important US Highway 212 transportation factor. The shippers noted that they time their freight movements to avoid peak hour traffic congestion through the bottleneck when possible and avoid travel during heavy snow events. The snow fencing (discussed further in the Safety Criteron) will prevent snow hazards and improve travel time. Many of the businesses rely on just-in-time deliveries (e.g., parts for machines) or final outputs (e.g., perishable foods or tight customer-driven deadlines). For instance, if a machine breaks down at Southern Minnesota Beet Sugar, parts are immediately shipped from the Twin Cities. The company stated that shipping delays on US Highway 212 have interrupted or stopped their production.

> *Expanding Highway 212 to four lanes will save us time and money, but the safety benefits of the expansion are the most valuable to us.*
>
> – Michael Foods Inc.

Furthermore, oversized loads are not permitted to operate in narrow segments of the corridor, requiring a State Patrol escort. Due to the increased cost of this escort, oversized shipments often divert onto the county road system. This rerouting adds time and expense to a trip, increases the potential for damaged goods, reduces safety, and affects the local roadway system. Expansion to a four-lane facility will alleviate the need for a State Patrol escort.

> - *Reduces shipping delays*
> - *Removes 5-mile bottleneck*

Figure 17 Carver County Freight Network and Generators

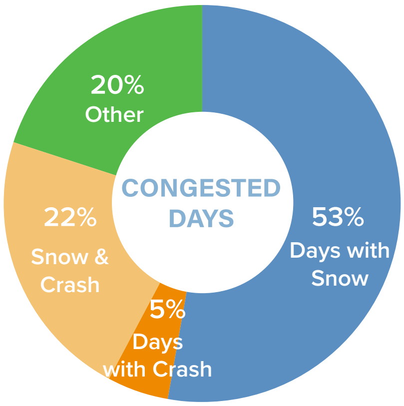


The Project will address critical capacity issues and alleviate a five-mile bottleneck that directly impacts regional and multi-state freight movements. The Project Corridor experiences high truck traffic volumes moving freight from western Minnesota to river and rail terminals in the Shakopee/Savage area. Figure 17 illustrates the importance of US 212 as a major freight connection. The Project will address these negative impacts on freight by expanding the significant gap in the US Highway 212 Corridor, advancing the goal for a continuous four-lane expressway from the Twin Cities metropolitan area to Glencoe, Minnesota. The Project will also expand highway shoulder widths and construct additional turn lanes to eliminate inefficiencies in the freight network.

Travel Time Delay and Reliability Issues

A [Travel Time Reliability Analysis] was completed for the Corridor between the Cities of Cologne and Carver. The analysis concluded that factors contributing to congestion in the Corridor include crashes, snow and other causes (see Figure 18). While crashes are observed to contribute to congestion throughout the year, snow has a more dramatic effect on congestion during the winter months.

Congested Days by Event



Implementation of Snow Fencing (detailed in the Safety Criteron) will reduce congestion during winter months. The conversion from two to four lanes will significantly improve travel time savings along US 212. As detailed in the benefit cost analysis, the project will result in about $25 million in travel time benefits (between the years of 2025 and 2054).

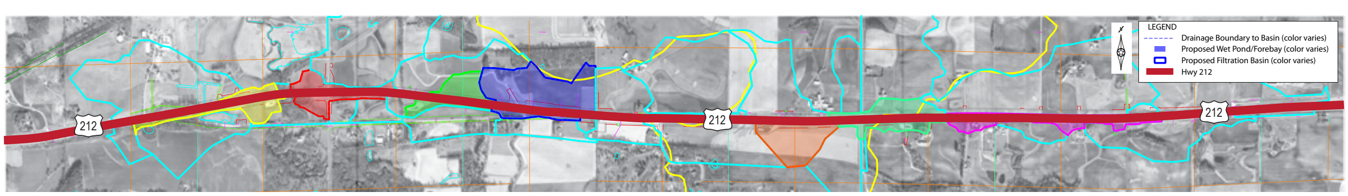
Environmental Sustainability

The Project was found to have no adverse environmental impacts, and avoids impacting historic structures (see Section 5 for more details). The proposed improvements will improve air quality due to decreased accident related congestion and idling. Installation of an RCI is expected to reduce total crash rates by 20% along the Corridor, with an estimated 100% reduction in fatal crashes (K) (see Safety Criteron for more information). As total and fatal crash rates decline, the amount and duration of road closures and delays will decline as well. These delays should result in improved air quality due to a decrease in emissions from idling vehicles.

The existing corridor contains minimal stormwater management practices which reduce nutrient loading or runoff volume to downstream water resources. Sediment and nutrients picked up along paved surfaces by runoff are discharged to surrounding wetlands, streams and lakes.

The Project will incorporate new stormwater management practices that reduce nutrient loading and runoff volume. Proposed improvements include sedimentation, filtration, plant uptake, and groundwater recharge methods. The Project includes many wet ponds and infiltration basins (see detailed map here).

Figure 18 Wet Ponds and Filtration Map

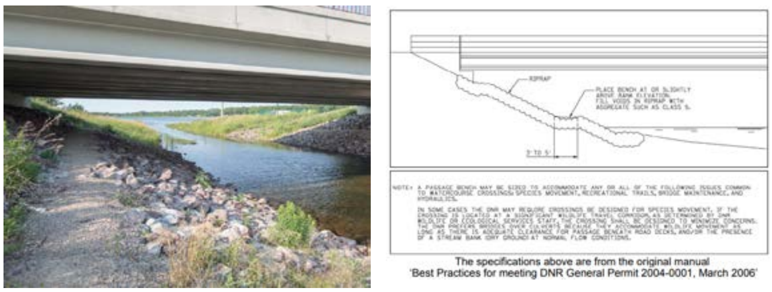


These are designed to meet Carver County Water Management Organization (CCWMO) and MnDOT standards. The cumulative treatment capacity along the corridor will remove nutrients from more than 270,000 cubic-feet of runoff (generated by a 1-inch storm). The new improvements will also capture and retain more than 130,000 cubic-feet of runoff (from a 1-inch storm). 90% of the total suspended solids and 90% of total phosphorus of this runoff will be removed through stormwater management design (see Table 10).

Table 10 Sustainability Metrics

1-inch Storm Event	Nutrients Filtered	Runoff Retention	Suspended Solids	Total Phosphorus
Amount Removed	270,000 cubic feet	130,000 cubic feet	90%	90%

Figure 19 Passage Bench



As part of construction, a Passage Bench will be installed along US 212. Typical bridge riprap can prevent animal movement along streambanks, creating roadway safety issues and roadkill when animals then move to the street for passage. A passage bench is a gravel path incorporated into bridge riprap that allows wildlife to pass beneath bridges uninterrupted. Additional benefits include safe footing for inspections and maintenance and flexibility in design for flood profile.

Quality of Life

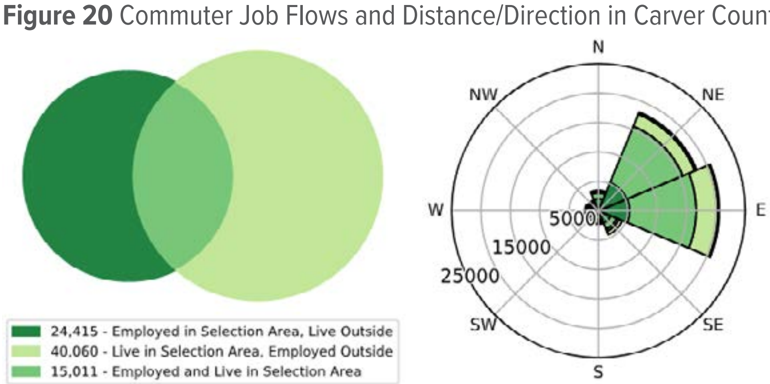
Expanded Access to Employment

US 212 serves as a critical link between rural communities in Carver County and job opportunities in the Twin Cities urban center. As a Principal Arterial roadway through the rural area, US Highway 212 is depended on as a safe and reliable commuting option without similar alternative routes available.

Carver County is a net exporter of workers. According to 2018 U.S. Census data, 61 percent (approximately 64,000) residents of Carver County travel outside of the County for work.[5] The origin destination study completed in 2019 found 66 percent of personal vehicle traffic on US 212 originates from or is destined outside of Carver County. Figure 19 demonstrates that most employees live within the County and commute outside of the County for employment.

Most commuters to, or from, Carver County must use US 212 to reach work destinations. Approximately 12,000 employees live within one mile of US 212 in Carver County. Approximately 53 percent of the total 35,675 employees in Carver County commute greater than ten miles. Most commuters are traveling eastward into the Twin Cities urban center. Figure 19 also illustrates the direction of commuters between place of residence and workplace.

Figure 20 Commuter Job Flows and Distance/Direction in Carver County (2017)



Source: American Community Survey, 2017

The Project will benefit the employees living and commuting along US 212. The Project will expand capacity of the US 212 Corridor by converting the gap of rural two-lane highway to a four-lane expressway, therefore improving travel time reliability, speed, and safety for these employees.

[5] U.S. Census Bureau. Longitudinal Employer-Household Dynamics Survey, Inflow/Outflow Job County in 2015. https://onthemap.ces.census.gov/

Increased Transportation Choices

The Project will expand transportation choices for residents to include pedestrian, bicycle, and transit opportunities. The existing shoulder is not safe for pedestrians or bicyclists yet is utilized by rural residents as a primary connecting roadway. With current free flow speeds above 60 mph and AADT of up to 14,500, US 212 is a barrier to bicycle and pedestrian access. The proposed improvements will expand the shoulder to ten feet and add a center median creating a safe space for pedestrians and bicyclists isolated from passing traffic.

Safety and efficiency benefits from the project will greatly enhance transit opportunities along US 212. Currently, students who live along the corridor must wait along narrow shoulders, next to opposing traffic flows, to be picked up by their school bus. The project will not only provide safety through wider shoulders but will isolate opposing traffic via median construction. Project improvements will positively impact agricultural transportation, as farming equipment will now be able to travel on US 212 with expanded shoulders. Additionally, the Carver Station Park and Ride facility located at the eastern end of the Project and SouthWest Transit storage and operation facility along the corridor will see cost, safety, and efficiency improvements. Users of transit routes along US 212 will experience increased travel time reliability and safety with decreased congestion and idling. SmartLink, the Met Council dial-a-ride service, is housed at the Carver County Public Works facility along US 212. The project provides direct multimodal benefits by increasing access from rural areas to the existing fixed-route transit system, park and ride, and dial-a-ride services.

Environmental Sustainability

Quality of Life will also increase due to environmental sustainability initiatives, detailed in the Environmental Sustainability Criteron.

V. SECONDARY SELECTION CRITERIA

Innovation

Innovative Technology

Reduced Conflict Intersections (RCI)

RCIs, also referred to as restricted crossing U-Turn (RCUT) intersections, have been identified through the Federal Highway Administration's (FHWA) Every Day Counts Initiative as an innovative design with proven safety benefits. FHWA studies have determined that RCUT intersections reduce crash occurrences by 28 to 44 percent (see Safety section for further details).[6] Furthermore, RCUT intersections offer substantial cost savings and reduced construction time benefits compared to grade-separated interchanges. The Project proposes construction of four RCIs (see Figure 20) in the Corridor to address existing safety issues, capture cost savings compared to alternative intersection designs, and streamline the construction timeframe.

[8] FHWA. Intersection and Interchange Geometrics Project Case Study. https://safety.fhwa.dot.gov/intersection/innovative/uturn/case_studies/mn/mn_rcut.pdf

Figure 21 Reduced Conflict Intersection

RCIs

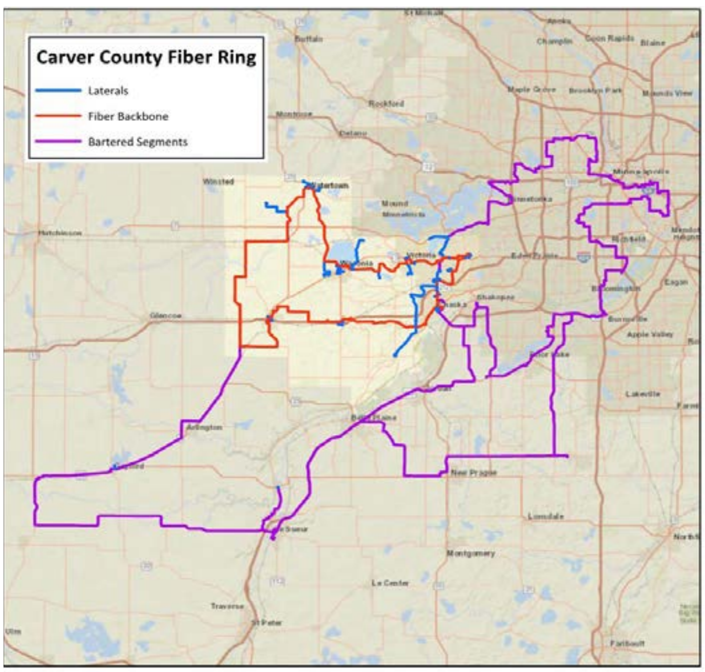
67% reduction in fatalities & serious injury crashes

12% reduction in total crashes

Broadband Deployment

The Project will connect rural communities to fiber-optic internet access by utilizing the existing CarverLink, the publicly owned broadband fiber optics network that runs adjacent to the Corridor. The fiber ring connection runs along the US Highway 212 Corridor (see Figure 21).

Figure 22 Existing Fiber-Optic Network



Providing reliable and fast data communications is becoming necessary as local agencies and communities adopt technology. Fiber optic communications can vastly improve the speed and reliability of internet service – a requirement as population and employment centers continue to grow. CarverLink, the publicly owned broadband fiber optics network that covers hundreds of miles of Carver County, provides internet service and network connectivity to communities, businesses, and people across the County, though there is still room for the network to expand. Improving internet access along the US 212 Corridor will benefit the businesses, employees, and residents who work and live near the roadway, in particular providing more reliable connections to help small businesses compete. Fiber optic networks will guarantee quality internet speeds along the corridor and also serve as a reliable communication method for transportation applications such as traditional ITS applications as well as connected and automated vehicles.

Rural internet access is a growing concern. Rural communities are far less likely to have access to reliable internet service. Fiber-optic rings can vastly improve internet service in rural areas. Federal internet service standards have increased, and many rural areas have not been able to maintain quality internet access. Carver County can resolve this issue by ensuring fiber optic internet access along higher population and employment densities, including US 212.

Blow Ice Warning Systems

Figure 23 Blow Ice Warning System Sign

Ice on roadways is a significant concern for a region that experiences below-freezing temperatures for the better part of three months. Even the most experienced drivers can be caught off-guard when traveling over black ice, through freezing rain, and on snow-packed roadways. "Blow ice" forms when snow blows across the highway, creating an unexpected sheet of ice for travelers. This blow ice phenomenon has caused numerous accidents. An innovative technology-based solution to this problem has been developed utilizing in-pavement ice sensors, cameras, and warning signs with flashing beacons upstream. Carver County will identify the most effective locations for installation of blow ice warning systems to improve safety in the Corridor. Figure 22 shows a blow ice warning system sign. Snow fencing will also be implemented along the Corridor, discussed further in the Safety Criteron.

Other Intelligent Transportation Systems (ITS)

The Project will include Intelligent Transportation Systems (ITS) elements. ITS technologies advance transportation safety, mobility, and efficiency by integrating advanced technologies into transportation infrastructure or vehicles. ITS encompasses a broad range of electronic communication and sensing technologies but traditionally includes elements such as dynamic message signs, CCTV cameras, and vehicle detection. By deploying these ITS elements along US 212, the County can provide traveler information such as travel times, alternate routes, and incident notifications. These enhance driver awareness and allow drivers to make informed decisions while traveling. These deployments can also be used for incident management purposes such as identifying crashes, detecting queued traffic, and emergency response.

The Project will explore installation of wireless dynamic message signs that provide real-time traffic advisory and route guidance information to road users. By providing information to road users in advance of a situation, they help to improve safety and reduce congestion when an incident occurs or in the event of poor road or weather conditions.

Innovative Project Delivery

Civil Information Management Software

During public engagement of the corridor study, project designers used innovative Civil Information Management (CIM) software for preliminary modeling and visualization of the proposed project to understand and mitigate impacts. This allowed stakeholders and partners to make decisions through a visual compare and contrast in real-time.

The Project will continue to utilize CIM software to model and visualize the project, as well as increased transparency of the project. The transparency will enable owners, consultants, contractors, and stakeholders to work together easily. The CIM software enables designers to make constant adjustments to the design to ensure the best alternatives. The software also uses embedded 3D visualization as part of the process. This enables an effective conflict detection, rapid design review and validation. These efforts will reduce project schedule timelines and overall costs.

Best Value Procurement

MnDOT and related transportation agencies utilize the best value procurement process to deliver high-quality projects faster and more cost effectively by awarding contracts based on quality rather than price alone. It is anticipated that best value procurement will help the Project deliver long-term benefits on an efficient schedule and budget. Carver County has utilized the best value procurement process for several transportation projects and will consider applying this procurement process for this Project.

Design-Build Process

Carver County is leading the effort for a design-build (DB) procurement process. DB project delivery methods significantly accelerates project completion, resulting in project savings by avoiding cost inflation. DB projects are typically led by the state, so the County's efforts are unique and innovative. The County's leadership showcases the vitality of the US 212 corridor. The County will ensure efficient project delivery. Options that will be pursued include:

- **MnDOT State Aid Design-Build Contracting:** Recent legislation allows use of the design-build program for Minnesota cities & counties through a MnDOT program administered by Local Transportation (SALT) Division.
- **Cooperative Agreement:** There is recent precedent in the metro area of MnDOT and local agencies administering design-build contracts via cooperative agreements. MnDOT's authority would be utilized to administer the design-build procurement and administration process, while the County would be responsible for leading the overall project.
- **Local Agency Led Design-Build:** Precedent exists for the local agencies to be granted temporary legislative authority to administer design-build transportation projects. There is significant political backing and agency support (see Letters of Support) for this highly visible and beneficial project.

Innovative Contracting

Carver County successfully utilized incentive based contracting on several projects. Contractor incentive alternatives considered for this Project may include the use of a detour pool method for closures or partial closures of the existing highway to the use of A + B methods to reduce the amount of delay/costs to users during key portions of construction.

Innovative Financing

Carver County is one of the leading counties in Minnesota to implement both a ½ percent sales tax and an excise tax to create a new, non-federal transportation revenue source for county and state transportation projects in the County. Over the next twenty years, the collected revenue is expected at $102 million. This new dedicated transportation funding source will enable the County to provide a local match to state and federal funding for critical infrastructure projects, including the US 212 Freight Mobility and Safety Project.

In 2017, Carver County passed resolutions to approve a new, dedicated, non-federal transportation revenue. The resolutions enabled Carver County to implement a ½ percent sales tax, a $20 excise tax on vehicle purchases, and to increase the wheelage tax to $20 per vehicle (See Carver County Resolution #25-17: Implementing a ½ Percent Local Option Sales Tax and $20 Vehicle Excise Tax for Transportation and Resolution #26-17: Implementing a $20 Annual Wheelage Tax for Transportation).

Partnership

Grant Recipient

Carver County is the project sponsor of this BUILD grant application. The County has been a proactive leader and advocate for this Project for several years. A standout feature of this application is that the County is leading this effort for major investment on a US highway corridor and investing County funding. The County has extensive experience with procuring and developing transportation improvement projects including several state and federally funded projects. The County owns and operates over 274 miles of road. The County's 2040 Road Systems Plan (RSP) prioritizes major future transportation investments and identifies potential fiscal resources to advance these projects.

Primary Contact

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Email: lrobjent@co.carver.mn.us

Project Partners

Minnesota Department of Transportation (MnDOT)

MnDOT is a dedicated partner in this Project. MnDOT has established a firm commitment of investment towards improving the US 212 corridor. MnDOT has participated in the NEPA environmental review process and development of the final design. They have also reviewed the design plans and will provide final approval. To date, over $2 million in MnDOT and local funds was used for project development such as environmental assessment, project design, and right-of-way official mapping to advance the delivery of the Project.

MnDOT will operate and maintain the Project as part of the State highway system as stated in MnDOT's letter of support for the Project. MnDOT and Carver County have entered into an agreement identifying financial obligations and responsibilities pertaining to right-of-way acquisition requirements for the Project. MnDOT and Carver County have also established agreement for final design. The County and MnDOT will negotiate agreements on the construction and long-term maintenance of the Project. Section IV, Criterion #2 includes additional details regarding MnDOT's operation and maintenance commitment towards the Project.

MnDOT and the County have successively partnered on past and planned investments in the Corridor including the freeway construction from Eden Prairie to Carver in 2009, the construction of the US 212/County Highway 44 in Chaska, construction of three reduced conflict intersections in Cologne at US 212/County Road 53, US 212/County Road 36, and US 212/County Highway 41. MnDOT and the County have partnered to fund several other projects in the US 212 Corridor including the US 212 pedestrian underpass in the City of Norwood Young America, and the State Highway 5/State Highway 25/County Highway 33 intersection improvements project in the City of Norwood Young America. Figure 3 identifies other planned and past investments in the US 212 corridor.

Southwest Corridor Transportation Coalition (SWCTC)

The SWCTC is a strong partnership with broad representation from all sectors. In total, 60 communities, businesses, and local chambers of commerce have passed resolutions supporting improvements to expand the capacity of this highway: including the Board of Commissioners of every county along the corridor. Several agencies and jurisdictions passed specific letters of support for this BUILD Grant opportunity. The full package of letters of support from key agencies, elected officials, counties, cities, Chambers of Commerce, and businesses can be viewed here.

> *"It is truly a project that will benefit people from many areas of the State."*
>
> *- City of Chaska*

The SWCTC was formed to work cooperatively with MnDOT, local governments, businesses, state, and federal legislators and interested citizens to advocate for transportation improvements on US 212 and TH 5. The SWCTC travels to Washington D.C. each year to meet with Members of Congress and transportation officials to promote the importance of US 212 and request funding assistance. These meetings resulted in $1.2 million in federal appropriation to allow project development to occur and assist in project readiness for the Cologne to Carver segment of the US 212 Freight Mobility and Safety Project.

> *"Local shippers rely upon US 212 as their primary link to the Twin Cities [...] and to the rest of the country."*
>
> *- Marshall Area Transportation Group*

As mentioned previously, the partnership led to the US 212 Corridor Study. This study looked at lower-cost ways to make improvements to the corridor while working towards the long-term conversion of the corridor to a four-lane facility. The first phase of the study utilized public engagement, through newsletters, open houses and a project website. The project website is still maintained and provides the past newsletters and open house materials. The project website can be accessed here. The second phase of the study was completed in 2016 and focused on identifying a preferred alignment for the Cologne to Carver segment. Following this phase of the Corridor Study, the SWCTC has been focused on working together to continue advancing improvements along the corridor, with the goal of improving the safety and capacity of the US 212 corridor.

Freight Community

Carver County has solicited input on the Project from several freight generators in the US 212 Corridor. As part of the US Highway 212 Corridor Study, the County, in partnership with the SWCTC and MnDOT, conducted interviews with 16 major freight generators to obtain feedback on the shipping and transportation infrastructure needs of these businesses. The County has incorporated the input received through this outreach to develop the proposed improvements included in this Project. Letters of support have been received by business and industries in the Corridor.

As of 2020, Pattison Sand Company, a new aggregate manufacturer, is locating just outside the Project area. The company will haul aggregate by rail from Iowa to their site at US 212 and Salem Avenue. The 100,000 cubic yards of aggregate will be stockpiled on site and shipped to construction projects in the region. The company will be one of the primary manufacturers along the corridor and will bring new jobs to the region. This new facility will generate an average of 150 truck trips per day, which will depend on US 212 as a primary route. Renovation of US 212 is necessary in order to attract and retain businesses of this caliber, ensuring freight is moved safely, efficiently, and without delay. Pattison Sand Company submitted a letter of support for this BUILD request.

VI. ENVIRONMENTAL RISK REVIEW

The County is the lead agency on the US Highway 212 Corridor Study and all other project development activities which utilize federal funds. The County has delivered several federally funded highway projects and understands the rules and procedures to manage a federal grant.

Carver County and MnDOT have worked together to explore the best ways to address access, safety, freight movement, and mobility needs along US Highway 212. To move the project forward and fully understand the impacts and cost, Carver County has proceeded with detailed design and preparation of a final bid package for construction letting. Preliminary design layouts have been completed. Cost estimates have been prepared that include contingency levels. Project studies completed include an Environmental Site Assessment, wetland delineation report, traffic analysis and hydraulic analysis.

The proposed design meets all current USDOT, AASHTO, and MnDOT standards for multi-lane highways. General details of the design include: 70 mph design speed, 12-foot lanes, 10-foot outside shoulder, 4-foot inside shoulder, rural ditch drainage (NOAA Atlas 14 - Precipitation Frequency met for design), 84-foot centerline spacing, and bituminous pavement. The final design has identified the final roadway alignment, profiles, geometry, drainage elements, and grading limits for the Project. From the final design information, real quantities were derived. Expected unit costs are based on the most recent record of similar highway construction projects in Minnesota.

Project Schedule

The Project Schedule (see Figure 23) demonstrates that grant funds can be obligated by Summer 2021 in advance of the BUILD funding obligation date requirement of September 30th, 2022 (see detailed Project Schedule here). Carver County anticipates that construction will begin by July 31, 2021 and be completed by November 2023. Construction is scheduled to finish nearly four years ahead of the grant liquidation deadline of September 30th, 2027. All property and right-of-way acquisition will be completed in accordance with 49 CFR Part 24 and other Federal regulations.

The County has an experienced right-of-way acquisition staff that have been actively involved during the project development process and have worked with MnDOT on numerous state highway projects. An official map has been prepared and a right-of-way agreement with MnDOT is close to completion. As discussed in the following section, an Environmental Assessment was approved in 2009. The County is in the process of updating this environmental review document which is anticipated to be completed in May 2020.

Figure 24 Project Schedule

Required Approvals and Permits

Environmental Approvals

FHWA approved an Environmental Assessment (EA) on December 31, 2009 for the Project. The EA found that the Project is not expected to cause adverse impacts to any community or neighborhood. No categories of people uniquely sensitive to transportation would be unduly impacted. The EA also found that the Project impacts are distributed evenly throughout the Corridor and the proposed improvements would provide benefits for all who utilize the roadway. The environmental justice section concluded that the Project would not have disproportionately high and adverse human health or environmental effects to any minority population or low-income population.

Due to the age of the approved document, an EA Re-Evaluation is required to address any new environmental impacts along the corridor. Carver County has coordinated with MnDOT and FHWA on the process and anticipates that the EA Re-Evaluation will be completed by May 2020. Wetland delineation was completed in 2019 and permitting has been initiated. The proposed alignment was designed to avoid impacts to historic properties while minimizing impacts to wetland resources to the extent possible. Final plan submittal is expected by Summer 2020. As required, all remaining permits will be included in the final submittal. Since being designated as a MnDOT Interregional Corridor in 2000, the US Highway 212 corridor has undergone significant analysis. Carver County, MnDOT and respective federal agencies foresee no issue with permit issuance.

State and Local Approvals

Support for the Project is provided for by several different levels. There is a broad base of support for the project, as shown by the Letters of Support submitted for this application. These include letters of support from MnDOT, Metropolitan Council, and US Senate Representatives from MN to cities and local businesses along the US 212 Corridor. The Project is programmed in MnDOT's State Transportation Improvement Program (STIP) and in the Metropolitan Council's Transportation Improvement Program (TIP) as state project number 010-596-012. This project is programmed due to the Minnesota Highway Freight Program funding awarded for Fiscal Year 2022. The Project is currently listed in the Metropolitan Council Transportation Policy Plan (TPP). This project is specifically identified to receive Carver County local sales tax funds in the County's adopted Transportation Tax Plan and is in the Capital Improvement Plan as the highest priority project. Based on current annual revenues of the adopted ½ percent sales tax, $7.2 million is allocated for the project by 2022.

The US 212 Project is included in all relevant local, metropolitan, and state planning documents. This includes the MN Statewide Freight System and Investment Plan (2018) and related Metropolitan Council and Carver County comprehensive planning elements.

Environmental Review and Permitting

The Project is nearing completion of the environmental review and incorporated feedback from agency stakeholders into proposed design to minimize the Project's impacts to sensitive environmental resources. An Environmental Assessment (EA) was approved by FHWA in 2009 in accordance with the National Environmental Policy Act (NEPA). The County is close to completing an EA Re-Evaluation for the Project area.

Sensitive resources have been thoroughly evaluated and avoidance, minimization and mitigation measures have been identified. During the 2009 Environmental Assessment, historical and archaeological surveys were completed and the State Historic Preservation Office (SHPO) was consulted. During the survey, several properties listed or eligible for listing in the National Register of Historic Places were found to be impacted. To avoid these impacts MnDOT shifted the alignment to avoid impacting historic properties and provide vegetative buffers. With these mitigation techniques, MnDOT CRU determined no listed or eligible archaeological properties would be impacted. During reevaluation of project impacts in 2019, no additional adverse impacts were found.

The Project will benefit from existing MnDOT programmatic agreements and agency liaisons to maximize the efficiency of environmental review and permitting processes. MnDOT has executed a programmatic agreement with FHWA and the SHPO to streamline the Section 106 review process. Additionally, MnDOT has established agency liaisons with the US Army Corps of Engineers (USACE) to directly manage the Section 404 permitting process for state highway projects.

Risks and Mitigation Strategies

The County and MnDOT are close to executing a right-of-way agreement that identifies the responsibilities and financial commitments for right-of-way requirements. Right-of-way acquisition requirements have been identified, detailed cost estimates have been prepared, and all parcel sketches of impacted properties have been completed. The County will exercise eminent domain if necessary, to gain access to the property to construct the Project within the required schedule constraints.

VII. BENEFIT-COST ANALYSIS

The objective of a benefit-cost analysis (BCA) is to bring all the direct effects of a transportation investment into a common measure (dollars), and to account for the fact that benefits accrue over an extended period while costs are incurred primarily in the initial years. The primary elements that can be monetized are travel time, changes in vehicle operating costs, vehicle crashes, environmental impacts, remaining capital value, and maintenance costs. The results of the BCA are briefly summarized below. A detailed technical memorandum of the analysis is available to view at the grant application website: https://www.srfconsulting.com/us-212-BUILD-grant/.

No Build Alternative

The No Build Alternative included leaving the US 212 corridor from the cities of Cologne to Carver in its current geometric and operational condition, with no modifications or restrictions to current access. Regional roadway improvements that are currently programmed were included as part of the regional transportation network.

Build Alternative

The Project will replace the existing two-lane undivided section with a four-lane divided roadway; thus, connecting the existing four-lane sections of US 212 from Cologne into the Twin Cities metro area. The spot mobility and safety improvements consisting of RCIs were also assumed at the locations denoted previously in this document.

BCA Methodology

The primary cost and benefit components analyzed in the BCA included:

- Travel time/delay (vehicle hours traveled – VHT)
- Operating costs (vehicle miles traveled – VMT)
- Environmental and air quality impacts
- Crashes by severity
- Initial capital costs
- Remaining Capital Value: The remaining capital value (value of improvement beyond the analysis period) was considered a benefit and was added to other user benefits.
- Maintenance and rehabilitation costs such as:
  - No Build Scenario
    - Medium (4”) bituminous mill & overlay at year 0 (year 2020) ($350,000 per lane mile)
    - Thin (2”) bituminous mill & overlay at year 14 ($250,000 per lane mile)
    - Medium (4”) bituminous mill & overlay at year 24 ($350,000 per lane mile)
    - Unbonded concrete overlay at year 37 ($800,000 per lane mile)
  - Build Scenario
    - Thin (2”) bituminous mill & overlay at year 20 ($250,000 per lane mile)
    - Medium (4”) bituminous mill & overlay at year 35 ($350,000 per lane mile)

Other analysis considerations included:

- It was assumed that right-of-way acquisition for the Build Alternative would take place in year 2021, and construction would be incurred during years 2022 to 2024. Therefore, year 2025 was assumed to be the first full year that benefits will be accrued.
- The present value of all benefits and costs was calculated using 2018 as the year of current dollars.
- A benefit-cost analysis period of 30 years was used to determine net project costs and benefits
- Several factors were not quantified as part of the analysis and should result in a conservative estimate of project benefits for the Build Alternative (see the Project Website for details).

Project Costs

Year 2018 project cost for the BUILD Grant components of the overall project is expected to be about $52.8 million. The current 2018 project costs discounted at a rate of 7 percent are approximately $38.2 million.

BCA Results

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, such as providing access and connectivity to a rural region. Projects are considered cost-effective if the benefit-cost ratio is greater than 1.0. The larger the ratio number, the greater the benefits per unit cost. Results of the benefit-cost analysis are included in Table 10.

Table 11 Benefit Cost Analysis Summary

Benefits	Costs	B/C Ratio	Net Present Value
$67 Million	$38 Million	**1.8**	$29 Million

Note: Results based on seven percent discount rate.

VIII. SUPPORTING DOCUMENTS

Links to supporting documents are included throughout this narrative. All supporting documents and the BUILD grant application narrative are available to view at the following webpage: https://www.srfconsulting.com/us-212-BUILD-grant/.