

US Highway (US) 14/County State Aid Highway (CSAH) 44 Interchange Project

Addressing Critical Safety, Equity, and Mobility Challenges in Rochester, MN Regional Center

MERIT CRITERIA

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



Project Name: Project Type: Total Project Cost: 2023 RAISE Funds Requested:

US Highway (US) 14/County State Aid Highway (CSAH) 44 Interchange Project Rural Capital Project – Road, Road/Rail Crossing \$60.54 million \$42.1 million

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Supporting Information can be found at: <u>https://www.srfconsulting.com/raise-us14-olmsted/</u>



US Highway (US) 14/County State Aid Highway (CSAH) 44 Interchange Project

Submitted by Olmsted County

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

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MERIT CRITERIA

1. SAFETY

The primary purpose of the US Highway (US) 14/County State Aid Highway (CSAH) 44 Interchange Project (herein known as the Project) is to improve multimodal traveler safety at the intersections of US 14/CSAH 44 and US 14/7th Street NW. The Project follows best practices as outlined in Federal Highway Administration's (FHWA) <u>Manual on</u> <u>Uniform Traffic Control Devices (MUTCD)</u>, which provides guidance to promote the safety, inclusion, and mobility of all users and provide for the protection of vulnerable road users.



Figure 1 Project Location Aerial

This application will demonstrate the significant outstanding safety concerns which the Project will address, thereby advancing the goals of numerous overarching plans and policy documents, including <u>US DOT's National Roadway</u> <u>Safety Strategy Plan (NRSS)</u>. For example, the NRSS outlines a strategy of a Safer Roads approach, wherein roadway design is a key factor in influencing driver behavior. **The Project will advance this strategy by improving existing conditions via grade separating US 14, CSAH 44, and the Canadian Pacific (CP) rail line so that severe and fatal crashes can be eliminated**.

Project Area

US 14 is a rural divided expressway facility with numerous at-grade intersections and a posted speed of 65 miles per hour (mph). This roadway is classified as a Principal Arterial on the Federal Functional Classification (FFC) Map and designated as a <u>Medium Priority Interregional Corridor (IRC)</u> by the Minnesota Department of Transportation (MnDOT). It is defined as a significant corridor that services both interstate and intrastate travel. Within the project area, US 14 services 32,000 vehicles per day (vpd).

CSAH 44 services 3,000 vpd and is classified as a minor collector on the FFC (Figure 1). CSAH 44 approaches US 14 at a skewed angle from the north. Based on the roadway geometry and traffic volumes at the US 14/CSAH 44 intersection, the MnDOT Access Management Manual indicates high-risk conditions for vehicles on CSAH 44 trying to find an adequate gap in traffic flows on US 14. Drone video footage of the intersection taken during the morning peak of 7 – 7:30 a.m. confirms these high-risk conditions. CSAH 44 provides the best opportunity to establish future urban arterial connectivity and continuity between key transportation corridors on an existing alignment that can be extended north and south of US 14 to provide the system linkages envisioned by numerous local agencies including Olmsted County (hereafter known as the County), the City of Rochester, and the Rochester-Olmsted Council of Governments (ROCOG).

To support the future growth and expansion of Rochester urban area, the County and ROCOG <u>envision</u> that CSAH 44 will be expanded to a four lane facility in the future to accommodate projected growth within the boundaries of planned Rochester urban growth area. The County has purchased right-of-way in expectation of this forthcoming expansion.

Project Policy Guidance



Figure 2 Population and Employment Forecast Summary

The Rochester regional center is one of the highest growth areas in the state of Minnesota. US 14 is an important eastwest arterial that connects many smaller communities to Rochester. Similarly, CSAH 44 serves as a key north-south connection for travelers utilizing US 14 to reach the northwest area of Rochester. Future traffic volumes are anticipated to increase significantly due to a range of factors. ROCOG forecasts in its Long-Range Transportation Plan (LRTP) that Olmsted County is expected to add approximately 55,000 residents between 2018 and 2045 (Figure 2). This follows a trend of intense growth, as the city of Rochester grew by ten percent between years 2010 – 2018. The Project is consistent with ROCOG LRTP guidance to continue to collaborate with local law enforcement, public health agencies, and others on travel safety education and outreach activities as part of Southeast Minnesota Toward Zero Deaths Regional Strategic Plan.

The Project should additionally be viewed in the context of near, medium, and long term increases in traffic. US 14 is a regional corridor serving as a primary commuter route from the west into Rochester. A recent major expansion project from Owatonna to Dodge Center completes the US 14 four-lane corridor from Mankato to Rochester (over 75 miles of four-lane expressway). This creates an attractive, access-controlled route that will increase traffic on US 14 directly through the CSAH 44 intersection. As per MnDOT traffic volume data, the AADTs along US 14 in the project area increased from 21,000 (2010) to 27,474 (2019) indicating a rise in traffic volumes due to the expansion project.

Rochester's importance as a regional center of employment is expected to grow in the future. This expansion in employment is driven by the expansion of Mayo Clinic's innovative healthcare initiative public-private development initiative known as the Destination Medical Center (DMC), which will impact future traffic volumes and associated safety risks on the primary regional/interregional corridors such as US 14 that connect Rochester with areas throughout Southeastern Minnesota and the Upper Midwest. The DMC is anticipated to add 30,000 new jobs primarily in the Rochester urbanized area, with the largest share of growth expected in the city center. This growth is anticipated to exert significant pressure on the existing transportation system, including within the project area. Additionally, as medium-and long-term macro trends continue, the age of the average Minnesotan and American will continue to rise, along with a need for associated medical care, with

the number of medical patients and travel companions coming to Rochester from the region and Upper Midwest expected to increase by 50 percent over the next 20-25 years. Mayo Clinic's continued expansion, combined with the increasingly aging population, will exacerbate existing safety concerns on US 14 as it services travel to jobs and visits attracted to the expanded capacity for health services resulting from the Destination Medical Center initiative.

This growth aligns with the City of Rochester Comprehensive Plan 2040, which outlines the following Principles of Growth: 1) Downtown will be a prime focus of future Rochester growth, and 2) Growth on the edge of the city will be more fiscally sustainable with an emphasis on directing growth to areas where adequate infrastructure capacity exists to support the needs of future residents or businesses. Downtown Rochester's growing intensity as a regional hub of jobs and attractive destinations will place increasing pressure on the city's transportation system connections to the larger regional area, of which US 14 is a major connector both east and west of Rochester.

Project Safety Improvements

The Project will improve multimodal safety by constructing a modern multimodal interchange at US 14 and CSAH 44, and an associated flyover structure at 7th Street NW (Figure 3). Infrastructure elements include bridge structures, retaining walls, pavement, lighting, and active transportation facilities. The US 14/CSAH 44 intersection is currently configured at a severely skewed angle, which creates safety and visibility concerns due to the sharp angle required to turn on and off the roadway. The Project will vastly improve safety by eliminating two at-grade intersections and 64 conflict points.



Figure 3 Project Improvements



7 minor injury crashes





possible injury crashes

property damages only

Crash Record

From 2017 to 2021, there were 62 reported crashes within the study area, averaging 14 crashes per year. This equates to an intersection Crash Rate of 0.88, which is almost double the Critical Crash Rate (0.45), and over three times the Statewide Average Crash Rate (0.25) (Table 1). Of these crashes, one was classified as Fatal, seven were Minor Injury, nine were Possible Injury, and 45 were Property Damage Only. The fatal crash, occurred in July of 2020, involved a motor vehicle and a semi-truck. The vehicle was stopped at the side-street stop on CSAH 44 and the driver attempted to cross US 14 but was struck by the semi-truck which had been traveling eastbound on US 14. A separate crash involved a bicyclist who was struck by a vehicle at the CSAH 44/Country Club Road intersection, while traveling northbound on CSAH 44, and possible injuries were reported

With a goal of reducing the high-speed right-angle crashes that occur at this location, MnDOT closed the center medians at US 14/CSAH 44 and US 14/7th Street NW intersections and converted both intersections into right-in right-out (RI/ RO) access only, as an interim safety improvement in July 2022. However, even after the center median closure, the intersection continues to pose ongoing safety concerns. Vehicles turning right from CSAH 44 onto US 14 still face significant delays and limited gaps in traffic flow in order to merge into the mainline traffic of US 14, particularly during peak AM and PM periods. Vehicles previously turning left from CSAH 44 onto US 14 must now make detours of up to seven miles in order to gain access US 14. Thus, while the interim solution eliminated the most problematic movements resulting in serious crashes, it has also eliminated accessibility in the project area, by creating longer diversion routes which further led to intensified capacity challenges at other intersections along US 14.

Intersection	Existing Traffic Control	Actual Crash Rate	Critical Crash Rate	Statewide Average Crash Rate ¹	Critical Crash Rate Index
CSAH 44 & US 14	Thru Stop	0.88	0.45	0.25	1.95
CSAH 44 & Country Club Road	Thru Stop	1.34	0.86	0.25	1.55
US 14 & 7th Street	Thru Stop	0.18	0.46	0.25	0.39
Valleyhigh Road & 50th	Roundabout				
Avenue		1.45	1.51	0.78	0.96
West Circle Dr & Valleyhigh	Signalized				
Road		0.78	0.70	0.45	1.12
West Circle Dr & 26th Street	Signalized	0.56	0.69	0.45	0.81
West Circle Dr & 19th Street	Signalized	0.50	0.67	0.45	0.75
West Circle Dr & N Frontage	Signalized				
Road/Wilder Road		0.41	0.69	0.45	0.60
West Circle Drive & US 14	Signalized				
North Ramps		0.43	0.69	0.45	0.63
West Circle Drive & US 14	Signalized				
South Ramps		0.36	0.69	0.45	0.52

Table 1 Intersection Crash Rates

Crash Rate < Expected Crash Rate Expected Crash Rate < Crash Rate < Critical Crash Rate ¹Expected rates from MnDOT's 2022 Statewide Trunk Highway Intersection Rates

West Circle Drive



Figure 4 Traffic Diversion to West Circle Drive Access

The recent median closures on US 14 at CSAH 44 and 7th Street NW are contributing to safety and operational problems in the Project vicinity and areas north and east, such as Valleyhigh Road and West Circle Drive. Since MnDOT closed the US 14/CSAH 44 median in 2022, the behavior of southbound motorists desiring to turn left (to travel eastward) on US 14 has changed. Because immediate left turns are no longer accommodated at the CSAH 44 intersection, many motorists are electing to divert seven miles east to the West Circle Drive interchange (Figure 4), which prior to the project was already experiencing frequent congestion and operational problems.

This diversion from the existing US 14/CSAH 44 intersection worsens an already-problematic series of intersections. Table 1 lists crash rates for the five-year period from 2017 to 2021. The critical indices exceed 1.00 at the following intersections: West Circle Drive/Valleyhigh Road, CSAH 44/ Country Club Road, and US 14/CSAH 44. Critical indices exceeding 1.00 indicate that there are safety concerns at these locations.

Volume to Capacity

The diversion of traffic due to the closure of medians at US 14/CSAH 44 and US 14/7th Street NW intersections, is contributing to operational and capacity issues at the neighboring interchange of US 14 and West Circle Drive. Since the median closures are a recent change, definitive data to establish the correlation is still to be procured. However, the County and MnDOT has been made aware of numerous anecdotal observations of a noticeable increase in traffic volumes and queuing demand at West Circle Drive. According to the ROCOG's LRTP, recommended upper limit threshold for daily traffic volumes on a four-lane divided roadway, such as West Circle Drive, is 25,280 vpd to maintain Level of Service (LOS) quality at a level at the C/D threshold. This LOS threshold equates to a volume to capacity ratio of 0.85, which is recognized as approaching capacity. The 2021 daily traffic volumes on West Circle were 23,000, equating to 90 percent of recommended capacity, and suggestive of a LOS quality below desired conditions.

Due to the median closures, an associated increase in congestion levels and perceived safety issues on the US 14/West Circle Drive interchange, challenges associated with these interim safety measures will cause conditions at the West Circle Drive interchange to worsen over time. Given that traffic volumes on West Circle Drive were at 90 percent of the recommended capacity before the diversion, it is anticipated that the recently diverted traffic from CSAH 44 have increased the traffic volume on West Circle even further past the recommended threshold and pose increased safety and operational risks.

By providing modern full access infrastructure at the US 14/CSAH 44 intersection, the Project will alleviate the need for this traffic diversion, thereby improving the safety and operations of both the CSAH 44 and West Circle Drive intersections.

At-grade Railroad Crossing

The CP railroad at-grade crossing intersects CSAH 44 at approximately 100 feet north of US 14. According to the US DOT crossing inventory report, the crossing identification number for this at-grade crossing is 193235S. CSAH 44 is owned and maintained by Olmsted County and consists of two lanes of undivided traffic at the crossing. The CP railway company owns the railroad right-of-way and operates the railroad. Currently there are three thru train movements per day at the crossing (2018), one during the day and two at night, and two switching trains. The crossing is not illuminated. There were three railroad-related crashes on CSAH 44 between 2012 and 2021. These crashes were comprised of one minor injury and two property damages only (PDO). The Project will improve safety by alleviating rail and motor vehicle conflict points due to grade separation and by adding lighting to the corridor.

The Project's safety improvements will yield over \$3.5 million in projected crash cost savings over 30 years.

2. ENVIRONMENTAL SUSTAINABILITY

The Project will positively impact short-and long-term environmental resilience and sustainability goals. Project planning is driven by the Olmsted County Climate Change and Resiliency Plan Inventory, which defines its purpose as "...to act on climate change by assessing and reducing the county's carbon footprint using facilities, lands, operations, and activities strategies. This will allow the county to prepare and plan for the potential impacts of climate change on the county and its residents, preparing them for long-term resiliency." The Plan identifies transportation as a primary area for the County to address climate change and resiliency, with suggested strategies of travel reductions, reduction in commuting, reducing greenhouse gas (GHG) emissions, transit, and motor pool. The Project will conform to all guidance in the Olmsted County Climate Change and Resilience Plan.

Stormwater Water Runoff and Detention

The Project will improve existing environmental conditions via incorporation of modern Best Management Practices (BMP) regarding stormwater runoff and detention. The existing water runoff is untreated and existing water protection infrastructure in the project area provides limited protections against brake dust, tire grime, total suspended solids (TSS) or total phosphorus (TP) runoff. The road runoff drains directly from the road to ditches before entering into an unnamed creek on the Minnesota Department of Natural Resources (MnDNR) designated Public Water Inventory, which then drains into Cascade Creek and ultimately reaches the impaired waters of the Zumbro River.

The Project will follow modern BMP and include installation of contemporary runoff infrastructure and collection to route runoff to a treatment basin. New culverts will be designed for 100-year events and existing culverts that are retained will be checked for damage potential and safe path of runoff. This infrastructure will be designed to meet the existing peak runoff to treat the stormwater before it enters the waterways. The Project will result in a design that will reduce the total amount of pollutants from entering the waterways. The system will be designed for an ultimate four- lane section on CSAH 44. Additionally, the Project will replace a failed wetland mitigation sitenorthwest of the existing US 14/CSAH 44 intersection, the extents and level of improvement are to be determined.

Air Quality

The Project will reduce transportation-related air pollution and GHG emissions, as it will significantly reduce vehicle idle times and congestion. The Project is estimated to reduce 52,021 metric tons of Carbon Dioxide (CO2), 50,639 kilograms of Nitric Oxide (NOx), 303 kilograms of Sulfur Oxide (SO2), and 1,061 kilograms of particulate matter that are two and one half microns or less in width (PM2.5) over a 30-year period (Table 3). **The projected air quality savings benefit because of the Project, over 30 years, is over \$2.5 million.**

Table 2 Emissions Reduction

Emission Type	Reduction
CO2 (metric tons)	52,021
NOx (kg)	50,639
SO2 (kg)	303
PM2.5 (kg)	1,061

The Project will integrate ways to advance equitable decarbonization to consider how the benefits and costs of cutting emissions are equitably distributed across different groups. By distributing traffic across a network in a more efficient manner, the Project will improve the overall air quality by reducing traffic delays, idle times, and inefficient traffic movements. By alleviating the currently diverting traffic to West Circle Drive and the US 14/West Circle Drive access point, the Project will improve traffic operations and improve efficiencies along that route. This gain in efficiencies is particularly valuable given that traffic volumes on West Circle Drive were at 90 percent of recommended capacity before the diversion.

The project area is planned as the site of a potential future Park-and-Ride system facility on the west side of Rochester, serving downtown commuters to Rochester from areas west along the US 14 travelshed. This facility once developed has potential to further curtail emissions by providing an easily accessible parking option served by convenient, direct shuttle bus service to Downtown Rochester, resulting in more efficient travel movements to and from the center city, a major regional travel node accounting for approximately 30 percent of the employment in the Rochester urban area. Due to the inefficient operations of existing conditions, approaching vehicles on CSAH 44 must currently stop and wait to enter the US 14 traffic stream, sometimes for inordinately long periods of time. Under existing conditions, there are numerous anecdotal incidents of motor vehicles idling for extended periods of time as they wait for an acceptable gap in mainline traffic on US 14. **By improving this access point into a grade-separated interchange, this Project will address the inefficient idling and reduce associated air pollution and greenhouse gas emissions.**

Additionally, by grade-separating vehicular traffic above the existing CP rail line, motor vehicles will no longer stop and idle at the tracks while waiting for trains to cross, further reducing emissions. By providing for efficient left turn movement at CSAH 44, motorists who currently divert seven miles to West Circle Drive to access US 14 will no longer need to make this indirect travel, thereby reducing emissions associated with travel on stop and signal controlled local roadways. The Project will provide necessary infrastructure to channel traffic in a more fuel-efficient manner.

Electrification

Project design will accommodate US 14's future designation as a Draft Fast Charging Network Corridor, as identified in the <u>Minnesota Electric Vehicle Infrastructure Plan</u>. The Project design will accommodate future electrification framework to support zero-emissions vehicles, in alignment with the goals of Minnesota Climate Action Framework.

Transportation Equity

Local agencies continue to pioneer innovative methods to advance transportation equity. The <u>City of Rochester</u> <u>Sustainability and Resiliency Community Work Plan</u> provides guidance to county staff, elected officials, and residents. The Plan's Accessible Transportation element states, "Access to transportation is a necessity for all, especially community members seeking affordable and accessible options. Our community will work to create a nonpolluting, multimodal transportation network through which residents can easily and safely travel regardless of means, language, or ability." The Project's planning components are responsive to these policy goals which encourage a transportation framework that supports modal equity for the urban community of Rochester as well as neighboring rural townships.

3. QUALITY OF LIFE

The Project will provide numerous Quality of Life benefits, including improving access to daily destinations like jobs, healthcare, schools, houses of worship, and places of recreation (Figure 5), making travel safer, and by adding new facilities that promote walking, biking, and other forms of active transportation. The Project will also improve travel time reliability and traffic flow to one of the nation's preeminent medical centers. The Project will additionally provide an improved noise and emissions barrier to the nearby residential area to the south.

One of the goals listed in the <u>City of Rochester 2040</u> <u>Comprehensive Plan</u> is "Quality of Life is Key." In accordance with this priority, the Project will advance Quality of Life factors, such as community culture, safety, and "things to do." The Project will provide improved multimodal access to more opportunities for connections to recreation, shopping, education, and employment. It will also service residents of affordable housing developments that currently exist in the vicinity of CSAH 44 and 55th St NW, approximately 3 miles north of the project area, and additional planned affordable housing development along east of CSAH 44 on CSAH 4 (Valleyhigh Drive NW).

Project design will include construction of modern multimodal facilities across US 14, thereby advancing public health by adding new facilities that promote walking, biking, and other forms of active transportation.



Figure 5 Surrounding Destinations

Transit

Reliable transit service is a vital component to Quality of Life, particularly as an affordable transportation choice and reduction of automobile dependence for older adults, persons with disabilities, persons of low income, veterans, and youth. By removing the problematic CSAH 44 at-grade access, the Project will improve operations, traffic flow, reliability, and comfort of local and regional transit riders. A range of transit providers depend on safe and efficient transportation services along US 14, including Land to Air Rochester-Owatonna-Mankato, Jefferson Lines, Greyhound, OurBus, Rochester Shuttle Service, and Rolling Hills Transit, a regional provider of dial-a-ride service from small towns in Southeast Minnesota to Rochester including communities west of Rochester such as Byron, Kasson, and Dodge Center. These transit services are utilized by all segments of the population, including many older adults, persons with disabilities, veterans, and persons of low-income

traveling to/from the Mayo Clinic campus for both routine and nonroutine medical care. Additionally, the Mayo Clinic provides transit options to neighboring communities for employment opportunities. **By addressing safety and operational issues along US 14, the Project will improve regional transit users' mobility, access to destinations, and Quality of Life.**

Travel Time to Medical Care

US 14 and the supporting road network are the major eastbound approach to the Mayo Health Systems Campus and its College of Medicine and Science. The Project's improvements to travel time and travel time reliability to this vital corridor will help ensure patients arriving from the west (those seeking both routine and emergency support) receive prompt and timely medical care. The Project will provide safer, more efficient, more reliable service to those seeking direct medical treatment, as well as those seeking medical education at the world-renown Mayo College of Medicine and Science. The projected travel time savings because of the Project, over 30 years, is over \$145 million.

Inequitable Burden of Inefficiencies

Vehicle operating costs are a foundational component of equity. The long-term burdens of inefficient transportation systems are often overlooked and represent a disproportionate burden on persons with low incomes. By addressing inefficiencies in the current project area represented by existing challenges with delay and diversion, the Project will save travelers (many of low income and seeking medical care) millions in vehicle operating costs. **The projected savings because of the Project over 30 years, are approximately \$16 million.**

4. IMPROVES MOBILITY AND COMMUNITY CONNECTIVITY

The Project will construct active transportation facilities where there is currently a severe need, thereby providing numerous mobility and connectivity benefits to the local and regional community. It will improve the safety and comfort of multimodal users (including those walking, rolling, and bicycling) both within and outside the project area, and improve access to transportation, jobs, services, and public amenities. These connectivity improvements will benefit the immediate project location and surrounding communities including those located in urban Rochester and beyond.

Improving a Crossing Barrier

US 14 acts indirectly as an effective barrier for non-motorists intending to travel north-south across US 14. Non-motorists must wait long periods for a gap in traffic and even then, the distance involved in crossing US 14 creates risks to multimodal crossers (e.g., eastbound may be clear to cross, but westbound may not be). Non-motorists who choose to cross US 14 via West Circle Drive interchange must travel over seven miles (calculated by using the north side of the US 14/CSAH 44 intersection as a starting point and the south side of US 14/CSAH 44 as an end point). This results in approximately 35-40 extra minutes of travel for a bicyclist (approx. average speed of 12 mph) and approximately 2 hours of travel for a pedestrian (approx. 3-4 mph).

As development and traffic volumes increase further in the area, safety will continue to be a concern for pedestrians/ bicyclists utilizing the limited shoulder space on existing roadway. Utilizing the shoulder as a walk and/or bikeway is not ideal and presents an impediment for multimodal users. The Project will provide a safe and comfortable gradeseparated multimodal route across US 14, thereby removing a major barrier to community mobility and connectivity.

Multijurisdictional Connectivity Planning

The Project directly advances multijurisdictional efforts to improve mobility and community connections. The <u>Rochester Active Transportation Plan</u> had significant public input related to development of trail and paths within the project area.



Source: MnDNR Stagecoach State Trail Master Plan

The <u>Rochester Parks and Recreation System Plan</u> identifies trail development along Cascade Creek in the project area as a recommendation. This recommended trail specifically would address two potential desires: to provide a connection to reservoirs located upstream on Cascade Creek which could be developed with a nature-oriented park facility, and the Cascade Creek Trail is a potential option for providing connection from the urbanized area of Rochester to the future <u>Stagecoach Trail</u>, which is a Legislatively Authorized State Trail envisioned by the Minnesota Department of Natural Resources (MnDNR) connecting Rochester area to Owatonna area (Figure 6).

The project area is located within the planning boundary of the Rochester-Olmsted Council of Governments (ROCOG). Pedestrian and bicycle facilities are recognized as an important need in the region including identification in the ROCOG 2045 Long Range Transportation Plan (LRTP) (Chapter 12).





Figure 6 Inflow/Outflow Analysis

The project is consistent with ROCOG's LRTP's Complete Streets and Context-Sensitive Design principles. In ROCOG's 2045 LRTP (page 12.17), the <u>Regional Active</u> <u>Transportation System Plan</u> identifies the following as Core Corridors for Upgrade: 7th Street from CSAH 44 and extending east (adequate priority) and CSAH 44 (medium priority). Olmsted County identifies that the US 14/CSAH 44 project including design for 10-foot trails on both sides of the constructed roadways and thereafter development would include dedication and construction of pedestrian/ bicycle facilities. The Project is a foundational cornerstone to a greater multijurisdictional effort to improve mobility and connectivity both within and outside the project area.

Multimodal Destinations

In the immediate vicinity of the project area, there are commercial land uses to the north. To the south, there is large-lot rural residential land use. To the west of CSAH 44, the land use provides agricultural services. The east side of CSAH 44, south of US 14, is characterized by mediumdensity residential land use. On the eastern side of the project area, along West Circle Drive, the growth of the City of Rochester is recognizable with several retail and commercial land uses.

The Project will introduce multimodal infrastructure in an area of immense regional transportation importance. According to the <u>Inflow-Outflow Analysis</u> of the project area, approximately 52,000 people commute into the project area and its surrounding five-mile buffer, and approximately 12,900 people commute out. There are also 28,094 residents who both live and work within the project area and its five-mile buffer (Figure 6).

The <u>EJ Analysis</u> of the area utilizing the Environmental Protection Agency's EJScreen tool of a five-mile buffer around the project area brings into focus a wide range of existing multimodal destinations (Table 3). These destinations are particularly conducive to multimodal travel. **The Project will improve local mobility and connectivity, including connectivity to the below destinations.**

Table 3 Multimodal Destinations

Within five miles of the project area					
23 schools	51 places of worship	9 hospitals			
13 public		12 subsidized			
housing	17 parks	housing			
locations		locations			

Figure 5 in the previous section represents the US 14/CSAH 44 interchange area and the surrounding five-mile buffer. The map depicts the attractive destinations described above.

Transit

The City of Rochester operates the Northwest 408 fixed route line in the neighborhood to the southeast of the project area. Route 408 provides rider connections from the west to the majority of the other public transportation routes throughout the city. **By providing a safer and more efficient interchange at CSAH 44 and US 14, the Project will provide better operations and reliability for future transit needs as the area continues to urbanize and develop.**

Complete Streets Approach

The Project will advance a Complete Streets approach to planning and transportation, with a primary objective of streets serving all modes and abilities. Currently, the roadways only provide infrastructure for vehicular traffic- no sidewalks, bike lanes, or trails are available. **By constructing grade-separated ADA-compliant sidewalks across US 14, the Project will provide much-needed facilities for multimodal users.** The Project's improvements will serve as a critical step toward developing the area's multimodal active transportation infrastructure system that will catalyze and support the future network of affordable transportation options.

5. ECONOMIC COMPETITIVENESS AND OPPORTUNITY

The Project will provide significant benefits to an increasingly widening range of economic opportunities. These opportunities are emergent within the Rochester city core, surrounding communities, and the greater region beyond. The Project will promote economic growth by facilitating improved safety, operations, reliability, and travel times to and from a dynamic regional center of economic activity, employment, shopping, and innovation.

Destination Medical Center



Figure 7 Destination Medical Center Future Planning

Through the project area, US 14 provides major eastbound service to one of the world's preeminent medical campuses, the Mayo Clinic. Mayo is a major international destination and routinely draws considerable motor vehicle traffic from within the region and beyond. The Mayo campus is approximately five miles from the Project location, through which US 14 serves as the primary eastbound route for Mayo's daily commuters and visitors requiring medical care. Mayo is the animating force behind a public-private development initiative known as Destination Medical Center (DMC) (Figure 9). The DMC is anticipated to be a major driver of new jobs in a range of sectors such as retail services, leisure activities, construction, and public services. A primary DMC goal is to add 30,000 new jobs to the city center, which is anticipated to exert significant pressure on the existing transportation system, including CSAH 44 and US 14 within the project area. Daily private vehicle trips in and out of the DMC are anticipated to reach approximately 268,000 trips by year 2040. Additionally, as medium-and long-term macro trends maintain, the age of the average Minnesotan and American will continue to rise, along with a need for associated medical care. Mayo's continued expansion, combined with the increasingly aging population, will increasingly reinforce US 14's economic importance as it is the primary east-west corridor to/from the Destination Medical Center.

PRIVATE VEHICLE TRIPS IN/OUT OF DMC DISTRICT



*Projected vehicle trips in 2040 assuming implementation of DMC and Comprehensive Plan transit and land use programs.

Figure 8 Projected Daily Vehicle Trips

Freight Linkage

Through the project area, US 14 serves as a major commercial freight corridor, servicing 4,800 Heavy Commercial Vehicle Average Annual Daily Traffic (HCAADT) in 2021. This heavy commercial volume is anticipated to increase with nearand long-term economic development initiatives. US 14's optimal performance is essential for major freight interests located within Rochester and the thousands of associated local jobs. The Project will additionally improve commercial freight safety and operations for heavy freight along CSAH 44 traveling southward to access US 14. Businesses in the immediate project area depending on the Project's success include RDO Equipment Company, Michelin, Superior Mechanical, Frito Lay's, Hawk and Sons Crane Services, and American Fence Company, among many others.

Forthcoming Development



Figure 9 Future Land Use

Future development within and adjacent to the project area will be consistent with the <u>Rochester Comprehensive Plan</u> 2040, the policy guidance which informs the future use of parcels within the Rochester Urban Service Area (Figure 11). Several existing land uses in the project area feature mixed use development matching a range of residential densities with commercial and business uses areas.

The Project will improve the connection between land use and transportation by more appropriately aligning the transportation infrastructure with the existing and future land use. The immediate area lacks convenient access to employment opportunities. As such, development has thus far bypassed this area for those better connected to the residential and commercial cores. The Project will create better access to the project area's adjacent development sites, supporting smart growth principles outlined in the City's Planning 2 Succeed Comprehensive Plan.

6. STATE OF GOOD REPAIR

Under a no-build condition, the US 14/CSAH 44 and US 14/West Circle Drive intersections will deteriorate at a quickening pace as traffic volumes continue to rise as forecasted. This will be exacerbated as the immediate and adjacent areas continue develop as outlined in the Rochester Unified Development Code, while currently transformative economic development occurs within the city core and Mayo Clinic's Destination Medical Center. The Project is a major piece of the envisioned multimodal system improvements shared by multiple local and state agencies and is aligned with planned future improvements for nonmotorized users. The Project will include accommodation for the forthcoming expansion of CSAH 44 to a four-lane roadway. Therefore, the Project is a sound investment as it maximizes previous and future investments and the long-term value of both County and State maintained infrastructure.

Operations and Maintenance Plan

A joint operations and maintenance partnership will be accomplished between the County, MnDOT, and appropriate jurisdictions for their respective jurisdictional portions. The County is fully committed to operate and maintain project components within its right of way. MnDOT operates and maintains the 14,000-mile state highway system, and the addition of lane miles due to the Project (via ramps and auxiliary lanes on US 14) represents a very minor increase to their system. Long-term maintenance operations will be performed in partnership based upon the typical maintenance schedule for bituminous roadways.



Graphic Source: MnDOT TAMP

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 <u>Transportation Asset Management Plan (TAMP)</u> in accordance with the 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21) which was updated to its current form in June 2019. 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.

Operations and Maintenance Funding

Olmsted County

The County will operate and maintain the infrastructure portions of the Project within its right-of-way. The County applies varying pavement preservation techniques to its roadway system to maintain it in a state of good repair. Generally, this includes applying three different pavement treatment types which are routine maintenance, pavement preservation, and rehabilitation/reconstruction for maintaining roadways within the County. The County typically funds annual routine maintenance and mill and overlay (pavement preservation) activities through a combination of a portion of the annual property tax that is dedicated to routine street maintenance and municipal state aid maintenance allocation funds. Major roadway rehabilitation and reconstruction is funded by a combination of special assessments (where applicable), general fund levy, municipal state aid construction allocations, and long-term development funds. All sources of the County's funding are stable or growing based upon continued residential and commercial growth.

Minnesota Department of Transportation

MnDOT will operate and maintain the US 14 highway entrance/exit ramps and 7th Street NW overpass portions of the Project. Financial trends indicate that operation and maintenance revenues have slowed compared to previous decades. Consequently, MnDOT is committed to timely investments in capital and preventative maintenance treatments to extend the service life of assets while reducing life cycle costs. Ongoing operating and maintenance costs on the state highway system are funded by taxes and fees from four main revenue sources:

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

7. PARTNERSHIP AND COLLABORATION

Olmstead County is the lead applicant and primary point of contact for this RAISE Grant application. The County officials have significant, proven experience in the successful management and implementation of federal grants, as the County has been chosen to receive about \$31 million in Coronavirus State and Local Fiscal Recovery Funds to promote recovery and provide greater community resilience. With these funds, Olmstead County has invested in affordable housing, tackled the challenges of homelessness, and directed funds to projects such as a new nature center, sewer system upgrades, and critical building restoration/renovations. Olmstead County has been crucial in meaningfully engaging the local community and various stakeholders to understand community need and gather feedback related to the proposed Project improvements.

COMMUNITY ENGAGEMENT PRINCIPLES





Figure 10 Project Open Houses

Public Engagement

In early 2022, Olmstead County initiated the development of a Project-specific Public Involvement Plan as part of the preliminary design and environmental documentation. The County coordinated with MnDOT, CP Railways, ROCOG, the City of Rochester, and the Federal Highway Administration (FHWA) to organize two open house meetings to engage residents and community-based organizations. The purpose was to engage meaningfully with residents and stakeholders so stakeholder input could be incorporated throughout the lifecycle of the Project. During these meetings members of the public were able to view proposed designs for the interchange/overpass as well as provide comments and ask questions (Figure 12). In addition to these public meetings, members of the public were also able to review Project materials and provide comments via an online submittal form. Additionally, Olmstead County conducted a targeted focus group session with several local businesses in the area. The public houses were attended by more than 140 attendees. In total, 59 comments were received regarding the proposed improvements. These comments included support for enhancing the safety and mobility of non-motorized travelers, opposition to the continued temporary closure of the medians at the intersection due to the uptick in heavy truck traffic that has been redirected as a consequence of the closure, and concerns about how water might drain after a potential interchange project is constructed. The vast majority of comments received by the public spoke about the need for some sort of tangible changes to be made to the intersection to improve safety and mobility conditions.

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 that would bring equitable development through public involvement, collaborative problem solving, and would make a visible difference to the rural and urban communities around the project area.

Project Partners

Project work will be led by Olmstead County in close coordination with MnDOT, ROCOG, City of Rochester, and adjacent Townships. These agencies have a long history of successful collaboration and coordination. 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.

8. INNOVATION Innovative Technology

Conduit Deployment

The County adopts a practice of deploying fiber optic conduits and additional lines for County projects. Therefore, for this Project, the County in partnership with MnDOT will install conduits for fiber optics. Conduits may be used for communications/Broadband, Intelligent Transportation Systems (ITS), and/or to assist future Connected and Automated Vehicles (CAV). In today's age of remote/hybrid workplaces, Broadband vastly improves the speed and reliability of internet service, which would in-turn benefit future businesses, employees, and residents who will work and live near the Project. This includes the planned mixed-use development in the project area, a unique development opportunity and area of job growth. Fiber optic networks will guarantee quality internet speeds along the corridor and serve as a reliable communication method for transportation applications such as traditional ITS as well as CAV applications.

Intelligent Transportation Systems (ITS)

The Project reviewed and identified inclusion of 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 14, the County and MnDOT 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 also install 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, ITS elements help to improve safety and reduce congestion when an incident occurs or in the event of poor road or weather conditions (especially frequent in Minnesota during the winter months).

Innovative Project Delivery

MnDOT Construction Management Resources

MnDOT provides construction management services inkind at times to projects that intersect their roadways. This unique partnership between MnDOT and the County, and the supportive service provided by MnDOT helps to streamline construction management and reduced project cost through innovative project delivery.

Civil Information Management Software/3D & 4D Modeling

The Project designers will 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, as well as increase transparency of the project. Transparency enables owners, consultants, contractors, and stakeholders to easily work together. 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 which enables effective conflict detection, rapid design review, and validation. These efforts will reduce the project schedule and overall cost.

Transportation Management Plans for Mitigating Risks

A project-specific transportation management plan (TMP) will be designed and 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.

Innovative Financing

Olmsted County implemented both a 0.5 percent sales tax and \$10 per vehicle annual registration fee to create new, non-federal transportation revenue for the construction of County transportation projects. Both funds produce a total of approximately \$18.3 million annually and could enable the County to provide additional funding should additional local match funds be required following an award of the grant. The County uses its special assessment authority, a power provided to local agencies by the State of Minnesota, to help fund existing and future transportation and utility improvements. This public/ private partnership assigns trunk transportation and utility rates based on individual parcel size, land use, and percentage of impervious surface. These special assessments are typically levied at the time a parcel develops or redevelops, or the property owner can defer with interest to a point in the future when the parcel is developed. This financing opportunity could be utilized for the Project or adjacent supporting infrastructure to the Project such as connections via the local roadway network.

SUPPORTING DOCUMENTS

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

https://www.srfconsulting.com/raise-us14-olmsted/