FUNDING APPLICATION
MINNESOTA HIGHWAY FREIGHT PROGRAM

Application Cover Sheet

Project Name: County State Aid Highway 46 Project from Trunk Highway 3 to US Highway 52

Roadway Project: ☒ **Intermodal Project:** ☐

Roadway: CSAH 46

Project Location: Dakota County **To/From:** CSAH 46 from TH 3 to US 52

Project Length in Miles: 5.1

On the National Highway System (NHS)? ☐ Yes ☒ No

(To see whether your project is on the NHS, go here to view a map of the NHS please visit the Federal Highway Administration website located at: https://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/minnesota/index.cfm)

Applicant: Dakota County

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If the project is located within the area of a Tribal Nation: n/a
Applicants are required to communicate with all Tribal Nations and Governments that may be impacted by a submitted project. It is expected that the applicants will have obtained concurrence or support for each project submitted.

If the project is within any Metropolitan Planning Organization planning boundary: Yes
Applicants are required to communicate with a federally designated MPO if their project is located within an MPO boundary. It is expected that applicants will have concurrence or support for each project submitted.

If the project is within the Metropolitan Council planning boundary:
Indicate which Tier from the Metropolitan Council's Highway Truck Corridor Study it falls on: Tier 1, Tier 2, or Tier 3. (Click here for the study website)

☐ Tier 1

☒ Tier 2

☐ Tier 3

☐ Does not fall on a Tier

If the project does not fall on a tier, but the project itself provides a direct and immediate physical connection to one of these three tiers, describe how it accomplishes this.
N/A

Application Form

FREIGHT PROJECT TYPE

1. **Select only one of the investment categories below** that best describes your project based on its primary purpose or benefit.

☐ **Freight Safety**

This category covers projects that improve the safety of freight movement on highways. Freight Safety projects may be located anywhere in the state. Example project types include:

- Truck parking lots or truck parking information systems
- Railroad at-grade crossing improvements
- Grade separations at/near railroads
- Commercial vehicle weigh station improvements
- Bridge Clearance improvements

☒ **Freight Mobility**

This category covers projects that improve the mobility and efficient movement of freight on highways. Freight Mobility projects must be located on the National Highway System. Example project types include:

- Adding turn lanes or passing lanes
- Turning radius, geometric improvements
- Intersection/interchange improvements
- Long-term pavement repairs
- Capacity increases
- Traffic signal optimization

☐ **First/Last Mile Connections**

This category covers projects that improve access to and from freight-generating facilities. First and Last Mile Connection projects may be located anywhere in the state. Example project types include:

- Improving access to freight-generating facilities or industrial areas
- Upgrading pavement to 10-ton specifications

☐ **Intermodal Project**

This category includes projects that connect multiple modes of transportation and would improve freight movements. This project category may include:

- Railroad intermodal/interconnect improvements
- Airport cargo loading and roadway improvements
- Ports and waterways improvements

PROJECT SUMMARY – ROADWAY PROJECTS

Please limit your responses to a maximum of 35 pages total including all appendices, letters and other attachments.

2. Provide a brief summary of the project that includes the types of improvements, and roads and other transportation facilities affected. If the funding is for an up-scope or add-on to an existing project, differentiate between the total project scope and the freight elements being added.

County State Aid Highway (CSAH) 46 project from Trunk Highway (TH) 3 to US Highway (US) 52 project will reconstruct CSAH 46, an existing Minor Arterial roadway, from a rural two-lane undivided roadway (Figure 1) to a four-lane divided roadway from TH 3 in Rosemount and Empire Township through the CSAH 46/TH 52 interchange in Coates (See Attachment C: Project Layout). The project improvements include:

- reconstructing CSAH 46 to a divided four-lane roadway with a raised center median,
- constructing a trail along the north side of CSAH 46,
- constructing a grade separated crossing of CSAH 46 for the future Vermillion Highlands Greenway (Figure 2),
- constructing roundabouts (RABs) at CSAH 46/TH 52 interchange ramps (Figure 2), and
- implementing access management strategies along CSAH 46 from TH 3 to the CSAH 46/TH 52 interchange.

Figure 1. CSAH 46 existing two-lane rural roadway section.

The project will improve freight travel by reconstructing the 20-year-old roadway, adding additional capacity to address high crash rates and unsafe intersections, and constructing RABs, medians, and eight-foot-wide shoulders along the project corridor. These improvements will eliminate freight inefficiencies, reduce rural highway fatalities, and strengthen rural access to economic opportunities in the Twin Cities area.

Last reconstructed in 2001, CSAH 46 is an A minor expander between TH 3 and Biscayne Avenue and an A minor connector from Biscayne Avenue to US 52 in Coates. The CSAH 46 corridor extends from CSAH 5 (west of I-35) in Lakeville as an A-minor expander east to Biscayne Avenue where it becomes an A minor connector. CSAH 46 remains an A minor connector from Biscayne Avenue east to TH 61 in Hastings. Metropolitan Council (Met Council) through their 2017 Regional Truck Highway Corridors Study identified CSAH 46 from CSAH 23 (Cedar Avenue) to the CSAH 46/TH 52 interchanges as a Tier 3 truck route (score 8.8). The designation was reviewed in the next iteration of the study, 2021 Truck Corridor Study, and CSAH 46 from CSAH 23 to CSAH 46/TH 52 interchange was upgraded to a Tier 2 truck route (score 19.7). This was an increase of 10.9.

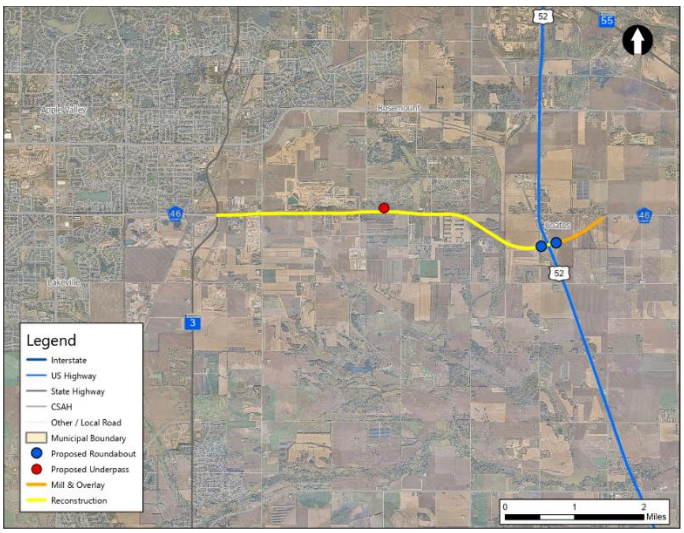

Figure 2. Project location in regional context.

The CSAH 46 corridor provides regional connectivity by connecting I-35 in Lakeville with TH 61 in Hastings. The corridor provides freight access to Dakota Aggregates, Cemstone, Aggregate Industries, UMore Park, and several other commercial businesses. Several of these businesses provide goods to the County as well as the Twin Cities region. The existing project corridor is a two-lane undivided rural roadway with narrow lanes, narrow shoulders, limited turn lanes, and unsafe intersections. West of the CSAH 46/TH 3 intersection, CSAH 46 is a four-lane divided roadway. Reducing CSAH 46 from a four-lane divided roadway to a two-lane undivided roadway at the west end of the project corridor creates mobility and safety issues. Additionally, the existing facility creates conflicts between rural farm equipment and regional truck traffic and generates traffic merge issues at TH 3 and US 52. The intersection safety and delay issues create bottlenecks in the interstate freight supply chain and perpetuate safety issues, which lead to truck travel time delay and reliability uncertainty.

Further, the proposed trail along the north side of CSAH 46 from TH 3 to the CSAH 46/TH 52 interchange will provide an option for non-motorized users to access parts of the CSAH 46 corridor and the City of Coates. Pedestrians and bicyclists currently use the existing shoulders along CSAH 46. Since CSAH 46 is utilized as a freight corridor, walking and biking near truck traffic may not be desirable for all levels of users. These issues will be addressed by constructing a trail on the north side of CSAH 46 and a grade separated crossing of CSAH 46 to provide access to the County's Vermillion Highlands greenway. The Vermillion Highlands greenway will provide a connection between Whitetail Woods Regional Park and Lebanon Hills Regional Park as well as access to adjacent neighborhoods.

The project is well supported by the community as reflected through the letters of support issued by the local businesses and other agencies.

3. Briefly describe how the project is consistent with relevant local, regional and state plans. Applicants are encouraged to consult with their MnDOT District and/or Metropolitan Planning Organization. MPO approval will be required if project is selected for funding.

This project is identified in multiple transportation plans and is consistent with local, regional, and state transportation plan goals, objectives, and strategies.

Local State Plans – Dakota County 2040 Transportation Plan

- Chapter 9, Goal 6: *Expansion of Transportation Corridors*: This goal directs the County to improve the existing transportation system to address emerging deficiencies to address capacity needs to best provide efficient connections. This goal applies to the development of new transportation corridors, lane additions, interchanges and the transit system. The goal identifies current and future estimated expansion needs, defines measures and planned costs of investments, and measures for improvement and expansion of the system.

The project is identified as overcapacity under current (2019) and future (2040) conditions. The project will be expanding CSAH 46 to a four-lane divided roadway from TH 3 to the CSAH 46/TH 52 interchange. The project will maintain a regional east-west corridor, improve mobility of freight, and provide multimodal facilities.

Dakota County Land Use Goals

- Chapter 5, Goal 1: *Support and encourage orderly development*: Support land use patterns that are compatible with the Metropolitan Council's Thrive MSP 2040 and local comprehensive plans. Review city, township, and regional plans for compatibility with County plans and potential impact on County services or facilities.
- Chapter 5, Goal 2: *Support land use and transportation options that create places where people can live without an automobile*: Encourage land use patterns that provide alternatives to automobile use. Support city land use planning efforts to create walkable areas along regional transit corridors and station locations.

Regional – Metropolitan Council's Transportation Policy Plan Thrive MSP 2040

The proposed project relates primarily to these goals and corresponding objectives & strategies:

- Goal A (2.6): *Transportation System Stewardship*: Efficiently preserve and maintain the regional transportation system in a state of good repair. Operate the regional transportation system to efficiently and cost-effectively connect people and freight to destinations. Strategies: A1 and A2
- Goal B (2.7): *Safety and Security*: Reduce crashes and improve safety and security for all modes of passenger travel and freight transportation. Strategies: B1, B4, B5, and B6
- Goal C (2.8-2.11): *Access to Destinations*: Increase the availability of multimodal travel options, especially in congested highway corridors. Increase travel time reliability and predictability for travel on highway and transit systems. Ensure access to freight terminals such as river ports, airports, and intermodal rail yards. Improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically underrepresented populations. Strategies: C1-4, C6-10, C15-17 and C19
- Goal D (2.11-2.12): *Competitive Economy*: Improve multimodal access to regional job concentrations identified in Thrive MSP 2040. Invest in a multimodal transportation system to attract and retain businesses and residents. Support the region's economic competitiveness through efficient movement of freight. Strategies: D1-5
- Goal E (2.12-2.14): *Healthy Environment*: Reduce impacts of transportation construction, operations, and use on the natural, cultural and developed environments. Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles. Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations. Strategies: E1-7
- Goal F (2.14-2.16): *Leveraging Transportation Investments to Guide Land Use*: Focus regional growth in areas that support the full range of multimodal travel. Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement. Encourage local land use design that integrates highways, streets, transit, walking, and bicycling. Strategies: F1, F2, F3, & F5-8

State – MnDOT's Statewide Multimodal Transportation Plan (SMTP)

The proposed project relates primarily to these goals of the SMTP through the project improvements, discussed above:

- Goal 1. To minimize the fatalities and injuries for transportation users throughout the state.
- Goal 2. To provide multimodal and intermodal transportation facilities and services to increase access for all persons and businesses and to ensure economic well-being and quality of life without undue burden placed on any community.
- Goal 4. To enhance economic development and provide for the economical, efficient, and safe movement of goods to and from markets by rail, highway and waterway.
- Goal 9. To provide for and prioritize funding of transportation investments that ensures that the state's transportation infrastructure is maintained in a state of good repair.
- Goal 10. To ensure that the planning and implementation of all modes of transportation are consistent with the environmental and energy goals of the state.
- Goal 14. To promote and increase bicycling and walking as a percentage of all trips as energy-efficient, nonpolluting and healthy forms of transportation.
- Goal 15. To reduce greenhouse gas emissions from the state's transportation sector.
- Goal 16. To accomplish these goals with minimal impact on the environment.

This Project will support modern infrastructure conditions by improving pavement quality, promotes safety by expanding lanes and reconfiguration of intersections, promotes multimodal transportation through the construction of a trail and grade-separated underpass, and promotes efficient freight movement by reducing congestion and crashes while increasing travel time reliability.

4. If applicant is a non-state-aid city or a township, identify the project sponsor that will assist with federal funds.

N/A

5. How does the proposed transportation improvement support freight transportation?

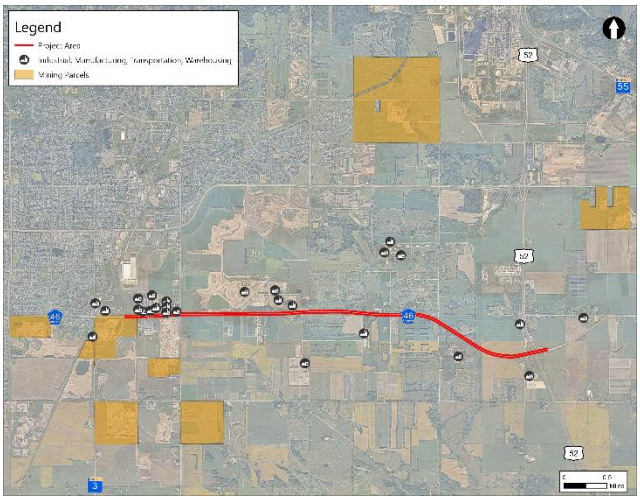

Figure 3. Freight generators along the project corridor.

The Project directly benefits the freight community. The project serves a greater region for east-west connectivity, especially freight movement and overall mobility to access I-35, TH 77, TH 3, TH 52, and TH 61 from Burnsville to Hastings. Along the western segment of the project corridor is a high density of industrial aggregate production (Figure 3). In addition to this industrial base along the corridor, the largest cluster of highly valued freight natural resources in the Metropolitan Council's planning area is located just north of the project (Attachment G). This segment of CSAH 46 traverses through the University of Minnesota's Outreach, Research and Education (UMore) Park (approximately 4,700 acres), that potentially could develop sustainable and economically viable residential, industrial, and commercial uses of the land.

Increasing capacity of the roadway from two to four lanes with wider shoulders and turn lanes will give freight haulers increased free flow speeds, less congestion, increased travel time reliability, eliminate

merge bottlenecks, and improved safety. The Project improvements will increase shipping reliability and reduce costs for freight generators located adjacent to CSAH 46 that utilize the Project corridor.

Traffic volumes are at a capacity deficiency within the Project area. A capacity deficiency exists when actual traffic exceeds the vehicular capacity of the highway. The volume to capacity ratio is an indicator of the congestion of a roadway. A volume to capacity ratio between 0.90 to 1.00 is considered approaching capacity, and a ratio above 1.00 is over capacity. See Table 1 below.

Table 1. Dakota County Highway Capacity Criteria

Roadway Design	1/2 ROW Needs	ADT (Average Daily Traffic) Capacity	90% of Capacity	110% of Capacity
2-Lane Urban	50'	0 to 10,000	9,000	11,000
2-Lane Rural	55'	0 to 10,000	9,000	11,000
3-Lane	60'	10,000 to 18,000	16,200	19,800
4-Lane Divided	75'	18,000 to 35,000	31,500	38,500
6-Lane +	100'	35,000 and over	31,500	38,500

In 2019, the average daily traffic (ADT) volume for CSAH 46 in the project corridor ranged from 15,100 vehicles per day (vpd) to 12,000 vpd. The 2040 traffic projections are estimated to be 21,000 vpd. The capacity for a two-lane segment roadway is 10,000 vehicles per day (vpd). As documented in Attachment F, the current traffic volume exceeds the capacity of CSAH 46 with a volume to capacity ratio of 1.86 and will continue to do so in 2040 under a No-build condition.

Dakota County's policy is to consider expansion improvements, including the addition of through-lanes, as a highway approaches the near capacity threshold of 90 percent of traffic volume capacity. The goals of preservation, management, and replacement are considered a higher priority to ensure existing infrastructure is maintained and managed to maximize safety, function, capacity, and life of the facility before expansion is considered. Dakota County's evaluation of CSAH 46 as part of the 2040 Transportation Plan supports the policy that this segment must be upgraded to a four-lane divided design to improve safety and mobility.

The Project will improve travel time reliability on CSAH 46 as vehicles utilize this major east-west connector as the safer, more direct route through Dakota County. Freight mobility is impacted by the existing geometrics of the roadway. Congestion and collision problems arise from conflicts between traffic entering and exiting facilities competing for gaps in highway traffic. Trucks attempting to enter the roadway face inadequate turning radii and often experience extended wait times to begin the turn. Trucks within the intersections are hindered from moving safely and are often in conflict with other turning vehicles. The four-lane to two-lane merge in the project corridor also creates a mobility bottleneck condition for the movement of freight. Currently, there is 19.6 percent decrease documented in the peak-hour travel speed (37 mph) compared to free-flow conditions (46 mph), at the CSAH 46/TH 3 intersection, as noted in Attachment G.

The improvement to a four-lane divided roadway design not only provides additional through lane capacity but key access control. Building additional lanes for high volume traffic without restricting access spacing results in a costly highway system that does not yield capacity benefits. By constructing the raised median as part of the divided four-lane roadway design, Dakota County's access management approach will minimize the potential safety issues while maximizing system efficiencies.

TRUCK VOLUME

6. What is the Heavy Commercial Average Annual Daily Traffic (HCAADT) for the project location? HCAADT counts for the project area may be identified by MnDOT's Traffic Mapping Application located at: www.dot.state.mn.us/traffic/data/tma.html. If a count is not available from MnDOT, the applicant must obtain one and describe the count methodology.

1,824 (2022)

SAFETY BENEFITS

7. Does your project address a sustained crash location?

☒ Yes. The project location contains a sustained crash problem. Crash data was obtained for the years 2018 through 2022 from the Minnesota Crash Mapping Analysis Tool (MnCMAT). The following are key takeaways which are supported by **Tables 2** through **5**:

- There were a total of 152 crashes along the corridor, 45 were segment related and 107 were intersection related.
- Current crash rate for the segment of CSAH 46 between TH 3 and US 52 is over the statewide average crash rate.
- Three intersections at Barbara Avenue and both US 52 ramps are over the critical crash rate.
- The Barbara Avenue and Biscayne Avenue intersections are over the critical severity rate.
- Within the project area, there were a total of 19 (approximately 13 percent of the total crashes) freight-related crashes in the five-year period (2018-2022).
- A fatal head on crash occurred within the project area occurred in 2020 and resulted in one deaths.
- Three (3) serious injury (A) crashes occurred within the project area between 2018 to 2022.

☐ No

8. Is your project location identified in a district or county safety plan? If yes, identify the plan and provide the risk rating for the location.

Yes, this Project location is identified in Dakota County's County Roadway Safety Plan (2013, see Attachment H). Most of the project is located within the rural corridor segment #46.04, CSAH 46 from Biscayne Ave (MSAS 108) to CSAH 85 (2 out of 5 stars) and is designated as a high priority roadway project. The westernmost segment of the project is located within urban segment #46.03, CSAH 46 from CSAH 31 to Biscayne Ave (MSAS 108) (3 out of 5 stars). Two intersections along the project segment (CSAH 46/MSAS 108 and CSAH 46/CR 81) are also identified as rural intersection projects (1 out of 5 stars). It is important to clarify that this ranking used 2007-2011 analysis years and traffic volume and crashes have both increased significantly along the project corridor in the last 10-plus years.

9. If a truck parking project, how many total truck parking spots are currently available, and how many spots are in use during peak hour?

Name of rest area or parking facility: N/A

Total truck parking spots available	Truck parking spots in use during peak hour	Percentage of spots in use during peak hour
N/A	N/A	N/A

10. Current crash rate (crashes per one million VMT):

MnDOT uses a comparison of the crash rate and the critical rate when determining whether there is a safety issue at an intersection or along a roadway segment. The **crash rate for an intersection** is the number of crashes per million entering vehicles (MEV) and the **crash rate for a segment** is the number of crashes per million vehicle miles (MVM) travelled. The **critical crash rate** is a statistical comparison based on similar intersections or segments statewide. An observed crash rate greater than the critical crash rate indicates that the intersection or segment operates outside of the expected, normal range. The critical index reports the magnitude of this difference.

The crash rate for the project segment is 0.41 (see **Table 4**), which is above the statewide average crash rate for a similar facility. See tables below for intersection crash rates by intersection and severity.

Table 2: CSAH 46 Intersection Crash Rates (All Crashes)

Intersection	Existing Crash Rate	Statewide Average Crash Rate for Similar Intersections	Statewide Critical Crash Rate for Similar Intersections	Critical Index	Estimated Crash Rate After Project	Crash Rate Change
CSAH 46/TH 3 (Robert Tr)	0.54	0.59	0.87	**0.62**	**0.1836**	**-66%**
CSAH 46/Service Rd West Access	0.20	0.13	0.31	**0.66**	**0.068**	**-66%**
CSAH 46/Dakota County Public Access	0.36	0.25	0.55	**0.65**	**0.1224**	**-66%**
CSAH 46/Service Rd East Access	0.04	0.13	0.32	**0.11**	**0.0136**	**-66%**
CSAH 46/Biscayne Ave	0.24	0.51	0.89	**0.27**	**0.0816**	**-66%**
CSAH 46/Station Tr	0.19	0.10	0.30	**0.62**	**0.0646**	**-66%**
CSAH 46/Alverno Ave	0.05	0.10	0.30	**0.16**	**0.017**	**-66%**
CSAH 46/Albata Ave	0.05	0.10	0.30	**0.16**	**0.017**	**-66%**
CSAH 46/Akron Ave	0.28	0.10	0.30	**0.93**	**0.0952**	**-66%**
CSAH 46/Angus Ave	0.19	0.10	0.30	**0.63**	**0.0646**	**-66%**
CSAH 46/Asher Ave	0.24	0.10	0.30	**0.78**	**0.0816**	**-66%**
CSAH 46/Barbara Ave	0.33	0.10	0.30	**1.09**	**0.1122**	**-66%**
CSAH 46/Blaine Ave	0.14	0.10	0.30	**0.46**	**0.0476**	**-66%**
CSAH 46/Clayton Ave	0.09	0.10	0.29	**0.31**	**0.0306**	**-66%**

CSAH 46/US 52 West Ramps	0.52	0.10	0.28	**1.84**	**0.2**	**-62%**
CSAH 46/US 52 East Ramps	0.86	0.10	0.30	**2.86**	**0.14**	**-84%**

Table 3: CSAH 46 Intersection Crash Rates (Fatal and Serious Injury Crashes Only)

Intersection	Existing Crash Rate	Statewide Average Crash Rate for Similar Intersections	Statewide Critical Crash Rate for Similar Intersections	Critical Index	Estimated Crash Rate After Project	Crash Rate Change
CSAH 46/Biscayne Ave	3.95	0.69	4.78	**0.83**	**0**	**-100%**
CSAH 46/Barbara Ave	4.66	0.55	4.92	**0.95**	**0**	**-100%**

Table 4: CSAH 46 Segment Crash Rates (All Crashes)

Segment	Existing Crash Rate	Statewide Average Crash Rate for Similar Segments	Statewide Critical Crash Rate for Similar Segments	Critical Index	Estimated Crash Rate After Project	Crash Rate Change
TH 3 to US 52	0.41	0.35	0.50	**0.82**	**0.14**	**-66%**

Table 5: CSAH 46 Segment Crash Rates (Fatal and Serious Injury Crashes Only)

Segment	Existing Crash Rate	Statewide Average Crash Rate for Similar Segments	Statewide Critical Crash Rate for Similar Segments	Critical Index	Estimated Crash Rate After Project	Crash Rate Change
TH 3 to US 52	1.82	1.41	3.32	**0.55**	**0**	**-100%**

11. Estimated crash rate (crashes per one million VMT) after project: The estimated crash rate for the CSAH 46 segment after the proposed project is 0.14, or a decrease of 66 percent (**Table 4 in Question 10**). The proposed project is expected to reduce the frequency of crashes by 23 to 84 percent at the major intersections along the CSAH 46 corridor (see **Table 2 in Question 10**). This is due to the roadway expansion and roundabout construction. The proposed project will also have a drastic impact on the severity of crashes with a 100 percent reduction predicted at the CSAH 46 intersections with Biscayne Avenue, Barbara Avenue, and along the entire segment of CSAH 46.

12. Method used to calculate estimated crash rate:

Crash Modification Factors (CMFs) were chosen based on the planned roadway improvements in the project. The following CMFs were used: Covert roadway from two lane to four-lane divided and Convert interchange to roundabout interchange. Note, for the roundabout interchange locations, it was assumed that left-turn, angle, head on, and sideswipe opposing crashes are 100% eliminated from the

intersection due to the change in traffic control and intersection design. Those CMFs were then applied to crash values obtained from MnDOT. After calculating the estimated number of crashes after roadway improvements, these values were entered into the MnDOT Intersection Crash Rate calculator.

MOBILITY BENEFITS

13. Please describe any truck reliability or mobility issues at project location:

The undivided two-lane section of CSAH 46 between TH 3 and US 52 presents timing, limited mobility, product quality, and safety reliability issues for freight haulers. The lack of lane continuity, substandard shoulders, short turning radii, cars passing trucks in turning lanes, transit time, etc. were some of the issues identified by freight businesses along the project corridor. These challenges make safety and travel time reliability a common problem throughout the project termini. This situation will only deteriorate, as the County is expected to grow significantly over the next 20 years– adding even more traffic and delay to a two-lane roadway. Unreliable safety conditions also create travel time reliability issues along this segment of CSAH 46, as freight traffic often interacts with inconsistent travel speeds, unsafe pavement conditions, narrow lanes, inadequate shoulders, and crash related delays.

Currently, travel time reliability is low and fluctuates based on time of day, freight traffic demands, and crashes. Per the Metropolitan Council's traffic data analysis, the free-flow travel speed on CSAH 46 at TH 3 intersection is 46 mph. During peak hours the through-traffic travel speed is reduced by 19.6 percent to a speed of 37 mph.

The current pavement section is very thin and does not provide enough structural strength to support heavy commercial vehicles. Additionally, poor pavement condition adds to the limited mobility of freight vehicles, often limiting their ability to transport goods in a time efficient and high-quality manner and causing delivery drivers to travel at reduced speeds. Currently the pavement condition index (PCI) for CSAH 46 from TH 3 to US 52 ranges from 60 to 65. Product quality after travelling along CSAH 46 is unreliable, as freight loads are often damaged by poor pavement conditions. Several freight facilities along the corridor stated their freight loads often shift or bounce along this segment, leading to damaged products and increased cost.

Figure 4. CSAH 46/TH 3 intersection (source: Google Maps).

Freight mobility is also severely impacted by the existing geometrics of the roadway. Trucks attempting to enter the roadway face inadequate turning radii and often experience extended wait times to begin the turn. At intersections such as CSAH 46 and TH 3 trucks have limited movement within the intersection to move safely and are often in conflict with other turning vehicles (Figure 4). The four-lane to two-lane merge in the project corridor, east of TH 3 intersection, also creates a mobility bottleneck condition for the movement of freight.

14. Please describe how your project improves truck travel time reliability at the project location:

The proposed project will expand CSAH 46 from TH 3 to US 52 to a four-lane divided roadway from the existing rural two-lane undivided highway with narrow shoulders and limited geometrics for freight at intersections. Roundabouts at CSAH 46/US 52 intersection ramps will be constructed to provide better and consistent access onto and off of US 52 for freight vehicles. The project will bring the highway up to modern geometric standards with wide shoulders, turn lanes, and reconstructed pavement.

Currently, travel time reliability is low and fluctuates based on time of day, freight traffic demands, and any crashes that may have occurred. During peak hours the through-traffic travel speed is reduced by 19.6 percent to a speed of 37 mph from a free flow speed of 46 mph. Widening the road from two rural lanes to four urban lanes, adding wider shoulders, and installation of RABs will increase travel speeds and reduce safety hazards for all vehicles, allowing for more reliable truck travel times.

The Project specifically addresses pavement quality and product quality for freight users by fully reconstructing the 20-year-old pavement. While the upcoming mill and overlay resurfacing project will address some of the urgent pavement issues as an interim maintenance measure, CSAH 46 corridor has been identified as a full reconstruction project to address the structural integrity of the existing pavement. The travel delay and reliability issues related to crash will also be addressed by implementing safer intersection designs and upgrading the highway to a four-lane divided roadway. Specifically, congestion and delay will be mitigated by not having to close or block the highway to one-way traffic when a crash occurs.

15. Does your project remove a geometric or temporary barrier for freight movement? If so, please select which one:

☐ Low Clearance Bridge

☐ Load Restricted Bridge

☐ Railroad crossing

☐ Roadway prone to flooding

☒ Other – Please specify: Convert two-lane undivided rural roadway to a four-lane roadway with raised center median, construct RABs at CSAH 46/US 52 intersection ramps that are high priority safety and freight access intersections

If "roadway prone to flooding" selected, how many times has it flooded within the past ten years?

n/a

16. Does your project upgrade a roadway to 10-ton standards?

☒ Yes: The Project is reconstructing and upgrading the existing 10-ton roadway and will include additional through lanes with standard wide shoulders and raised median.
☐ No

FREIGHT FACILITY ACCESS

17. Does your project improve access to an existing freight-generating facility or facilities? If so, please provide:

The name of the facility or facilities

Over 20 major freight generators have been identified along CSAH 46. These companies represent a variety of industries from aggregate production, paint products, and agricultural machinery to plastics, food items, and consumer products. Below is a partial list of these businesses including trucking companies that rely on this corridor to transport freight; many have issued letters of support for this project:

- Phil's Body Shop (12 employees, 24 trucks per day)
- Frana Wall Plant (35 employees, 32 trucks per day)
- Bergari Solutions LLC (22 employees, 18 trucks per day)
- Dirt Worx LLC (9 employees, 6 trucks per day)
- Dakota Unlimited (50 employees, 38 trucks per day)
- Dakota Aggregates plant south (30 employees, 750 trucks per day)
- Wells (45 employees, 100 trucks per day)
- Minnesota Paving and Materials, a CRH Company (60 employees, 220 trucks per day)
- Ames Construction Maintenance Facility (76 employees, 76 trucks per day)
- Astro Plastics (50 employees, 28 trucks per day)
- The Mulch Store (8 employees, 50 trucks per day)
- Amish Furniture Showroom Minnesota (18 employees, 16 trucks per day)
- Alpha Construction Public Self Haul Drop Site (20 employees, 35 trucks per day)
- NITTI (86 employees, 125 trucks per day)
- CEMSTONE (60 employees, 200 trucks per day)
- AAA auto parts (48 employees, 75 trucks per day)
- Quala - Polar Service Centers (15 employees, 85 trucks per day)

How your project improves access to the facility or facilities

The freight businesses along the project corridor were interviewed by the County. The freight operators identified significant mobility and safety issues for trucks traveling in the corridor due to the lack of lane continuity, substandard shoulders, short turning radii, and safety issues, among several other challenges. The roadway was identified by every business interviewed as key to receiving inputs to production and shipping manufactured goods to the market. The businesses also identified transit time or speed as the most important transportation challenge in the corridor (see letters of support). Expansion to a four-lane divided roadway facility will address the existing mobility bottleneck as well as the safety concerns. The project will bring the highway up to modern geometric standards with wide shoulders, turn lanes, and reconstructed pavement.

What good or commodity the facility produces/handles

Companies along the corridor represent a variety of industries such as aggregate, asphalt, and concrete production plants, domestic and industrial waste collection and recycling, auto parts supply stores, plastic production plant, furniture manufacturing and showroom, truck overnight parking yards, etc. Most of these facilities produce or handle heavy machinery on a daily basis.

Daily truck load equivalents entering and exiting the freight facility or facilities

The total daily truck load equivalents directly entering and existing the project area from freight facilities is 1878 vehicles. The counts were collected from the businesses located along CSAH 46 in the project corridor and are listed under **Question 17, part A** – name of the facility or facilities.

ADDITIONAL INFORMATION

18. If **outside** the urbanized area of a Metropolitan Planning Organization, which of the following does your project and project location satisfy? Please check the box. You may select more than one.

Check	Item
☐	Rural principal arterial roadway with a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks
☐	Provides access to energy exploration, development, installation, or production areas
☐	Connects the Interstate System to facilities that handle more than: • 50,000 20-foot equivalent units per year; or • 500,000 tons per year of bulk commodities;
☐	Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility
☐	Connects to an international port of entry
☐	Provides access to significant air, rail, water, or other freight facilities
☐	Corridor that is vital to improving the efficient movement of freight of importance to the economy of the State.

19. If **within** the urbanized area of a Metropolitan Planning Organization, which of the following does your project and project location satisfy? Please check the box. You may select more than one.

Check	Item
☐	Connects an intermodal facility to the Interstate System or a different intermodal freight facility.

Check	Item
☐	Located within a corridor of a route on the Primary Highway Freight System [1] and provides an alternative highway option important to goods movement
☒	Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land
☐	Corridor that is important to the movement of freight within the region, as determined by the MPO or the State

ENVIRONMENTAL JUSTICE AND EQUITY

MNDOT is committed to an equitable transportation system. Please respond to the following questions with as much information and detail as possible.

30. Please describe the potential impacts of the proposed project upon Tribal/Indigenous, low-income populations and/or communities of color?

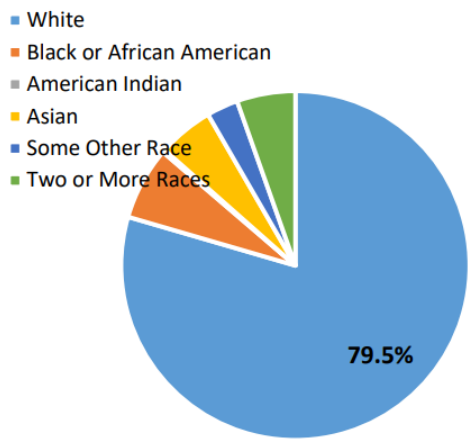

Figure 5. County Population by Race

Dakota County has studied the potential impact of the proposed project upon underserved communities (Tribal/Indigenous, low-income populations and/or communities of color) in the area. According to the US Census Bureau 2017-2021 ACS results, Dakota County has approximately 32,737 Hispanic/Latino, 22,372 Asian, 29,461 Black/African American, and 1,084 American Indian residents, although not within the project area. Within five miles of the project corridor are 28 schools, six places of worship, no healthcare facilities, 11 public housing facilities, and five subsidized housing sites with 94 rental units providing services and housing for low income, persons with disabilities, and youth/ elderly populations (see Attachment G). The Project improves a regionally significant corridor and provides direct economic, safety, and social benefits to these diverse populations. The County finds no adverse impacts to these populations due to distance from the project area.

[1] https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/minnesota.htm

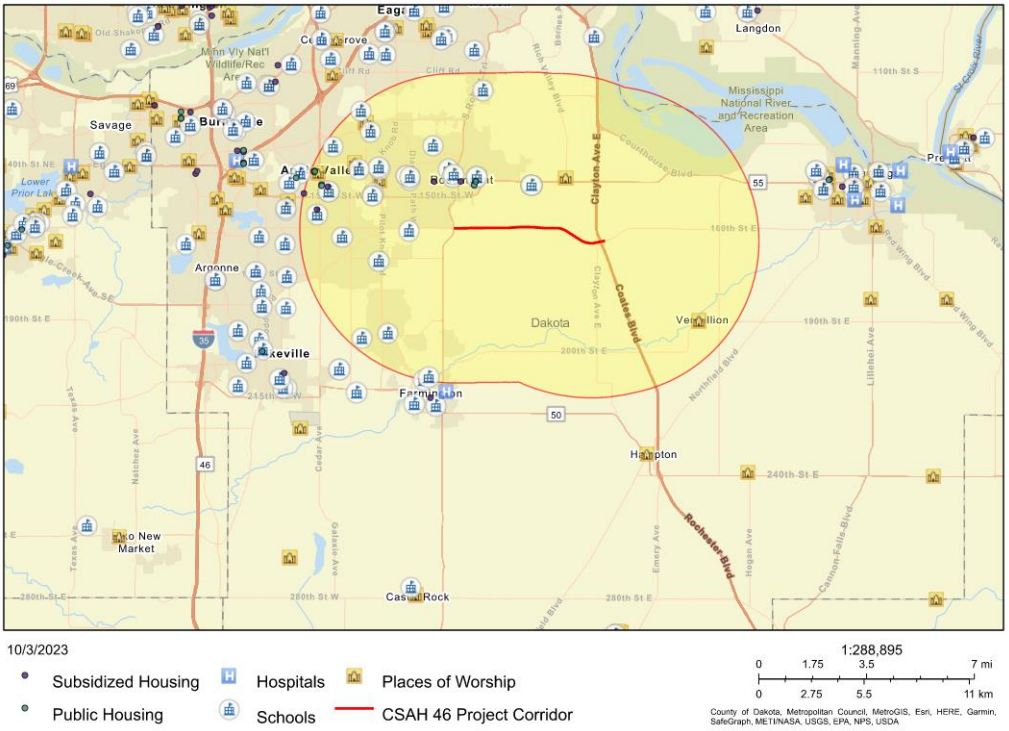

Figure 6. Everyday destinations within five miles of the project corridor.

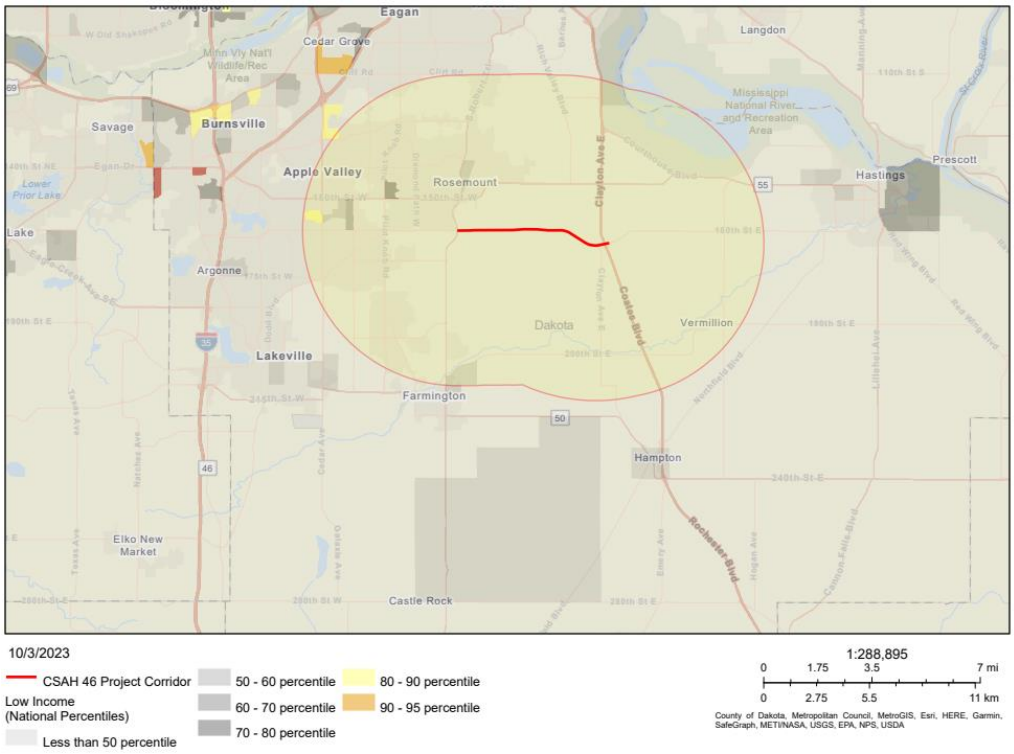

Figure 7. Low-income population within five miles of the project corridor.

31. Have you integrated feedback, consultation, or input into the development of the project from any sensitive or overburdened communities that it may impact?

Yes. In the Fall 2020, Dakota County and the cities of Coates and Rosemount and Empire Township partnered on the preliminary design of the CSAH 46 expansion to four-lanes from TH 3 to the CSAH 46/TH 52 interchange. As part of the preliminary design kickoff, the project team mailed out an introduction letter. As part of the letter, residents were encouraged to visit the project website to provide input on issues/concerns they were seeing along the corridor. This information was incorporated into the corridor operations review and roadway alignment. The County utilized its social media account to reach additional members of the community. Two public information meetings have been conducted in Spring and Summer of 2022, to gather feedback on concept layout and preliminary design, respectively.

32. What steps have you taken to ensure that these communities are not disproportionately impacted by your proposed project?

There has been significant effort to reach out to surrounding underserved communities within five miles from the project area, however the project location is adjacent to rural agricultural land uses and does not directly impact the underserved communities. The County will continue to avoid or at the very least, strongly mitigate any potential negative impacts from the project through frequent and direct communication with the communities, specifically low-income and minority populations. Project information is continuously shared with the public to gather their feedback and identify any potential issues not already known.

33. Describe the project's benefits to the communities it may impact including Tribal/Indigenous communities, low-income populations and/or communities of color, children, people with disabilities, and the elderly.

The proposed project will provide several benefits to the underserved communities by improving access, safety, and efficiency for residents travelling to the Twin Cities for employment, healthcare, or education. In addition to addressing the current safety challenges along CSAH 46, the project will:

- construct a trail along the north side of CSAH 46 from TH 3 to the CSAH 46/TH 52 interchange,
- construct roundabouts at both ramps at the CSAH 46/TH 52 interchange, and
- construct a CSAH 46 grade separated crossing that will be incorporated into the County's Vermillion Highlands Greenway system that will eventually connect Lebanon Hills Regional Park with Whitetail Wood Regional Park.

CSAH 46 will be reconstructed as a divided four-lane roadway. The median will provide access management and reduce the potential vehicle and pedestrian and/or bicyclist conflicts which will lead to improved safety and mobility for all users, including underserved communities. The center median will reduce the total distance a non-motorized user must travel to cross traffic lanes by providing a median refuge and providing a safer crossing.

The expansion of CSAH 46 to a divided four-lane roadway between TH 3 and the CSAH 46/TH 52 interchange will help maintain the mobility and safety of freight along the corridor. Depending on the destination of freight vehicles, the CSAH 46 corridor may see additional vehicles utilize the corridor to

deliver their goods. Expanded capacity along CSAH 46 will result in a safer commute for workers, with increased travel time reliability, fewer crashes, and decreased congestion for the 3,241 workers in the County who live within one mile of the project corridor.

SUSTAINABILITY AND EMISSIONS

Please answer each of the following questions with a short qualitative narrative to describe how the project improves sustainability:

34. Will the project increase freight efficiencies? Potential freight efficiencies might include improvements that decreasing idling, increasing freight fluidity, and intermodal connectivity, reduce deadhead miles, out-of-route miles, or other efficiency strategies that reduce environmental impacts.

Yes, the project will increase freight efficiencies through improvements that decrease idling and improve efficiencies in movement of goods. The project improvements incorporate RABs at the TH 52 ramps. This will lead to reducing the average user cost of delay for heavy commercial vehicles by approximately 15 percent by 2040. Similarly, air quality emission benefits associated with this improvement are anticipated to realize a similar reduction.

The project will improve environmental sustainability by reducing congestion. The construction of an additional lane in each direction will also lead to bypass opportunities for crash and winter operation-related delays.

35. How will the proposed project impact emissions? If you have quantitative data, please summarize the assumptions used to estimate how the project would impact emissions. Please list the outputs of any GHG emissions tools that you used in scoping, environmental analysis, or preliminary design.

The project reduces greenhouse gas (GHG) emissions by promoting pedestrian and bicycle travel with the installation of the multi-modal trail on the northside of CSAH 46. Pedestrians and bicyclists will experience increased safety with an off-road trail and a grade separated crossing connecting to Vermillion Heights Greenway. As part of sidewalk construction, all sidewalks and curbs within the Project area will also be upgraded to meet ADA requirements. This will lead to increased sustainable and multimodal options for the roadway users and a decrease in vehicular dependence.

Additionally, Dakota County intends to expand their current Fast-Charge Electric Vehicle (EV) Charging Station facility along the project corridor to include community use at the County's Empire Shop (2800 160th Street, Rosemount, MN 55068) which currently has one existing EV station. Two additional EV stations are planned to be installed at the Public Works facility located in the Project area. These fast-charge stations (fully charging in approximately 30 minutes) will encourage the use of EV, ensure commuters utilizing CSAH 46 have accessible and convenient access to charging stations, and reduce vehicle-related emissions within the project area.

The Project promotes environmental benefits to the area by remediating potential contaminants within the area adjacent to CSAH 46 where the right of way acquisition occurs. During World War II, the U.S. Army operated a munitions facility on the site that became UMore. The facility used a series of concrete structures, called T-walls, to support the solvent recovery buildings (Figure 8). These structures

contained asbestos. The University of Minnesota is working with Dakota County and the U.S. Army Corps of Engineers to evaluate and assess the property for remediation. The University's 2009 cleanup removed surficial asbestos on either side of CSAH 46. Dakota County has contracted with environmental and remediation experts for the potential removal of two rows of the T-Walls, with removal and remediation costs included in the project estimate. The continued cleanup of this existing condition as part of the project will follow all recommended remediation from the environmental agencies as outlined in the project's environmental analysis and alternatives available upon request from the County's Transportation Department.

Figure 8. T Walls from old WWII gunpowder manufacturing site within project corridor.

36. If the project involves construction, what mitigation practices will be used (select all the apply):

☒ Full Depth Reclamation (FDR)

☐ Cold In-Place Recycling (CIR) and Cold Central Plant Recycling (CCPR)

☐ Warm-mix asphalt

☐ Recycled concrete aggregate

☐ Increase in overall wetlands, tree cover, or planted area

☐ Other, please describe: _____Click here to enter text.

PROJECT READINESS

In the following questions, select the option that best describe the level of project development at the time of application. These questions are designed to assess potential risks to the deliverability of the project within the timeframe of the program.

Environmental Documentation

20. Which type of environmental document is required for this project?

☐ Environmental Impact Statement (EIS)

☒ Environmental Assessment (EA)

☐ Categorical Exclusion (CatEx)

21. What is the status of the document?

☒ Document in progress; environmental impacts identified

☐ Environmental impacts identified

☐ Document not started

Anticipated date or date of completion/approval: July 2025

Review of Section 106 Historic Resources

22. What is the status of the review of historic/archeological resources?

☐ No known historic properties eligible for or listed in the National Register of Historic Places are located in the project area, and project is not located on an identified historic bridge

☒ Historic/archeological review underway; determination of "no historic properties affected" or "no adverse effect" anticipated

☐ Historic/archeological review underway; determination of "adverse effect" anticipated

☐ Unsure if there are any historic/archeological resources in the project area

Anticipated date or date of completion of historic/archeological review: November 2020

23. Is the project located on an identified historic bridge?

☐ Yes

☒ No

Review of Section 4f/6f Resources

Section 4f deals with project impacts to public parks, public wildlife refuges, public golf courses, wild and scenic rivers, or historic properties. Section 6f deals with project impacts public parks, public wildlife refuges, public golf courses, wild and scenic rivers, or historic properties that were purchased or improved with federal funds.

24. What is the status of the review of Section 4f/6f resources?

☐ No Section 4f/6f resources are located in or adjacent to the project

☒ Section 4f resources are present within the project area, but no adverse effects

☐ Project impacts to Section 4f/6f resources likely--coordination/documentation has begun

☐ Project impacts to Section 4f/6f resources likely--coordination/documentation has not begun

☐ Unsure if there are any impacts to Section 4f/6f resources in the project area

Right of Way

29. What is the status of right of way acquisition for the project?

☐ ROW, permanent or temporary easements not required

☐ ROW, permanent or temporary easements has/have been acquired

☐ ROW, permanent or temporary easements required, offers made

☐ ROW, permanent or temporary easements required, appraisals made

☒ ROW, permanent or temporary easements required, parcels identified

☐ ROW, permanent or temporary easements required, parcels not identified

☐ ROW, permanent or temporary easements identification has not been completed

Anticipated date or date of acquisition: March 2028

Railroad Involvement

30. What is the status of railroad involvement in the project?

☒ No railroad involvement on project

☐ Railroad Right-of-Way Agreement is executed (include signature page)

☐ Railroad Right-of-Way Agreement is required; Agreement has been initiated

☐ Railroad Right-of-Way Agreement is required; negotiations have begun

☐ Railroad Right-of-Way Agreement is required; negotiations have not begun

Anticipated date or date of executed agreement: n/a

Construction Documents/Plan

31. What is the status of the construction plans?

☐ Construction plans completed/approved (include signed title sheet)

☐ Construction plans submitted for review

☒ Construction plans in progress; at least 30% complete

☐ Construction plans have not been started or are less than 30% complete

Anticipated date or date of completion of plans: January 2028

Letting

32. Anticipated letting date: April 2028

PROJECT FUNDING

33. Complete the table below with all requested, secured and expended funding sources. Put the amount you are requesting from the Minnesota Highway Freight Program in the first row. Additionally, please identify a funding gap, if applicable, and the overall total project cost.

Requested/Secured/Expended Funding Sources

Funding Source	Funding Type (State, Federal, Local)	Amount	Status (Requested, Secured, Expended)
Minnesota Highway Freight Program	Federal	$10,800,000	Requested
Regional Solicitation	Federal	$10,000,000	Soon to be requested
Dakota County	Local	$20,800,000	Secured

+

Funding Gap (if any):	$0

=

Total Project Cost:	$41,600,000

34. Requested Funding Fiscal Year(s) (if flexible on funding year, identify preferred and alternate years):

Preferred: 2028

Alternate: 2027

REQUIRED ATTACHMENT CHECKLIST

- A resolution or clear letter of support indicating the governing body's approval of this application and commitment of the match funding identified in the application – Attachment A
- A map or maps showing the project location – Attachment B
- A project layout or conceptual drawing – Attachment C
- Letter of support from the metropolitan planning organization (MPO) if applicable – Attachment D
- Letter of support and/or approval from the Tribal Nation if applicable – n/a
- Letter of support from roadway system owner, if not applicant – Attachment E

Attachment A

BOARD OF COUNTY COMMISSIONERS
DAKOTA COUNTY, MINNESOTA

September 26, 2023 | Resolution No. 23-428

Motion by Commissioner Hamann-Roland | Second by Commissioner Atkins

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Authorization To Submit And Accept Grant Funds For 2023 Minnesota Highway Freight Program For County State Aid Highway (CSAH) 46 From Trunk Highway (TH) 3 To US 52, County Project (CP) 99-13, And CSAH 71 Project From CSAH 73 to 117th Street E In Inver Grove Heights (CP) 71-017

WHEREAS, the Minnesota Department of Transportation is requesting project submittals for the Minnesota Highway Freight Program (MHFP); and

WHEREAS, the MHFP grant program funds up to 80 percent of project construction costs; and

WHEREAS, the County State Aid Highway (CSAH) 46 two-to-four lane expansion project, County Project 99-013, and the CSAH 71 modernization project, County Project 71-017, will improve freight mobility and capacity, accommodate future growth, support economic development opportunities, promote safety, and enhance multimodal connections; and

WHEREAS, federal funding of projects reduces the burden on local taxpayers for regional improvements; and

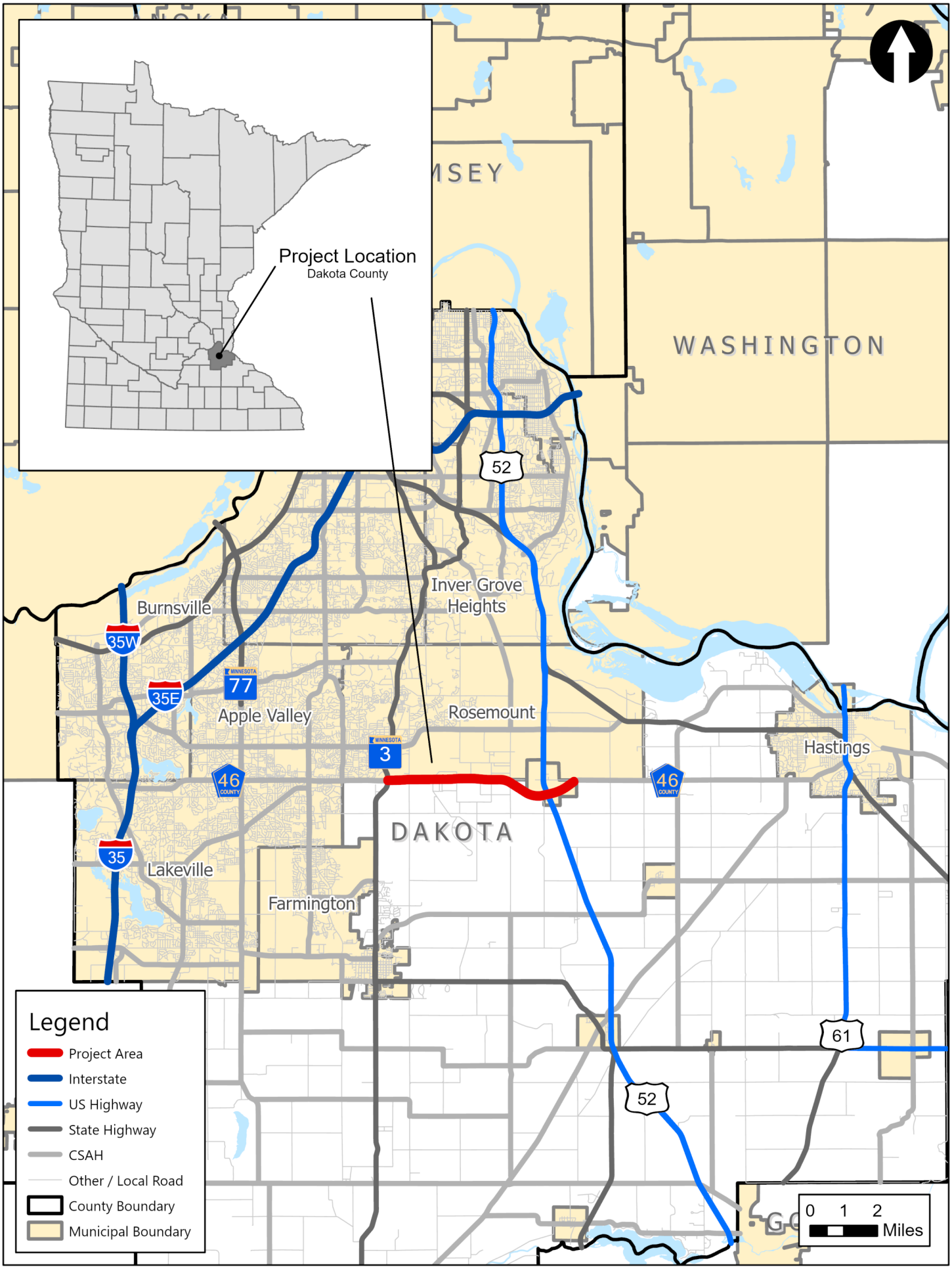
WHEREAS, project submittals are due on October 13, 2023; and

WHEREAS, all projects proposed are consistent with the adopted Dakota County 2040 Transportation Plan; and

WHEREAS, subject to federal funding award for the CSAH 46 two-to-four lane expansion project, County Project 99-013, and the CSAH 71 modernization project, County Project 71-017, the Dakota County Board of Commissioners would be asked to consider authorization to execute a grant agreement at a future meeting.

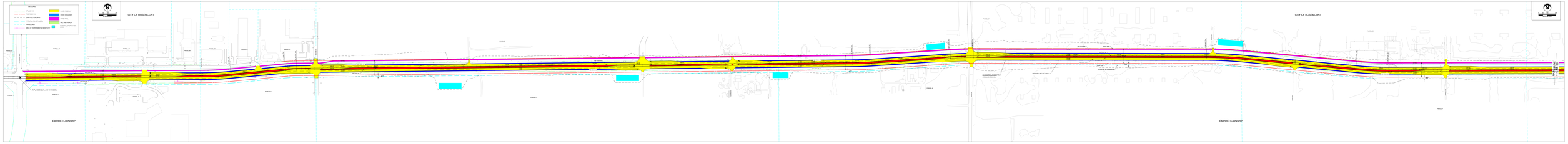
NOW, THEREFORE, BE IT RESOLVED, That the Dakota County Board of Commissioners hereby authorizes the submittal of County Project 99-013, the County State Aid Highway (CSAH) 46 two-to-four lane expansion project from Trunk Highway 3 to US 52, and County Project 71-017, the CSAH 71 modernization project from CSAH 73 to 117th Street E to the Minnesota Department of Transportation for the Minnesota Highway Freight Program and authorizes the Physical Development Director to accept grant funds, if awarded, and execute grant agreements subject to approval as to form by the Dakota County Attorney's Office.

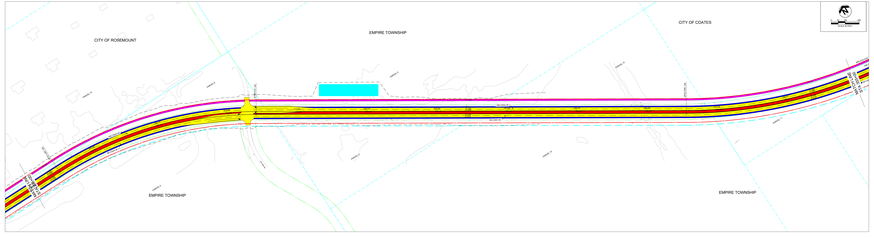
Attachment B

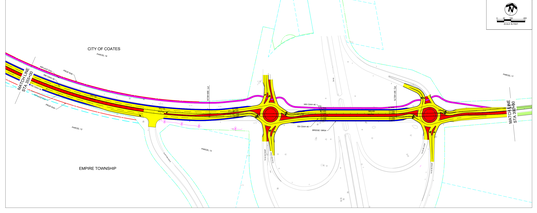


Attachment B

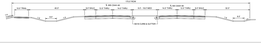
Attachment C







PROPOSED TYPICAL SECTION



CSAH 46 EXPANSION
PRELIMINARY DESIGN
APRIL 14, 2022

Dakota transportation we get you there

ROSEMOUNT MINNESOTA

EMPIRE TOWNSHIP MINNESOTA

DEPARTMENT OF TRANSPORTATION

TKDA

Attachment D

METROPOLITAN
COUNCIL

September 15, 2023

Robert Clarksen
Manager, Minnesota Highway Freight Program
MnDOT Office of Freight and Commercial Vehicle Operations
395 John Ireland Boulevard, Saint Paul, MN 55155

Mr. Clarksen:

As the region's metropolitan planning organization, the Metropolitan Council is pleased to support Dakota County's County State Aid Highway 46 Project from Trunk Highway 3 to US Highway 52 in Rosemount for consideration under the Minnesota Highway Freight Program. This project will address safety and mobility needs for increasing traffic volumes and the high amount of heavy commercial vehicle traffic.

Within the region, CSAH 46 is essential to commuters, transit riders, freight movement, and residents. It is a Tier 2 Regional Truck Freight Corridor. Additionally, this project will modify the interchange access ramp at US 52 with roundabouts to help eliminate right-angle crashes at this location. A multiuse trail will also be constructed along the north side of CSAH 46 with the incorporation of a new trail underpass connecting to the Vermillion Highlands Greenway.

The County State Aid Highway 46 project integrates needed safety and mobility improvements on a critical freight corridor. The Metropolitan Council is committed to amending the Transportation Improvement Program and long-range transportation plan, as needed, to include this project. We are in full support of Dakota County's grant application and look forward to working with the county and all other project partners.

Sincerely,

Charles Carlson (Sep 19, 2023 08:24 CDT)

Charles Carlson
Metropolitan Transportation Services Executive Director
Metropolitan Council