

## 2.0 PURPOSE OF AND NEED FOR ACTION

### 2.1 PROJECT HISTORY

The need for capacity improvements on the interregional transportation system connection between I-94 and TH 10 was initially identified during a study completed by Mn/DOT in 1996. This study, *Mississippi River Crossing Study* (1996 Study), identified existing and future congestion and safety issues on the I-94 and TH 10 corridors between the southeast St. Cloud and the northwest Twin Cities metropolitan areas and the highways that connect them. The findings of the *1996 Study* and the four corridors recommended for further study were the basis for the *I-94/TH 10 Regional Connection Scoping Document* (1997 Scoping Document) for this DEIS, including the need statement and alternatives. The major findings of the 1996 Study, as summarized in the 1997 Scoping Document included:

- Areas of existing and forecast (year 2015) congestion were identified on the I-94 and TH 10 corridors, as well as on the river crossing corridors that connect them.
- Existing congestion is worst during periods of peak recreational demand (e.g., Friday and Sunday nights during the summer months). However, congestion during weekday peak periods is projected as development continues to occur in the region.
- Identification of the major travel origins/destinations (O/D) on TH 24 and TH 25 as being to/from the northwest, with the most efficient interregional transportation link between I-94 and TH 10 having a north-south orientation.
- The O/D studies found that the TH 24 weekday travel patterns serve long interregional trips in contrast to TH 25 which had a higher percent of local trips. This supports the conclusion that diversion from TH 25 would be more likely to occur with weekend, rather than weekday, travel.
- Increasing urbanization of Wright and Sherburne counties will result in more local river crossing demand. To maintain interregional mobility and safety, there is a need to separate long-distance regional trips from local trips.
- Identification of existing and forecast safety issues related to high traffic volumes and congestion, especially on the TH 24 and TH 25 corridors.
- Identification of four corridors to be considered for an improved I-94/TH 10 interregional connection – located between Becker and St. Cloud. Identification was based on the results of benefit/cost comparisons of transportation system improvement alternatives to the No-Build scenario.

The congestion issues on I-94 and TH 10 identified in the 1996 Study are separate corridor capacity issues from the need for an improved connection between the two corridors. The capacity issues on I-94 and TH 10 have been addressed in subsequent statewide Interregional Corridor (IRC) studies completed since the 1997 Scoping Document. These studies and their relationship to the proposed I-94/TH 10 Interregional Connection project are described in Section 2.2.2. Because the congestion issues on I-94 and TH 10 identified in the 1996 Study have been addressed in recommendations of the statewide IRC studies, the focus of the project identified in the 1997 Scoping Document and in this DEIS remains the interregional transportation system connection between I-94 and TH 10 in the area between Becker and St. Cloud.

## **2.2 NEED FOR THE PROPOSED IMPROVED I-94/TH 10 INTERREGIONAL CONNECTION**

As described previously, the need for an improved connection between I-94 and TH 10 was initially established in a comprehensive transportation study completed by Mn/DOT in 1996. This same study was the basis for establishing the project need for an improved I-94/TH 10 connection in the 1997 Scoping Document. Since that time, additional transportation studies and forecasting have reconfirmed and strengthened the need for improvements to the interregional transportation connection between I-94 and TH 10. The sections below compile the findings of the studies from 1996 to the present that establish the need for an improved connection between I-94 and TH 10.

### **2.2.1 Increasing Travel Demand**

The 1996 Study documented future increases in travel demand and congestion on I-94, TH 10 and the connections between them. The regional forecasts for the study area were updated during the DEIS studies for existing (2000), year 2025, and year 2040 (approximately 20 years following the anticipated year of project completion). Table 2.1 summarizes the existing, 2025 and 2040 traffic volumes (average weekday traffic) and volume/capacity ratios (V/C) for the river crossing corridors in the vicinity of the study area, based on analyses using the regional forecasting model for the I-94/TH 10 corridor area. (Note: The 2040 No-Build modeling includes the proposed 33rd Street river crossing in St. Cloud and the proposed Dayton-Ramsey crossing in the northwest Twin Cities metropolitan area, to represent a ‘best case’ of meeting future No-Build crossing demand without a regional crossing.) Table 2.1 shows that existing crossings in the vicinity of the proposed I-94/TH 10 connection are currently uncongested (i.e., V/C is 1.0 or less), except for the TH 25 crossing in Monticello, which has a strong local demand and less of an interregional crossing demand. The 2025 No-Build results (without the 33rd Street or Dayton-Ramsey crossings) show all crossings as being congested, indicating insufficient crossing capacity in 2025. The 2040 No-Build results show essentially all crossings as being congested, indicating insufficient crossing capacity in 2040, even if the 33rd Street and Dayton-Ramsey crossings were built. Table 2.2 summarizes the forecast daily hours of congestion for 2000, 2025 and 2040 conditions. This data indicates substantial periods of delay would result in the future under No-Build conditions.

**TABLE 2.1  
DAILY SCREENLINE VOLUMES AND  
MAXIMUM VOLUME/CAPACITY RATIOS**

Crossing	Daily Screenline Volumes			Maximum Volume/Capacity Ratios <sup>(1)</sup>		
	2000	2025	2040	2000	2025	2040
33rd Street	--	--	54,600	--	--	1.8
TH 24	13,200	33,900	34,500	0.7	1.7	1.6 <sup>(2)</sup>
TH 25	23,800	42,100	46,300	1.2	1.9	1.8
CSAH 42	6,600	22,100	7,400	0.8	2.0	0.8 <sup>(3)</sup>
TH 101	40,300	55,400	114,000	1.8	2.6	1.4 <sup>(3)</sup>

<sup>(1)</sup> Maximum volume/capacity = v/c during the peak hour of travel in each corridor.

<sup>(2)</sup> 2040 v/c is lower than 2025 v/c due to construction of the 33rd Street bridge in St. Cloud, which decreases peak hour v/c in the TH 24 corridor.

<sup>(3)</sup> 2040 v/c is lower than 2025 v/c due to assumed construction of the Dayton-Ramsey crossing and implementation of capacity improvements on TH 101 (i.e., conversion to freeway).

**TABLE 2.2  
DAILY HOURS OF CONGESTION**

Crossing	Daily Hours of Congestion <sup>(1)</sup>		
	2000	2025	2040
33rd Street	N/A	N/A	6
TH 24	--	6	7
TH 25	7	9	9
CSAH 42	--	6	1 <sup>(2)</sup>
TH 101	7	10	6 <sup>(2)</sup>

<sup>(1)</sup> Daily hours of congestion = number of hours per weekday when v/c is >1.0.

<sup>(2)</sup> 2040 hours of congestion are lower than 2025 for CSAH 42 and TH 101 due to assumed construction of the Dayton-Ramsey crossing and implementation of capacity improvements on TH 101 (i.e. conversion to a freeway).

### 2.2.2 Interregional Corridor (IRC) Conformance

Interstate 94 and TH 10 are state principal arterials and National Highway System (NHS) routes that provide important links between the Twin Cities and St. Cloud metropolitan areas. Beyond St. Cloud, both of these routes continue to provide important links to regional centers (e.g., Brainerd, Detroit Lakes, Alexandria and Fargo-Moorhead). In 1999, the *Statewide Interregional Corridor Study* (IRC Study) established the concept of an IRC system to enhance safety and timely travel between regional trade centers within the state. The study also identified specific corridors, their classifications and performance criteria for each classification. Interstate 94, TH 10 (north of the interregional connection) and TH 24 (between I-94 and TH 10) were all classified as high priority IRC corridors in the study. Based on this classification, the corridor management goals for these high priority corridors include a minimum target speed performance of 60 mph. The statewide IRC system identified in the IRC Study, including implementation strategies identified in the study, was adopted by Mn/DOT in 1999.

Individual corridor management plans were developed for seven IRC corridors, including three corridors (I-94, TH 10 and TH 24) located within the DEIS study area. The corridor study limits and findings pertinent to the proposed I-94/TH 10 Interregional Connection are summarized below:

*I-94 Interregional Corridor Plan* – from the City of Maple Grove (I-494) to Collegeville Township (west of St. Cloud) was completed in March 2002 to establish an overall long-term corridor vision for I-94 that would meet the IRC performance goals. It included recommendations for an improved-capacity interregional connection between I-94 and TH 10 between Becker and St. Cloud and additional lane capacity on the I-94 mainline (e.g., ten lanes from I-494 to Rogers, eight lanes from Rogers to Monticello and six lanes from Monticello to the location of the interregional connection). In addition, it made recommendations for local supporting arterial systems to limit shorter trips on I-94.

*Highway 10/Highway 24 Interregional Corridor Study* – from TH 10 at TH 371 (Little Falls) to TH 24 at I-94 (Clearwater) was completed in May 2002 and addresses corridor needs forecast through 2025. Analysis performed for the study indicate that by 2025 the average speed for the entire corridor (TH 10 and TH 24) would be 51 miles per hour, but that the TH 24 segment would create the greatest limit to travel, with an average speed of 27 miles per hour in 2025. The study also defined an overall long-term corridor vision for TH 10/TH 24 that would meet the overall IRC performance goals (including a goal of maintaining an average speed of 65 miles per hour for the corridor) as well as address safety concerns identified in the study. Based on the analysis of future traffic volumes and input from all of the public agencies along the corridor, the long-term vision that was established includes a freeway facility from I-94 to Rice and an at-grade expressway north of Rice to Little Falls. This overall vision would meet the IRC performance goal and improve safety in the corridor.

*TH 10 St. Cloud Area Transportation Study* from the south end of Haven Township to Benton Drive in Sauk Rapids was completed in 2003. This study is within the limits of the TH 10/24 IRC study described above. The focus of this study is to further refine the TH 10 IRC plan and how it would convert TH 10 to a freeway facility from the south limits of Haven Township to Benton Drive in Sauk Rapids.

The IRC Study, IRC corridor plans, and the *TH 10 St. Cloud Area Transportation Study*, described above identify the need for capacity improvements on their respective routes as well as the need for an improved interregional connection between I-94 and TH 10.

### **2.2.3 Relationship to Federal Highway System**

In addition to being identified as important state highways, as described in the previous section, I-94, TH 10 and TH 24 within the study area are components of the National Highway System (NHS). Interstate 94 is part of the Federal Strategic Highway System (STRAHNET) in addition to being part of the federal interstate system. Trunk Highway 24 between I-94 and TH 10 and TH 10 north of TH 24 are designated as STRAHNET connectors. Trunk Highway 10 from Clear Lake north to St. Cloud and TH 24 between Clearwater and Clear Lake are part of the federally-designated NHS.

### **2.2.4 Safety – Crash Rates**

The *Highway 10/Highway 24 Interregional Corridor Study* included analysis of TH 24 crash rates for the three-year period 1997-1999. The analyses indicated that, for the most part, crash rates were similar to statewide averages for similar roadway types. However, the corridor experienced a slightly higher crash severity: 2 percent fatalities, 38 percent injury and 61 percent property damage (this totals to greater than 100 percent, due to rounding) versus the statewide average of 1.1 percent fatal crashes and 35 percent injury crashes.

### **2.2.5 Safety – Pedestrians/Bicyclists on TH 24**

Local residents have expressed concerns about pedestrian and bicyclist safety in the TH 24 corridor through Clearwater and Clear Lake. The high traffic volumes in the corridor increase the potential for crashes involving pedestrians/bicycles either crossing or traveling along the corridor. The existing two-lane corridor through Clearwater is not an inviting or safe environment for pedestrians or bicyclists. The high speeds and high traffic volumes, as well as the number of turning vehicles, make travel along and across TH 24 difficult for non-motorized modes. In downtown Clear Lake, the heavy traffic volumes, relatively narrow corridor and numerous turning vehicles also make this an uninviting and unsafe corridor for pedestrians and bicyclists. As TH 24 extends north of Clearwater, it crosses the Mississippi River. The existing TH 24 bridge across the Mississippi River is long and narrow, has no shoulders, and has sidewalks on either side that are only 2.5 feet wide. This leaves little space for protection of pedestrians and bicyclists from vehicular traffic on the bridge. The bridge is also used by snowmobiles, creating hazardous conflicts with other vehicles on the bridge.

An elementary school – with associated school bus and other turning traffic – is located adjacent to TH 24 south of Clear Lake. Slow moving farm vehicles also use the TH 24 corridor to access farm fields and the grain elevator located north of TH 10. These vehicles increase the potential for conflicts between turning vehicles and through traffic, adding to potential safety issues in the corridor.

### **2.2.6 Safety – At-Grade Railroad Crossing Issues**

The Burlington Northern Santa Fe (BNSF) railroad's main line runs parallel to and immediately south of TH 10 and crosses TH 24 at-grade within the City of Clear Lake. This at-grade crossing is a safety and operational concern due to the high traffic volumes on TH 24, the high frequency

of train traffic (approximately 40 trains per day), and the proximity of the crossing to the TH 10 intersection. These factors can lead to extended backups on TH 24 and TH 10 due to pre-emptions of the signal at TH 10, and safety issues if TH 24 traffic queues from the TH 10 signal extend onto the rail tracks.

This rail corridor is also under consideration to accommodate the proposed North Star Commuter Rail. If this commuter rail system is implemented, it could increase the number of trains per day, increasing signal pre-emptions and, therefore, increasing TH 10/TH 24 intersection congestion.

### **2.2.7 Safety – Regional Evacuation Plan**

Mn/DOT's Transportation Security Project (MN contract 83533) has started an analysis of the I-94/TH 10 corridor as a means for evacuation from the Twin Cities metro area as well as evacuation from the Monticello Nuclear powerplant area. As a potential future phase of the project, the team plans to create a task force to evaluate the current surface transportation physical constraints, develop system improvement recommendations, and develop operational guidelines for evacuating traffic in this region by way of I-94, TH 10 and TH 55. The project team has already identified that during an evacuation situation, re-routing traffic between I-94 and TH 10 will be crucial. Therefore, maintaining I-94 and TH 10 will be an important issue in evacuation planning.

### **2.2.8 Local Traffic Congestion/Delays**

As described in Section 2.2.1, increasing travel demand is causing more congestion on the existing crossings. The focus of the discussion in Sections 2.2.1 and 2.2.2 was on the impact of the congestion on the ability of the existing crossing corridors to convey interregional traffic. However, increasing traffic in the TH 24 corridor also interferes with the ability of local traffic to find gaps to cross or access the TH 24 corridor. As overall traffic levels increase, neither the local nor the interregional traffic is well served by the existing roadway facilities. The 1996 Study included analysis of local intersection operational levels of service on existing crossings for 1995 and 2015 No-Build conditions. The 2015 analysis indicated a V/C above 1.2 at the I-94/TH 24 ramp intersections and at the TH 10/TH 24 intersection, indicating unacceptable delays (i.e., equivalent to level of service F conditions).

### **2.2.9 Existing Bridge Condition – TH 24 Across the Mississippi River**

The existing TH 24 bridge over the Mississippi River was built in 1958 and has sufficient width for only two travel lanes and 2.5-foot wide sidewalks on each side of the bridge. Based on an inspection performed in September of 2002, Mn/DOT has rated the bridge using its standard measure of bridge condition: the Sufficiency Rating. This rating system takes into account the physical condition of the structure, as well as its functional adequacy (using factors such as vertical and lateral clearance, drainage and safety characteristics). Generally, bridges with ratings of 50-80 qualify for rehabilitation and those with ratings of less than 50 would require replacement. The TH 24 bridge was rated at 68.0 in 2002. Based on this rating, and the age of the structure, it is likely that the bridge would require replacement within the next 20 years (i.e., approximately within the implementation period for the proposed interregional connection improvement project).

## 2.2.10 Increasing Growth in the Study Area

The Office of the Minnesota State Demographer estimates that the central portion of Minnesota (including the study area and areas served by the highway corridors) has been and will continue to be one of the highest growth areas in the state over the next 20 to 50 years. Continued development along the Mississippi River and the I-94 and TH 10 corridors will increase the cost of constructing a new I-94/TH 10 interregional connection in the future if right of way is not protected from future development encroachment. Thus, there is a need to identify a preferred Build Alternative and preserve the best corridor (i.e., serves the transportation need, while minimizing environmental impacts) as soon as possible. This would also allow communities to plan future development with the proposed river crossing corridor in mind, and minimize future right of way acquisition costs for the project.

## 2.3 SUMMARY OF PROJECT NEED/PURPOSE

The previous sections describe the important role of the I-94/TH 10 crossing in the overall state and federal highway system and the problems in the TH 24 corridor that is currently used as the primary interregional connection between I-94 and TH 10 within the study area. These descriptions indicate a need for an improved connection due to:

- Increasing transportation demand on river crossing corridors coupled with limited opportunities in existing corridors to increase capacity. This results in increased congestion and the inability to meet established transportation performance goals.
- The role of Highways I-94, TH 10 and TH 24 as important linkages that connect regional centers throughout the state. They are designated as part of the NHS and/or Minnesota's High-Priority IRC System. The TH 24/TH 10 IRC performance standards set the goal of maintaining a minimum travel speed of 60 mph, with a preferable travel speed of 65 mph.
- Safety problems will increase as traffic levels rise since the ability to find gaps in traffic to cross or access TH 24 will become more difficult and motorists will take greater risks. Also, pedestrian, bicyclist and snowmobile safety issues will continue to worsen as volumes rise and more modal conflicts result.
- Delay and safety issues at the existing at-grade crossing of TH 24 with the BNSF (also proposed North Star Commuter Rail) corridor will increase as travel demand rises.
- Impacts of congestion on the communities through which interregional traffic is traveling (Clearwater and Clear Lake) will lead to increasing delays for local traffic trying to cross the corridor. This will also decrease the 'quality' of downtown areas bisected by the highways.
- Increasing growth in the area will limit available options for increasing corridor capacity, if a Build Alternative is not selected as the preferred alternative during the EIS process. There is an immediate need to identify a preferred alternative and preserve the best corridor (i.e., serves the transportation need, while minimizing environmental impacts) as soon as possible. This would also allow communities to plan any future development with the future corridor in mind.

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