

Highway 100: 36th Street to Cedar Lake Road Purpose and Need Statement

Purpose

The purpose of this project is to replace the structurally deficient bridges on Highway 100 located at Highway 7 and Minnetonka Boulevard (CSAH 5) as mandated by 2008 Minnesota Laws Chapter 152 (Minn. Stat. 165.14). The purpose is also to improve the safety and mobility for the traveling public entering and exiting Highway 100 between Cedar Lake Road and 36th Street in order to match the existing and available upstream and downstream freeway capacity.

Need

Bridges

The passage of Minnesota Laws 2008, Chapter 152 resulted in the development of the Trunk Highway Bridge Improvement Program for accelerating repair and replacement of trunk highway bridges throughout the state. The Highway 100 bridges located at Highway 7 and Minnetonka Boulevard have been identified as structurally deficient bridges and are legislatively mandated for replacement. The bridge at Highway 7 was built in 1939 and currently has a deficiency rating of 71.2. The bridge located at Minnetonka Boulevard was also built in 1939 and has a deficiency rating of 63.0.

Congestion

The section of Highway 100 from 36th Street to Interstate 394 was a four-lane section of freeway between two six-lane segments up until 2006. This bottleneck caused major congestion during both peak periods and in both directions.

In the fall of 2006, Metro District converted the shoulders of this road segment to a general purpose through lane northbound and a collector-distributor lane southbound. These lanes were designed to increase the existing capacity and throughput until such time as the future build project could be accomplished. The interim project helped reduce congestion in the area but did not address the structurally deficient bridges nor did it adequately address the safety issues with the exits and entrances to and from Highway 100.

As a result of the shoulder conversion project, mobility, congestion and speed within the area improved. The number of trips served increased by 32% during the AM Peak Period and increased by 34% during the PM Peak Period. Congestion (speeds falling below 45 mph) decreased by 77% during the AM Peak Period and 80% during the PM Peak Period. While remarkable, this section of Highway 100 still experiences 2-4 hours of congestion each day during the AM and PM peak periods combined.

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Safety

After the shoulder conversion project was completed, the number of crashes increased southbound and northbound by 49% and 17% respectively. Notably, southbound crashes doubled in the area of Highway 7 after the project. Most of these crashes can be attributed to the substandard ramp from westbound Highway 7 to go southbound on Highway 100.

The Highway 100 and Highway 7 interchange ranked 27th on the 2007–2009 Statewide Interchange Crash Cost List. During those years the average annual crash cost at this location was \$2.7 million dollars per year. The interchange has a crash rate of 1.59 MEV (crashes per million vehicles entering interchange) compared to the metro average of 0.74 MEV. The severity rate is 2.03 MEV compared to the metro average of 1.10 MEV.

Highway 100 at Minnetonka Boulevard ranked 76th on the 2007–2009 Statewide Interchange Crash Cost List. During those years, the average annual crash cost at this location was \$1.9 million dollars per year. The interchange has a crash rate of 0.99 MEV and a severity rate of 1.31 MEV.

Crash studies have indicated that several of the substandard ramps along this corridor are causing an unacceptable number of correctable crashes. These substandard lanes affect the safety and operation of the freeway and have a significant impact on merging and diverging operations.

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