
Appendix C

Preferred Alternative Memorandum (On CD-ROM)



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MEMORANDUM

TO: Jim Grube, Hennepin County
Scott Pedersen, MnDOT

FROM: Samuel Turrentine, AICP

DATE: March 9, 2016

RE: Preferred Alternative Memorandum
SEH No. HENNC 113114 14.00

The purpose of this memorandum is to provide a complete description of the Preferred Alternative for the I-35W and Lake Street Improvement Project Environmental Assessment (EA). See Appendix A of the EA for the Preferred Alternative Figures.

Roadway Reconstruction

The project provides for the rehabilitation/reconstruction of I-35W from 700 feet south of 42nd Street to 11th Avenue, Highway 65 from 26th Street to 15th Street, and on I-94 from 1st Avenue to Park Avenue. I-35W will be reconstructed to facilitate an additional lane in the southbound direction.

The project will reconstruct portions of the Minneapolis street grid including: 2nd Avenue, Stevens Avenue, 31st Street, Lake Street, 28th Street, 26th Street, 3rd Avenue, Clinton Avenue, 24th Street, Franklin Avenue, 4th Avenue, and 5th Avenue.

The project will reconstruct Lake Street from Blaisdell Avenue to 5th Avenue. The reconstruction of Lake Street from 1st Avenue to 3rd Avenue will include two traffic lanes and one left-turn lane in each direction on Lake Street along with bus pull-out bays under the bridge. Wider sidewalks along with curb extensions (bump-outs) on Lake Street at the 2nd Avenue and Stevens Avenue intersections will be provided to shorten the distance a pedestrian must walk to cross the street. The reconstruction of Lake Street will also include sidewalk improvements and streetscape enhancements.

The project will reconstruct 2nd Avenue between the northbound I-35W 31st Street exit ramp and Lake Street. The current northbound I-35W exit ramp to 31st Street/Lake Street merges into 2nd Avenue prior to the signalized intersection with 31st Street. Second Avenue is a northbound one-way residential frontage road. The Healy Block Residential Historic District is located along 2nd Avenue between 32nd Street and 31st Street. Existing traffic demands and congestion is a livability concern for the residents of the Healy Block Residential Historic District. The proposed design provides a separation between the local 2nd Avenue and the freeway exit ramp. The grid disconnection of 2nd Avenue includes a forced right turn at 31st Street. Figure 11 in Appendix A of the EA represents the proposed configuration for the 31st Street Ramp and 2nd Avenue.

Multimodal Transit Station

The project will construct a multimodal transit station along the METRO Orange Line transitway in the center of the freeway near Lake Street. The multimodal transit station is located over Lake Street, with access on both sides of Lake Street, and connections to the Midtown Greenway. This location provides direct and convenient service to transit passengers boarding at Lake Street or transferring to/from local buses, provides good visibility to the station from Lake Street, and supports reinvestment in private property on Lake Street and Nicollet Avenue. Stairs, lobbies and elevators are located within glass enclosure that extends out towards Lake Street. This improvement will allow the reinstatement of northbound I-35W transit routes to Lake Street which have been suspended by Metro Transit during peak periods due to weaving problems from the existing left side transit lane to the right side transit stop on I-35W.

The preferred freeway level platform configuration is a split design with a center barrier which widens at the tail end of the station to allow extra width for the vertical circulation area while still maintaining a 16-foot wide through lane in each direction. This configuration satisfies the primary physical, operational, and safety objectives, as identified through the alternatives evaluation process and can be accommodated in a width of 66 feet. The four-lane section was selected because it is intuitive for riders, spreads out passengers along the platform for fewer conflicts, allows for the easiest maintenance and snow removal, and it can handle higher bus volumes.

The bus volumes, over 100 buses per hour in the peak direction, requires that the transit station design allow buses the opportunity to safely and efficiently pass each other, to accommodate both routine dwell times (buses deploying ADA lift ramps) or emergency events (a mechanical breakdown at the platform). Finally, from a safety perspective, the split platform design would allow an errant to pass through the station and safely re-enter I-35W in the same direction.

Braid Bridge

The project will replace the structurally deficient Braid Bridge. The bridge will be reconstructed to land on the right side of Highway 65. The major benefit is that the alignment of the southbound Highway 65 entrance from downtown is on the left side of I-35W; this will allow MnPASS and transit users to stay on the left side to enter both the MnPASS lane and multimodal transit station without requiring lane merging. It also allows the auxiliary lane for the proposed southbound Lake Street exit ramp to be a continuous auxiliary lane from the westbound I-94 entrance to the new exit.

The right side landing also allows for a complete relocation of the braiding structure; the current design shifts the location from approximately 24th Street northerly up to 19th Street. This extends the weaving distance between the systems merge and the proposed exit ramp to over 3,300 feet. The change allows the northbound diverge location to also shift north closer to the Franklin Bridge. This change in configuration also allows for a higher speed curve for southbound I-35W exiting the I-94 Commons Area. The existing curve is a 35 mph design while the proposed design is able to increase the design speed to 40 mph.

Flyover Bridge

The project will replace the structurally deficient Flyover Bridge. The project will reconfigure the movement from northbound I-35W/Highway 65 to westbound I-94. The current configuration provides for this ramp entering westbound I-94 on the right hand side. This movement has been studied as to the effectiveness of maintaining the connection on the right side or modification of this movement to have it enter westbound I-94 on the left side. An origin-destination study was completed to determine the split in traffic using that ramp and where motorists exited. It was found that 78 percent of the traffic using that

ramp in the PM peak period continues north on I-94 north of the Lowry Hill Tunnel. Operational analysis was completed for each alternative and the operations were found to be acceptable for the ramp entering on the left side. A weave analysis was completed and found to have a notable improvement to the operations of I-94. The decision was to move forward with the ramp entering on the left side, as documented in the project's Interstate Access Request. The 4th Avenue entrance ramp will be maintained as part of the project.

MnPASS Managed Lanes

The Preferred Alternative will reconstruct the existing left northbound lane from a priced dynamic shoulder lane to a full MnPASS lane from 42nd Street to approximately the 26th Street overpass, extending the MnPASS lane in the I-35W corridor. This is accomplished by maintaining the existing typical section¹ on northbound I-35W from 43rd Street through 35th Street, but extending this to the northbound I-35W bridge over Lake Street.

The Preferred Alternative will also construct a left southbound lane as a MnPASS lane from approximately the 26th Street overpass to the existing MnPASS lane near 42nd Street, where the MnPASS lane will then continue on to Lakeville. This is accomplished by reconfiguring the southbound Braid Bridge. This is also accomplished by replicating the typical section provided on the northbound I-35W and transitioning of 12-foot lanes to 11-foot lanes at the southbound I-35W Bridge over Lake Street and maintaining 11-foot lanes to the southern terminus of the project at approximately 43rd Street.

Metro Transit is studying the feasibility of a new transit-only connection from Highway 65 from roughly 15th Street to downtown Minneapolis. This will be studied under the METRO Orange Line environmental documentation. Managed lanes north of 26th Street are not being pursued as part of this Preferred Alternative or the METRO Orange Line project.

New Exit from I-35W Southbound to Lake Street

The project will construct a new southbound exit ramp from I-35W to Lake Street, with an auxiliary lane extension from the westbound I-94 entrance ramp. The new ramp will exit from I-35W at approximately 28th Street, bridge over the Midtown Greenway, merge with Stevens Avenue, and intersect Lake Street. Currently, the system ramp connection from westbound I-94 enters southbound I-35W as a merge in the downtown commons. It is proposed to begin an auxiliary lane at the I-94 westbound entrance (under 11th Avenue, South) and continue it to the new Lake Street exit. Constructing the southbound I-35W exit ramp to Lake Street, along with the needed auxiliary lane, will provide better overall operations while serving much higher demands along I-35W.

The new southbound Lake Street exit ramp will reduce traffic demands by 25 percent at the 35th Street exit ramp in the forecast PM peak period design year. This reduction will improve operations at the 35th Street interchange, which has failing operations under existing conditions, and remove demand from the short weaving segment between 31st Street and 35th Street improving both safety and operations on I-35W.

¹ Northbound I-35W from 43rd Street through 35th Street was modified by a previous project to facilitate a priced dynamic shoulder lane. The typical section for northbound I-35W was modified under SP 2782-306 to provide a 6-foot left shoulder, 11-foot PDSL, 2-foot buffer, 4 – 11 foot lanes, and a 4-foot right shoulder. The in-place typical section for southbound I-35W is a 9-foot left shoulder, 4 – 12 foot lanes, and a 10-foot right shoulder.

New Exit from I-35W Northbound to 28th Street

The project will construct a new northbound exit ramp from I-35W to 28th Street. The construction of a new northbound exit ramp from I-35W to 28th Street is being proposed as an extension of the 31st Street/Lake Street interchange. The proposed access is for a northbound I-35W exit ramp and auxiliary lane only. The 31st Street and Lake Street bridge decks will carry the auxiliary/exit lane to the new 28th Street exit. The existing northbound 31st Street exit ramp will be reconstructed due to mainline elevation changes and related modification of the freeway embankment and configuration of 2nd Avenue. Direct access to 28th Street is provided via a separate exit ramp. The design does not preclude future consideration of a northbound entrance ramp from Lake Street.

The proposed northbound I-35W exit ramp to 28th Street provides both an operational and safety benefit to the roadway network without any adverse impacts to the freeway system, as documented in the project's Interstate Access Request. This occurs with the exit ramp as either a standalone access change or in combination with the potential future northbound Lake Street entrance ramp project; the 28th Street exit is a functional improvement for the 31st Street/Lake Street interchange and a mitigation for the potential future northbound entrance ramp. The proposed northbound I-35W exit ramp to 28th Street also provides a livability improvement to those who reside along 2nd Avenue.

Off-Street Trail Connection

The project will construct an off-street trail connection between the Midtown Greenway and 31st Street. Connections for pedestrians, bicyclists, and future transit users of the Midtown Corridor between the multimodal transit station and the Midtown Greenway will be provided via a new off-street trail in current MnDOT right-of-way between Stevens Avenue and southbound I-35W. The new off-street trail will extend from the Midtown Greenway along the east side of Stevens Avenue up to 31st Street, to connect to the future east-west bicycle corridor along 31st Street. The off-street trail connection is integrated with the station plaza, seamlessly linking the off-street trail to the Lake Street multimodal transit station. It will have both a 10-foot bicycle trail and a parallel pedestrian sidewalk. The trail corridor provides bicycle and pedestrian paths separated by native grasses and low concrete curb walls defining areas with overstory trees for shade and native grasses to filter runoff. A gentle grade is proposed for both pathways with several intermediate flat rest areas. Extensive lighting, durable asphalt and concrete paving, an emergency call button pylon and provisions for integrating public art will further enhance safety and the user experience. The off-street trail eliminates the barrier presented by the Midtown Greenway trench, eliminates excess intersection crossings (4 or 6, depending on the direction of travel) for non-motorized users, and reduces the travel distance from the Midtown Greenway to the proposed multimodal transit station to 0.135 mile.

The project will also construct a stairway, with an integrated bicycle track, from Stevens Avenue street level to the Midtown Greenway level.

Other Bridges

The project will remove and replace the following bridges at:

- 40th Street (Pedestrian Bridge),
- 31st Street,
- Lake Street,
- Midtown Greenway,
- 28th Street,
- 26th Street,
- 24th Street (Pedestrian Bridge),

- Franklin Avenue Bridge, and
- Highway 65 over I-94.

The bridge replacements at 31st Street, Lake Street, and the Midtown Greenway are necessary to build a new multimodal transit station.

There will be three parallel bridges at the I-35W crossing of Lake Street with the outside bridges carrying the southbound and northbound traffic and the middle bridge carrying the bus lanes and supporting the transit station canopy up at the freeway level. The transit station bridge will be a cast-in-place (C-I-P) box girder superstructure and the two outside structures (I-35W northbound and southbound) will be pre-cast concrete beams. The C-I-P concrete girder bridge type is a proven form in Minnesota, familiar to local contractors, and it is naturally suited to the needed customizations—especially the deck openings and two-way framing for loads. Additionally, this bridge type provided a good fit for site constraints, reasonable staging, and supports aesthetic goals.

In addition to supporting the canopy structure, the middle bridge will accommodate transit users on the platform waiting areas and allow vertical circulation with elevator and stairway access through the structure. The proposed transit station bridge will be a three-span bridge with overall length of 310 feet and spans of 80'-150'-80'. The middle bridge defines the "core" of the proposed transit station, with outdoor and indoor plaza and lobby space focused in this central area. The central area below the transit station bridge has lobby structures at each end, with indoor stairs and elevators to transition passengers between the Lake Street (local bus/street) level and the freeway level bus platform.

The bridge replacement at 28th Street is necessary to build the new southbound exit from I-35W to Lake Street with auxiliary lane.

The bridge replacement at 26th Street is necessary due to the passing of the southbound exit auxiliary lane under 26th Street.

The bridge replacement at Franklin Avenue is necessary due to the replacement of the Braid Bridge.

The project also includes the removal of the 2nd Avenue South Bridge over the Midtown Greenway based on the new I-35W northbound exit ramp providing a direct connection to 28th Street. Second Avenue is a Major Collector roadway that provides a link between northbound I-35W and 28th Street. As part of the reconstruction of I-35W to include the center Lake Street multimodal transit station, the project will sever the MnDOT-owned frontage road (2nd Avenue South/Clinton Avenue) over the Midtown Greenway to 28th Street. This change will cause substantial rerouting of existing traffic (beneficial impact) along 31st Street, Lake Street, and the main connecting roads between Lake Street and 28th Street. The portion of the roadway south of 28th Street will be realigned to provide access to the Wells Fargo parking facilities and will change in function to a private driveway.

The project will also re-deck the 38th Street Bridge over I-35W.

No reconstruction of the 42nd Street Bridge, 36th Street Bridge, or 35th Street Bridge will occur. For the areas outside of these bridges, the project will widen the right shoulder width to 10 feet where it is feasible. This would be done in lieu of providing emergency pull off areas along the corridor.

Retaining Walls

Retaining walls minimize roadway side slopes widths where right-of-way width is tight. Retaining walls are proposed along the following sections:

- The elevated sections of I-35W between 28th Street and 32nd Street,
- The southbound I-35W Braid Bridge,
- The northbound I-35W to westbound I-94 Flyover Bridge, and
- The depressed section of I-35W between Franklin Avenue and 28th Street.

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