Highway 252/I-94 interim safety improvements

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Our mission at the Minnesota Department of Transportation is to plan, build and maintain a safe, accessible, efficient and reliable multimodal transportation system for the people of Minnesota.

Based on MnDOT crash data, there is a need to improve motorist and pedestrian safety on Highway 252 and Interstate 94 between 4th Street North in Minneapolis and Highway 610 in Brooklyn Park. All six of the signalized intersections on Highway 252 have crash rates that exceed the statewide average and fall into a range we consider "critical" for statewide intersections. Beyond the intersections, crash rates on the corridor also exceed the statewide average and critical rates, signifying additional safety concerns along the portions of Highway 252 between intersections. Most of the crashes on Highway 252 are rear-end crashes—collisions typically associated with congestion and poor mobility.

We are currently in the early stages of an extensive environmental review of Highway 252 and I-94 between 4th Street North in Minneapolis and Highway 610 in Brooklyn Park. This effort will help us prepare for a potential, large-scale construction project that would address safety needs. However, the environmental review process will take several years to complete and any large-scale construction on Highway 252 is not anticipated until 2026 at the earliest.

In the meantime, we are able to make some interim safety improvements in this area while the environmental review takes place. We recently reviewed the project area and completed a summary of safety improvements that can be made in the near term. The following summary includes a list of interim options we have accepted as potential safety improvements and options we will not be making in the near term based on our review.

Sincerely,

Michael Barnes

Digitally signed by Michael Barnes
Date: 2022.01.25 11:59:58 -06'00'

Mike Barnes
District Engineer
MnDOT Metro District

Highway 252 interim safety improvements

Accepted options

Remove free right turn in the southwest corner of Highway 252 and 66th Avenue

A high number of crashes occur at the free right turn from eastbound 66th Avenue to southbound Highway 252. This location averaged more than 17 crashes per year between 2016 and 2020. MnDOT believes removing the free right turn and replacing it with a traditional right turn lane will reduce the number of crashes at this location and have a limited effect on traffic.

Install advance warning flashers on southbound Highway 252 for the signal at 85th Avenue

An elevated number of right-angle crashes involving southbound Highway 252 drivers occur at 85th Avenue compared to other signals on Highway 252 and in the Twin Cities metro area. This location meets criteria for installation of advance warning flashers because it is the first signal after a long freeway section. AWFs provide drivers with additional warning that there may be a need to stop for a red light.

Install "Signal Ahead" pavement markings on northbound Highway 252 for the 66th Avenue signal

There are a high number of crashes on Highway 252 at 66th Avenue. MnDOT will install "Signal Ahead" pavement markings on the northbound approaches—on a pilot basis only—to provide additional visual cues to drivers that the freeway is ending.

Install new pedestrian crosswalk pavement markings at 66th, 70th, 73rd and 81st avenues, and Brookdale Drive

Pedestrian crosswalk markings provide visual cues to pedestrians about where to cross the road and alert drivers that pedestrians should be expected at those locations. MnDOT will reinstall crosswalk markings because the existing markings are either covered with pavement or faded.

Deploy speed feedback trailers

MnDOT will deploy speed feedback signs on a temporary basis using trailer-mounted signs. These signs will be deployed for short periods of time—likely in conjunction with other speed education campaigns—when there is no snow or ice on the road. MnDOT will use the data collected from the trailers to study the effectiveness of temporary speed feedback signs on a high-speed, high-volume highway.

Upgrade “One Way” signing

MnDOT will upgrade or add “One Way” signs and/or “Keep Right” signs to the intersections according to current traffic engineering standards. These signs will provide motorists with additional cues about the correct direction of traffic flow on the divided highway, reducing the likelihood of wrong-way movements.

Implement Toward Zero Deaths (TZD) strategies

In addition to engineering efforts to improve the safety of motorists and non-motorized users of these corridors, MnDOT will partner with local agencies to identify and reach audiences for TZD strategies. These efforts, including education and outreach, will be coordinated with existing traffic safety campaigns and work to amplify their messages in communities along and around these highway corridors.

Make crossing times longer for pedestrians

Pedestrian crossing times are based on the physical distance pedestrians need to cross a road. MnDOT recently updated pedestrian crossing times to match the latest national standards the department is required to use. These standards include longer crossing times compared to the past.

Further increasing pedestrian crossing times across Highway 252 would cause the signals to become out of sync whenever there is a pedestrian call, which could lead to more vehicle crashes. MnDOT will continue to work with complaints on a case-by-case basis to ensure adequate crossing time is provided in each situation.

Add more signal heads on Highway 252 at Humboldt Avenue/81st Avenue

MnDOT will add an additional signal head on the existing signal poles for both northbound and southbound Highway 252 at Humboldt Avenue/81st Avenue to comply with current standards of one signal head for each through lane. Other signals on Highway 252 already have one signal head for each through lane on the highway.

Rejected options

Reduce speed limits

Lowering speed limits by only changing speed limit signs has proven to be an ineffective method of influencing actual speeds. Studies show there is little change in speeds after posting a lower speed limit without making any other changes. Drivers are much more influenced by changes to the road and driving conditions than by the change of a speed limit sign alone.

Change signal timing

MnDOT has already optimized signal timings on the Highway 252 corridor for the traffic volumes. There are no further adjustments that can be made to improve safety. Increasing the duration a signal stays green for traffic on side streets will have negative effects on mobility and increase congestion on the Highway 252 corridor. Congestion is one of the leading factors that contributes to the number of crashes on Highway 252.

Install cable median barrier

There has not been a documented, cross-median crash on the Highway 252 corridor since 2016 that cable median barrier would have prevented. While some gaps in the existing median barrier could be made smaller with additional barrier, these would be small lengths adjacent to wide open intersections. MnDOT does not recommend installing additional barrier because of the inability to fully close the median through intersections and lack of documented, cross-median crashes.

Replace cable median barrier

MnDOT reviewed the existing cable median barrier, which is in good condition and does not need to be replaced at this time.

Add queue detection and warning system approaching 85th Avenue

Prior to 2020, a high rate of rear-end crashes occurred during the AM peak period on southbound Highway 252 approaching 85th Avenue due to traffic congestion from the signal system at 85th Avenue. MnDOT could implement a queue detection and warning system to alert drivers of the congestion ahead. This would require additional dynamic message signs and detection on each ramp from Highway 610 to Highway 252.

Since 2020, rear-end crash rates at this location have greatly diminished. Lower traffic volumes during the AM peak period have reduced the congestion. In addition, MnDOT observed that any congestion quickly dissipates with the long green lights at 85th Avenue. A queue detection and warning system would likely be ineffective for these conditions as the location where drivers first enter the congested area rapidly changes. MnDOT will install an advanced warning flasher at 85th Avenue for southbound traffic, which will address most of this issue.

Install advance warning flashers on northbound Highway 252 at 66th Avenue

The intersection of northbound Highway 252 and 66th Avenue does meet criteria for AWF consideration because it is the first signal after a freeway section. However, based on available crash data, there does not appear to be a specific problem with right-angle crashes that would be helped by the installation of AWFs at this location. Traffic merges and weaves in this area, and drivers need to focus on other vehicles and signs. Installing AWFs in this location may be counterproductive as they will compete for drivers' attention with these other critical tasks. MnDOT does not recommend installing AWFs on northbound Highway 252 at 66th Avenue.

Install permanent speed feedback signs

Permanent speed feedback signs have shown limited effectiveness at reducing traveled speeds as any observed drop in speeds tends to be short lived. MnDOT recommends deploying speed feedback signs for short periods of time.

Display crash statistics on dynamic message signs

Studies have not demonstrated that displaying crash statistics is effective at reducing the number of crashes. Displaying the number of crashes does not inform drivers of what actions to take to reduce the risk of a crash.

The Federal Highway Administration recognizes the display of crash statistics as an inappropriate use of dynamic message signs.

Improve corridor lighting

Lighting exists at signalized intersections along the Highway 252 corridor. Signalized intersections are the locations on the corridor that experience the highest number of severe crashes, particularly rear-end and side-angle crashes, and crashes between automobiles and pedestrians, bicyclists or other non-motorized users. Increased lighting along the Highway 252 corridor will not be effective at reducing these crashes.

Install advance warning flashers on northbound Highway 252 at Humboldt Avenue/81st Avenue

This location does not meet criteria for installation of AWFs. It is not the first signal after a freeway segment or extended distance without a signal. MnDOT does not recommend installing AWFs.

Install "No Right Turn on Red" sign at Humboldt Avenue/81st Avenue

There currently is a free-right-turn lane from westbound Humboldt Avenue to northbound Highway 252 that is not controlled by the signal system. For this reason, it is not appropriate to install a "No Right Turn on Red" sign. Sight distance is limited for this movement when westbound vehicles are stopped at the signal to turn left or continue through the intersection; however, there does not appear to be a crash problem at this location based on available crash data.

Install dynamic message signs

Additional dynamic message signs are not needed because DMS have already been installed on Highway 252 or other corridors leading into the area. DMS provide travel information to motorists about hazards ahead. Messages displayed may provide information to motorists on construction, incidents and debris on the road. Messages also may help motorists avoid unexpected congestion and can help reduce secondary incidents from occurring. Four DMS signs exist on Highway 252 or on corridors leading into the area:

- Southbound Highway 252 north of 85th Avenue
- Westbound I-94 at Lowry Avenue
- Eastbound I-694 at Brooklyn Boulevard
- Westbound I-694 at Central Avenue

Deploy arterial traffic management system

MnDOT already has an arterial traffic management system on Highway 252. The system includes fiber optics, cameras and a dynamic message sign. Traffic signals on the corridor are connected and coordinated.

Prohibit U-turns at 66th Avenue

A review of available crash data does not indicate that there is a crash problem caused by drivers making U-turns at 66th Avenue. U-turns at a protected left are generally a safe movement, and the crash data supports that. Motorist behavior will be difficult to change with signage alone. MnDOT believes a sign prohibiting U-turns at this location likely would be highly violated and there does not appear to be a good safety reason to restrict U-turns at 66th Avenue.

Add lighting at turn lanes

Available crash data does not indicate a pattern of nighttime crashes that would be reduced by the installation of additional lighting at intersection turn lanes, either in the corridor or at specific intersections. Signalized intersections along the Highway 252 corridor currently have lighting in all four quadrants. MnDOT believes it is unlikely that additional lighting would provide any benefit considering there is no pattern of nighttime crashes.

Install yellow retroreflective signal backplates

Yellow retroreflective signal backplates have shown to provide a minimal safety enhancement to the signal system. MnDOT is moving closer to including retroreflective backplates on all new signal heads because of the low additional installation costs. However, retrofitting existing signal heads with retroreflective backplates requires high amounts of labor and traffic control resources. MnDOT does not recommend retrofitting retroreflective backplates to the existing signal heads.

Widen pedestrian crosswalk markings

MnDOT installs and maintains crosswalk blocks to MnDOT standards. Widening crosswalk markings on Highway 252 would provide no additional benefit to users. Wider crosswalks benefit areas where multiple people moving side-by-side must cross a road at the same time. Removing and replacing the existing markings with wider markings also would scar the pavement on Highway 252. MnDOT believes refreshing the current crosswalk markings will provide the greatest benefit to users.

Install wayfinding signage on westbound I-94 to southbound Highway 100

MnDOT does not recommend installing wayfinding signage for the following reasons:

- MnDOT signs what is required for highway junctions and does not sign how to access parallel routes. It is not an absolute rule, but it is a best practice to meet requirements in the Minnesota Manual on Uniform Traffic Control Devices while also attempting to limit the number of signs present on the highway system. Excess signs can contribute to unnecessary sign clutter, which distracts motorists from:
    - Higher priority signs (e.g., regulatory, warning and guide signs)
    - Other traffic control devices
    - The road itself
    - Other motorists and pedestrians

This type of signing normally is not installed.

- MnDOT currently signs for access to Highway 100 from southbound Highway 252. This is an exception to the above; however, it is a south-to-south connection where the interchange/ramp configuration demands that Highway 100 be signed. This is significantly different compared to the requested northbound/westbound I-94 movement to southbound Highway 100 movement, which would involve signing not only a parallel route, but also the reverse direction from which the motorist was previously heading.
- The movement from eastbound I-694 to southbound Highway 100 is signed because the highways appear to intersect, but there is no direct connection. MnDOT installed the signs to clarify the movement needed for motorists looking for this necessary eastbound to southbound movement, which has significant demand.
- The best route to access Highway 100 from northbound/westbound I-94 depends upon where the motorist is originating from and what their destination is. There may be many possible alternatives recommended as quickest route by Google/GPS, including:

    - Using 49th Avenue or 57th Avenue
    - Continuing on westbound I-94 and exiting at Shingle Creek Parkway
    - Using northbound Highway 252 and either making a left turn or U-turn at 66thAvenue

In some cases, a motorist's destination will not require them to use Highway 100, but only local streets after exiting from westbound I-94. It is best to let motorists choose the quickest, most efficient or their preferred route when there are many options available and no strong need to provide only one "recommended route."

Add more lane identification signs on southbound Highway 252 north of 66th Avenue

MnDOT does not recommend adding new overhead signs at this time. MnDOT could expand the signing due to the limited space between 66th Avenue and I-94 that makes early lane selection important for motorists. Updating or expanding the signage in an effective way that meets standards and is consistent with the other signing, on approach, should involve overhead signs.

Install a center median refuge with accessible ramps on the east side of 73rd Avenue at West River Road

The cities of Brooklyn Center and Brooklyn Park would have to address this as the location is not within MnDOT right of way.

Add crosswalk markings and signs across free right turns

Following guidance in the MnDOT Traffic Engineering Manual, MnDOT does not mark pedestrian crossings across free right turns. Crash data does not show documented crashes with pedestrians or bicycles in free-right-turn lanes along Highway 252.

Install raised crosswalks at 49th and 53rd avenues

MnDOT maintains the I-94 exit and entrance ramps, and the connecting frontage roads at I-94, 49th Avenue and 53rd Avenue. MnDOT has concerns about snow and ice operations at raised crosswalks and does not recommend installing raised crosswalks across I-94 ramps due to those concerns.

Increase law enforcement on Highway 252

The Minnesota State Patrol indicated they may be able to provide additional patrols on Highway 252 periodically; however, the State Patrol is unable to provide a sustained presence on this one section of highway due to other law enforcement demands throughout the Twin Cities metro area.

Install transverse rumble strips

MnDOT does not recommend installing transverse rumble strips on Highway 252. MnDOT standards only recommend in-lane rumble strips at stop signs. Transverse rumble strips have been used at rural intersections; however, studies have shown mixed results with no clear evidence of crash reduction. Transverse rumble strips at high-volume, signalized intersections would be ineffective at reducing speeds or enhancing safety. Drivers may not know what is expected of them as the sound generated from the strip is present at any speed. The rumble strips also would introduce additional noise, disturbing neighbors in the area.

Add larger and newer signs

The last sign replacement project on Highway 252 took place in 2009, making the current signs about 12 years old, on average. Signs typically last 15-20 years. At the time of the project, MnDOT installed the signs according to the expressway design standards of the time. MnDOT verified that current signs are not covered by vegetation.

Correct crashes at the right turn from westbound 81st Avenue to northbound Highway 252

There are crashes occurring at Highway 252 and 81st Avenue with the westbound to northbound right-turn movement. Part of the problem is the intersection is located on a curve, and it is difficult for motorists turning right from westbound 81st Avenue to see and judge the speed and distance of oncoming traffic on northbound Highway 252.

MnDOT examined the following:

- Blocking off the free-right-turn lane and making people drive the right turn around the island
- Installing an acceleration lane on the Highway 252 right shoulder

MnDOT determined that these alternatives are worse than the existing condition and may result in more crashes. MnDOT determined that the problem can only be solved by redesigning and reconstructing the entire intersection. This alternative may be examined in the Environmental Impact Statement (EIS) process because it is a major change to the corridor with potential impacts that must be analyzed in the EIS.