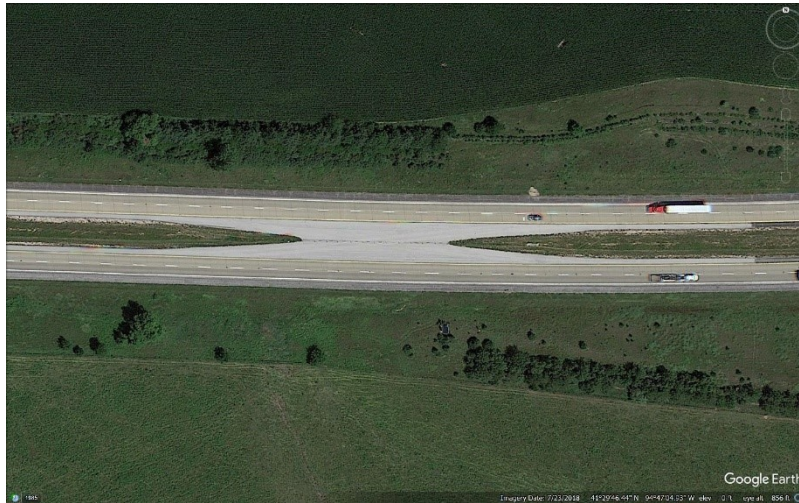


## Median Crossover White Paper (Final) July 30, 2023

### **Problem Statement**

Develop recommendations to improve the timing of median crossover construction in order to maximize the efficiency of subsequent project work and minimize traffic disruptions (e.g., construct crossovers in the fall, prior to summer construction). Also develop criteria for when crossovers should be left in place for use on future projects rather than removed.



A typical median crossover

### **Committee Members:**

Roy Gelhaus – District 2, District Construction Engineer  
Shane Tymkowicz-District 3, Assistant District Engineer  
Austin Yates – District 4, TSMO Engineer  
Jesse Tibodeau – District 6, Assistant District Engineer  
Mark Swenson -Project Management Bureau, Project Scheduling Engineer  
Kent Nicholson – Design Bureau, Assistant Design Engineer  
Dan Sprengeler – Design Bureau, Work Zone Traffic Control Engineer  
John Bartholomew – Design Bureau, Field Exam Engineer  
Kevin Patel – Design Bureau, Assistant Design Engineer

Median crossovers are typically built on 4-lane interstate and freeways to shift traffic over to the adjacent lanes to allow construction to occur (typically for bridge and pavement construction projects). The question was raised regarding when these crossovers should be let and built.

The committee agreed it is advantageous to let the median crossovers early in the fiscal year (i.e. – July or August letting). This could either be an independent project or part of a larger

construction project. In addition to the construction of crossovers, it was recommended that other work required for traffic staging such as shoulder strengthening should also be evaluated for possible advanced construction.

An independent crossover project would be advantageous, especially if the letting does not allow for the primary construction work to take place in the fall. Accomplishing this work early in the fiscal year should provide the contractor sufficient time to complete the crossover project prior to winter. This will allow the traffic shift and primary construction work (paving or bridge work) to begin immediately in the spring, minimizing the risk that the project will extend into the following year. Letting the crossovers in the late summer or fall will typically have improved site conditions compared to early spring where wet median ditches can be a challenge. Although having a separate project for the construction of the median crossovers (and other work such as shoulder strengthening) does require the RCE to administer an additional project. Letting the median crossover project independently from the major project will allow the project to begin and provide additional time to address right of way, utility, or other problematic clearances. There may be a minor public perception issue related to building the crossovers in the summer/fall and then having the contractor move out and the major project not beginning until the following year.

It was also discussed that rather than having the crossover being an independent project including this as part of the mainline project that is let in July or August also has benefits such as reduced administrative efforts to manage a separate project, early crossover completion, ability to address settlement period issues, along with minimizing the risk associated with missing crossover removal items in subsequent projects.

The committee also discussed the advantages and disadvantages of leaving the crossovers in place at the end of the project and ultimately decided this should be handled on a case-by-case basis. Typically, this should be discussed and documented during the concept and field exam.

**Discussion points included the following:**

- Consider impacts to winter operations. Depending upon the location, a crossover left in place could be used for winter operations. On the other hand, it could result in additional long-term maintenance with little benefit.
- Median crossovers may provide a benefit during long-duration incidents (e.g., natural disasters); however, they are rarely used for short-duration incidents (e.g., crashes) as it usually takes too long to establish traffic control for a head-to-head situation. As a result, during short-duration incidents, traffic is typically detoured as per the TIM plans via the nearest interchange or side road.
- There have been cases where crossovers have been left in place for future projects; however, it is important to evaluate crossover geometry and the pavement's ability to meet

traffic demands. Many times, due to old crossover geometry or poor pavement conditions the crossovers could not be used and had to be removed and replaced. It is often necessary to evaluate pavement conditions by taking pavement cores. It is also important to also consider that existing crossovers may not be constructed in optimal locations, requiring traffic to be in a head-to-head situation for longer than necessary.

- It is important to discuss the removal of the crossovers during project development and should be clearly documented in the concept statement and field exam letter. It was recommended that all ramp crossovers and mainline one-way crossovers be removed after the completion of the project to avoid confusing motorists and the potential for wrong way drivers.
- If median crossovers are strategically placed, especially for bridge work, they can provide significant cost savings as well as eliminate time delays due to crossover construction. District 3 cited a case where they used the same crossovers on 3 different occasions for bridge work. The construction cost for a dual median crossover for a 50' median (Road Standard PV-500) is approximately \$330,000 and therefore could generate substantial cost saving if they can be left in place for future projects.

In summary, it was recommended that median crossovers and other necessary work required for the construction staging be constructed early in the fiscal year (thru either a separate project or part of the major project). If an independent crossover project is desired, it should be established at the inception of the project. In general crossovers, should be removed after the completion of the project; however, if crossovers are placed in optimal locations for future projects, they have the potential to generate substantial cost savings and should be left in place. Both topics should be addressed early in project development, at the concept and field exam stages.