CITY OF Salem AT YOUR SERVICE

MEMO

TO: Salem River Crossing Project File

FROM: Julie Warncke, Transportation Planning Manager JW
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Public Works Department

DATE: July 13, 2015

SUBJECT: **Impact of Closure on Marion or Center Street Bridges**

The Center Street and Marion Street Bridges together form a two-way connection across the Willamette River, linking west Salem to the rest of Salem, Polk to Marion Counties, and I-5 to the Coast. These bridges are part of State Highway 22 and are owned, managed, and maintained by the Oregon Department of Transportation (ODOT). The bridges are part of the National Highway System, on a designated freight route, State-designated Expressway, and have a statewide level of importance.

During an average 24-hour weekday, approximately 100,000 vehicles cross the bridges. Each bridge has four lanes of capacity in its direction of travel. The bridges are connected to the surrounding surface streets via a system of directional ramps. The bridges and associated ramps are commonly congested during normal morning and evening peak travel periods.

The Center Street and Marion Street Bridges are the only full service bridge connections in Salem and the only bridges[1] across the river between Independence to the south (10 river miles upstream) and Newberg to the north (35 river miles downstream). The Buena Vista and Wheatland Ferries can only carry several vehicles per trip. The Independence Bridge is a two-lane facility that must be accessed via River Road S from Salem. Railroad bridges over River Road S have 11-foot 6-inch clearance, thereby excluding large trucks and some recreational vehicles (RVs) from using this detour route. In addition, there are not many places on River Road S where large vehicles can turn around. During the 2005 closure of the Marion Street Bridge, access to the Independence Bridge was blocked when an RV got stuck due to the limited vertical clearance. Finally, River Road S typically floods several times each year, requiring closure of this route. The best alternate route to the south is to cross the Willamette River in Albany (35 river miles upstream), requiring a detour of approximately 60 miles. Regardless of what type of detour plans are implemented, an additional bridge in Salem would be the best solution to handling traffic detours from incidents on the existing bridges.

Following two incidents in 2005 that closed the Marion Street Bridge, the City and ODOT jointly developed plans for converting each of the bridges to two-way operation in the event of a bridge closure. These plans, completed in January 2007, are very complex and would take approximately three hours and dozens of staff to implement. The equipment needs for converting each bridge based on this 2007 plan are listed in the table below. Depending on the time of day, it may be very difficult to get the crews and equipment to the affected areas.

[1] There is also one existing pedestrian bridge (Union Street).

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Estimated Equipment Needs (based on 2007 plan)

Resource	Marion Street Conversion	Center Street Conversion
Cones	364	465
Signs	44	53
Barriers	14	18
Flaggers (long-term)	3	3
Reader Boards	Along main access routes; number and placement to be determined	

The difficulty in converting these bridges to two-way operation stems from their design as one-way bridges with several directional ramps feeding and off-loading traffic from the bridge spans. The one-way street pattern on the east side of the bridge adds to the complexity of a conversion to two-way operation.

Implementation of these plans would allow for continued two-way flow across the Willamette River, but with significant limitations. The capacity to move vehicles would be severely impacted, resulting in gridlock that could extend well beyond the area of the bridges. Safety would be compromised due to the complex nature of the conversion and resulting congestion. If a long-term closure is anticipated, additional modifications to the plan would be needed.

The Union Street Pedestrian Bridge was not open to use when these conversion plans were developed in 2006 and 2007. Since that time, this former railroad bridge was opened for use by bicycles and pedestrians. The bridge deck is 14 feet wide connecting to a 12-foot-wide path. The bridge decking is designed to accommodate most emergency vehicles, with the exception of certain specialty fire trucks such as ladder or tanker trucks. This new bridge provides an opportunity to enhance river crossing capacity in the event of a prolonged closure of one of the existing bridges. However, given the width and limited roadway connections, it is likely this facility would only be used for limited emergency vehicles and pedestrian and bicycle travel.

In conclusion, the City and ODOT have plans in place to support a temporary conversion of the Marion and Center Street bridges to two-way operation in the event of a significant closure of the companion bridge. These plans would allow two-direction travel across the Willamette River, but the system would not approach the capacity needed to meet travel demand. Implementing and maintaining these plans would also take significant equipment and staff. The limited detours and resulting congestion would have a significant impact on personal and freight mobility throughout the mid-Willamette Valley.

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Attachments:

1. Alternate Traffic Routing for Emergency Closure of Marion Street Bridge (January 2007)
2. Alternate Traffic Routing for Emergency Closure of Center Street Bridge (January 2007)

cc: Dan Fricke, ODOT Region 2 Senior Planner, Salem River Crossing Project Manager
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