

Second Bascule Bridge Phasing

Introduction

How was phasing of the second bascule bridge addressed in the preferred alternative?

The SR 520 I-5 to Medina preferred alternative included a second bascule bridge across the Montlake Cut to the east of the existing bascule bridge. This second bascule bridge will improve traffic operations on Montlake Boulevard, increasing speed and reliability of both local and regional bus service. The new bridge also features an 18-foot pedestrian/bicycle path on the east side, as recommended by the ESSB 6392 Workgroup. In order to construct the second bascule bridge, WSDOT must acquire two residential properties at the corner of Montlake Boulevard and Shelby Street.

What comments were received?

The SDEIS proposed a construction timeline for the bascule bridge of 2016 to 2018. The Seattle City Council expressed concern about the timing of and need for the second bascule bridge, particularly in the context of impacts to adjacent property owners. The Council asked WSDOT to consider transportation demand management and other traffic management measures that might postpone the need for the bridge.

Addressing the problem

How did we identify possible solutions?

A subgroup of the Technical Coordination Team (TCT) was formed to identify approaches to phase construction of the second bascule bridge. The subgroup included participants from WSDOT, SDOT, and the Seattle City Council. The subgroup reviewed interim channelization plans for the corridor as well as a VISSIM model that illustrated the preferred alternative without the second bascule bridge. Due, in part, to this information, the subgroup recognized the need for the second bascule bridge and began to explore “triggers” that would more clearly signal the need to construct the bridge.

Recommendations

What did we consider?

The subgroup recognized that transit service reliability on Montlake Boulevard is poor today and that traffic operations will degrade in the future if traffic volumes increase as forecast. The subgroup acknowledged the difficulties of predicting changes in traffic volumes along this corridor after tolling begins on SR 520 in 2011. In addition, the volume of pedestrians and bicyclists crossing the Montlake Cut is expected to increase with the completion of the regional path across SR 520 in 2014 and the opening of the University Link UW station at Husky Stadium in 2016.

The subgroup brainstormed ideas related to the phasing of the second bascule bridge, which fell into two main categories:

1. Level of service measures that could trigger construction of the bridge.
2. Interim traffic management opportunities that may delay the onset of the triggers.

Level of service measures considered by the subgroup included:

- Transit travel times for both local and regional bus service.
- Pedestrian and bicycle levels of service across the Montlake Cut.
- General purpose travel times between Pacific Street and SR 520.
- Queue lengths on Montlake Boulevard north of the Montlake Cut.
- Cumulative passenger delay for transit riders.

Interim traffic management opportunities considered by the subgroup included:

- Implementing an intelligent transportation systems (ITS) program on Montlake Boulevard north of 45th Street.
- Installing transit priority treatments to key intersections on Montlake Boulevard.
- Extending the existing transit queue jumps.

Ultimately, the subgroup agreed to recommend two triggers to TCT: one related to transit travel times, and one related to pedestrian and bicycle levels of service across the Montlake Cut. The subgroup determined that these triggers best related to the core purposes for building the second bascule bridge and would be relatively easy to monitor over time. The subgroup also recommended moving forward with interim traffic management opportunities, as funding allows.

The subgroup presented these recommendations to TCT and led a discussion about phasing in general and triggers specifically. TCT recommended adding a third trigger related to SR 520 operations to ensure that traffic does not back up onto SR 520 from Montlake Boulevard. Additionally, TCT members expressed interest in helping to set the specific trigger thresholds and recommended that a committee be established to complete this work.

In addition to recommendations about phasing the bridge, the subgroup developed a recommended interim channelization for Montlake Boulevard for the period following construction of the floating bridge and west approach but prior to construction of the second bascule bridge. Two options for interim channelization were considered:

- Restriping the existing bascule bridge with an HOV lane in each direction (1 general purpose and 1 HOV lane in each direction).
- Maintaining the current striping on the existing bascule bridge (2 general purpose lanes in each direction).

After reviewing a VISSIM model showing the existing bridge with an HOV lane in each direction and exploring the challenges related to channelizing HOV lanes in the corridor with such a configuration, the subgroup determined that this option would have significant negative impacts on traffic and transit

operations along Montlake Boulevard and SR 520.

The second option for interim channelization maintains the current striping on the existing bascule bridge and implements transit priority treatments at Shelby Street (northbound) and Pacific Street (southbound) to ensure reliable transit operations (see exhibit 1). Additionally, the HOV receiving lane on northbound Montlake Boulevard plays a significant role in ensuring regional transit reliability for vehicles exiting SR 520 via the direct access ramps. Following discussion of both options, TCT concurred with the subgroup's recommendation to maintain the current striping and implement transit priority treatments.

Final TCT recommendation

The TCT recommends the following, based on the work of the subgroup and subsequent discussion:

- Include the second bascule bridge in the SR 520 FEIS.
- Establish three separate metrics to trigger the construction of the second bascule bridge. These triggers should be related to transit travel time, pedestrian and bicycle levels of service, and SR 520 operations.
- Identify opportunities for traffic management that may delay the onset of these triggers.
- Establish a committee that includes WSDOT, SDOT, Seattle City Council, King County Metro, Sound Transit, and University of Washington to identify the exact triggers/metrics and the next steps for implementation in the measurement of these triggers/metrics.
- Prior to construction of the second bascule bridge, maintain the channelization and striping across the existing bridge and implement transit priority treatments.



Exhibit 1. Channelization without the second bascule bridge.