SR 520 Floating Bridge and Landings
City of Medina, Committee of the Whole (COW)
Friday, July 18, 2016
10:00 – 11:00 a.m.
Medina City Hall

Attendees
State
- Rep. Kuderer
- Rep. McBride

WSDOT
- Dave Becher
- Larry Kyle
- Lawrence Spurgeon
- Stacey Howery

City of Medina
- Mayor Morcos
- Deputy Mayor Wen
- Councilmember Cynthia Adkins
- Councilmember Patrick Boyd
- Michael Sauerwein, City Manager
- Robert Grumbach, Director of Development Services
- Aimee Kellerman - City Clerk/HR Manager

Public
- Mark Nelson
- Approximately nine other members of the public were in attendance

Materials
- Agenda; Q & A document

Meeting Overview
- WSDOT is working to complete additional noise measurements in Clyde Hill and Yarrow Point; have not yet heard back from some residents to schedule measurements at their property.
- WSDOT asked that questions from the Council be routed through Michael Sauerwein and Robert Grumbach to streamline the response process.
- WSDOT proposed to change August meeting to mid-August.

Participants reviewed WSDOT’s current draft of a question and answer document and discussed the following topics:

Speed limit adjustments: WSDOT
- WSDOT did not recommend lowering the SR 520 floating bridge speed limit due to the statute that designates SR 520 to be signed at 60 mph.
- The Secretary of Transportation can decide to change the speed limit with consultation with Washington State Patrol.
- Reducing the speed from 60 mph to 50 mph may not be enough for a noticeable change in noise.

Funding sources: WSDOT
- Funding for a study that would test fatigue with sinus place attachment holes and determine a rough order of magnitude would likely require approval by the State Legislature. The program has agreed to continue working with the City and Mageba to identify potential options, but additional funding would be needed for implementation. Federal funding would likely not be available for this type of study, particularly because noise levels have been measured below the federal criteria for noise abatement.
• The noise issue arose towards the end of the last legislative session. Additional funding will need to be identified in the next legislative session to move forward with a study or other modifications to the expansion joints.

Additional studies: WSDOT
• Additional studies are needed to understand the best and most effective way to mitigate noise from the joints.
• The I-90 and Tacoma Narrows Bridge joints have been studied and measurements were taken above and below the joint. One of the lessons learned from these joints was that the encapsulation underneath the joints helps control noise.

Additional noise mitigation options: WSDOT
• To retrofit the existing joints with sinus plates would be challenging. Some of the existing joint beams would need to be removed and replaced. Most beams of the joint would require drilling to create threaded holes and fabricating plates to be bolted to the beams. Field welding is not an option because WSDOT is concerned with how long field welds would hold, based on experience on the I-90 Bridge joint. Removal and replacement of some of the beams may also void manufacturer's warranty and decrease service life of the expansion joints.
• Mageba could not verify if sinus plates would be a successful retrofit option. The range of motion on the large joints between the floating and fixed sections of the bridge may not allow the placement of sinus plates on that type of joint.
• For retrofit to take place, 520 would need to be closed for possible several weekends. I-90 Bridge must be open for these full closures of the 520 bridge. The design team is currently reviewing I-90 construction schedules to see when a potential retrofit could be accomplished, considering the I-90 schedules.
• The Mageba Robo®Mute system would not provide additional noise reduction since the large joints are already encapsulated.
• Noise walls might be a faster and more cost-effective option over the sinus plates, (this effort would also include an engineering analysis of the bridge to ensure that the additional walls would not result in structural loading problems on the bridge). However, additional noise walls would only be beneficial in areas with direct line-of-sight to the joint, which represents a relatively small area.
• It would be difficult and not financially realistic to engineer and build a lid to span over the expansion joint section of the bridge that is both heavy duty and aerodynamic. The additional structural loading on the bridge would also be problematic.
• To learn about experiences with roadway noise and performance issues with retrofitted joints, WSDOT has been in contact with representatives in British Columbia who have completed a Mageba joint of similar size on a cable stayed bridge.
• The Golden Ears Bridge, in British Columbia, has installed geotech fabric “socks” filled with pulverized rubber between joint members. They have seen a decrease in noise from this solution but have found it requires a lot of maintenance. WSDOT will continue to research this option as well as other similar potential mitigation techniques.
• Due to limited funding, installing material between the joints would be most likely option to potentially reduce noise, since joint replacement would likely be cost prohibitive. However, this option would both require further study and investigation before determining the cost and potential effectiveness.

Next steps
• Topics for August COW: Provide first draft of work plan for retrofit or replacement.