SR 520 Floating Bridge and Landings
Medina noise: tech team meeting #1
Friday, July 8, 2016, 1 – 3 p.m.
Medina City Hall

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

City of Medina
- Michael Sauerwein
- Robert Grumbach

Materials
- Agenda
- Draft responses to combined questions from the City Council
- Compilation of joint-noise-related materials

Key topics discussed

General discussion
- Information from these meetings will be shared with the Committee of the Whole and members of the public, if interested.
- WSDOT is working to complete additional noise measurements in Clyde Hill and Yarrow Point; have not yet heard back from residents.
- WSDOT asked that questions from the Council be routed through Michael and Robert, to help ensure that answers are provided in a timely manner and to help decrease duplication of questions/answers.
- WSDOT noted that having COW meetings on Mondays does not work for the WSDOT team, as all team members have conflicts. This will be discussed at the July 18 COW meeting.

Next steps
- WSDOT will contact Mageba to discuss participation in a future COW meeting either by phone or in-person. The City might be willing to pay to have a representative at the meeting in-person.
- WSDOT will check with the leadership team and provide a response regarding the participation of the city attorney in Tech Team meetings.
- WSDOT will evaluate the joints and roadway near the joint during the next closure.

Topics for July 18 COW:
- Provide list of questions and answers compiled from Council since the June 13 council meeting.
- Focus on the questions regarding the Mageba joint.
- Request specific questions to be shared with Mageba so that they can have the right staff available during the call (or attend in-person.)
During the Tech Team meeting, participants reviewed WSDOT’s current draft of responses to questions received since the June 13 council meeting. Summary notes of the discussion are below, collated by topic.

1. Adjusting / lowering speed limit
   - WSDOT noted that it is probably not advisable to lower the speed limit on SR 520 at the floating bridge due to underlying statute that says SR 520 is to be signed at 60 mph and difficulty getting drivers to maintain that speed if there are low volumes of traffic.
   - The city asked for clarification on the decision-making process. Initially, after project engineers have reviewed, Northwest Region traffic engineers would need to review. Final approval is delegated from the Secretary of Transportation to the State Traffic Engineer, and requires consultation with the State Patrol.
   - One criteria used in the evaluation is ease of enforcement, which on 520 may be the only way to get drivers to comply.
   - Regarding the proposed speed limit reduction on the Portage Bay Bridge, the bridge is in a transition zone, which is why the reduction might work. However we know that, even today, when there is no traffic on the bridge, drivers will go over 60 mph, even though it is signed for a maximum of 50 mph.

2. Joints / history
   - WSDOT knew expansion joints can be an issue, so when we were working on the design and RFP, we required the joints to be encapsulated. Based on our current measurements, this has resulted in an approximately 10 dBA reduction as compared to Tacoma Narrows Bridge and I-90.
   - WSDOT is open to taking additional measurements at or around the joint if it would be helpful to determine the potential effectiveness of one or more of the potential mitigation options.
   - The joints installed on the floating bridge were state of the art when the bridge was designed. After the floating bridge was designed, Mageba completed additional, required fatigue (or endurance) testing to allow the plates to be used on WSDOT projects. The joint being installed by the WABN project does have sinus plates. This is because of the timing of design for the bridge vs. timing of completion of endurance tests in North America. There was no proven safe/effective design for sinus plates or similar joint covers when the floating bridge was being designed. We are looking forward to installation on west side to see how it will work, particularly because there is some question about the plates effectiveness.
   - The group discussed the timeline for design and approval for the joint. This information will be included in the Q&A document to be provided to the COW on July 18.
   - The sound coming from the new floating bridge is in compliance with current federal and state criteria.
   - If the joint were to be retrofit or replaced, work likely could not begin until 2018 due to the need for good weather and other regional construction projects already underway. (Materials provided from Mageba showing possible process for retrofitting the joint.)

3. Source of noise
   - Primary sound is tires striking the beams of the joint.
   - It’s possible that there is some air pumping within gaps of seals between the beams.
   - WSDOT does not believe that there is a trumpeting effect from the encapsulation.
   - Underside encapsulation is capturing sound and not putting back to neighborhood.
   - WSDOT does not believe that the sound walls are reflecting/amplifying the noise.
   - There does seem to be a difference heard in the sound from the eastbound versus westbound joints. This may be due to the direction of travel and/or geometry of the joints.
- WSDOT is checking with KGM to get a scope and scale to determine feasibility of engineering for expansion/addition of noise walls. Noise walls are most effective when they block the receivers line-of-sight to the source of the noise, so this would have a limited area of influence.

4. Other noise mitigation options
- WSDOT is committed to continue working with the City on this issue. A table of potential mitigation options is included in the Q&A document. Since the noise from the new bridge is within federal and state criteria, implementation of any of these options would require identification of additional funding by the legislature.
- Review table in Q&A document for overview of discussion.
- The addition of “batts” between the beams/seals has been tested on the Golden Ears Bridge in Vancouver (bridge joints are not encapsulated.) The batt is essentially a “hose” with pulverized rubber in it. They have noticed about 5-7 dBA reduction, however the batts deteriorate fairly quickly, resulting in significantly increased maintenance costs. On 520, we would also have a concern about the rubber getting into the lake when the batts fail.
- The purpose of the Mageba Robomute is to stop noise escaping through bottom of the joint; WSDOT does not expect that adding the Robomute to the encapsulated joint would provide additional benefits.