SR 520 Floating Bridge and Landings
Medina noise: Committee of the Whole meeting summary
Wednesday, April 12th, 2017
Medina City Hall

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

Others
- Approx. six members of the public

City of Medina
- Mayor Morcos
- Deputy Mayor Wen
- Councilmember Adkins
- Councilmember Boyd
- Robert Grumbach
- Michael Sauerwein
- Aimee Kellerman

Materials
- Agenda
- WSDOT questions and answers on Mageba expansion joint proposal
- Mageba proposal with WSDOT annotations

Key topics discussed
Overview of Mageba proposal (Dave Becher)
- Mageba, the expansion joint manufacturer, sent WSDOT a proposal on Feb. 15, 2017. After receiving the proposal, WSDOT sent several questions to Mageba regarding the proposal.
  - The questions and Mageba’s answers are provided in a handout.
- It is important to note that there are costs and policy considerations associated with the proposal.
  - Legislative authorization and funding would be required for WSDOT to move forward with a pilot project.
  - The noise from the new expansion joints is below both the applicable federal noise mitigation criteria and the modeling included in the environmental documentation.
- Question (Councilmember Adkins): Did the previous program on the Ship Canal Bridge comply with federal noise standards?
  - Answer (WSDOT): The neighborhood was above the noise abatement criteria prior to the project.
  - Question (Councilmember Adkins): Would this be the first time WSDOT looks at noise abatement where federal requirements are already met?
  - Answer (WSDOT): Yes, it is the first one we are aware of.
  - Question (Councilmember Adkins): How many is WSDOT aware of? They have been doing noise mitigation since the 1970s.
  - Answer (WSDOT): The state has a policy and program to track and evaluate corridors for retrofits in areas that are above federal criteria. I am not aware of any noise abatement projects where the area was already meeting federal criteria. While we’re not
aware of this situation, we can look into whether this has been done in any other locations in the state.

- **Update – 5/5/17 (WSDOT):** WSDOT staff conducted some research and confirmed that this would be the first time that WSDOT would consider noise abatement where a facility is already meeting the federal criteria. If a community does not qualify for noise abatement, they do occasionally receive inexpensive options such as a 6-foot tall fence during construction, plantings or jersey-type barriers.

- **Mageba has developed estimated costs for materials and Mageba’s supervision associated with installation of the pilot project.**
  - Mageba’s estimate does not include installation, evaluation or maintenance costs.
  - WSDOT’s estimated total cost and duration of a pilot project is:
    - Between $2 and $6 million, including materials, labor, traffic control and loss of toll revenue.
    - Between three and five years to receive approval, contracting and installation.
  - The cost and duration of the project demonstrate the need for legislative authorization and funding prior to proceeding with a pilot project.

- **Question (Mayor Morcos):** Would you need another $2 to $6 million every five years?
  - **Answer (WSDOT):** We don’t know at this time. The Golden Ears Bridge in Vancouver, Canada is not an identical situation, so it is difficult to draw conclusions from their data. However, the material on the Golden Ears Bridge does wear out and requires significant maintenance every six months, with a full replacement roughly every two to three years. The Mageba product in this pilot proposal may last longer but this would be the first project to use this specific material on a bridge with this large of traffic volumes.

- **Question (Mayor Morcos):** Would the Mageba product be better than the product used in Vancouver?
  - **Answer (WSDOT):** The [packet](#) includes a diagram of how the project would be used. Mageba has provided estimates but has not provided definite answers to noise reduction numbers. While this installation will not be exactly identical to previous Mageba installations, at this point we estimate that the noise reduction may be up to five decibels. We also estimate that the noise reduction will be in the correct frequency and would likely be noticeable to the human ear. The pilot project would give us data about how the products would reduce noise from the new SR 520 bridge.

- **Comment (Mayor Morcos):** $2 to $6 million dollars is still a better price than retrofitting or replacing the expansion joint with sinus plates which was closer to $20 million.
  - **Comment (WSDOT):** Yes, the cost for the foam is better in terms of upfront cost. However, the maintenance costs for the foam solution are likely higher. Installing the sinus plates on the floating bridge joints has more technical issues.

- **If WSDOT receives legislative authorization and funding for the pilot project, we estimate up to two years to complete contracting and installation.** This timeline has to do with advertising and finding a contractor for the project, incorporating three to five weekend closures of the bridge, and the necessary conditions for the work – dry weather and above 50 degrees Fahrenheit.

**Brief review of 1/27/17 Mageba proposal (Dave Becher)**

- A photograph in the upper right of the [January 2017 Mageba handout](#) shows the U-shaped rubber seal of the expansion joint.
  - Currently, the seal looks like a “V.” Replacing it with the more rectangular, U-shaped seal would provide a larger adhesion area and would likely be more durable.
Review of 2/15/17 Mageba proposal and WSDOT questions (Dave Becher, Larry Kyle and Lawrence Spurgeon)

- In February, Mageba provided a more detailed proposal.
  - The reason the draft proposal includes WSDOT-added comments and annotations in green is to show you some of the conversations WSDOT had with Mageba.
  - To assess the best material for this environment, Mageba proposed testing three different, but similar, foam solutions for a pilot project:
    - Top-Plast
    - Abena
    - Vibraplast
  - Larry Kyle noted that Mageba has developed U-shaped rubber seals to use in conjunction with the foam solutions.
  - Mageba estimates that each option would provide about the same amount of noise reduction, so the pilot project would primarily be to test the differences in durability for each material.

- Question (Mayor Morcos): Your last email suggested they were testing six different materials. Is this no longer the case?
  - Answer (WSDOT): Mageba tested six materials and narrowed it down to these three options.

- Question (Deputy Mayor Wen): Would each material have the same effect for noise reduction?
  - Answer (WSDOT): The characteristics of each foam are similar, so we expect they would provide similar noise reduction.

- We will discuss another solution, Robo®Mute, shortly. This product will be installed on the West Approach Bridge, where, unlike on the SR 520 floating bridge, there is no encapsulation underneath the expansion joints.

- Larry Kyle continued reviewing Mageba’s February proposal.
  - Mageba proposed installing all three materials in sections on a single expansion joint for testing. As we will discuss, WSDOT has some hesitations about how this might affect the reliability of the pilot project data (both noise and durability). Instead, if a pilot project is authorized and funded, WSDOT would suggest modifying the project to include one type of foam on each of the four large joints. This would create more reliable and discernable data for both durability and noise reduction.
  - In Vancouver, the bridge has V-shaped seals that are filled with noise reducing material and then covered with a thin, foam cap. As traffic crosses the joints, the material cracks, breaks and flies out of the joint.

- Question (Councilmember Adkins): Which foam material do they use in Japan?
  - Answer (WSDOT): Mageba has not provided that information but we have asked several times. However, it is important to note that the setting in Japan where they have used the Robo®Foam material is rural and has a low-volume of traffic.

- Question (Deputy Mayor Wen): Could you clarify the pictures on slide seven?
  - Answer (WSDOT): Mageba set-up a smaller version of the joint to simulate conditions on SR 520. In the test pictured, Mageba filled the joint with water and froze it to assess movement’s effect on the material. The seal and foam material would be installed slightly below the surface of the beams to prevent contact between tires and the foam, even with bridge expansion. We would want to test each material through a winter to assess durability, particularly in relation to snow chains and studded tires on vehicles.

- Question (Deputy Mayor Wen): What’s the depth from the material to the surface?
Answer (WSDOT): As you can see on slide nine, the dimensions of the Top-Plast foam solution would be 2 meters long by 80 millimeters wide by 60 millimeters deep, or about 2.25 inches. The U-shape would be over two inches deep to allow room for the depth of the foam.

Larry Kyle continued reviewing Mageba’s proposal:

- Since the foam material is shorter than the width of the lanes, there will be joints or seams in the material width-wise across the bridge. We would attempt to align the seams at lane lines. However, not all the foam materials are the same length which would result in some foam material not aligning with lane lines and potentially resulting in more tire traffic on the seams.
- The foam materials are roughly the same dimensions, the density is generally consistent and each material is a closed-cell foam, similar to the soles of athletic shoes. Due to these similarities, Mageba concludes that noise mitigation would be consistent across the materials.

Question (Councilmember Adkins): Has Mageba sent any data on where this technology was used in Germany?

Answer (WSDOT): No, Mageba has said this material has many uses. They have not identified a joint where this has been used for noise mitigation other than in Japan.

Question (Deputy Mayor Wen): What is “LR16”?

Answer (WSDOT): Those are designations for the SR 520 floating bridge expansion joints. On each end of the bridge, LR16 is the large joint and LR6 is the small joint.

Question (Neighbor): You mentioned the wear and tear on the material. Is it likely that studded tires and chains would be prohibited on the bridge because of the foam?

Answer (WSDOT): That would have to be evaluated as a policy decision. Such a decision may face similar challenges to eliminating studded tires on state roadways.

Question (Deputy Mayor Wen): It looks like this material - Top-Plast - would be $20,000, so how did WSDOT come up with a cost of $2 to $6 million?

Answer (WSDOT): The $20,000 figure is Mageba’s estimated cost for one-third of one expansion joint. WSDOT’s installation includes installation on multiple joints and the costs of labor, traffic control and loss of toll revenue.

Question (Neighbor): The primary noise concern in the immediate neighborhood is the large expansion joint (on the east end of the bridge in the westbound lanes). Are we also discussing these solutions for the smaller expansion joints?

Answer (WSDOT): Mageba suggested installing the technology on smaller, LR6 joints as well. We based our cost estimates on installation of the foam only on the four large expansion joints. Note, the WSDOT estimate also excludes the Robo®Mute, which Mageba had originally included.

Question (Neighbor): Which foam material is narrower?

Answer (WSDOT): The shortest material is Abena foam, at 1.6 meters long which would produce at least two seams in every lane. Abena is probably produced as a “sheet good,” meaning it would be very expensive to request it in a wider/different size.

Question (Mayor Morcos): As a customer, could we request a longer piece?

Answer (WSDOT): You could ask.

Comment (Mayor Morcos): The City of Medina is primarily concerned with a material that reduces noise and is easy to maintain.

On page 17, Mageba discusses the Robo®Mute option, an option being installed on the West Approach Bridge North where the joints are not encapsulated. The cross-section diagram on page 18 illustrates what the small expansion joint might look like with a Robo®Mute option.
Lawrence Spurgeon reminded the group that WSDOT is not proposing a Robo®Mute option for the large expansion joints because they are already enclosed in concrete boxes. Mageba proposed testing the Robo®Mute option as part of the draft pilot-project proposal. However, a Robo®Mute option adds significant cost, and WSDOT does not see an engineering reason to add the technology to a joint that is already enclosed.

- **Question (Councilmember Adkins):** Did Mageba think the Robo®Mute option would replace the concrete box?
  - **Answer (WSDOT):** No, Mageba’s speculation was that sound may travel down into the encapsulation and then back out to the roadway. However, because the large joints are completely enclosed underneath, WSDOT has concluded that a Robo®Mute option would not result in significant additional noise reduction.

- **Question (Mayor Morcos):** Would you need to close the bridge to install a Robo®Mute option?
  - **Answer (WSDOT):** No, it can be installed from underneath the bridge.
  - **Question (Mayor Morcos):** Since it seems easier, would you want to consider testing the Robo®Mute?
  - **Answer (WSDOT):** By itself, the Robo®Mute option would have very little to no noticeable noise reduction without a foam option in place. The “pump” or “drum” air-compression action as cars cross over the expansion joints is the sound we hear, not a noise from underneath the bridge that a Robo®Mute option would mitigate. We considered whether there would be any additional noise mitigation by installing a Robo®Mute option inside the enclosure. However, installing the Robo®Mute would make inspection and maintenance more challenging because it would have to be removed and reinstalled for every joint inspection. WSDOT does not see any potential for a Robo®Mute option to create additional sound reduction. They are being installed on the West Approach Bridge North because those joints are not enclosed.

- **Question (Deputy Mayor Wen):** We are concerned about the concrete box acting like an acoustic chamber. Would the Robo®Mute option help reduce that effect? Could we add a Robo®Mute option to one joint in the pilot project?
  - **Answer (WSDOT):** You could test it. You could also install foam above and examine the data for a chamber or bounce-back effect. A Robo®Mute option could be retrofitted at any point. This is just a pilot project so the next step in designing the project would require legislative funding and authorization.

- **Question (Mayor Morcos):** To confirm, the $2 to $6 million figure does not include the Robo®Mute option?
  - **Answer (WSDOT):** Correct.

  - **Comment (Councilmember Boyd):** I support moving forward with the testing of foam materials in the pilot project, reviewing the results, and then retrofitting a Robo®Mute option if necessary.

  - **Comment (Mayor Morcos):** I agree, let’s focus on the foam right now which may prevent sound from escaping upward out of the concrete box.

  - **Comment (Councilmember Adkins):** I disagree. If some experts are saying a Robo®Mute option might help then it should be an option we try in the pilot project.

  - **Comment (WSDOT):** You could try an incremental approach to collect the best data: first install the foam, and then test the Robo®Mute option later.

  - **Comment (Robert Grumbach):** Since we would use public money on this, we would need the results to justify the cost.

  - **The group continued to evaluate whether to include a Robo®Mute option in the pilot project.** Larry Kyle reminded the group that WSDOT had asked Mageba for all the
options regarding noise reduction which is why Mageba sent all possible options. However, this doesn’t mean all the options should be used. The group agreed to move on with the pilot’s focus on the three foam materials.

- Larry Kyle presented Mageba’s draft pilot-project proposal.
  - Prices reflect Mageba design and materials for installation on one expansion joint.
  - Option 1 shows applying foam to an LR6 (small) joint which WSDOT does not recommend.
  - Option 2 shows applying foam to an LR16 (large) joint. WSDOT would recommend applying one foam type to each of the four LR16 joints for data collection purposes.

- Question (Mayor Morcos): What is the definition of one joint?
  - Answer (WSDOT): There are two at each end of the bridge, one westbound and one eastbound joint.
  - Comment (Mayor Morcos): Westbound (at the east end of the bridge) is the larger noise problem. Vehicles traveling downhill is the louder noise.
  - Comment (Councilmember Boyd): We should install on the downhill on each side of the bridge as this is also a concern on the eastbound west side.

- Larry Kyle reminded the group that WSDOT suggests using foam in all four large joints for more scientific data on the material durability and noise reduction.
  - Comment (Councilmember Boyd): The incremental cost isn’t material; it’s the work and closing the roadway.
  - Answer (WSDOT): That’s correct. Testing foam on all four joints is more labor but the same number of weekend closures as working on fewer joints.

- Question (Mayor Morcos): So, the $115,968.37 is the total cost?
  - Answer (WSDOT): That would be the approximate cost to install all foam material on one joint. Our pilot project would multiply this by four joints but we wouldn’t include the Robo®Mute option.
  - Question (Mayor Morcos): Can you give us a breakdown of the $2 to $6 million?
  - Answer (WSDOT): It depends on the number of weekends worked. Lost toll revenue is approximately $220,000 per weekend. Closing the freeway for a weekend is $125,000. The drying of the glue requires about twenty-four undisturbed hours which drives a lot of this process and increases the closures to several weekends. The pilot project’s data needs to be good, so we don’t want to rush the process.

- Question (Neighbor): Do you have cost estimates to replace the foam material?
  - Answer (WSDOT): The bulk of the overall cost estimate is traffic control and lost toll revenue so removing the foam but leaving the seal would require highway closures but less labor and closures could likely be shorter, since we wouldn’t need to wait for the glue to cure. A large part of the material cost is the seal which could remain even if the foam material needed to be replaced.
  - Question (Michael Sauerwein): If you decide after testing that one foam material is best, would you recommend replacing that material at the three other joints?
  - Answer (WSDOT): Yes, we may only need to replace foam at three joints.

- Question (Councilmember Adkins): Why does glue curing drive the cost?
  - Answer (WSDOT): It determines how many weekend closures are needed. The glue has a certain curing time – twelve to thirty-six hours – and cars cannot drive on the bridge while the glue is curing because of disturbance from vibration. In one weekend, crews would remove the existing rubber seal and install the new seal, the glue and the foam material. Since the large joints have sixteen openings, crews cannot complete all of the joints in one weekend. Multiple crews could work on multiple joints at the same time,
however only one seal can be replaced at a time. This is because the joint being worked on must be expanded, thus compressing the other gaps between the beams. We estimate it would take three to five weekend closures.

- **Question (Mayor Morcos):** Have you estimated the maintenance costs?
  - **Answer (WSDOT):** We estimate that the material would have to be replaced about every five years. It will likely require other annual maintenance, too. If maintenance does not require replacing the rubber seal, then it could be quicker and less costly than the current estimate of an additional $2 to $6 million.
  - **Question (Councilmember Adkins):** How does that compare to I-90 bridge maintenance?
  - **Answer (WSDOT):** We maintain all bridges on a regular basis but expansion joints generally require less maintenance. On the joints, you typically only have to replace the rubber seals about every twenty years. On I-90, the joints were replaced a few years ago for the first time since the bridge opened in the 1980s. They currently only require routine inspection.

### Questions and next steps

- Larry Kyle reviewed the next steps and timeline on Mageba’s February proposal.
- A pilot project would need to be added to an existing contract or would need an executed, separate contract with a competitive process; WSDOT cannot contract directly with Mageba, and Mageba does not install the components.
- **Question (Councilmember Adkins):** Could a change order to the current contract accommodate this?
  - **Answer (WSDOT):** There are a couple of issues. Kiewit/General/Manson’s contract is scheduled for completion this year. There would be a large premium to extend the contract with a change order.
- Larry Kyle reviewed WSDOT’s final questions for Mageba on the draft pilot-project proposal:
  - **How much noise reduction is expected from each of the foam solutions?**
    - The technology is in use on one bridge in Japan but the bridge is small and low-volume (estimated at 5% of SR 520 traffic). Mageba measured a five-decibel noise reduction at the top of a joint on that bridge. That is a noticeable reduction but it is hard to compare that bridge to SR 520. Measurements from the bridge in Vancouver show about a seven-decibel reduction.
  - **Question (Michael Sauerwein):** For the non-engineers here, what does a five-decibel reduction mean?
    - **Answer (WSDOT):** If you are out on a deck, walk inside and close the door, that difference in sound is about 20 decibels. A five-decibel reduction is less than that but still a difference that the human ear can readily perceive. A five-decibel change is not the difference between painful and comfortable noise; it’s more like turning down a TV a perceptible amount.
    - **Answer (Mayor Morcos):** Another way to explain a reduction of five decibels is if you moved from 50 feet away from the bridge to 100 feet away.
  - **Question (Robert Grumbach):** We discussed the frequency range being an issue as well. Would this solution have any impact on that?
    - **Answer (WSDOT):** We don’t have acoustical measurements from the Mageba proposal. The material in Vancouver was selected because its best noise reduction was in the same frequency range as the peak joint noise. Because the materials proposed have similar densities, they all probably reduce noise in a similar, correct range.
- **Comment (Robert Grumbach):** It’s not just the volume; we’re trying to eliminate the annoyance aspect.
- **Comment (WSDOT):** The evidence suggests these materials should give a five-to six-decibel reduction at the peak frequency on these joints.
- **Question (Councilmember Adkins):** Can you obtain the material to test it in-house? It seems like we should obtain this data before doing the pilot project. There are labs that can do such testing. NASA implements noise tests on certain materials.
- **Answer (WSDOT):** There are only a handful of labs around the world that are set up to do this type of vehicle-noise testing. We can ask Mageba whether they have done this type of testing.
- **Comment (Councilmember Boyd):** Taking five decibels off the peak noise will not solve the problem. The annoyance is the rhythm and presence of the sound, not its volume.
- **Answer (WSDOT):** That is correct and there is nothing we can do to eliminate this rhythm entirely. However, we could potentially make it less noticeable by reducing the volume in the frequency that is more distinct from the general roadway noise.
- **Question (Deputy Mayor Wen):** Could we contract with UW to test the material? I’ve seen this sort of testing of material for frequency-volume reductions.
- **Answer (WSDOT):** The pilot project proposal includes before-and-after testing, but it has not specified who will conduct the tests.
- **Question (Mayor Morcos):** In the study in Japan, did Mageba provide any information on the frequency? The old bridge was louder, but the frequency was such that the noise was less apparent. Could the material also affect the frequency, bringing it closer to the white noise of the roadway?
- **Answer (WSDOT):** These solutions won’t affect the overall frequency; based on the other example installations they could potentially reduce noise in the 500- to 800-hertz frequency by approximately five decibels. If we realize this reduction, it would bring the more noticeable noise into approximately the same or lower volume as the general roadway noise (in the 1000-hertz frequency). The joint would still be an impulse noise.
- **Question (Mayor Morcos):** What are the expected durability, maintenance schedule and costs for the proposed foam solutions?
- **Answer (WSDOT):** The Japanese bridge has not had any maintenance issues but is a newer (less than a year) installation on a lower-volume roadway. WSDOT does not have any comparison to a joint the size (and with similar traffic volumes) of those on SR 520. Based on observations from the Golden Ears bridge in Vancouver, we expect better longevity than in Vancouver. The Vancouver bridge requires twice- or once-yearly maintenance, with full replacement of the material every two to four years.
  - **Question (Neighbor):** Could more severe weather in Vancouver affect the material? What about the bridge in Japan?
- **Answer (WSDOT):** Vancouver’s weather is similar to Seattle, and even slightly drier. The proposed foam material on SR 520 would be affixed in a way that should be more durable. The material will not last indefinitely and if it starts to break off into the roadway, deterioration may accelerate. A large reason for the pilot project is to determine the longevity and reliability of the material in addition to its acoustic properties. The bridge in Japan is slightly farther north than SR
SR 520 so it may see more snow and ice but it still has a similar, temperate climate with lower traffic volumes across the bridge. Snow tires and chains on vehicles could significantly damage the material on SR 520.

- **Question (Mayor Morcos):** Have you considered having a lane dedicated to chains and studs?
  - **Answer (WSDOT):** It is difficult to enforce one lane being dedicated to chains and studs and it would also cause one lane to wear out before others. We typically replace pavement in panels or segments that are slightly more than one lane wide. We also made a significant investment in the concrete on the bridge, and chains and studs will cause the most damage.

- **Question (Councilmember Boyd):** What will be the next steps for the results of the pilot project? We may find out one material is best but we may also learn that each material is roughly the same. Does the pilot project have an implementation plan?
  - **Answer (WSDOT):** WSDOT is not prepared to move forward with design of a pilot project without legislative funding and authorization. The legislature will need to consider the results and decide whether WSDOT should implement and maintain a solution. Without maintenance, the material may deteriorate and the noise will return.
  - **Question (Councilmember Boyd):** The legislature may ask why they are funding a pilot without a subsequent implementation plan.
  - **Answer (WSDOT):** In addition to the impact to this community, WSDOT also has to consider precedent as the expansion joints on other bridges, such as I-90, are louder. There are many needs throughout the state, including seismic projects, so the legislature would have to weigh those needs with this expansion joint issue.

- **Question (Neighbor):** How much funding would you require from the legislature if the pilot project is approved?
  - **Answer (WSDOT):** We estimate that the pilot project will cost between $2 and $6 million, including loss of toll revenues during closures.
  - **Question (Deputy Mayor Wen):** What is the real cost for WSDOT minus the lost toll revenue?
  - **Answer (WSDOT):** The $2 to $6 million estimate is the real cost because we owe revenues from the tolls to pay the bonds.
  - **Question (Deputy Mayor Wen):** Legislators could exclude that. What is the WSDOT cost minus the lost tolls?
  - **Answer (WSDOT):** The answer depends on the number of weekend closures. It’s approximately $220,000 in lost revenues per weekend. It would cost over $1 million if there are five weekend closures.
  - **Question (Mayor Morcos):** Could you synchronize closures with other scheduled closures?
  - **Answer (WSDOT):** Potentially, but it is challenging to coordinate work at the same time, especially when the pilot project work would significantly restrict contractor movement across the bridge.

- **Question (Mayor Morcos):** Are we assuming that the sinus plates are not an option?
  - **Answer (WSDOT):** At this point, we believe a foam solution is the best option. Retrofitting sinus plates is an expensive and risky option. Joint replacement is also significantly more expensive and would pose warranty and replacement issues.
- **Comment (Councilmember Boyd):** At this point, we should listen to WSDOT’s recommendation. We wanted sinus plates to work but they are not the answer in this location.
  - **Question (Mayor Morcos):** What are the next steps, action items and responsibilities?
  - **Answer (WSDOT):** We spoke with the Secretary of Transportation and a pilot project needs legislative authorization and funding to proceed. At this point, the Medina City Council can approach their representatives to ask them how to proceed in asking for legislative authorization. WSDOT will provide supporting information as needed but the proposal to the legislature for the pilot project will not come from WSDOT.
- **Comment (Mayor Morcos):** A two-page executive summary including a project explanation, timeline and cost would be helpful.
- **Comment (Robert Grumbach):** It would be helpful to get a recording demonstrating a five-decibel reduction.
- The group discussed factors that influence the noise level of the bridge for residents, such as wind direction and cloud cover and how this might affect measurements. The group then asked for clarification on the known information about the Mageba materials.
  - **Answer (WSDOT):** We know in the installation in Japan, the material produced about a five-decibel reduction at the top of the joint. The slightly different installation in Canada saw a reduction in the six- to seven-decibel range. We expect a reduction in the five- to six-decibel range from these materials. Longevity is the biggest question for the pilot project, but there would also be a plan to verify the noise reduction.
- **Comment (Michael Sauerwein):** We would appreciate a three- to four-page white paper to give to state legislators that outlines the proposed project, cost and benefits.
- **Comment (Neighbor):** Regarding the financial aspect: our population is increasing, and the bridge opened one year ago. At that time, the community opposed the tolls. Now, they are used to paying the tolls, and the revenues are coming in. It would seem toll revenues will continue to increase.
  - **Comment (WSDOT):** Toll revenues are meeting projected levels.
  - **Question (Mayor Morcos):** What’s next? Do we need to meet again?
  - **Answer (WSDOT):** We don’t need to meet again unless the group has more questions. We will work on a summary document.
  - **Question (Mayor Morcos):** It seems like you are happy with Mageba’s proposal, yes?
  - **Answer (WSDOT):** We are concerned about the cost. It is challenging for WSDOT to acquire funding for maintenance in general. Even if a Mageba solution would work, we need the revenue stream to maintain it. We don’t know the long-term costs but the bridge has a minimum 75-year lifespan. Replacing the material several times over the lifespan of the bridge would add up to a significant cost.
  - **Comment (Mayor Morcos):** The bridge needs maintenance on a yearly basis. The additional cost of noise reduction maintenance is relatively small. In your summary, please include annual maintenance expenditures on the bridge.
  - **Answer (WSDOT):** The costs are relative but a major design element of the bridge was to avoid traffic impacts by completing most all regular maintenance activities from underneath the roadway.
- **Comment (Mayor Morcos):** You’ll be doing maintenance anyway, so just synchronize closures with expansion joint work.
- **Answer (WSDOT):** Once we finish construction, there won’t be many full highway closures.
- **Answer (Mark Nelson):** We compete with many other bridges and roadway projects in the state that the legislature has to consider as well. We'll need to be cognizant of that. You should compile the best package you can for legislators but remain realistic.
- **Comment (Councilmember Boyd):** Mayor Morcos is right to ask for the maintenance costs. Even an estimate will help us when we speak with legislators. Additionally, this issue needs to come before the whole Medina City Council before we give official direction.
- **Comment (Michael Sauerwein):** Once we receive the summary/white paper from WSDOT, we should have a public process with distribution of information, an open house and perhaps a council meeting.
- **Comment (Mayor Morcos):** We have four councilmembers present and I doubt any member will say no to pursuing the pilot project.
- **Comment (Councilmember Boyd):** I agree but I maintain we should adhere to the proper process.
  - **Comment (Mayor Morcos):** Once we get the white paper, we will present it to the Medina City Council for final approval. We can summarize it for those who are not present and then we move on. WSDOT is invited if they would like to attend.
- Mayor Morcos thanked everyone for the meeting and requested meeting materials and the summary as soon as possible for distribution to the community. Stacey Howery confirmed the timeline.
- Dave Becher added that crews removed the temporary toll gantries a few weekends ago. Crews also ground and repaved the area where treadles were installed. This may provide some relief for residents who live to the east.
  - **Stacey Howery** added that the Seattle Times had a “rave” about the reduced noise.
- **Question (Councilmember Adkins):** Will you keep pushing Mageba for the data from the installation in Japan?
  - **Answer (WSDOT):** We can try but they are not obligated to provide it and there may be a language barrier. They will not be paying for any of the costs.