SR 520 Floating Bridge and Landings
Regional Shared-Use Path (RSUP) Light Evaluation
Technical community meeting summary

Thurs. June 1, 2017, 4:30 – 5:30 p.m.
Wells Fargo Center, SR 520 Program Office

Attendees

46th District Legislator
• Senator David Frockt

SR 520 Program Management
• Julie Meredith
• Dave Becher
• Larry Kyle

Communications
• Stacey Howery
• Wren McNally

Public participants
• Jean Amick, Neighbor
• Jim Bradburne, Neighbor
• Katherine Burk, Neighbor
• Colleen McAleer, Neighbor
• Steve Murch, Neighbor
• Ginny Sherrow, Neighbor
• Blake Trask, Cascade Bicycle Club

Executive Summary
On June 1, 2017, WSDOT hosted a technical meeting to review the progress made on the evaluation of the lights along the Regional Shared Use Path (RSUP) since the first technical meeting which was held on Nov. 29, 2016. WSDOT reviewed the actions to-date, the fabrication and testing of the prototype shields, and discussed next steps. WSDOT proposed moving forward with production and installation of the Prototype 2 – closed shield. The other meeting attendees agreed and WSDOT estimated that the shields will arrive and be installed in September 2017.

Introduction
Julie Meredith thanked the community members for their feedback and collaboration during WSDOT’s evaluation of the lights along the RSUP. Dave Becher provided an overview of the presentation that detailed WSDOT’s evaluation process, feedback collected from community members and planned next steps.

Actions to-date
Stacey Howery detailed the actions taken by WSDOT since the November 2016 community meeting to address community concerns with the RSUP lights. In December 2016, WSDOT pursued evaluation of five potential modifications to the RSUP lights based on feedback from the November community meeting. WSDOT determined that installation of a shield on the existing RSUP light fixtures would be the most cost- and time-effective modification. In January 2017, WSDOT fabricated, installed, measured a prototype light shield (P1) and requested feedback from community members. Based on measurements collected by WSDOT and feedback received from the community, WSDOT developed modifications to the prototype shield. In March, WSDOT fabricated, installed, measured two new prototype light shields (P2-open and P2-closed) and requested feedback from community members. Around this time, the 50W bulbs WSDOT has installed also began to fail much more quickly than expected. WSDOT began replacing the failed bulbs with the original 100W bulbs to protect the light system. The light measurements were taken with prototype shields installed on both 50W and 100W bulbs.

- **Question:** Were the 50-watt and 100-watt light bulbs from the same manufacturer?
  - **Response (Larry Kyle):** Yes.

- **Question:** Does WSDOT know why the 50-watt bulbs burned out so quickly?
  - **Response (Larry Kyle):** The WSDOT team spoke to the manufacturer who believes that the failure was due to an incompatibility between the bulbs and the ballast in the fixtures, as described in the January 11 RSUP lighting project update.
• **Question:** Are the photos of the light shields in the presentation with 100-watt or 50-watt bulbs?
  
  o **Response (Larry Kyle):** With 100-watt bulbs.

**Prototype shield evaluation**

Larry Kyle provided an overview of WSDOT’s fabrication, testing and evaluation of three prototype light shields. The evaluation focused on ensuring the safety of all RSUP users and addressing the concerns of the project neighbors. WSDOT used neighbor and bike community feedback to inform the evaluation and worked with the manufacturer to fabricate three prototype shields between Dec. 2016 and March 2017. WSDOT then installed and evaluated the prototypes on 50-watt and 100-watt bulbs. The evaluations included light level testing of all three shrouds in same atmospheric conditions.

**Input received to-date**

Stacey Howery reviewed the input WSDOT had received on the RSUP light evaluation to-date. WSDOT requested and integrated feedback from both the neighbors and the bike community. The feedback received from project neighbors focused on how the shields reduced glare seen from north of the bridge. Neighbors preferred the shielded over unshielded lights and noted a preference for the second prototype shields, particularly the closed-bottom shield. Feedback from the bike community noted that the shields improved user the experience and that there was some concern about falling into the shields.

• **Question:** Did WSDOT evaluate non-light issues with regard to the shields?
  
  o **Response (Larry Kyle):** WSDOT received a comment from one bicyclist concerned about the shields getting hot or the potential of falling into the shields. WSDOT’s response noted that the prototypes are made of a thin, aluminum material to allow for modification during the evaluation period. If shields are selected and installed, the final shields will be made of a powder coated-steel and will be a thicker, more robust material that will remain cool to the touch and does not have sharp edges. (Note, the thinner, test material was also safe for installation in a public space and did not get hot or have sharp edges.)

• **Question:** Did WSDOT measure the reflection from the bridge lights on the water?
  
  o **Response (Larry Kyle):** Yes, WSDOT evaluated light levels from the water and found they were well below the levels required by the Program environmental documentation. More information on the light level requirements and measurements can be found in the [Nov. 29, 2016 meeting summary](#).

• **Comment:** The experience for bicyclists on the path was positive. Cyclists found the shields improved the user experience on the path by slightly reducing the glare (on the path) while maintaining a safe user experience.

Larry Kyle asked attendees if they had additional comments from other neighbors or stakeholders. Attendees did not know of additional comments from others.

**Results of evaluation and next steps**

Larry Kyle reviewed WSDOT’s evaluation process, using the options matrix. For reference, attendees were provided the matrix from the Nov. 29 public meeting. The updated June 1 matrix (handout) detailed the options WSDOT evaluated after the Nov. 29, 2016 meeting. After four months of evaluation and incorporation of stakeholder feedback, WSDOT concluded that the Prototype 2 shield (P2) placed on the existing fixture with 100W bulbs is the most cost- and time-effective solution to address neighbor concerns and maintain effective light levels on the path. In addition, WSDOT found that the P2-closed shield more effectively reduced light seen from the north of the bridge compared to the P2-open shield.

As a result, WSDOT recommended P2-closed as the best modification to pursue. WSDOT explained the shields could likely be fabricated and installed in several months, whereas other modifications (detailed on the options matrix) would both require legislative funding and authorization and take much longer to implement. All attendees were asked if they agreed the P2-closed option to be the best solution; all attendees agreed.

Attendees provided several follow up comments and questions:
• **Question:** Are there operating cost differentials between operating 100-watt vs. 50-watt bulbs, acknowledging the large cost of replacing the ballast to accommodate 50-watt bulbs?
  o **Response (Larry Kyle):** WSDOT has not run calculations on the operating expenses of the 100-watt and 50-watt bulbs, but there is a cost associated with replacing the ballast, detailed in the updated June 1 matrix.

• **Question:** What will the transition be like between the WABN and the Floating Bridge sections of the bridge with regard to lights?
  o **Response (Larry Kyle):** WSDOT is waiting to do light measurements on the WABN section, but does know at this time that the individual lights on the Floating Bridge section will be relatively brighter because the lights with shields are every spaced at 45-feet as compared to the WABN section where lights are at the ground level on the railing side and spaced at 15-feet. In both cases, we anticipate the average light levels on the path will meet the safety criteria. Measurements will be taken on WABN after the contractor completes installation of the railing and lights.

• **Question:** Is it possible to put a dimmability feature on the Floating Bridge lights if the bulbs were replaced with LED bulbs in the future?
  o **Response (Larry Kyle):** This was considered, see option 8 on the matrix, there would be a cost associated with installing dimmable functionality, and WSDOT believes that, without a shroud, it would not address the neighbors' concern as the lights would still be very visible. WSDOT chose the type of light they did in part due to concerns about creating a safe environment for people on the path. The Nov. 29, 2016 meeting summary details the design, evaluation and selection process of the RSUP lights on the Floating Bridge.

• **Comment:** From a pragmatic standpoint it seems reasonable to select the P2-closed option to be responsible with tax payer dollars. However, in the future, would it be possible to install 50-watt bulbs, an inexpensive and relatively easy change that only requires unscrewing the shields and replacing the bulbs.
  o **Response (Larry Kyle):** Changing to 50-watt bulbs would require a replacement of the ballast. The estimated, associated cost is detailed in the updated June 1 matrix.

• **Comment:** WSDOT should try to do the most right, up front. There are costs associated with having to close the bridge if future changes would be needed. WSDOT should consider other funding options such as increased tolls to cover costs of changing the ballast and bulbs.
  o **Response (Julie Meredith):** It is important to note that the contractor is nearing completion of its contract and WSDOT would be remiss if they did not pursue a modification that can be implemented before the contract is completed.
  o **Response (Dave Becher):** If WSDOT installed the P2-closed shield on the existing fixtures, the shields could be installed in approximately three months. If another modification was pursued, it would likely require legislative funding and authorization, as well as another contract, which would require approval and funding from the Secretary of Transportation.

• **Question:** Are there any options for another type of diffuser?
  o **Response (Larry Kyle):** WSDOT spoke with the manufacturer and there is not a commercially available diffuser that is available for these fixtures. One concern for a custom diffuser would be if it has the potential to trap heat or reduce the light below required levels for safety.

• **Comment:** It sounds like users and neighbors can agree that the shield is a good option, and that it could be installed quickly.

• **Question:** Will there be a secondary phase and if so, could WSDOT explain that process?
  o **Response (Julie Meredith):** Explained again that the process for requesting additional funding and authorization would require a new contract and approval from the legislature and Secretary of Transportation Roger Millar.
**Question**: Does WSDOT have pictures of the shields on 50-watt bulbs?

- **Response (Stacey Howery)**: Yes, WSDOT does and can send them to the lights listserv.
- **Response (Julie Meredith)**: As was discussed at the Nov. 29 meeting, it is important to note the difficulty of representing the light as it appears in real life with a photograph.

**Question**: What does WSDOT need from the attendees to move forward with installing the P2-closed shields?

- **Response (Julie Meredith)**: In addition to these comments, WSDOT will request additional feedback from the RSUP lights listserv following the meeting.

**Question (Julie Meredith)**: Attendees were asked to confirm if they wanted WSDOT to move forward with fabricating and installing the P2-closed shields on the RSUP lights. Generally, attendees agreed.

- **Response (Steve Murch)**: Yes, absolutely. And he would also like WDOT to consider a secondary phase of going down to 50-watt bulbs in the future. He asked Senator Frockt about legislative funding to do so.
- **Response (Sen. Frockt)**: A $5 million fix is not feasible at this moment and would need to be part of the next funding and budget cycle. He was unsure if WSDOT could commit to a $500,000 modification.
- **Response (Julie Meredith)**: WSDOT does not have funding and authorization for a $500,000 modification. She clarified that fabricating and installing the shields can be performed within the existing contract.
- **Response (Katherine Burk)**: Stated that she is absolutely in support of WSDOT moving forward with the proposed shield.

**Question (Sen. Frockt)**: Were all the 50-watt bulbs replaced?

- **Response (Julie Meredith)**: Yes. The ballast in the fixtures was designed for 100-watt bulbs, and when WSDOT installed the 50-watt bulbs, as a trial solution in response to initial neighbor complaints, the contractor informed them the bulbs would burn out at a faster rate than the 100-watt bulbs. The 50-watt bulbs burned out within a few months, much faster than anyone anticipated. Since then WSDOT has confirmed that the ballast was not faulty but that the failure of the 50-watt bulbs was due to incompatibility between the ballast and the bulb. WSDOT has authorization to spend $120,000 which is approximately the total to fabricate and install the shields. If they also changed the ballast, it would take longer and add $500,000, at a minimum, to the overall cost and require a new contract, which would require authorization from Secretary Millar.

**Comment**: It would be nice to have a process be put in place and documented for the future when bulbs need replacing that they consider replacing the ballast for 50-watt bulbs.

**Comment**: P2-closed is a fantastic option and it can be done in three months. It would be fabulous to get something done in three months.

**Comment**: A request for WSDOT to consider either having a secondary phase or noting in maintenance procedures that future bulb replacements change to 50-watts.

- **Response (Dave Becher)**: WSDOT will look into running a cost comparison of operating the 100-watt bulbs with the replacement of the ballast for 50-watt bulbs and cost of operating at a lower wattage. WSDOT will evaluate the potential to swap the ballast out at a later time, potentially “piece-meal” such as part of regular maintenance when the bulbs burn out.

**Question**: Will there be reflection from concrete barrier from the WABN section lighting and will WSDOT test the WABN light levels?

- **Response (Larry Kyle)**: WSDOT does not anticipate a reflection problem. The concrete barrier in the WABN section will be painted with pigmented sealer which should reduce reflectivity.
• **Comment:** This process has been valuable in terms of addressing both neighbor concerns and path usability. He thanked the WSDOT team for their responsiveness and effort to balance the various concerns.

Julie Meredith thanked the attendees for their participation in the process and confirmed next steps.

**After meeting summary**

WSDOT sent a follow-up email with a brief summary of the meeting to the lights email listserv and requested any additional feedback before making a final decision to fabricate and install the P2-closed light shield. Only a few responses were received and all were in favor of proceeding with installation of the light shields.