| **QUESTION** | **SUBMISSION**  **DATE** | **RESPONSE** | **RESPONSE**  **DATE** |
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| **Answers as of March 27, 2020 @2:00** | | | |
| **They would like to know which 16 bridges are covered in the Bridge Seismic - Phase III CIP project (BC-TR-19001) -- are these the same 16 as called out in Move Seattle?** | From Calvin Chow – 3/23 @3:41PM | Yes, the 16 bridges in the Move Seattle Levy are the same 16 this CIP covers. As part of the City of Seattle’s efforts to invest in transportation infrastructure and public safety, the Move Seattle Levy is funding the replacement of the Fairview Ave N Bridge and the [seismic reinforcement of 16 other bridges](https://www.seattle.gov/Documents/Departments/SDOT/About/Funding/2018_1129_MoveSeattle_WorkPlan_FINAL.pdf#page=26). The Levy will also fund [replacement planning studies for 10 additional bridges](https://www.seattle.gov/Documents/Departments/SDOT/About/Funding/2018_1129_MoveSeattle_WorkPlan_FINAL.pdf#page=29) to help us better understand the size of Seattle’s maintenance backlog, assess and manage roadway structure maintenance needs, and maximize future investments. | 3/24 |
| **Please explain the decision to not allow cars on the lower bridge (compared to when e.g. the AWV closed and before the SR99 tunnel).** | from Newell Aldrich 3/23 @4:48PM | The High Bridge carried significantly more vehicles than the Low Bridge can carry because it has 7 lanes compared to the Low Bridge’s 2 lanes. Attempting to shift traffic 1:1 from the high to low bridge would create traffic congestion and long traffic queues. SDOT prioritizes the movement of transit, freight, and emergency vehicles on city streets and used this prioritization to limit vehicle demand on the Low Bridge in a way that keeps people, goods, and essential services moving. | 3/27 |
| **Has SDOT received word from the Coast Guard about flexibility re: times the bridge can remain open w/o or with limited closures?** | from Newell Aldrich 3/23 @4:48PM | The Coast Guard has broadcasted a notice to non-commercial vessels with a request to time transit and requests for openings during non-peak commute times. We are making a deviation request for am/pm peak close periods that, if they are not objected to by local mariners, can last for 180 days. Additionally, we can request an official rule change for a close period, but that is a 6-month process and subject to any objection from the local maritime community. | 3/27 |
| **The November 2018 Move Levy Workplan (i.e. levy “re-set”) noted 16 bridges scheduled for seismic improvements from 2019 to 2024; the 2020-2025 SDOT CIP “Bridge Seismic – Phase III” item noted the 16 bridges. Why was the West Seattle Bridge not included in the 16 bridges?** | from Newell Aldrich 3/23 @4:48PM | There is a very significant need for seismic retrofit throughout SDOT’s bridge inventory. The list of 16 bridges chosen for the current levy was based on bridge assets with the most significant seismic vulnerability and highest degree of impact if a failure under seismic loading were to occur for each region around the city.  The live load capacity issues we are seeing with the WSHB are distinct from potential seismic vulnerabilities that were intended to be addressed with the Move Seattle Levy.  Note that the repairs that we will need to make to return vertical live load capacity to the bridge will not necessarily address other components in the bridge that are vulnerable to lateral seismic loading.  As part of the City of Seattle’s efforts to invest in transportation infrastructure and public safety, the Move Seattle Levy is funding the replacement of the Fairview Ave N Bridge and the [seismic reinforcement of 16 other bridges](https://www.seattle.gov/Documents/Departments/SDOT/About/Funding/2018_1129_MoveSeattle_WorkPlan_FINAL.pdf#page=26). The Levy is also funding [replacement planning studies for 10 additional bridges](https://www.seattle.gov/Documents/Departments/SDOT/About/Funding/2018_1129_MoveSeattle_WorkPlan_FINAL.pdf#page=29) to help us better understand the size of Seattle’s maintenance backlog, assess and manage roadway structure maintenance needs, and maximize future investments (for example, this includes the recently completed the [Magnolia Bridge Planning Study](https://www.seattle.gov/transportation/magnoliabridgeplanning) and [Ballard Bridge Planning Study](http://www.seattle.gov/transportation/projects-and-programs/programs/bridges-stairs-and-other-structures/bridges/ballard-bridge-planning-study) currently underway).  Here are a few examples of upcoming / ongoing bridge projects funded by the Move Seattle Levy:   * [Fairview Ave N Bridge Replacement Project](https://www.seattle.gov/transportation/projects-and-programs/programs/bridges-stairs-and-other-structures/bridges/fairview-ave-n-bridge-replacement): This South Lake Union bridge was built over 65 years ago and is the last wood-supported bridge on a major road in Seattle. The timber piles which hold up the western half of the bridge are decaying and the concrete girders which stabilize the street on the eastern half of the bridge were cracked. While safe for travel, the bridge was structurally unstable and vulnerable to earthquakes needed to be replaced. We closed this bridge in late September and construction is expected to last approximately 19 months. * [Cowen Park Bridge Seismic Retrofit Project](https://www.seattle.gov/transportation/projects-and-programs/programs/bridges-stairs-and-other-structures/bridges/cowen-park-bridge-seismic-retrofit): This Ravenna bridge was built in 1936, prior to the modernization of the seismic design code. Seismic improvements are needed to reduce the bridge’s vulnerability to earthquakes. Construction on the Cowen Park Bridge began in fall 2019 2019 and will last approximately 6 months. * [W Howe St Bridge Project – Seismic Retrofit](https://www.seattle.gov/transportation/projects-and-programs/programs/bridges-stairs-and-other-structures/bridges/w-howe-st-bridge): The bridge over 32nd Ave W in the southern portion of Magnolia was constructed in 1946 to provide access across a steep ravine. The all steel structure is tall and slender and was identified as seismically deficient. Construction began on this project in late 2019. | 3/27 |
| **Please describe what analysis SDOT will be conducting to decide when to re-open the Spokane Street (lower) Bridge, and what criteria you will be using.** | Questions received from CM Herbold’s office, 3/23, @6:59 PM | The Low Bridge is currently open to the general public who are taking transit, walking, and biking. It’s also open to people using emergency vehicles and transporting freight. The Low Bridge is closed to people driving general purpose vehicles to keep essential and life-safety services moving. The Low Bridge is not capable of carrying alll the traffic that used to use the High Bridge, so we must continue to emphasize 1st Ave S Bridge and the South Park Bridge. | 3/27 |
| **Can SDOT allow vehicle traffic on the lower bridge overnight? I have heard from more than one person whose work shift begins at 3 p.m., when traffic is lighter.** | from CM Herbold’s office, 3/24 | We understand the inconvenience the closure of the High Bridge poses to the West Seattle community. In light of the current public health emergency, our top priority is emergency access to hospitals and protecting the supply chain, so we are reserving access to emergency vehicles, freight, and transit, and working with our partners at SPD, SFD, the Port, and Metro to determine the extent of the access limitations. Detour signs are posted and SPD officers are stationed at either end of the Low Bridge to direct GP traffic away from the bridge. We are monitoring traffic on the Low Bridge 24-hours a day from our Transportation Operations Center. As new traffic patterns develop, we may be able to adjust access. | 3/27 |
| **I** **have heard from several COVID-19 first responders (firefighter, ER nurse) who must leave the peninsula for work, and from an immunology researcher at UW working on COVID-19. Could the lower bridge be opened for them?** | from CM Herbold’s office, 3/24 | We acknowledge it is critical for doctors, nurses, researchers and first responders to get to their jobs. At the same time, we must reserve access to the Low Bridge to emergency vehicle transporting critically ill patients. Many people who live and work in West Seattle serve many kinds of essential functions – we need to maintain equity for all of them. The Low Bridge is currently open to essential workers who get to work by taking transit, walking, and biking. It’s also open to essential workers who need access to Harbor Island and T-5 and people using emergency vehicles and transporting freight as part of their jobs. For essential workers who are driving private vehicles, they are directed to the 1st Ave S Bridge. | 3/27 |
| **Can SDOT work to encourage cars traveling east on Roxbury down the hill to South park to turn left onto the onramp to Highway 99 between 7th and 8th Avenue South if they are traveling north, instead of proceeding into South Park?** | from CM Herbold’s office, 3/24 | We are looking to provide several alternative routes. We need to be careful not to direct drivers to prefer any one route to encourage traffic to spread throughout the system to avoid congestion as much as possible.  SDOT created and shared alternate route maps for people in West Seattle to use as they shift their preferred routes to the 1st Ave S and South Park bridges. | 3/27 |
| **The West Seattle lower bridge will remain open to pedestrian and bike crossing on the appropriate sidewalk, is that correct?** | Questions received from CM Pedersen’s office Monday, March 23 @5:19PM | Yes. The Low Bridge remains open to pedestrian and bike users. | 3/24 |
| **Some concerns about all day vehicle restrictions on lower bridge and whether we will consider time of day restrictions.** | Via call with Sam | We understand the inconvenience the closure of the High Bridge poses to the West Seattle community. In light of the current public health emergency, our top priority is emergency access to hospitals and protecting the supply chain, so we are reserving access to emergency vehicles, freight, and transit, and working with our partners at SPD, SFD, the Port, and Metro to determine the extent of the access limitations. Detour signs are posted and SPD officers are stationed at either end of the Low Bridge to direct GP traffic away from the bridge. We are monitoring traffic on the Low Bridge 24-hours a day from our Transportation Operations Center. As new traffic patterns develop, we may be able to adjust access. | 3/27 |
| **What will be the travel time impacts to vehicles from various parts of West Seattle.** | Via call with Sam | Travel time impacts would depend on specific origin and destination and traffic conditions at the time of the trip, so it is difficult to provide this information in a general way. | 3/27 |
| **Answers as of March 29, 2020 @5:00** | | | |
| **Please explain SDOT’s procedures for providing information the Council regarding ongoing inspections for potential significant problems that could lead to closure of major roadways or structures.** | **from Newell Aldrich 3/23 @4:48PM** | SDOT regularly conducts inspections of bridges in keeping with Federal requirements. These inspections are programmatic in nature, and generally identify preventative maintenance and repair actions, while also tracking the evolution of the bridge structure over time. The load rating project for the West Seattle High-Pass Bridge started in 2019 indicated that the cracking problem was more serious than originally reported in the consultant study we commissioned in 2014 after cracking at post-tensioning anchorage points was first discovered in 2013. We performed an in-depth analysis through the consultant doing the load rating work. As part of this analysis we needed more accurate mapping of the cracked bridge sections near the anchorage points so we inspected the bridge via Under Bridge Inspection Truck (UBIT), interior inspections of the box girders at the anchorage points and additional exterior inspections in October and December of 2019 and again in March of 2020. As the analysis was coming to a conclusion in March 2020 it indicated that there was a serious load carrying capacity issue with the bridge, we simultaneously noticed that the rate of cracking was increasing at a concerning rate just within the month of March 2020. This rate of increase was unexpected compared to previous months and gave us reason to close the bridge for safety.  The closure of the bridge, while abrupt, followed SDOT’s commitment to transparency and timely communication with the Mayor, City Council and the public on all issues that will or are quite likely to negatively impact their constituents. What led to the short window of time between alerting the Council and the public and the closure of the bridge on March 23 was the rapid acceleration of cracking within an extremely short period of time*.* | 3/29 |
| **Please provide a timeline of SDOT’s inspections of the West Seattle Bridge that lead to this decision.** | **from Newell Aldrich 3/23 @4:48PM** | We regularly inspect our bridges. The events of the past few days is a notable example of why those efforts are critical and why we take this responsibility so seriously. During a 2013 routine inspection of the West Seattle Bridge, our bridge inspectors discovered four sets of cracks in the bridge support structure. We’ve inspected the bridge every year since then; twice as frequently as required by federal guidelines. Since then, we’ve closely monitored and managed the cracks. In 2014, we installed real-time data collection equipment to aid in these efforts, which allowed us to remotely monitor the width of existing cracks on the bridge. At this time, we also began conducting more frequent inspections and implementing best-practice maintenance and repairs. Those annual inspections did not indicate a need for repairs that would significantly disrupt standard use of the bridge. During a 2019 assessment of the bridge’s ability to carry heavy loads, our structural engineering consultant mapped the cracks in the bridge and discovered that they had grown since the previous year’s inspection. We and our engineering consultant continued to closely monitor these cracks and carry out critical maintenance by injecting epoxy into them to protect the steel reinforcements. In late February 2020, our engineering consultant recommended that the rate of deterioration made it necessary to consider traffic restrictions to ensure public safety. As we came to the same conclusion late last week, while we were drafting a lane-reduction plan and preparing to initiate conversations with City leaders and the community, our structural engineering consultant notified us that they had conducted new analysis raising larger concerns. We conducted several observations over the next few days and on Monday, March 23, we found significant new cracking. This confirmed that cracking had rapidly accelerated to the point where there was no other option but to immediately close the bridge. | 3/29 |
| **The 2020-2025 CIP (page 188) references federal changes in 2013 and 2016 to load requirements:**    “*Bridge Load Rating:* Another investment in the 2020‐2025 Proposed CIP relates to bridge load rating standards, which were revised by the Federal Highway Administration in November 2013. The revised standards require the SDOT to re‐evaluate the load ratings for 69 bridges by 2022 at a cost of $25,000 to $175,000 per bridge. The proposed CIP includes $1.1 million of funding in 2020 to continue addressing this mandate. SDOT will also be addressing additional load rating requirements specific to Emergency Vehicles, which were mandated in November 2016 by the Federal Highway Administration. The funding impact to address Emergency Vehicles as part of the currently mandated list of bridges as well as all of the City’s remaining bridge assets is still being assessed.”  **Today’s press release says “In 2019, however, the Federal load rating for this type of bridge changed”. When did this change take place?** | **from Newell Aldrich 3/23 @4:48PM** | Federal guidelines require that bridges in the National Highway System be inspected every two years (see National Bridge Inspection Standards in 23 CFR 650C). During a 2013 routine inspection of the West Seattle Bridge, our structural engineers discovered four sets of cracks in the bridge support structure. We have been closely monitoring these cracks since then, installing real-time data collection equipment in 2014 allowing us to remotely monitor the bridge condition, and began conducting more frequent follow up inspections in 2014, 2015, 2016, 2017, 2018, 2019, and 2020.    In an unrelated process, the FHWA issued new requirements in 2013 that DOTs reevaluate all bridge load ratings by 2022 due to the growing use of heavier trucks for specific kinds of emergency response and construction vehicles. This required SDOT to re-evaluate the maximum vehicle weight that 69 bridges could safely support. We began these load rating revaluations in 2015 and started the West Seattle Bridge reevaluation in mid-2019, according to our planned schedule. |  |
| **What was the timeline of our load rating/inspections and how do these meet with the various federal requirements?** | Via phone call with Sam | See above | 3/29 |
| **Please provide the most recent list of SDOT’s assessment of Seattle’s bridges (including ratings).** | **from Newell Aldrich 3/23 @4:48PM** | Each year Roadway Structures updates their Project Rating Criteria List based on the previous years’ bridge condition data and rating factors that prioritize local concerns including equity and transportation system impact. The 2019 Project Rating Criteria for SDOT’s bridge inventory is being updated and will be ready the week of 3/30. | 3/29 |
| **I assume SDOT has an inventory of the status of all City bridges. How can we get that info?** | **from CM Pedersen’s office Monday, March 23 @4:48PM** | See above | 3/29 |
| **CM Herbold’s office is asking for the most recent SDOT evaluation of bridge structures.** | **From Calvin Chow – 3/23 @3:41PM** | See above | 3/29 |
| **Please describe what actions you are taking to restrict access to the West Seattle Bridge, specifically for pedestrians. Given the height of the bridge, if accessible by pedestrians, it could be used for suicides, as the Aurora Bridge was for many years until barriers were installed.** | **from CM Herbold’s office, 3/24** | The initial traffic control and detour plan, implemented within 5 hours on Monday evening, has standard vehicle barriers in place. As we evaluate the length of closure, the repair plans, and construction access needs, we will determine if upgrades to this barrier are necessary. As is typical with our traffic control barriers, we will regularly inspect and adjust any of our traffic barriers or detour signs if needed. | 3/29 |
| **Can traffic signals at the 5-way intersection at West Marginal Way, Spokane Street, Delridge Way be adjusted to better serve new traffic patterns? One constituent said they had to wait through 5 light cycles to get to Spokane Street from West Marginal during the afternoon with relatively light traffic.** | **from CM Herbold’s office, 3/24** | We know the 5-way intersection has been a challenge even prior to the High Bridge closure. The current intersection design is intended to maintain all potential movements and separates each leg to remove potential conflicts. With increased demand on the intersection as a result of the High Bridge closure, SDOT will re-evaluate the intersection to see whether any design or operational changes can help address congestion while maintaining safe operations.  This signal is on our high priority emergency list to be upgraded so that the signal system is interconnected to our central system. This will allow for us to adjust signal timing actively based on new traffic patterns. These upgrades also include improved detection to better facilitate new priority movements. This work will be prioritized after our work on Highland Park Way & Holden and our target is to complete it within the next 2-3 weeks. | 3/29 |
| **What was the original design vehicle and what would we use today?** | Via phone call with Sam | The bridge was originally designed for a design live load commercial vehicle designated as HS-20 (like a large commercial tractor-trailer truck but slightly less axel load than an articulated bus). Since the bridge was brought online in 1984, the size and loading of commercial vehicles have continued to increase as indicated by the much larger HL-93 design loading that is used to design new bridges today. Note that HL-93 loading is not a specific commercial vehicle type, but rather a requirement to choose the worst load combination presented by combining either an HS-20 or Heavy Tandem Trailer with a distributed lane load. The ‘93’ refers to the year that this loading type was adopted as the governing load combination for bridge load rating calculations. This load combination captures the loading of the larger articulated buses that are in use today. | 3/29 |