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Eagle Landing Informational Forum, Thursday, May 17, 2018
Questions/Answers

The numbered items below are themes/questions City staff captured from the Eagle Landing Informational Forum that the City held on May 17, 2018. The words that are in **bold** have been added to answer the questions asked by the public.

1. Who did the engineering design? Was there a disclaimer on 10 years?
 - **MacLeod Reckord, Prime consultant/Landscape Architects.**
 - **Shannon and Wilson, Geotechnical Engineers.**
 - **MLA Engineering, Structural Engineers.**
 - **Regarding disclaimer: the consultants very clearly identified the potential instability of the slopes at Eagle Landing in their reports and this was also documented in the SEPA Document.**

2. We went forward knowing the term? Who made that decision? Why wasn't money set aside to address the project needs ongoing? Are you advising to remove the stairs? Are you saying you don't have a plan or the money to solve it? Do you have a plan to repair or re-construct any part of the stairs?
 - **The City did move forward knowing the term.**
 - **City Council made the decision based upon staff's recommendations.**
 - **We fund for ongoing maintenance, not for potential events, such as landslides.**
 - **Money or budget available for repairing the stairs has not and will not factor into a decision regarding retention of or demolition of the stairs. The hillside is a feeder slope, which means that it will continue to slide until it returns to the shoreline. Shannon & Wilson's November 14, 2003 Design Statement Regarding**

Branson Property Stairway states:

“Although the steep slope on the Branson Park site is not perceptibly moving at this time, the subject slope is marginally stable and has many indicators that it has been unstable in the distant and recent past. This instability is both deep and shallow. The presence of sand over clay and groundwater seepage at the contact between the two formations, reported indicators of historic movement at the top of the bluff, and the arcuate nature of the slope indicate the presence of past and the likelihood of future deep-seated land sliding. Shallow movement is evident in the presence of chutes that indicate the periodic occurrence of debris flows. Creep, the imperceptible movement of soil in the upper few to several feet, is very active on this slope. All these types of mass movement will continue in the future with or without the implementation of the proposed park stairway. It is the intent of the Parks Department to allow such mass wasting processes to continue, so the sediment can naturally be delivered to the shoreline.”

- **In its June 4, 2018 report regarding the possibility of repairing the stairs, GeoEngineers stated:**

“To reduce risk to trail users from tree fall and other slope/landslide related hazards, and fall hazards related to the existing stairway system, we recommend that the landings and stairways be demolished and removed from the slope. We recommend that the City further discourage pioneering of trails down the slope to reduce the potential for slips, trips and falls on improperly formed trails.”

3. We hear people climbing over the signs to get to the stairs. How much money has the city spent to keep people out? If you are concerned about people walking on the stairs, why not provide a crescent wrench to the neighbors to fix the stairs? Why not disassemble the stairs and fence it off?
 - **We don't recommend having neighbors “fix the stairs” and will rely on our subject matter experts in this regard.**
 - **Estimates are less than \$5,000 since the slide in 2014.**

- **Currently, individuals have cut open our barriers and have created outlaw trails to the beach. This would most likely continue.**
4. Bulkheads weren't acknowledged in the reports. When grants are received you are required to maintain site and structure per RCO Grant funding. The last inspection was 2007. The grant requires park to remain open. There will be an upcoming site visit.
- **Regarding grant funds, the park is still "open" and only the stairs are closed. The City is in compliance with the Washington State Recreation and Conservation Office (RCO) grant requirements; the grant does not require the City to maintain the stairs, because "acts of extraordinary vandalism or arson, acts of nature such as floods or earthquake, and the structure(s) being past its useful life" do not constitute "conversions" that violate the grant. In fact, the RCO Agency is aware of the landslide activities and our public safety concerns and will be updated with our plans to move forward. We have communicated that we would welcome a site visit. Staff will be evaluating permit requirements, and providing information to Council for a potential project to tight-line the stormwater pipe into the existing stormwater system that outfalls at the bottom of the adjacent community club property.**
5. Nine city blocks are draining into one pipe washing into the beach. We need to get it plumbed. Use money to address the water/remove the stairs. If you can spend \$25 Million at Seahurst, you can dedicate money to your 2nd beach access point.
- **The comment "nine city blocks are draining into one pipe washing into the beach" is inaccurate. In fact, a small amount of stormwater from an approximately two-block area reaches the storm drain at Eagle Landing Park.**
 - **The Seahurst North Seawall project cost just over \$10M over seven years of feasibility, design, and construction. The City of Burien costs were under \$100,000, as the remainder was funded through state and federal funds.**

6. Address the stormwater flow from the pipe, dye the pipe to see where the stormwater is going. I measured 25 gallons per minute when it's raining.
 - **While a dye test may show the direction of some of the flow, it is not necessarily demonstrative or compelling evidence of the direction of all of the flow.**

7. Is this the first time the city is learning about a bulkhead? Are you saying the log structure isn't a bulkhead?
 - **When the property was purchased there were no bulkhead structures identified or seen by staff or consultants. Logs now observable on the beach were likely under the hillside buried at the time, and have since been exposed due to shoreline erosion from wave and tidal action. The logs at the base of the hillside and north of the slides do not extend the length of the park and do not appear to truly function as a bulkhead to protect the shoreline.**

8. Is there a legal requirement to maintain a bulkhead?
 - **Not at this location. Here, the logs which appear to be a crib wall are not currently protecting against erosion. At the time of the property purchase there was and still is a desire to remove bulkheads throughout Puget Sound. In fact, a condition of state funding for the acquisition of the property was that the City of Burien would not construct a bulkhead or interfere with natural sediment delivery to the sound.**

9. Is this the first time the city is suggesting unnatural causes to the erosion? Is there a study that shows manmade causes are affecting erosion?
 - **No, this is not the first time the City has suggested unnatural causes to the erosion. Starting in late 2014, damage to the stairs was noticed and the stairway was closed to public use due to safety concerns.**
 - **The March 13, 2013 report by GeoEngineers concluded that the effect of impervious surfaces on erosion is not significant:
"The net increase (increase due to impervious surfaces versus pre-development conditions) in recharge from local stormwater flows likely increased discharge at the seeps above the beach for periods of time during and shortly following**

precipitation events. It is our opinion that the effect is transient and likely not significant, in terms of slope stability over the long term (years to decades), since seeps flow year round and will continue to emanate from the bluff as the result of groundwater flows originating from upland recharge areas well to the east of the park.”

- **The stormwater infrastructure at Eagle Landing Park was constructed by King County. No significant increases in impervious surfaces in and around the area have occurred since the system was constructed. The City’s experts have concluded that the surface water runoff has not caused erosion, but erosion is simply caused by the passage of time in an area known to experience landslides.**

10. When you talk about the watershed, how much more water are we talking about from manmade structures? It looks like we had a stable shoreline for 100 years with a stable bulkhead until the water flow was increased to the park by the storm drain. Has the impervious surface changed? Have we changed the direction of the water flow? Have we considered ways to stabilize the park even if we remove the stairs? Are you saying no stormwater changes/additions have redirected water to increase drainage/flow into park? Was it known when we got the grant how much water was flowing into the park? Was it known when we got the grant how much water was flowing into the park? Was there a timeframe on the park/beach access?

- **The SEPA (State Environmental Policy Act) Notice of Decision of a Determination of Non-Significance (DNS) dated July 13, 2004 states in part: “There are no plans to tight-line convey existing flows entering the project through the park site. Such tight-line conveyance would be contrary to city drainage requirements by concentrating flows that currently infiltrate on the hillside. A basic assumption for this project is that the subject slope will continue to be unstable in the future. In fact, it is basic to the professional goals of the park that the instability continues to episodically provide sediment to the beach and nearshore areas. Therefore, it is understood by the design team and the City that damage and even destruction of the stairway is possible and the repair of the structure is probable.”**

- In Shannon & Wilson's November 14, 2003 Design Statement Regarding Branson Property Stairway states:

"Although the steep slope on the Branson Park site is not perceptibly moving at this time, the subject slope is marginally stable and has many indicators that it has been unstable in the distant and recent past. This instability is both deep and shallow. The presence of sand over clay and groundwater seepage at the contact between the two formations, reported indicators of historic movement at the top of the bluff, and the arcuate nature of the slope indicate the presence of past and the likelihood of future deep-seated land sliding. Shallow movement is evident in the presence of chutes that indicate the periodic occurrence of debris flows. Creep, the imperceptible movement of soil in the upper few to several feet, is very active on this slope. All these types of mass movement will continue in the future with or without the implementation of the proposed park stairway. It is the intent of the Parks Department to allow such mass wasting processes to continue, so the sediment can naturally be delivered to the shoreline."

11. I'm saddened by this possible shared experience going away. It's been a community builder, meeting on the stairs. We need to keep it.

- **The City shares your sentiment, as the stairs were extremely popular and a great asset. However, we have to balance public safety, environmental concerns, and the long-term financial sustainability of maintaining the stairs.**

12. What is the flow of the water through the pipe? I've seen it flow outside the pipe washing out two culverts. Do you know if its good stormwater management to send nine blocks of water through one pipe? There are twelve berms that are channeling water to the pipe. Please measure the flow and dye the water to know where it's going.

- **As stated above, the assertion that nine blocks of stormwater is being sent to one pipe is inaccurate. In fact, a small amount of stormwater from an approximately two-block area reaches the storm drain at Eagle Landing Park.**
- **As stated above, the City's experts have concluded that the effect of stormwater on the pipe at Eagle Landing Park is "not significant over the long**

term.” As stated above, while a dye test may show the direction of some of the flow, it is not necessarily demonstrative or compelling evidence of the direction of all of the flow:

“The net increase (increase due to impervious surfaces versus pre-development conditions) in recharge from local stormwater flows likely increased discharge at the seeps above the beach for periods of time during and shortly following precipitation events. It is our opinion that the effect is transient and likely not significant, in terms of slope stability over the long term (years in decades), since seeps flow year round and will continue to emanate from the bluff as the result of groundwater flows originating from upland recharge areas well to the east of the park.” [Emphasis added].

13. You’ve spent a bunch of time, effort, and research to get rid of the stairs, but no time to save them. Do you have any ideas?

- **We have not spent resources on getting rid of the stairs. Resources have been spent evaluating the hillside stability for public safety reasons, and to remove the lower two landings as they were falling into the sound. The City’s geotechnical engineers recommend demolition of the stairs. In its June 4, 2018 report, GeoEngineers stated:**

“To reduce risk to trail users from tree fall and other slope/landslide related hazards, and fall hazards related to the existing stairway system, we recommend that the landings and stairways be demolished and removed from the slope. We recommend that the City further discourage pioneering of trails down the slope to reduce the potential for slips, trips and falls on improperly formed trails.”

14. A little bit bigger pipe under the trail might be warranted. We haven’t created or added water. If you walk down the drainage area the water doesn’t go to the stairs. Surface water flows downhill. There are logs that look like they might have been a bulkhead, but it doesn’t matter because you can’t build bulkheads now. Areas are being more vegetated, which will help. Google 2007 Video Eagle Landing Stairs, it shows water going down the stairs.

- **We will continue to rely on the advice of our subject matter experts for recommendations regarding treatment of stormwater in and around Eagle Landing Park.**
15. In your professional training, does it make sense to unnaturally add water to the hillside? Will you be addressing the storm drain? Can you elaborate on insurance coverage for the stairs? These are natural slide areas. Maybe the city should acknowledge the changes and tight-line the drain around the area.
- **The stormwater pipe at Eagle Landing Park was in place decades before the City's incorporation. Despite our experts' conclusion that the location of the pipe has not contributed to the deterioration of the stairs, that the stairs' deterioration is caused by wave action the fact the stairs were constructed on a feeder slope (see November 14, 2003 Shannon & Wilson report), the City has commenced discussions with Council regarding the need to fund a tight-line of the stormwater to the beach. Hopefully, even though our experts believe the effect of the stormwater to be "insignificant over the long term" we can accordingly remove from consideration the existing stormwater pipe as a factor in the existing conditions at the Park. The stairs are not insured and replacement stairs would not likely be covered as part of the City's insured inventory of infrastructure.**
16. When I moved into the area I saw all the water from 144th come down my street. The berms are in response to the water coming into my property.
- **No significant increases in impervious surfaces in and around the area have occurred since the stormwater system at Eagle Landing Park was constructed decades ago. The City's experts have concluded that the surface water runoff has not caused erosion, but erosion is simply caused by the passage of time in an area known to experience landslides.**
17. Water coming into the park actually goes into the Vashon Till and out to the water, but if it's disrupted it goes to the clay layer. It doesn't follow the topography. The city needs to tight-line the drain to keep the stairs or at least a portion of the stairs. Looks like you could save some money.

- **The stormwater pipe at Eagle Landing Park was in place decades before the City's incorporation. Despite our experts' conclusion that the location of the pipe has not contributed to the deterioration of the stairs, that the stairs' deterioration is caused by wave action, and the fact the stairs were constructed on a feeder slope (see November 14, 2003 Shannon & Wilson report), the City has commenced discussions with Council regarding the need to fund a tight-line of the stormwater to the beach. Hopefully, even though our experts believe the effect of the stormwater to be "insignificant over the long term" we can accordingly remove from consideration the existing stormwater pipe as a factor in the existing conditions at the Park. The stairs are not insured and replacement stairs would not likely be covered as part of the City's insured inventory of infrastructure.**

18. Its obvious stormwater is causing the erosion. At one time there was a bulkhead. A tight-line would prevent erosion of the slope.

- **At the time of the property purchase there was and still is a desire to remove bulkheads throughout Puget Sound. In fact, a condition of state funding for the acquisition of the property was that the City of Burien would not construct a bulkhead or interfere with natural sediment delivery to the sound. Despite our experts' conclusion that the location of the pipe has not contributed to the deterioration of the stairs, that the stairs' deterioration is caused by wave action, and the fact the stairs were constructed on a feeder slope (see November 14, 2003 Shannon & Wilson report), the City has commenced discussions with Council regarding the need to fund a tight-line of the stormwater to the beach. Hopefully, even though our experts believe the effect of the stormwater to be "insignificant over the long term" we can accordingly remove from consideration the existing stormwater pipe as a factor in the existing conditions at the Park.**