



February 19, 2016

Carrie Martin  
Washington Department of Enterprise Services  
P.O. Box 41401  
Olympia, WA 98504-1401

Dear Ms. Martin:

**SUBJECT: Capitol Lake/Deschutes Estuary Technical Committee - Capitol Lake Flood Potential**

As requested at our February 17<sup>th</sup> meeting of the Technical Committee, I am providing an update on the City of Olympia's recent work to evaluate the potential for Capitol Lake flooding.

For many years, the Washington Department of Enterprise Services and the City of Olympia have worked together to manage the 5<sup>th</sup> Avenue dam as well as a City-owned valve and pump system near Heritage Park. During storm events, the City of Olympia and Enterprise Services carefully coordinates the management of the lake. With high flows in the Deschutes River, the 5<sup>th</sup> Avenue dam is opened during low tides and the lake partially drained to Budd Inlet. During the peak of the subsequent high tide, the dam is closed in order to help prevent the tides from entering and filling the lake. In turn, the drained lake provides a modest amount of water storage for river flows.

During these river and tidal events, the City of Olympia also closes a critical valve in its downtown stormwater pipe system and pumps runoff as necessary.

Unfortunately, extreme high tides in Budd Inlet can overtop the 5<sup>th</sup> Avenue dam and enter the lake. Regardless of practices to drain the lake, tidal water entering the lake can exceed storage capacities. Under this scenario, the lake can overtop the shoreline along Heritage Park and threaten adjacent development.

Engineering analysis of the lake and its potential future over the past several decades documents an evolving understanding of this potential flooding dynamic. The impact of sea level rise has also been evaluated. Analysis completed by the Capital Lake Adaptive Management Plan (CLAMP) process suggested that the potential of the lake to flood was not appreciably influenced by either lake or estuary management options. The City of Olympia concurred with this finding.

More recent work by the City of Olympia has better defined the stormwater pipe system and land elevations on the east side of the lake. Our work indicates that the effective operation of the 5<sup>th</sup> Avenue dam is necessary to prevent flooding during extreme precipitation and tide events.

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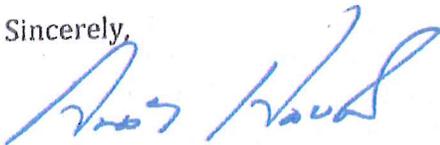
Although the landscaping around the lake provides a barrier to flooding, more than a dozen storm drains connect the lake to adjacent developed areas. Capitol Lake poses a flooding risk. However, this risk could be well managed by relatively modest refinement to the stormwater systems and land elevations regardless of the future of the lake/estuary.

While a current concern, the risk of downtown flooding need not be a key factor in evaluating long-term lake management options. Sea level rise will likely prompt additional flood prevention measures.

The City of Olympia will be working with an engineering firm to refine hydrologic computer models for the lake and provide a better understanding of risks and preventative measures. We can make the results of this analysis available to the Technical Committee.

Feel free to contact me at 360.753.8475 or at [ahaub@ci.olympia.wa.us](mailto:ahaub@ci.olympia.wa.us) for additional information.

Sincerely,



**ANDY HAUB, P.E.**  
Water Resources Director  
Public Works Department

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ec: Rich Hoey, Public Works Director