Sept. 30 2014

TO: King County Willowmoor Project Staff and Involved Parties

FROM: Martin Nizlek, WA Sensible Shorelines Association (WSSA) Representative

RE: King County Willowmoor Project - Objectives and Alternatives

I'm writing to express several concerns and requests related to the Willowmoor Project; both as a SAC member and WSSA's project representative. Our concerns and requests involve the project objectives and evaluation criteria as well as a lack of consideration of suggested alternatives. I've highlighted each of our requests in boxes and bolded them, below.

Summary and Background -

In June of this year I wrote County project staff and decision makers regarding maintenance of the site under study. I also provided factual information - primarily focused on flood protection, water flow, and lake levels. A response was received from John Engel which essentially said *maintenance is not an element of the Willowmoor project*. His response did not address the non-maintenance aspects of my correspondence, which requested inclusion of specific objectives.

Below I: 1) reiterate the requests made in our June submission; 2) reiterate the position of our organization with respect to lake water levels, conveyance, and flood protection; and 3) point out several needs within other aspects of the Willowmoor effort.

While the project team has asked for comments on the project alternatives, I find that would be premature until more refined data is provided, especially on hydrology and hydraulics, which are the key concerns of WSSA and lake residents.

WSSA will support and advocate for a Willowmoor project, but only if that project meets certain minimum requirements as previously described and reiterated here.

WSSA Input Disregarded -

As noted above, in June of this year we supplied the County WSSA's preliminary review of information found in the County consultant-produced Hydrology & Hydraulics Report. We underlined the need for the Willowmoor project to assure that any actions in the Transition Zone restore lake level conditions and conveyance capacities provided by the original Corps project in this area. Flood protection of lake properties was a primary intent of the Corps' project, yet the Willowmoor criteria only reflect an intent for such protection downstream of the TZ.

An objective is needed that clearly states the Willowmoor project will return the lake's outflow (at 29 ft. NGVD in a 10 year storm) to 1500 cfs thus assuring the Corps' intent to provide flood protection to lake properties under these conditions.

It is also imperative that flows at lake levels below 29 ft. NGVD replicate the Corps' project. Otherwise, the lake's 27 ft. OHWM (Ordinary High Water Mark), as described below, will be shifted higher and result in damages to and ***takings of private property***. Bellevue's 2004 OHWM study corroborates the contention that lack of maintenance and channel obstructions raised lake levels. The mean value of that study showed an OHWM 0.6 ft. higher than the historic Corps level. The H&H report cited **lack of**

maintenance and the presence of vegetation and debris in the TZ as factors in reduced lake outflow (and thus higher lake levels.) But SAC meeting minutes and the Sept. 8th meeting's slides fail to cite these facts, attributing **higher lake OHWM only to a raised weir reconstructed in 1998.**

Reconstruction of the weir in 1998 had no intention of altering flow capacity. The original design, using a parabolic (curved) structure was replaced with a flat, table-top design plus a notch that together assured identical functionality. Corps of Engineer records will reflect this.

Further, the H&H report concluded that Issaquah Creek inflow characteristics have not and, likely, will not change in the future. This needs to be emphasized, since there is much misinformation being promoted on this topic.

Meeting minutes need to be corrected, and staff reports and future presentations altered to reflect that -
a) Deferred maintenance, placement of willows in the channel, and accumulated debris and sediment are factors which artificially raised the OHWM on Lake Sammamish; not a raised weir, and
b) County consultant predictions indicate inflow to the lake has not been a factor, and is not anticipated to be a future cause of raised OHWM levels.

The objectives of the project and evaluation criteria must clearly reflect an intent to return the OHWM of the lake to levels provided by the Corps' original project.

Analysis Criteria Need Adjustment -

At earlier SAC meetings, criteria were discussed for evaluating alternatives. One of these can generally be described as an estimation of the "*number of days the lake would exceed 27 ft. NGVD*". Our understanding of the intent was that computer flow models would be used to make projections of this number for each alternative. However, your calculation of a baseline, historic value appears to be based on periods when the capacity of the TZ was less than prescribed by the original Corps of Engineers' project and its O&M Manual. That is, data were included from periods when lack of maintenance had created obstructions in the TZ and reduced conveyance capacity.

WSSA's June report cited efforts undertaken by myself and another engineer showing substantially fewer days above 27 ft. than staffs' recent presentation[1]. Our efforts evaluated a 10 year period when, to our knowledge, there were minimal obstructions and alterations in the TZ. The average number of days the lake exceeded 27 ft. NGVD was calculated to be less than 74 days. Your presentation materials from Sept. 8th show 146 days.

The method for calculating the historic "number of days of exceedance..." needs to be adjusted. Only observations during the period from 1965 until obstructions were added to the channel or routine maintenance ceased, should be used. (The baseline likely will be about 75 days per year.)

In reviewing the summary report from the Sept. SAC meeting and the staff presentation materials, two observations are offered. First, it is recommended that costs must include maintenance estimates. It

[1] See Sept. 8th meeting PPT slide number 19 of 40 - "Preliminary Results - Lake Level Exceedance".

appears that there is a presumption no maintenance will be required except under Alternative 1 - the "do nothing" alternative. However, it is likely that vegetation control and other actions will be required by the Corps for all alternatives. (See "Consideration of New Requirements", below.)

Second, presenting costs in the form of a "net present value" is misleading. The general public and elected officials relate to annual operating costs, not massive, project lifetime rollups.

Maintenance costs need to be added to all alternatives.

Costs should be presented as annualized amounts.

Inclusion of Logical Alternatives -

Although the most recent staff presentations use the term "*adaptive management*", it appears no further thought has been given to this topic. Early in the process it was suggested by SAC members that alterations be made to the weir that would allow dynamic response to changing hydrologic conditions. A gate-like structure could be used to control lake levels as is done on Lake Washington by the locks. Constraining alternatives only to habitat and environmental changes, at the expense of conveyance needs, will limit support from lake residents.

The project's efforts need to evaluate "dynamic control of lake levels" as a means to improve the alternatives.

The above suggestion underlines a basic need for the project. It can best be described by the question - *What have we learned from preliminary assessments of existing conditions and early alternatives, and does this knowledge suggest better alternatives?*

The SAC's efforts seem locked on 4 alternatives, none of which may be the optimal. Perhaps there are features of each which, when combined, would produce a preferred alternative. Likewise, as reflected in comments at the Sept. SAC meeting, enough knowledge now exists to completely reject one or more options.

We understand there are budget and time line constraints to carrying out the project. However, a static approach, which limits itself to evaluating only early-on concepts, ventures down a path which a more dynamic approach would avoid. And, there may be broader actions that are necessary to meet the needs of those who will be affected by actions at this location. For example, it might be a good idea to include in the review process a subcommittee of the County Flood District composed of abutting jurisdiction representatives. Another suggestion is inclusion of a monitoring plan to be developed from project objectives but clearly identifying baseline conditions. Without such a plan, efficient measuring of the success of the project in the future will be lost.

At this point in the project, staff and consultants should step back, assess the pro's and con's of alternatives and let the SAC know if, given what we now know, are there other actions or alternatives that should be considered? And, what should the monitoring plan consist of?

Consideration of New Requirements -

The Corps of Engineers has recently released a new set of guidance policies. It is our understanding that Circular 165-2-216[2] will apply to any action proposed in the TZ or along the entire flood control project. Language in the circular clearly states - "*Proposed alterations must not be injurious to the public interest or affect the USACE project's ability to meet its authorized purpose*." Information generated by the Willowmoor project consultants and staff attest that changes to the original Corps flood control project have diminished its functionality in the Marymoor area. In addition, each of the proposed project alternatives would further alter the Corps project and thus the authorized purpose.

The County should work with the Corps to determine what the Circular's requirements mean to the Willowmoor efforts, then reconvene the SAC and address what will be required and how the stipulations of the Circular or other such requirements will be accommodated.

Conclusions and Recommendations -

WSSA has consistently represented to the County that it will support County efforts to accomplish environmental improvements under the Willowmoor project. To do so, the selected project must be economically justified and must not negatively impact lake conditions. In other words, the project must not adversely impact either environmental conditions of the lake (including existing ESA and hatchery salmon runs), or ordinary water levels and conveyance related features. We make the above comments and requests to assure a mutually acceptable alternative is adopted.

Martin Nizlek, Ph.D. Civil Engineering
SAC Board Member on Behalf of WSSA

Washington Sensible Shorelines Association

CC: Willowmoor SAC Members
County Executive
County Council Members Hague & Lambert
Corps of Engineers - Seattle District
Mayor & Councils - Lake Sammamish Jurisdictions

[2] "Policy and Procedural Guidance for Processing Requests to Alter USACOE Civil Works Projects", July 2014