

To: Michelle Clark, Executive Director
King County FCD
(cc: C.Balducci and K.Lambert)

March 18, 2021

From: WA Sensible Shorelines Association (WSSA)
on behalf of Lake Sammamish Shoreline Residents



Subject: Comments and Input on Motion to Incorporate Willowmoor in Sammamish Basin CIS

To follow up on our meeting on this topic last week with you and Council Chair Claudia Balducci, we have reviewed the motion and prepared comments and suggested changes. Given the short timeline within which the Executive Committee will consider Motion 2021-03, we herewith provide that input for your and their consideration.

WSSA's presentation focuses on four areas -

- (a) what lake residents see as **critical issues and key objectives/actions**;
- (b) a request for a more effective third-party review of a **Dynamic Weir**;
- (c) a critique of the **motion's statements** from the perspective of lake shoreline property owners; and
- (d) a list of nearly **250 residents who petitioned** the County last year for flood relief.

Critical Issues and Key Objectives/Actions

Progress Delay - The Willowmoor Project, when initiated some seven years ago, held promise for us that actions would be identified to relieve extreme water levels and flooding on the lake. That did not happen. We are concerned that an immediate action plan to resolve these issues be part of the CIS effort.

Corps and Consultants - We applaud the fact that you have approached the Corps of Engineers for their involvement. Along with the Corps, we suggest the CIS effort engage one or more independent consultants to provide expertise. To be frank, until recently County staff has demonstrated a reluctance to consider the impacts to lake residents of high-water levels and flooding. An independent perspective is needed. We ask that the Flood Control District provide funding for this, since we understand the Corps is not budgeted for it.

Dynamic Weir - Our top priority is to urge renewed efforts to evaluate a remotely operated dynamic weir at Marymoor Park. We discuss this below and recommend the associated risk assessment include consideration of the benefits it would provide lake residents via lessened damage and loss.

Property Owner Assistance - We suggest the best means to assist residents in recovering from recent and future flood damage would be through the establishment of an expedited permitting process. The District could subsidize local, state, and federal permitting fees. Every effort would be made to expedite the process, so that, if feasible, the permitted repairs could be completed within the same year's "in-water" work window. If qualified contractors are not able to accomplish repair efforts on a timely basis, permits would remain open and not expire.

Flood Control Project (FCP) Audit - This effort would include the Corps, County, and an independent consultant, and consist of inspection and documentation of issues along the entire length of the FCP - asking what items obstruct flow; who is responsible for their removal; and options to remediate their impact(s).

Ordinary High Water Mark (OHWM) - The OHWM has guided millions of dollars of investment on the lake shore. The Corps cites 27 ft. (NGVD) as the lake's OHWM - in recognition that this was one of the FCP

design criteria. Though there are claims the OHWM has risen, that has not occurred either naturally or through a sanctioned permit process. A CIS goal should be re-establishment of the Corps's level.

Evaluation of Tributaries - While the CIS will likely look at this topic, we underscore the importance tributaries play with respect to the lake. Bear Creek basin, which has a serious negative impact on lake outflow, is a primary example of where the question of how to balance flood protection with environmental and fishery objectives needs to be answered, not avoided.

Consideration of tributaries would not be complete without addressing municipal drainage system impacts. While new development is restrained in how much runoff can be directed off-site, often overlooked is the contribution from expansion of public facilities like roads. Complicating this, regulations requiring that drainage ways and culverts be accessible to fish work against flood protection unless extreme care is exercised. The CIS will need to focus on this, adding flood & lake level management to its objectives.

That leads to an additional impact to consider. Siltation and invasive plant species have been reported, especially at the north and south ends of the lake and in the FCP itself. Identifying the status of these issues in the FCP should be part of that effort given their obstruction of river flow.

Mitigation Required for Routine Maintenance - Costly mitigation for routine maintenance continues to be required by the County. Staff have reported that this doubles the cost of maintenance efforts. If we were talking about destruction of native forest, we could understand the need for mitigation. This is maintenance – returning a facility to its design state. We also recommend there be an assessment made of the extent to which prior mitigation has created obstruction(s) to flow in the FCP.

The Case for a Dynamic Weir:

For lakeshore property owners, the main problem that so far has not been addressed by Willowmoor or by the RFPs the FCD has issued, is *damage from peak lake levels*. Lake Sammamish can rise by several feet in a few days. In February of last year, it rose 3 ft in 4 days. That, combined with strong winds, caused an estimated \$10 million or more in damage to docks, bulkheads, and other shoreline improvements.

Why is this happening?

There are various contributing factors, but the dominant one is the increased discharge from the Bear Creek Basin, which creates a backwatering effect where it enters the river at Marymoor and prevents the lake from draining, so the lake goes much higher than it used to.

So, what can be done about that?

1. Buffer the flow from Bear Creek – Not practical in the near term. It might take a retention pond the size of a small lake to do that. (But Bear Creek impacts do need to be addressed by the CIS.)
2. Dredge the river – Not a short-term solution. Faces many hurdles - principally cost and environmental. (And, like Bear Creek, this option also needs to be considered by the CIS.)
3. Draw down the lake level in advance of heavy rainfall periods to increase its capacity to store the heavy runoff without going too high. This is the concept of a “*dynamic weir*”.

Potentially, a dynamic weir is a relatively quick, affordable, and environmentally inconsequential solution that can be carried out in the near term. It might consist of enlarging the notch in the existing weir and installing a gate, to be opened in advance of high inflow. And it can be motorized and operated remotely.

The County should sponsor the study of a remotely operated dynamic weir of this nature to determine the appropriate design and the operational procedures to draw down the lake sufficiently in advance of major storm events to limit peak lake level excursions.

The FCD did issue an RFP somewhat along these lines, but it got no bidders. It was unproductive for several reasons:

- It merely called for a critique of the county's so-called dynamic weir design (stop-logs); it did not call for investigation of alternative designs – like a gated weir – that could be far more effective.
- It did not stipulate reduction in *peak* lake level as a criterion for DW operation.
- It did not call for determining an appropriate operating procedure for opening the weir in advance of a high rainfall periods.
- It did not provide any background documentation to the would-be bidder, such as the existing Remotely Operated Dynamic Weir Analysis or other Willowmoor documentation. Rather, it stated that such would be provided at a meeting after award of the contract. So, the bidder had no context in which to scope the task.
- It stipulated a budget (bid range) that was unreasonably small (\$15 – 25K).

It is no surprise that the RFP got no takers.

(Continued Below)

WSSA Critique of FCD Exec Comm. Motion 2021-03 (Willowmoor Redirection - Basin CIS)

Overall Comment - Following we critique several the "Whereas" declarations - in some cases recommending changes. Subsequently, we comment on the actions expressed in the "Now Therefore" statements - again proposing changes.

County Declarations	WSSA Comment
<p>WHEREAS, the Zone was constructed as part of the overall Sammamish River Improvement Project ("the Improvement Project") in the 1960s by the U.S. Army Corps of Engineers ("the Corps") in cooperation with King County primarily to control flooding in the Sammamish river valley...</p>	<p>The presumption that the Corps' FCP was placed solely to protect downstream development is incorrect. WSSA can provide documentation wherein the Corps directed the County to alert lake property owners of the consequences of the County's failure to maintain the FCP as agreed.</p>
<p>WHEREAS, state agency and tribal government representatives have expressed concern that those maintenance actions adversely affect water quality and habitat and conflict with federal, state, and local efforts to protect and enhance riverine habitat for recovery of salmon species listed under the federal Endangered Species Act...</p>	<p>While such legislation exists, court rulings have established that these regulations do not mandate abandonment of flood protection considerations. There have been repeated studies and declarations reporting the deficient conditions in the TZ and downstream - associated with failure to inspect and maintain the FCP - are primary causes of flooding on Lake Sammamish.</p>
<p>WHEREAS, the Willowmoor Project was created with the intent to reduce the frequency and duration of high lake levels while maintaining downstream Sammamish river flood control performance...</p>	<p>This statement infers that downstream performance of the FCP is adequate. To the contrary, the entire length of the FCP has had its capacity reduced through documented lack of maintenance and placement of obstructions to flow¹.</p>
<p>WHEREAS, on June 6, 2016, the District executive committee approved Motion 2016-04.1, which provided direction to proceed to 30 percent design with the Project, including, in part: developing the split channel alternative in such a way that balanced the objectives of flood control, habitat restoration, fish passage and sustainability; conducting a feasibility analysis of a dynamic weir that included costs and benefits; developing a maintenance plan for when the project is complete; pursuing grant sources and identifying funding partners to further evaluate cold water supplementation and assume ongoing maintenance costs should the option be selected; and continuing existing maintenance during design and permitting phases...</p>	<p>Despite the directive to proceed, nearly 5 years have elapsed. Minimal maintenance has been provided and the scope of the project has focused primarily on fish and environmental factors despite the identification of downstream obstruction to flow from illegal, ill-designed, and obstructive changes to the FCP. The result - continued damage to Lake Sammamish properties.</p>
<p>WHEREAS, the District requested King County evaluate the flood risk reduction of a dynamic weir, which could be adjusted with greater frequency and in anticipation of major weather events. In response, the county prepared a progress memorandum for an addendum to the weir analysis dated July 5, 2019, using the "Contemporary Conditions spreadsheet." The analysis preliminarily</p>	<p>This study/determination has never been provided WSSA despite repeated requests.</p> <p>In addition, it would appear the study found a net potential benefit reducing "days over 27 ft.". But elsewhere the County concludes the risks associated with operating the DW outweigh its</p>

¹ "Inspection Report on Authorized Project", Ifft, Charles, US ACoE, 8 July 2008

indicated a 25 percent to 47 percent reduction in flood days exceeding lake elevation of 27 feet was possible using a remote dynamically operated weir...	benefits. This effectively shifts the risk of flooding on the lake to shoreline property owners. That is not acceptable.
WHEREAS, in June 2020 the final Remotely Operated Dynamic Weir Analysis Addendum Technical Memorandum confirmed the preliminary results of the July 5, 2019 progress memorandum...	This statement appears to be offered as a reason for inaction when it should indicate the possibility that this situation - obviously not caused by lake residents - might, in the short term, be mitigated by the addition of a dynamic weir.
WHEREAS, because the results of the 2018 and 2019 analyses varied significantly due to differences in data availability and model setup, the District requested a third-party review of the models and analysis to inform further decision making for the Willowmoor Project...	What does this refer to? The DW analysis or some other aspect? If not the DW, why has the public not been involved or provided information on this effort?
WHEREAS, in February 2020, Lake Sammamish experienced historic flooding, resulting in damage to property including docks, crawlspaces and small outbuildings around the lake...	Yet there has been no effort by the County to estimate the magnitude and extent of the damage!
WHEREAS, the Sammamish river capital investment strategy is intended to take a comprehensive look at the entire Sammamish river basin in collaboration with the Corps, cities, and other stakeholders and to update the capital investment and maintenance strategy for meeting the flood risk reduction, fish habitat, and navigability requirements of the Corps's 1964 operations & Maintenance Manual...	The narrative of this citation essentially halts action to bring immediate relief to lake property owners when such action is urgently needed. It would place actions in the basin in competition with other programs AND inappropriately shifts an active operating program - that of maintaining the FCP per Corps directives - to a "Capital Improvement" program - which could take decades to implement.
WHEREAS, the King County Flood Control Zone District ("the District"), through the King County water and land resources division as its service provider, provides funding for and conducts regular maintenance of the Zone, including mowing, trimming, removal of vegetation, removal of accumulated sediments in the channel and associated mitigation efforts...	This statement blatantly denies the fact that the Corps of Engineers inactivated the project over a decade ago due to the fact regular maintenance had not been carried out. Further, an independent review is needed to establish whether conditions in the TZ have continued to deteriorate and need corrective, flow enhancing action.
WHEREAS, since mid-2013, the District's service provider, the King County, has been collecting data, conducting technical analyses, and developing a suite of conceptual design alternatives for the Willowmoor Project....	To the contrary, the County began promising the Willowmoor Project for more than 20 years, with the concepts and configurations now included in the project strikingly similar to what was envisioned back then. Further, no action has been forthcoming under the current project since conclusion of the preliminary planning phase over three years ago. Such inaction has left property owners and the shoreline environment without protection from high water impacts.
WHEREAS, King County prepared a report dated May 22, 2018, in response to the issues listed in Motion 2016-14.1. The report, using the "Modified Existing Conditions HEC-RAS" model for lake levels, indicated that there was no significant difference in flood risk reduction between the wide and narrow side channel alternatives	These "findings" need to be reviewed by an independent entity. WSSA recommends this be guided by the Corps of Engineers (as required for any modification of a federally funded FCP).

and that the manually operated weir, which assumed adjustments in weir height only on a seasonal basis, was not expected to reduce lake levels for a significant number of flood days...	
WHEREAS, uphill development around Lake Sammamish and in tributary stream basins has resulted in increased runoff into the lake during storms...	Where has this been documented? Indeed, federal drainage regulations would limit new development from increasing runoff and the Willowmoor consultants made a determination this would not be an issue. Finally, one must ask to what extent has and will the failure to maintain "up-basin" detention facilities (or modifications made solely for fish) contribute to this issue.
WHEREAS, in parallel with the process for developing options for reducing lake levels with reconfiguration within the Zone, eight cold-water supplementation concepts were identified, developed, analyzed, and compared as a tool for reducing fish morbidity...	At the same time, simple concepts such as evaluating the potential benefits of a dynamic weir have been given little credence.
County "Now Therefore" Action Statements	WSSA Comments & Recommendations
SECTION 1	
A. Update the Sammamish river capital investment strategy work program authorization and project charter to include Lake Sammamish, the Willowmoor project and Issaquah creek to ensure a complete basin-wide approach, subject to approval by the District executive director;	As stated, this would not encompass downstream tributaries. Unless they are included, the CIS will fail to find a comprehensive set of actions to return requisite flow in the Flood Control Project (FCP). <i>Recommended wording - "Update the Sammamish river capital investment strategy work program authorization and project charter to include Lake Sammamish, the Sammamish River, as well as their tributary basins, and the Willowmoor project, to ensure a complete basin-wide approach, subject to approval by the District executive director; and"</i>
B. Work with cities that border Lake Sammamish to design and implement near-term flood mitigation options for lakeside landowners, such as floating docks, out building relocation or elevation and other floodproofing measures;	While this action is not unreasonable, it is unclear whether such changes would be demanded of and paid for by property owners when they are not at fault for raised water levels and flooding. <i>Recommended wording - B. "Work with cities that border Lake Sammamish to design and implement near-term flood mitigation options for lakeside landowners, such as floating docks, if feasible, out building relocation or elevation, enhanced shoreline armoring, and other damage reduction and floodproofing measures; and"</i>
C. Conduct outreach to homeowners' associations and others on the lake to make them aware of their potential eligibility for flood-reduction grants and flood insurance;	Again, while not unreasonable, it is unclear if this proposal would limit efforts to return the lake to water level patterns which the Corps designed the FCP to supply. <i>Recommended wording - "While the CIS is identifying long range mitigation measures, conduct outreach to homeowners' associations and others on</i>

	<i>the lake to make them aware of their potential eligibility for flood-reduction grants and flood insurance; and"</i>
D. Prepare a high-level assessment of the scope and level of effort needed for data collection and a tributary gaging, groundwater monitoring and weather station network that would be able to support lake level forecasting;	WSSA does not object to such an effort, especially if integrated with a dynamic weir.
E. Continue to pursue the permits needed to continue vegetation maintenance in the Zone; and	The CIS should seek relief from stipulations that mitigation is needed for routine maintenance. Its purpose is to maintain the design conditions of the floodway. <i>Recommended wording - "Conduct annual inspection of the FCP and its tributaries to identify obstructions and needed maintenance, then seek permits to accomplish the required actions necessary to restore the Zone and the Sammamish River to Corps of Engineers standards; and"</i>
F. Identify updates to the 2021 work plan and budget needed to undertake the work described in this motion for potential inclusion in the 2021 midyear budget update.	WSSA requests to be allowed an opportunity to review and comment on the work plan.
SECTION 2.	WSSA Comments & Recommendations
A. Issue a third-party review request for proposals for analysis of weir alternatives, to remain open until the District executive director executes a contract for the work; and	As written consultants will not be able to submit informed bids. <i>Recommended wording - "Issue a third-party request for proposals for analysis and design of weir alternatives that (a) target wet season lake levels to not exceed 27 ft. NGVD, and (b) target peak period lake level excursions to not exceed 29 ft. NGVD; and"</i>
B. Explore possible county-owned locations closer to Lake Sammamish for sandbag distribution.	Again, this is acceptable so long as it is not interpreted as a reason for delaying urgently needed actions such as water level management through placement of a dynamic weir.
SECTION 3.	WSSA Comments & Recommendations
The District requests King County reach out to city stormwater programs in Bellevue, Issaquah, Sammamish and Redmond through existing contacts and coordination venues to learn more about their current plans, including stormwater retrofits and green stormwater infrastructure initiatives, such as rain gardens, and share its findings to the District executive director.	WSSA concurs with this action with two caveats. First, as written it can be interpreted to apply solely to drainage directly into the lake when shoreline properties contribute little compared to uphill properties. In addition, the entire lake and river basin must be involved. <i>Suggested wording - "The District requests King County reach out to basin municipalities and agencies, through existing contacts and coordination venues, to identify feasible measures to reduce inflow into the lake and the FCP by containment during stormwater events. The County shall share its findings with the District director."</i>

Lake Sammamish Feb. 2020 - Post Flood Petitioners

Claudia Burke	Denica Bucklin	Joerg Hallmann	Marguerite Harvey	D. R. Hendel
Craig Owens	Mark Kaushagen	Linda Johnson	Gene Harden	Sally Beckwith
Thomas Harsh	Sue O'Riley	William Gottschalk	John R. Strong	Trevor Nies
Margaret Klomp	julie mahler	Rory Dees	Suzanne Dodd	Mary Devino
James T. Stenson	Amy Byron	Kendall Bateman	Dan Tylutki	Cory Hitzemann
Mike Mathy	David Fortin	Valerie Shinn	Michael Merhej	Thomas Leach
Roxanne M Moening	Thomas Goar	Saeed Abtahi	Jay Buxbaum	Rod Wentworth
William R Greve	Paul R. Harvey	Stacy Dunlap	Rebecca Buxbaum	Michelle Eden
John Moodie	Sundi Mathewson	Palma Conces	Douglas Evans	Eva Vanderhoeven
Vinayak Bhalerao	Tracy Ficca	Kathleen&Bill Bonney	James Stulz	James Aiken
Kangho Lee	Bob Dixey	Lawrence Brennan	Scott Eaton	Michael S Tihista
Jill Hendel	William R Selset	Delie	Leonardo A Steinman	Don Johnson
Douglas Hendel	ed johnston	Carolyn Martin	Jim and Annita Presti	C Kramp
Joanne Pietromonaco	Scott Carroll	Hung Le	Ron Hallissey	Barbara Petzold
Carol Witty	Craig Williamson	Kathryn Pizzo	Todd Dunlap	Diane Vasey
Caroline Kaufman	Martin Piecyk	scot fordyce	John D. Thueringer	Michael Vasey
Kristin Landry	Meredith McDade	S Harikrishnan	James P. Mackey IV	joan murray
Vern Lindquist	Vo Le	Donna Thorson	Craig R. Wilbour	Karen Schirmer
Donald T. Stewart	Dan & Shane DeWald	Mark Wagner	Sean Muller	Patrick W Lathrop
Arul Menezes	Rachelle Benbow	Chong Ka	Randy Love	Greg Reiswig
Nick Tsilas	Michael Eng	Lennard Nahajski	Rick Carovano	JoAnn Spears
Doug Schumacher	Matt Pohle	LaVey Norquist	Deborah LR Freng	Thomas Marxen
Brandon Stock	Chris Monger	Fernando Mendez	Joseph C Decuir	Amy L. Schutt
Vasilios Petrakos	Yih Herng Chuang	Kathryn Fedor	Ron and Sharon Selset	Chuck Last
Kathy schroeder	Aaron Wiehe	Stephen Carrigan	Serina Kaye	Steve Peck
Eugene Morel	Joanna Ray	Bob Morrison	David Lambert	Tuna Ertemalp
Tom Rodgers	Lynne Storrar	Paul Armour	Michael Donelson	Susan Brockway
Bob Azelby	Anthony Gonchar	celia casas	Crystal Stull	Chris Keats
Benjamin zylstra	Albert Ting	Xiaoli Yang	Jun Zhang	Mark Rogalski
Emily B Repperger	CK Wang	Terry & Donna Lemke	David Chickering	Brad Del Matto
George Toskey	stephen dennis	Toren Elste	Arthur Ty Whitten	Vach
James O'Neill	Neil Koorland	Bonnie Kulinski	David Knopf	Gene Roeglin
Michale Durrell	margo allan	Anthony Jurcan	Cameron Pelly	Tara Rose-Large
Patrick Haluptzok	sean vanderdasson	Eric Shuey	Greg Mowrer	Jeffrey S Lum
Margaret Klomp	Nancy Myers	Gilad Odinak	Bryce Hausmann	Jill Lum
Thomas G Cowan	Terry Dodd	Harold Bantle	Sally Julien	Jason & Kim Gray
Hank Waggoner	Linda Bowers	Anne Gardiner	Gilbert B. Pauley	Carolyn Rossi
Stephen M Storrar	Linda Rasmussen	Jamie Brakken	Marty Nizlek	Kabir Siddiqui
Upinder Dhinsa	Barbara petzold	Gary Heitlauf	Vincent Santoro	Kip Durrell
lorrie garrett	Daniel C Smith	Vibhu Passi	Mike Gallop	Karen Hamilton
Bruce Miller	Kyle Buckner	Cindy Pauley	Christi Hettich	William Rissberger
Susan Brockway	Julie McClain Oppenhe	Naveen Garg	Jim Schirmer	Mike Hettich
Terrance R Schulze	Marc & Heidi Evanger	Paul Best	doug thorpe	Pamela Miller
Tracy Neighbors	Dean Heathcote	Calan DeWald	Reiko Hisamatsu	Robert Gunther
Lora VanSickle	Dawn Matte	Chris Tuohy	Gavin Skok	Raymond Castor
Joseph VanSickle	Thomas Hodge	Clifford schroeder	John Rossi	James A. Creevey
Cathleen Aiken	Carvel Moore	Reid Brockway	James Kulinski	Jay Buxbaum