

Correspondence from M. Nizlek to Redmond, King County, and Corps of Engineers

To: Mike Haley, Redmond Project Engineer; Mark Isaacson, King County Water and Land Resource Division Director; Douglas Weber, Chief - Army Corps of Engineers (Seattle) Emergency Management

Subject: Sammamish River TZ - Flow Issues¹

Date: Tue, 23 Apr 2013 12:06:07 -0700

I'm writing to express continued concern with outflow conditions from Lake Sammamish. I have been in recent contact with the City of Redmond regarding the forthcoming Bear Creek project. In addition, I have compiled TZ outflow information. (See Appendix A, below)

Both the Bear Creek project and TZ outflow data present concerns regarding current water levels as well as threats to Lake Sammamish under more severe storm conditions than witnessed recently.

First, a report by David Evans Associates for the Bear Creek project reflects conflicting information. Distinctly different flow values for 10 year storm events are reported. A FEMA value is listed which is 50% greater than the Corps used in the design of the Transition Zone. Given that the County has reported TZ flow and Bear Creek flow "work against each other" at flows over ~1000 cfs in the TZ, if there is potential for an even higher level of Bear Creek flow, this should be considered sooner than later.

Second, the comparative analysis (found in Appendix A), carried out using County online information, indicates that, even with the return to annual maintenance of the TZ, flow levels are below those experienced a decade ago.

On behalf of Lake Sammamish residents, I urge the City of Redmond, the Corps, and King County to press forward with deferred maintenance of the TZ through removal of accumulated debris and sediment in the high flow channels. The marginal benefits that have been produced, for example, by removal of the illegal rock dam last fall attest to the potential benefits. Our lake water levels persist at over 27 ft. - the Corps' OHWM and need not.

I close pointing to the experience nationally following Katrina and the Corps' revised position that vegetation in and on channels designed to handle storm flows jeopardizes the public. With the Corps' decertification of the entire project, prudent action toward a return to serviceability of the TZ is needed. FEMA's recent mapping of the TZ as a critical floodway supports this contention. (See Appendix B). Please press forward with this much needed maintenance and evaluate the conflicting flow situation reported above to identify appropriate actions.

Martin Nizlek
Bellevue Resident & Member - WSSA Board of Directors

cc: WSSA Board of Directors
King County Council Members Jane Hague and Kathy Lambert
Redmond Mayor John Marchione

¹ Adapted from email correspondence.

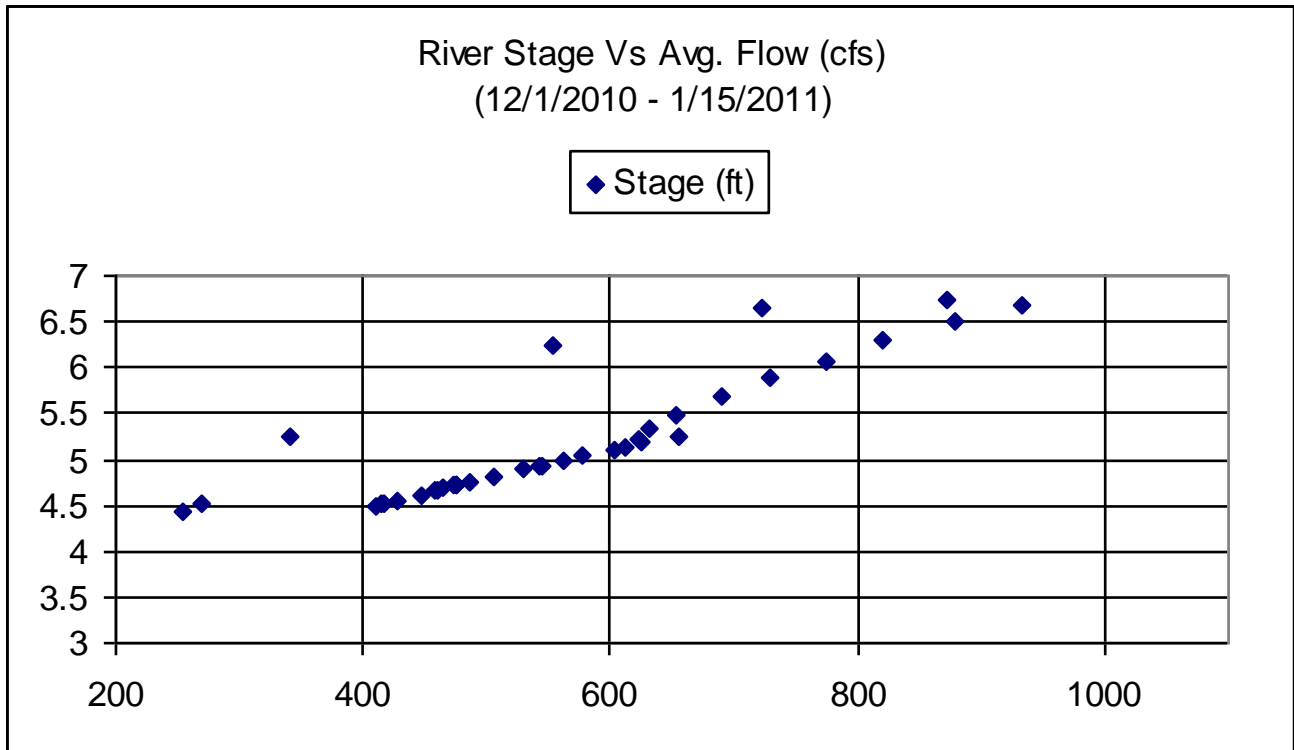
APPENDIX A

Lake Level – Flow Observations²

Period: Dec. 1, 2010 to Jan. 15, 2011

Reason for selection – last period of significant (> 1 inch/day) rain

Observations:

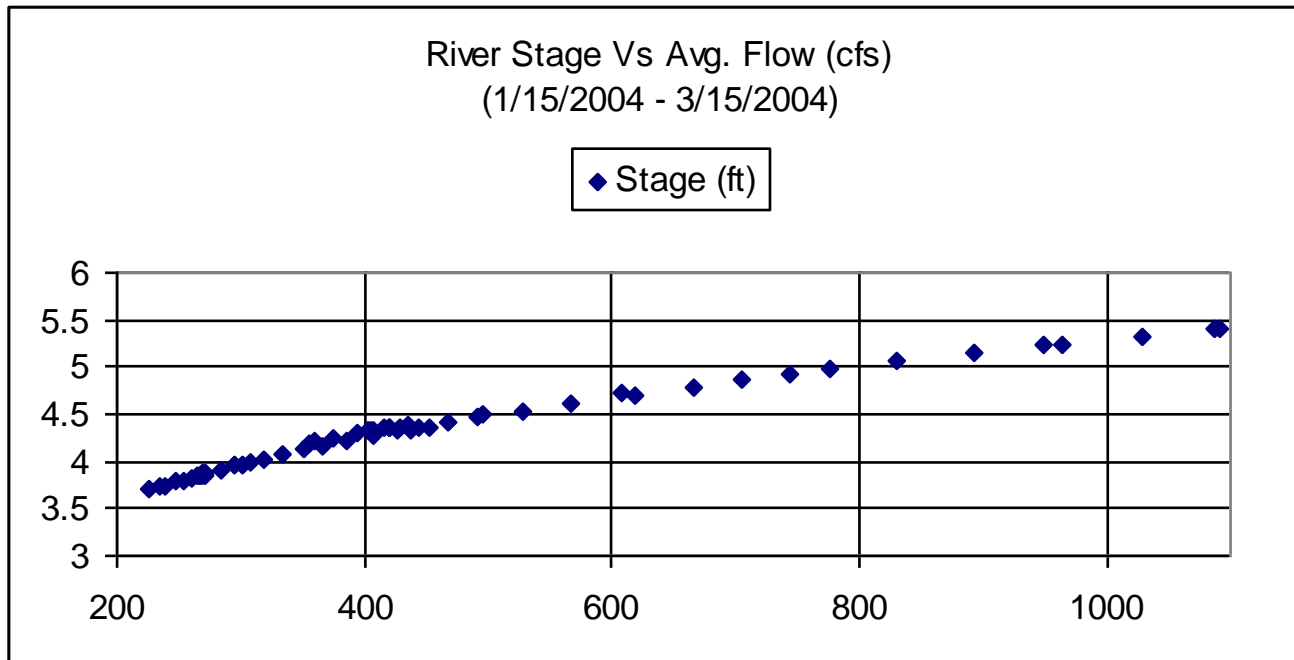


1. Near linear pattern of increasing flow which peaks at about 950 cfs @ weir stage of 6.65 ft. (29.85 ft NGVD).
2. The anomaly of 6 spurious data points occurred during a period of rains heavier than 1 inch per day.

² Prepared April 2013 by Martin Nizlek, PhD. Data source: King County weir gage online data found at – http://green.kingcounty.gov/WLR/Waterres/hydrology/DataDownload.aspx?G_ID=180

Period: Jan. 15, 2004 to Mar. 15, 2004

Reason for selection: To provide historic period of rainfall with > 1 inch per day

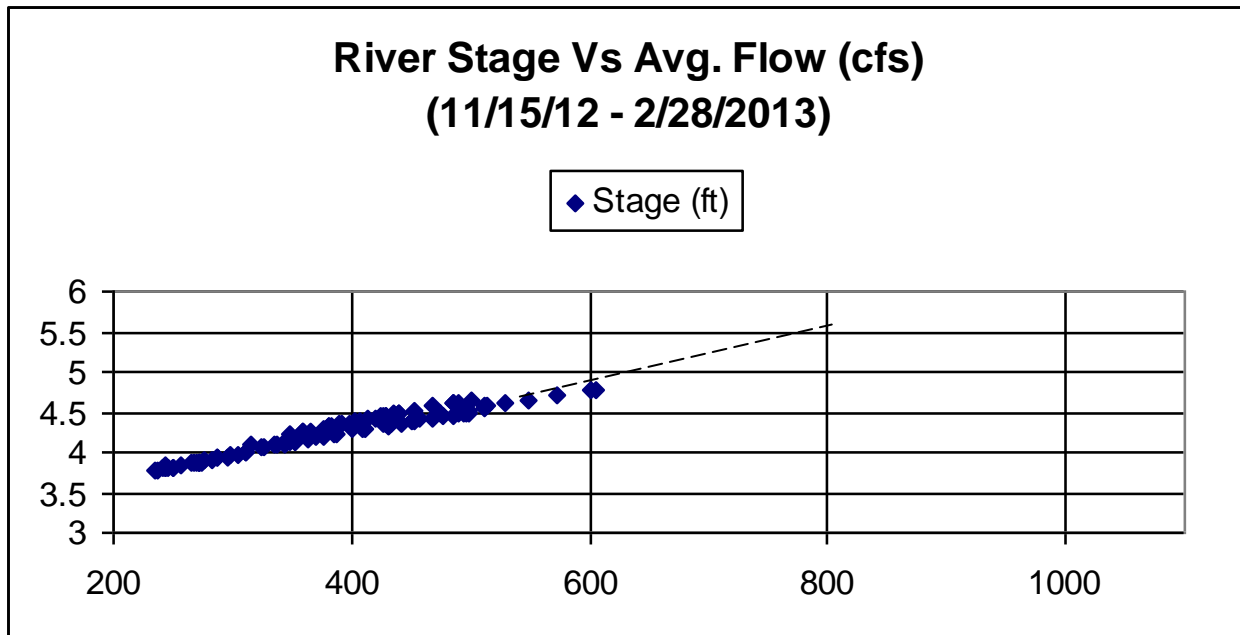


Observations:

1. At stage 4.5 ft. (27.7 ft. NGVD) flow is at 500 cfs compared to 400 cfs in 2010-2011
2. At stage 5.5 ft. (28.7 ft. NGVD) flow is at 1100 cfs compared to 675 cfs in 2010-2011
3. Conclusion – flow characteristics were better in 2004 and, if conditions in the TZ have not been improved since 2010-11, it is doubtful the TZ can pass 1200 cfs at 29 ft. NGVD.

Period: Nov. 15, 2012 to Feb. 28, 2013

Reason for selection: Current water year, exclusive of late spring flow



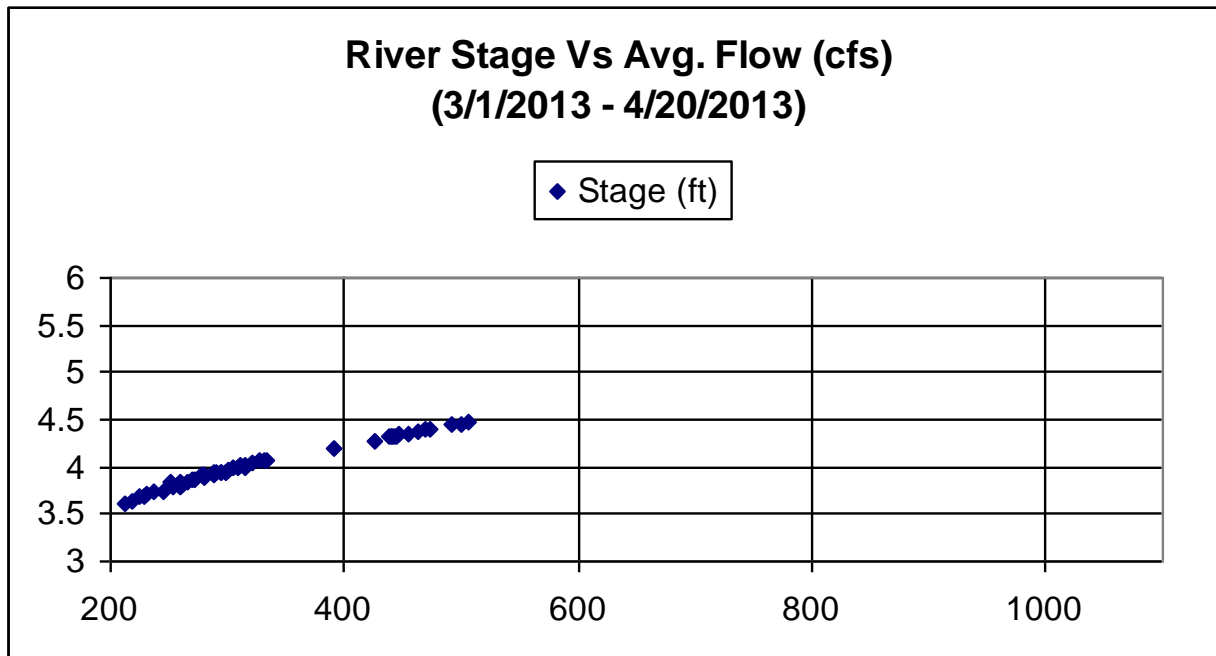
Observations:

1. While this period has been wet, there have been only a few days of more than 1 inch/day of rain. Thus, flow levels and lake stage have been confined under about 27 ft. NGVD.
2. At stage 4.5 ft. (27.7 ft. NGVD) flow is at 500 cfs which is better than 400 cfs in 2010-2011.
3. At stage 5.5 ft. (28.7 ft. NGVD) flow might be project to about 800 cfs which would compare favorably to 675 cfs in 2010-2011.
4. Trimming was carried out by the County in both 2010-11 and 2012-13. The difference in 2012-13 was removal of the illegal rock dam³. Thus, the improved flow, at least at these water levels, may be attributable to the dam's removal.

³ There may also have been a large amount of roots and debris removed just below the fish resting pool in 2012.

Period: Mar. 1, 2013 to April 20, 2013

Reason for selection: To detect if spring growth may be impacting spring flow



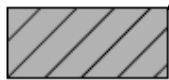
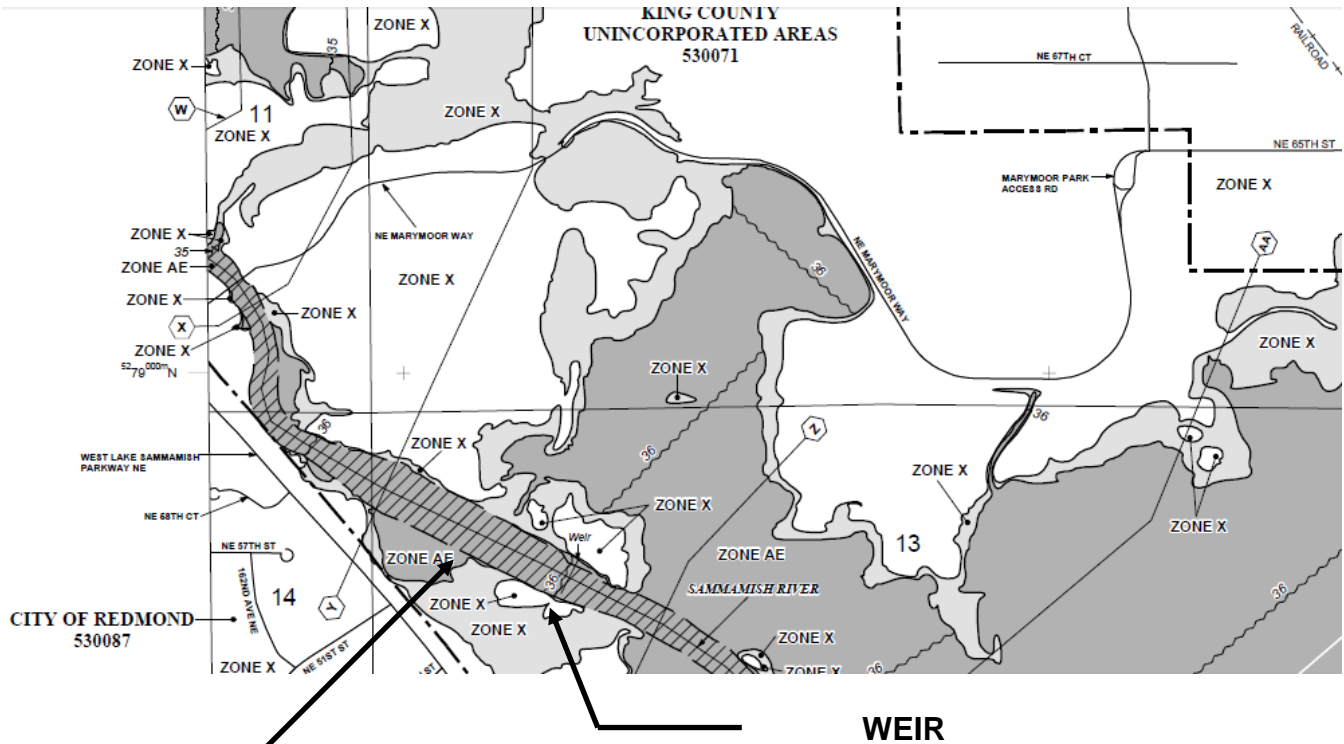
Observations:

1. The lake's water level has rested below stage 4.5 ft. (27.7 ft. NGVD) throughout this period. This is likely due to there being only two days of rain exceeding 1 inch per day during this period.
2. At stage 4.5 ft. (27.7 ft. NGVD) flow is at 500 cfs which is comparable to the Dec. through Feb. period, above.
3. Flows at 4.0 ft. are comparable at 300 cfs for the two periods.
4. There does not appear to be a substantive difference between periods. It cannot be concluded that spring growth in the high flow channels is impacting flow.
5. It should be noted that water levels persist above the Corps' 27 ft. OHWM. More than 75% of the days since Jan. 1st, 2013 and development of this report have been above the 27 ft. mark.
6. Most important – the question remains – **Can the TZ pass 1200 cfs at 5.8 ft. (29 ft. NGVD)?**

APPENDIX B

Inundation of Marymoor Park – (FEMA Analysis)

(Source - <http://your.kingcounty.gov/dnrp/library/water-and-land/flooding/mapping/flood-insurance-rate-maps/53033C0386H.pdf>)



FLOODWAY AREAS IN ZONE AE



OTHER FLOOD AREAS

ZONE X

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.