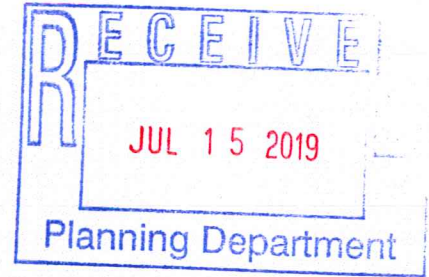




**WESTECH ENGINEERING, INC.**  
CONSULTING ENGINEERS & PLANNERS



Via Electronic Mail  
Honorable Mayor Hill  
Members of the City of McMinnville City Council  
C/o Planning Department  
230 NE 2<sup>nd</sup> St. McMinnville, OR 97128

RE: Premier Development LLC PDA 3-18, PDA 4-18, and S 3-18

Dear Honorable Mayor Hill Members of the City of McMinnville City Council,

This letter is in response to PBS May 24, 2019 letter (PBS Response Letter) to Friends of Baker Creek's response to Kellington Law Groups response to PBS Report (Hydrologic Analysis of Baker Creek). Our responses are numbered in accordance to that provided in the PBS letter.

**1. Topographical Error**

It is noted that PBS agreed that they made a typographical error in their report. We do not have a copy of the PBS developed HEC-HMS model so cannot confirm that their model was developed properly

**2. Unit Discharges**

We agree that unit discharges are not the only way to evaluate the reasonableness of peak flows for a watershed and that each watershed is unique. However, FEMA uses unit discharges to help review results of a hydrologic models when used for a Flood Insurance Study to ensure the model results are reasonable.

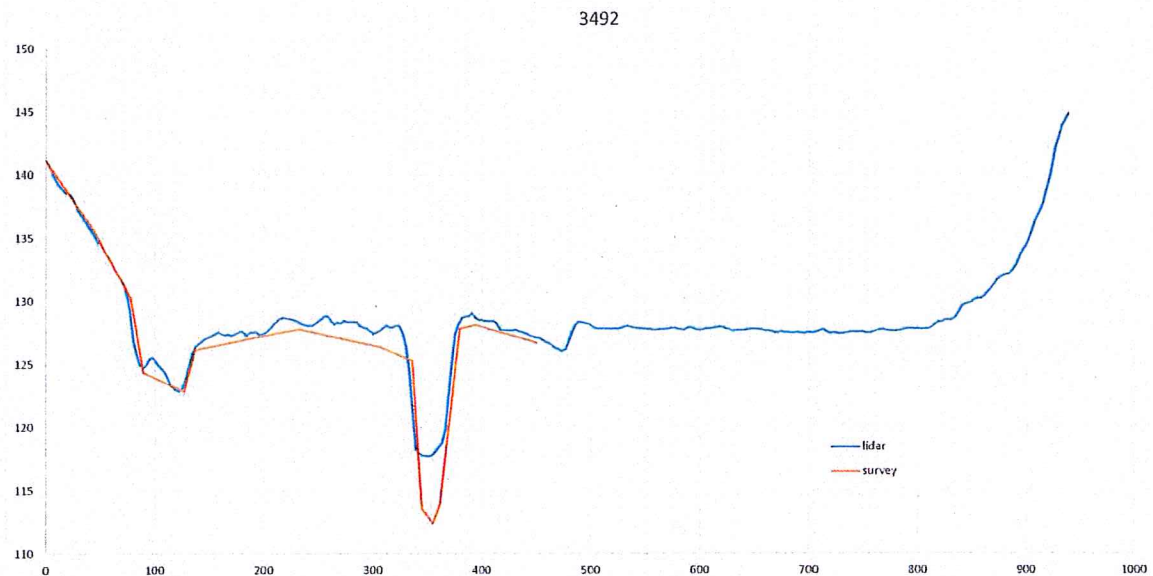
Our primary concern was that PBS states in the last sentence on page 9 of their May 2019 report that "Of the modeled calibration watersheds, Butte Creek and Tualatin Creek watersheds are the most similar in composition to the Baker Creek drainage area." Yet the unit discharges for Butte Creek and Tualatin River are 154 cfs/mi<sup>2</sup> and 141 cfs/mi<sup>2</sup>, respectively while the unit discharge for Scoggins Creek (assumed to be less similar in composition to Baker Creek) is 230 cfs/mi<sup>2</sup>. They do not explain in their report or their rebuttal the justification for the significantly higher unit discharge of 239 cfs/mi<sup>2</sup> for Baker Creek when compared to the two watersheds that are most similar in composition. The comparison to other watersheds in western Oregon shown in the PBS Response Letter makes it appear that their model results are in the ballpark. However, since they are using a Log-Log scale plot for their comparison, the ballpark is rather large.

PBS “calibrates” their Baker Creek HMS model using synthetic 100-year storm events for Butte, Tualatin, and Scoggins Creek basins. They adjust the curve numbers and lag times for each basin so that the model output matches the 100-year peak discharges that were developed from statistics of stream gauge data. This is an apples to oranges comparison. A more appropriate approach to calibration is to use rainfall data from specific storm events and attempt to reproduce the peak flows recorded by the stream gauge by adjusting model parameters. Those adjustments can then inform the level of adjustment that would be appropriate for the Baker Creek model.

### 3. Lidar Data and Channel Discharge Capacity

The first sentence on page 1, paragraph 4, of the May 2019 report states “The analysis herein supports the development of calibrated hydrologic and hydraulic models”. There is nothing in the PBS Report to indicate that the hydraulics component is “ancillary” as stated in the PBS Response Letter.

Survey of the channel indicates that there is significant additional conveyance area in the cross section than is indicated by the LiDAR data. The following figure is an example that illustrates this point. The low flow portion of the surveyed channel has roughly 150 square feet of additional conveyance area compared to the LiDAR cross section. Assuming 5 ft/sec average channel velocity for 100-yr discharge, this equates to 750 cfs of additional flow that is not accounted for by the LiDAR cross section.



### 4. Use of Lake Oswego Rain Gauge Data

Using data from a rain gauge that is located nowhere close to the basin of interest is not justified by the temporary inability to obtain the appropriate data. We appreciate that PBS has conducted additional analysis using the rainfall data from the McMinnville Airport as should have been done originally.



In summary, PBS does not attempt to change the conclusions of the PBS Report in the PBS Response Letter. In the PBS Response Letter they admit that the PBS Report lacks the data and the analysis to be considered a "MT-2 Narrative" that would be required to remap the floodplain, which indicates that the findings could be suspect. In any event, PBS stands behind their findings and conclusions. Their conclusions of the PBS Report per Table 16 of their report states that the 100-yr flood elevation prior to the Oak Ridge Development is 127.42, and after the buildout of Oak Ridge Development the 100-yr flood elevation is 127.41. Based on the PBS Report the 100-yr floodplain elevation decreases 0.01-ft with the buildout of the Oak Ridge Subdivision. In addition, the PBS Report on page 29 states, "Based on the modeled flow hydrographs, the potential downstream impact of blockage for the proposed development amounts to less than one hundredth of a foot of increase adjacent to existing residences....". Therefore, the PBS Report concludes that there are no downstream 100-yr flood impacts on neighboring property owners.

Sincerely,

**WESTECH ENGINEERING, INC.**

A handwritten signature in blue ink, appearing to read 'W. Josh Wells', is written over a solid horizontal line.

W. Josh Wells, P.E.

wjw

## Sarah Sullivan

---

**From:** Jamie Fleckenstein  
**Sent:** Tuesday, July 16, 2019 8:47 AM  
**To:** Sarah Sullivan  
**Subject:** FW: Oak Ridge Meadows  
**Attachments:** We sent you safe versions of your files; 20190715171547512.pdf

### Jamie Fleckenstein, PLA Associate Planner

City of McMinnville  
231 NE 5<sup>th</sup> Street  
McMinnville, OR 97128  
(503) 474-4153  
[jamie.fleckenstein@mcminnvilleoregon.gov](mailto:jamie.fleckenstein@mcminnvilleoregon.gov)

**From:** Josh Wells [mailto:[jwells@westech-eng.com](mailto:jwells@westech-eng.com)]  
**Sent:** Monday, July 15, 2019 4:59 PM  
**To:** Wendie Kellington <[wk@klgpc.com](mailto:wk@klgpc.com)>; Jamie Fleckenstein <[Jamie.Fleckenstein@mcminnvilleoregon.gov](mailto:Jamie.Fleckenstein@mcminnvilleoregon.gov)>  
**Cc:** Ron Pomeroy <[ron@navigationlanduse.com](mailto:ron@navigationlanduse.com)>; Lori Zumwalt <[loriz.premier@gmail.com](mailto:loriz.premier@gmail.com)>  
**Subject:** RE: Oak Ridge Meadows

**This message originated outside of the City of McMinnville.**

---

Mimecast Attachment Protection has deemed this file to be safe, but always exercise caution when opening files.

---

Jamie,  
Please see our response letter regarding the PBS Letter.

Thanks

W. Josh Wells, P.E.  
Westech Engineering, Inc.  
3841 Fairview Industrial Dr. SE Suite 100  
Salem, OR 97302  
P 503.585.2474  
C 503.991.1615

<http://www.westech-eng.com/>

*Celebrating 50 Years of Service*  
*1968 - 2018*

---

**From:** Wendie Kellington [mailto:[wk@klgpc.com](mailto:wk@klgpc.com)]  
**Sent:** Monday, July 15, 2019 4:48 PM  
**To:** Jamie Fleckenstein ([jamie.fleckenstein@mcminnvilleoregon.gov](mailto:jamie.fleckenstein@mcminnvilleoregon.gov)) <[jamie.fleckenstein@mcminnvilleoregon.gov](mailto:jamie.fleckenstein@mcminnvilleoregon.gov)>  
**Cc:** Ron Pomeroy <[ron@navigationlanduse.com](mailto:ron@navigationlanduse.com)>; Lori Zumwalt <[loriz.premier@gmail.com](mailto:loriz.premier@gmail.com)>; Josh Wells