Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070

Telephone number: (503) 570-0800 Fax number: (503) 570-0855

MEMORANDUM

Date: **August 23, 2023**

To: **Ken Onyima, Senior Development Planner**
Urban Design & Planning, City of Gresham

From: **Craig Tumer**
John van Staveren

Re: **Review of AKS Locally Significant Wetland Report – Veranda Subdivision**
MPLAN 21-00652

At your request, Pacific Habitat Services, Inc. (PHS) has reviewed the ESRA-PV Mitigation Plan Technical Memorandum prepared by AKS Engineering & Forestry (AKS) for the Veranda at Pleasant Valley Master Plan and Subdivision (MPLAN 21-00652), dated May 23, 2023, with the focus of our review on AKS's determination that the wetlands on the project site do not meet the criteria for locally significant wetlands (LSW) and, therefore, are not subject to the standards of the City of Gresham's ESRA-PV sub-district. The results of our review are provided below.

OAR 141-086-0350(2)(a)-(e) list five "Mandatory LSW Criteria", and in accordance with the OAR, if a wetland meets one or more of these five criteria, the wetland shall be identified as locally significant. In accordance with OAR 141-086-0350(2)(b), a wetland shall be identified as locally significant if:

> *The wetland or a portion of the wetland occurs within a horizontal distance of less than one-fourth mile from a water body listed by the Department of Environmental Quality as a water quality limited water body (303(d) list), and the wetland's water quality functions is described as "intact" or "impacted" or "degraded" using OFWAM. The 303(d) list specifies which parameters (e.g., temperature, pH) do not meet state water quality standards for each water body.*

As described in AKS's memo, the wetlands on the Veranda property are within one-fourth mile of Kelley Creek, which is included in the Upper Johnson Creek Assessment Unit, which is 303(d)-listed for having impaired year-round temperature and temperature for spawning. AKS's OFWAM assessment of the on-site wetlands, which is included in Attachment A of AKS's memo, characterizes the wetlands' water quality function as impacted or degraded. Therefore,

the wetlands on the Veranda site meet the criteria for locally significant wetlands, as required by the OAR.

OAR 141-086-0350(2)(b) goes on the say:

> *A local government may determine that a wetland is not significant under this subsection upon documentation that the wetland does not provide water quality improvements for specified parameter(s).*

In order to make the case that wetlands on the Veranda property should not be considered locally significant, AKS assessed the functions and values of wetlands on the site using the Oregon Rapid Wetland Assessment Protocol (ORWAP) Version 3.2 and used their ORWAP results for the water-cooling function to draw conclusions about the wetlands' contribution to improving water quality via the moderation of water temperatures within Kelley Creek. The ORWAP methodology requires wetland professionals to answer questions related to a wetland's characteristics and enter those answers into an Excel spreadsheet. That ORWAP spreadsheet automatically generates scores intended to reflect a wetland's ability to support 16 different wetland functions related to hydrologic function, water quality support, fish habitat, aquatic habitat, and ecosystem support. The "water cooling" function is one of three functions that contribute to the water quality support functional group. The ORWAP algorithm then translates these scores into ratings of "lower," "moderate or "higher" relative to 200 reference wetlands found throughout Oregon on which the ORWAP function and value rating scores are based. AKS's ORWAP analysis determined that the wetlands on the Veranda site scored "lower" for the water-cooling function, as described in their memo. Based on their analysis, AKS concludes that, "…wetlands on the project site do not contribute meaningful water cooling (temperature) improvement to Kelley Creek." However, it is our best professional judgement that AKS's memo does not adequately document that the wetlands on the Veranda site do not provide water quality improvements for the parameters for which Kelley Creek is 303(d)-listed (i.e., year-round water temperature and temperature for spawning) and, as described below, we do not find their assessment proves that the wetland should not be identified as locally significant.

In February 2023, in reviewing the AKS position that their ORWAP scoring should serve as documentation for a lack of cool water input to Kelley Creek, PHS reviewed the DSL-approved wetland delineation for the site prepared for the applicant by Schott & Associates in 2019, and using data from that delineation and PHS' site observations, we applied the ORWAP methodology to Wetland 1, the largest wetland on the project site. Our ORWAP evaluation arrived at a "higher" rating for the water cooling functions. While recognizing ORWAP was not developed for the purpose of documenting whether a wetland meets local significance criteria, we provided feedback to the City that our "higher" ORWAP scoring contradicts the AKS "lower" ORWAP scoring, and that we found no support in their findings for the conclusion that Wetland 1 does not provide a water cooling benefit to Kelley Creek. Based on our experience looking at similarly situated sites in the area, PHS relayed to the City that is our best professional judgement that the wetlands on the Veranda site provide a more important contribution to moderating surface water temperatures in Kelley Creek than what was presented in the AKS materials.

PHS feedback to the City was included in a March 22, 2023, response memo from the City to the Veranda applicant team. In May 2023, AKS responded to PHS's February findings, noting that PHS's ORWAP analysis is based on a single February 2, 2003, site visit conducted prior to the start of the growing season. In their memo, AKS suggested that the PHS ORWAP analysis is less accurate than the AKS ORWAP analysis included in their most recent memo, as their ORWAP assessment was based on at least four site visits conducted between December 2022 and May 2023. PHS has considered this statement and is unable to find relevance of this argument. The spreadsheets associated with our February ORWAP analysis (appended to the City's March 22, 2023, Local Significance of Wetlands memorandum) included comments noting how our responses to the ORWAP "questions" differed from those of the original AKS draft ORWAP analysis, which was based on a single site visit dated December 2, 2022. Those February comments show that PHS's ORWAP analysis differed from AKS's in the answers to just seven of the 72 "questions" on the field data form. Several of those seven points of difference stemmed from inconsistencies between AKS's answers to ORWAP questions and the comments AKS entered into the spreadsheet, meaning their scores weren't supported by their own observation notes. In May 2023, AKS's updated ORWAP was delivered as a summary, without the associated spreadsheets that record the answers to the 72 aforementioned questions, but we can see that their water cooling function score of 2.22 remained unchanged between their ORWAP based on one site visit and their ORWAP based on 4 site visits. The function score of 2.22 for both the draft and final versions suggests that multiple site visits or observations made after the start of the growing season did not affect the rating for the water cooling function. PHS has a function score of 6.35 for the water cooling function. PHS's ORWAP scores also showed consistency with the applicant's wetland delineation (Schott & Associates, 2019) report contents as detailed below.

AKS notes in their memo, "Per the DSL ORWAP manual, the water-cooling function is defined as 'effectiveness of a wetland for maintain[ing] or reducing summertime water temperature, and in some cases, for moderating winter water temperature.'" The wetland delineation report prepared by Schott & Associates, Inc. for the Veranda site indicates that the hydrology of all wetlands on the site is supported by a combination of precipitation, high groundwater table, hillslope seeps, and damaged or plugged drain tiles (which indicate the presence of a shallow groundwater table). That same wetland delineation report also included a photograph from March 26, 2019, of flow from Wetland 1 into the off-site ditch that leads to Kelley Creek. The City of Gresham also has photos taken on March 20, 2017 (Photos A and B, Attachment 1) that show surface water within Wetland 1 and flow in the ditch between the wetland and Kelley Creek. These two photos indicate that discharges from the wetland are longer than the "…no more than two consecutive weeks, on average, during the early growing season" indicated in AKS's memo and suggest that these discharges are a regular occurrence.

The May 2023 AKS memo includes the following two statements:

- *There is no evidence to support surface water discharges from Wetland 1 during the warm weather period (May through October), when temperatures within Kelley Creek require cooling benefit.*

- *There is no documented evidence that wetlands provide groundwater discharges via the roadside ditch into Kelley Creek outside of the cool, wet season.*

However, the AKS memo does not provide data in the form of piezometer readings, photographs, wetland delineation sample points or soil profile descriptions that document the absence of surface water or groundwater discharges to Kelley Creek during the warm weather period. However, photos taken by City staff from the public right-of-way show surface water within Wetland 1 on the Veranda Property on May 4, 2022 (Photos C and D, Attachment 1). Analysis of precipitation data for the three-month period preceding the date this photo was taken using the Direct Antecedent Rainfall Evaluation Method (DAREM) shows that this photo was taken during a period of normal precipitation, which suggests that Wetland 1 does discharge surface and/or groundwater to Kelley Creek outside of the cool, wet season. The results of the DAREM analysis are provided in Attachment 2.

Furthermore, Kelley Creek and the watershed are 303(d)-listed for "year-round water temperature." The evidence in AKS's memo also does not provide documentation that the documented discharges from the wetlands do not provide water quality benefits to downstream waters in the winter months or during the early part of the growing season.

Even without considering the different results of AKS's and PHS's ORWAP analyses, it is our best professional judgement that the "lower" rating for the water-cooling function from AKS's ORWAP analysis is not adequate to document that the wetlands on the Veranda site do not contribute water temperature improvements in Kelley Creek. As described in the *ORWAP Technical Supplement, version 3.2*, the term "lower" is not an absolute measure of function and value but is a score showing relative performance of a function when compared to the 200 reference wetlands on which the ORWAP function and value rating scores are based. Because the functional ratings provided by ORWAP are relative to the pool of reference wetlands located in various landscape settings throughout Oregon that were used in the development of the methodology, wetlands that have been historically degraded by urban or agricultural activities typically receive "lower" or "moderate" ratings. Therefore, a "lower" rating does not mean that the wetland does not provide the function; rather it indicates that the wetland provides the function to a lesser degree than many of the reference wetlands. Furthermore, AKS's ORWAP analysis resulted in a function score of 2.22 for each of the three wetlands that were assessed. The "LM" in the "Rating Break Proximity" column of the ORWAP Score Summary Sheets (Attachment B of AKS's memo) indicates that this ORWAP score is within the upper range of scores assigned to the "lower" rating and within the statistical confidence interval of the break between lower and moderate ratings.

In summary, the wetlands within the Veranda site are within one-fourth mile of Kelley Creek, which as part of the Upper Johnson Creek Assessment Unit and is 303(d)-listed for having impaired year-round temperature and temperature for spawning. OFWAM analysis performed by AKS indicates the wetlands' water quality function is impacted or degraded. For these reasons, the wetlands on the Veranda site must be considered locally significant wetlands in accordance with OAR 141-086-0350(2)(b), which states, the following:

> *The wetland or a portion of the wetland occurs within a horizontal distance of less than one-fourth mile from a water body listed by the Department of Environmental Quality as a water quality limited water body (303(d) list), and the wetland's water quality function is described as "intact" or "impacted" or "degraded" using OFWAM. The 303(d) list specifies which parameters (e.g., temperature, pH) do not meet state water quality standards for each water body.*

It is our best professional judgement that the evidence provided in AKS's memo does not adequately document that the wetlands do not provide improvements to the year-round temperature and temperature for spawning parameters for which the stream is 303(d)-listed, as required by the OAR, and therefore, AKS's memorandum does not provide a basis for not considering the wetlands to be locally significant.

Attachment 1

Photographs

Photo A: Looking southeast across Wetland 1 on the Veranda Property. Note flow within the ditch within the wetland. Small areas od surface water are also visible in the vicinity of the dark green, herbaceous vegetation in the background of the photo. Photo taken by City staff on March 20, 2017.

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo-documentation Provided by the City of Gresham

Veranda Property - Gresham, Oregon

Photo B: Looking south along the ditch on the west side of SW 190th Drive, downstream of the culvert that discharge surface flow from Wetland 1. Photo taken by City staff on March 20, 2017.

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo C:

The blue area under the shrub is a small area of ponded surface water within Wetland 1, as seen from SW 190th Drive.

Photo taken by City staff on May 4, 2022.

Photo D:

Zoomed out photo of the area shown in Photo C provided to provide contect for photo location.

Photo taken by City staff on May 4, 2022.

Attachment 2

Results of DAREM Analysis

Attachment 2

Analysis of Precipitation in the Months Immediately Preceding May 4, 2022 Using the Direct Antecedent Rainfall Evaluation Method (DAREM)

Month	Average Precipitation[1]	30% Chance Will Have[1]		Measured Precipitation[2]	Condition Value[3] (1=dry, 2=normal, 3=wet)	Month Weight[4]	Condition Value x Month Weight	Sum Total[5]
		Less Than Average	More Than Average					
April	4.24	3.35	4.77	8.22	Wet (3)	3	9	14 (normal)
March	5.07	3.63	5.59	4.92	Normal (2)	2	4	
February	4.69	3.20	5.40	2.83	Dry (1)	1	1	

[1] NRCS WETS Table for the Troutdale, OR WETS Station for the period 1991 - 2020. Source: http://agacis.rcc-acis.org/?fips=41051.

[2] Measured rainfall is the precipitation recorded at the Troutdale, OR WETS Station. Source: http://agacis.rcc-acis.org/?fips=41051.

[3] Condition Value: compared to nearest WETS normal range

[4] Month Weight: most recent month = 3, 2nd most recent month = 2, third most recent month = 1

[5] Sum Total: sum of eighth column: drier (sum 6-9), normal (sum 10-14), wetter (sum 15-18)