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Napa County Planning, Building  
& Environmental Services

**MEMORANDUM**

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<b>To:</b>	<b>Kellie Floyd Munselle Civil Engineering 513 Center Street Healdsburg, CA 95488</b>	<b>From:</b>	<b>Rhiannon Korhummel Wetland Biologist WRA, Inc. 2169 E. Francisco Blvd. San Rafael, CA 94901</b>
<b>cc:</b>	<b>Donald Barrella Planner III Napa County Planning Services</b>		
<b>Date:</b>	<b>March 2018</b>		
<b>Subject:</b>	<b>1300 Mount Veeder Vineyard Development Wetland Buffer Analysis</b>		

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Dear Ms. Floyd,

This memo provides an analysis regarding the proposed 50-foot wetland buffer for the seasonal wetland adjacent to proposed vineyards at 1300 Mount Veeder. In a letter dated February 7, 2018 from Donald Barella at Napa County Planning Services, an evaluation of the proposed buffer widths and sufficient justification of it's adequacy to protect water quality and function of adjacent aquatic resources was requested. The letter referenced *The Scientific Basis for Wetland and Watercourse Buffer Zones* by Gadwa et. al. as providing a scientific explanation for using 100-foot buffers around wetlands and streams for adequate protection from development. This memo analyzes the proposed 50-foot wetland buffer using the referenced scientific study as guidance.

According to Gadwa et. al. 2011<sup>1</sup>, the width of wetland and stream buffer needed depends on site-specific factors: (1) sensitivity and functional value of the wetland; (2) intensity of proposed activity; and (3) characteristics of the proposed buffer, including effectiveness and habitat value. While Gadwa et. al. suggest a 100-foot buffer for wetlands and streams, the document also states exceptions are possible, based on the above site-specific factors. Following is a discussion about the site-specific factors in regards to the seasonal wetland at Block B and a recommendation for an appropriate buffer for the wetland based on those factors.

*Sensitivity and Functional Value of the Wetland*

The wetland has seasonal hydrology and is heavily vegetated with common wetland and facultative wetland plant species and non-native wetland and facultative wetland plant species. It is located in a small gully with slopes of 10 to 20 percent and is surrounded by non-native annual grassland. According to the *Soil Survey of Napa County*<sup>2</sup> soils in the area of the wetland and

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<sup>1</sup> Gadwa, S.N., Logan, G.T., *The Scientific Basis for Wetland & Watercourse Buffer Zones*. Berlin Land Trust, Berlin Connecticut. October 2011.

<sup>2</sup> U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS). 1978. *Soil Survey of Napa County, California*. In cooperation with the U.C. Agricultural Experiment Station.

Block B are deep and well drained. According to the Napa USGS 7.5-minute quadrangle<sup>3</sup>, the wetland is located within the headwaters of an un-named intermittent stream which connects to Redwood Creek; however the wetland is not a perennial headwater seep. The seasonal wetland does not provide habitat for any special-status plants nor aquatic or special-status wildlife<sup>4</sup>. Aerial imagery indicates the seasonal wetland and surrounding grassland is mowed annually; additionally the main access point to the area is an unimproved road through the wetland.<sup>5</sup> The existing 100-foot buffer from the edge of the wetland is non-native grassland.

Based on the existing wetland conditions described above, the seasonal wetland is not a sensitive feature and provides minimal functional value of a wetland; and the value it does provide (native plant habitat) is not likely to be impacted by the current proposed project plans which include a 50-foot buffer.

#### *Intensity of Proposed Activity*

The proposed activity includes the development of a vineyard for the production of wine grapes. The development will require the conversion of 14.25 acres of non-native annual grassland to vineyards. Activities related to the development includes grading and outsloping of vineyard avenues around the perimeter of the vineyard, installation of subsurface storm drains in select areas to minimize potential runoff and erosion, installation of grape vines perpendicular to existing contours, installation of straw wattles, and the seeding and fertilizing of entire development area to create cover crop of annual and perennial grasses and herbs. The vineyard will be maintained throughout the year for the production of grapes, including mowing of the vegetated vineyard avenue along the perimeter. Straw mulch will be placed within the entire development area prior to the onset of the wet season.

Based on these known activities of the project, the intensity of the development and production of the vineyard is expected to be low with potential increments of moderate intensity (application of herbicide/pesticide/fertilizer, harvesting of grapes, mowing of avenues). As the vineyard will be seeded with annual and perennial grasses and herbs, the land conversion from non-native annual grassland to vineyard is not expected to have an intense impact to the functional or habitat value of the ecological community.

#### *Characteristics of the Proposed Buffer*

Current project plans include a 50-foot buffer from the seasonal wetland located near Block B. The plans suggest a 25-foot no-touch area from the outer edge of the wetland and an adjacent 25-foot vegetated vineyard avenue beyond that. The vegetated portion of the buffer as well as the entire development area will be seeded with annual and perennial grasses and forbs which are expected to have a high ground cover once established, and will be mowed rather than disced. The vegetated portion of the buffer will be outsloped (towards the vineyard) and have water bars installed.

The existing conditions of the 100-foot buffer of the edge of the wetlands is non-native grasslands; slopes surrounding the wetland are 10 to 20 percent and provide sheet flow to the wetland, which is a primary source of water for the wetland. It is expected, with the planting of the herb and grass cover throughout the development area, the proposed buffer will function similarly to the existing buffer as vegetation will not be dramatically different.

<sup>3</sup> U.S. Geological Survey (USGS). 1973. Napa, California 7.5-minute quadrangle topographic map

<sup>4</sup> WRA, Inc. 2016. Biological Resources Assessment 1300 Mount Veeder Road, Napa County, CA.

<sup>5</sup> Google Earth. 2018. Image dates: 1993 through 2017. Accessed: February 2018

Potential impacts to hydrology of the wetland may be possible due to the proposed outcropping of the outer 25-foot portion of the 50-foot buffer, as water will be diverted away from the wetland. It is recommended that a watershed analysis of the wetland be conducted to determine if the outcropping within 50 feet of the wetland will significantly affect the hydrology of the wetland; otherwise a 100-foot buffer is suggested.

*Summary and Buffer Recommendation*

The existing wetland located near Block B is not considered sensitive; the functional value it does provide is habitat for common, native plants in a field on non-native grasses and forbs. The land use intensity associated with the development and use of the proposed vineyard is expected to be low with increments of moderate activity. The proposed 50-foot buffer is expected to function similarly to the existing 50- and 100-foot buffer as there will not be a dramatic shift in vegetation (shall remain herbs and grasses). The only potential impact the proposed buffer may have is diverting sheet flow water away from the wetland due to the outcropping of the outer 25-feet. A watershed analysis is recommended to determine impacts of this outcropping.

Based on this analysis, it is expected a 50-foot buffer for the seasonal wetland may be appropriate, however further studies are necessary.

If you have any questions, feel free to contact me at (415) 524-7259 ext. 1850 or [korhummel@wra-ca.com](mailto:korhummel@wra-ca.com).

Sincerely,

Rhiannon Korhummel  
Wetland Biologist