

Memorandum

To: Barry Berezowsky, Planning Director, City of Poulsbo
From: Richard Robohm, Wetland Specialist, Washington State Department of Ecology
Date: February 5, 2009
Re: Wetland ratings for Noll Road projects

This follows up my memo on this matter of October 21, 2008 and evaluates information contained in the following documents from Wiltermood Associates, Inc., to Bernie Johnson of Team 4 Engineering:

- Letter dated October 29, 2008: "Addendum to Wyatt Wetland Analysis Report-Detailed Wetland Categorization."
- Four new figures attached to a previously sent letter dated November 15, 2007: "Addendum to Mountain Aire Wetland Analysis Report-Detailed Wetland Categorization." The new figures are "Hydrogeomorphic Polygons," "Cowardin Wetland Class," "Hydroperiod Polygon," and "Wetland Buffers."

I received these documents on December 2, 2008.

Wyatt wetland rating

I reviewed the rating forms and accompanying figures for the Wyatt wetland and found the forms to be correctly scored with one exception: The interspersions of habitats (item H1.4), in my best professional judgment, should be rated moderate (2 points), not low (1 point). This is based on the interpenetration of forested and emergent habitats and on the perennial stream flowing through the wetland. The habitat score should be 16 points rather than 15; total score for the wetland should be 28 points, not 27, which is still Category IV.

Mountain Aire wetland rating

After studying the figures provided to accompany the wetland rating forms for the Mountain Aire wetland, I concluded that it was properly scored, again with the exception of habitat interspersions. Item H1.4 should be scored as moderate, not low, because of the perennial stream flowing through the forested portion of the wetland. This raises the habitat score for the Mountain Aire wetland from 16 points to 17 points, and the total score for the wetland from 39 to 40 points (still Category III).

Additional points of clarification

- I accept as reasonable the wetland boundaries and Category IV rating for the Blue Heron property.
- As I noted in my October 21, 2008, memo, I believe that a jurisdictional wetland may very well exist in the orchard area of the Mountain Aire site. The applicant should request a jurisdictional determination by the Corps of Engineers to resolve this question. No clearing, filling, grading, or measures to drain this area or divert the established flow of water from it should be performed before a jurisdictional determination has been made.
- If the orchard area is determined to contain wetland, it may be reasonable to allow some or all of it to be filled, with compensatory mitigation, for the sake of preserving valuable upland habitat such as mature forest. Assuming it is a wetland, the Category IV rating in Wiltermood's *Revised Wetland Analysis for Mountain Aire* of December 18, 2007, appears reasonable.
- The wetland rating system distinguishes between "heavily used" and "infrequently used" roads for the purpose of determining the habitat value of wetland buffers. A relatively undisturbed and unbroken habitat corridor has a higher habitat function than one that is interrupted and regularly disturbed. Although a road may have very few vehicle trips, if motor vehicles use it several times daily, it is considered "heavily used" from a habitat perspective.
- The frequency of road use has no bearing on whether or not a wetland should be considered as a separate assessment unit in the rating system. This is based on whether there is a level surface-water connection between wetlands on both sides of the road. In the Noll Road properties, the roads do cut the wetlands into separate assessment units.

Please let me know if you have any questions or need more information.

Memorandum

To: Barry Berezowsky, Planning Director, City of Poulsbo
From: Richard Robohm, Wetland Specialist, Washington State Department of Ecology
Date: October 21, 2008
Re: Wetland delineations and ratings for Noll Road projects

Introduction

At your request, I reviewed a number of documents concerning wetlands and soils on the sites of three projects along Noll Road. The documents I reviewed include a series of wetland reports by Wiltermood Associates, Inc., a technical soil report by C. Steven Holzhey, a wetland and stream report by B&A, Inc., a letter and memo by Marc Boulé of Port Madison Associates, and correspondence by Linda Mueller, Senior Planner for the City of Poulsbo. I received these documents on August 11, 2008, along with a cover letter listing them, from Berni Johnston, P.E., project manager for Team4 Engineering.

I also consulted on-line maps and photos of the National Wetland Inventory, USDA Soil Survey for Kitsap County, the US Geological Survey, and the Kitsap County GIS.

The properties are identified as follows:

- Mountain Aire (18824 and 18228 Noll Road, plus two 10-acre parcels lacking addresses that lie immediately south of these lots; tax account #242601-1-015-2008, #242601-1-016-2007, #242601-1-043-2004, and #242601-1-044-2003, respectively).
- Wyatt property (18608 Noll Road; tax account #242601-1-017-2006).
- Blue Heron plat (18208 and 18230 Noll Road NE and 2650 NE Heron Pond Lane; tax account #242601-4-033-2000, #242601-4-034-2009, and #242601-4-003-2006, respectively).

I visited the properties on the morning of Thursday, September 4, 2008. As arranged in response to my request to you for help in navigating the area, Marc Boulé accompanied me as I toured the sites. I did not solicit Mr. Boulé's interpretation of the sites we looked at, nor did he volunteer it.

Blue Heron plat

The conditions I observed on site are roughly consistent with the boundaries and Category IV rating of the wetlands described in July 11, 2008, wetland and stream report by B&A, Inc. The heavily grazed pasture on much of the northern portion of the Blue Heron properties consists of gravelly fill or highly compacted native soil. This contrasts sharply with the relatively natural condition of the shrub and forest wetland immediately to the north that covers a large portion of the Wyatt property and part of the Mountain Aire site.

Wyatt property

The wetland on the Wyatt property, as approximated on a National Wetland Inventory map, is part of a large, contiguous wetland complex that extends across both sides of Lemolo Creek. The wetland boundary delineated by Wiltermood Associates in its March 5, 2008, wetland analysis report for the Wyatt property appears to be reasonably accurate. This conclusion is based on spot checks of locations accessible from the pasture along the southern property boundary and the gravel road along the northern property boundary.

For the purpose of rating the wetland, Wiltermood treated as a separate assessment unit the portion of the wetland complex that lies on the Wyatt property, plus an emergent portion adjacent to the creek just east of the parcel. As circumscribed, this assessment unit was scored as a Category IV in the Washington State Wetland Rating System for Western Washington.

The Wiltermood report does not explain the basis for rating the Wyatt property wetland, including the emergent area offsite to the east, separately from the larger wetland complex. In a July 10, 2008, memo, Mr. Boulé notes that “the proponent’s wetland consultant ... contends that the wetland on the Mountain Aire project site is isolated from other wetlands to the north and south by gravel roads demarcating the southern boundary of the parcel and the extension of Hostmark Street through the northern portion of the parcel.” In response to Mr. Boulé’s comments, Vaughan Everitt of Wiltermood produced on November 15, 2008, an addendum to that firm’s Mountain Aire wetland analysis report. This addendum also pertains to the treatment of the Wyatt property wetland as a separate assessment unit.

Mountain Aire

Wiltermood’s initial wetland analysis report for the four Mountain Aire parcels is dated September 21, 2005, and identifies one palustrine forested wetland (Wetland A) in the southeastern corner of the eastern 10-acre parcel. The wetland is rated Category II “in accordance with the City of Poulsbo Critical Areas Ordinance.” The report notes that the wetland extends offsite to the east and south. A June 25, 2007, version of the Wiltermood report updates the categorization of Wetland A to reflect its score under the 2004 Washington State Wetland Rating System for Western Washington (Category III) and includes the rating forms.

Another revision of the wetland analysis report for Mountain Aire dated October 15, 2007, adds to the delineated area a small Wetland B (Category IV) that “developed after the small orchard was cleared” in the northeastern corner of the site. The November 15, 2007, addendum to the Mountain Aire wetland analysis report is a detailed discussion of wetland rating scores and of the basis for categorizing wetlands on the Mountain Aire and Wyatt properties as separate assessment units.

A December 18, 2007, revision of Wiltermood’s wetland analysis report provides additional documentation of hydric soil indicators and wetland hydrology for Wetland B obtained during a field visit on November 7, 2007. No new data forms are added to the December 18 revision, but the discussion of soils and the added signature of Kenneth Drecksel, Professional Soil Scientist, on the latter report suggest that his observations and analysis are essential to this latest version.

C. Steven Holzhey produced on June 9, 2008, a technical report, Soil Water Monitoring and Soil Test Pit Characterization, which concluded that the orchard site where Wetland B was delineated does not meet the criteria for hydric soils. The report did note “a strong inference that water did perch on the till,” fluctuating over time and distance. Apparently referring to an earlier draft of Dr. Holzhey’s report, Vaughan Everitt of Wiltermood said in a letter to Team4 Engineering dated May 29, 2008, “The soil and hydrology report has provided me with enough evidence to retract my wetland delineation of the orchard site....”

Discussion and Conclusions

Wetland Ratings

Neither the original wetland rating forms in the June 25, 2007, report nor the detailed discussion in the November 15 addendum includes the figures called for on the forms: “Aerial photo or map with vegetation polygons” for item S 1.3, “Map of Cowardin vegetation classes” for H1.1 and H 1.4, “Map of hydroperiods” for H 1.2, and “Aerial photo showing buffers” for H 2.1. Without these figures, it is impossible to evaluate the scoring of these items with confidence. In addition to these figures, we need a map, photo, or drawing that shows which portion of the wetland is slope and which portion is depressional. If the depressional portion of the wetland equals at least ten percent of the total area of the wetland, then it should be rated as a depressional wetland, not as a slope wetland. Whether the unit should be rated as slope or depressional, items on the rating form should be scored as if the entire unit were one or the other.

The two gravel roads that run, respectively, east-west between the Wyatt Mountain Aire properties and east-west through the upper portion of the Mountain Aire site lie more or less parallel to the slope of the land. Where water on these properties is flowing downslope toward the east, the hydrology of the slope portion of the wetland is only trivially affected by the road that bisects it. Even so, if the roads are not at grade and not subject to the same surface flows and shallow groundwater as the wetland they bisect, it is valid to evaluate the wetland portions on each side as separate assessment units. In the

portion of the wetland immediately adjacent to Lemolo Creek, where the road lies perpendicular to a north-south flow, the road presents a significant barrier to the movement of water between one portion of the wetland and the other. It is valid to divide the wetland into separate assessment units when high-water marks on either side of a culvert, flume, or other structure differ by more than six inches in elevation.

The gravel roads did not appear to be "heavily used" as described in Wiltermood's rating. Based on the number of houses served by these roads and the level of traffic I observed on a weekday morning, I would call the roads "lightly used," and consider their impacts on habitat value accordingly.

Old Orchard Site on Mountain Aire Property

Removal of trees and stumps from the old orchard in the northeastern portion of the Mountain Aire site resulted in churned, rutted, and compacted soils and destabilized local hydrologic patterns. Springs and seeps that could formerly have been dispersed across a wider area may have become focused by recent grading into a more concentrated surface and shallow subsurface flow. Water that formerly infiltrated more rapidly via long-established subsurface voids and channels now remains at or near the surface in greater volume and for a longer time.

The findings in the Wiltermood reports of October 15, 2007, and December 18, 2007, appear to do a good job of documenting this development. The dominance of obligate (OBL) and facultative wetland (FACW) vegetation such as small-fruited bulrush (*Scirpus microcarpus*), creeping buttercup (*Ranunculus repens*), and soft rush (*Juncus effusus*) is a strong sign that soils are saturated or inundated early in the growing season. Hydric soil characteristics often do not develop as rapidly as hydrophytic vegetation can colonize a site with recent hydrologic changes. Nevertheless, Wiltermood's wetland specialists, including a Professional Soil Scientist, found evidence of hydric soils in the area of the former orchard.

Dr. Holzhey's June 9, 2008, report attests that hydric soils did not formerly exist on the orchard site and that hydric soil indicators were lacking in the soil profiles he examined. Relying on bore holes made with a soil auger, Dr. Holzhey also recorded depths to the water table last spring in ten locations in the orchard area. Aside from "surficial wetness" and standing water in stump holes, wheel tracks, and "other substantial man-made depressions," the depths to groundwater that he recorded were mostly greater than 18 inches and in only one case as shallow as 12 inches from March 5 to May 2, 2008.

Guidance from the U.S. Army Corps of Engineers (Corps) regarding hydrologic monitoring is contained in *Technical Standard for Water-Table Monitoring of Potential Wetland Sites* (Corps publication ERDC TN-WRAP-02-2, June 2005). The publication notes that, "[i]n most cases, a standard monitoring well installed to a depth of 15 in. below the soil surface should be used," but that "[s]hallow installation depths may be needed if restrictive soil layers exist within 15 in."

Under the heading of "Required Timing, Frequency, and Duration of Readings," the Corps document says the following: "Water-level measurements must be taken at least once

each day, beginning 5-7 days before the first day of the growing season and continuing until the end of the growing season or until the minimum standard for wetland hydrology is met that year. If automated recorders are used, readings four times per day are recommended (use the lowest reading each day). On sites subject to flooding or ponding, depth of surface water must be measured each day that water-table readings are made.”

It is not necessary to question Dr. Holzhey's findings in order to conclude that wetlands may have become established on the orchard site. Wetlands can form in shallow depressions or compacted soils in water that perches above a lower-lying water table. If the hydrologic regime of an area changes, soils that have become chronically wet in a major portion of the root zone early in the growing season and that support a dominance of FACW and OBL vegetation may not immediately display the features of a historically hydric soil. Hydric soil characteristics were found on the orchard site by Wiltermood. Even if these characteristics were localized, they may well become more widespread and pronounced over time as the recently disturbed site establishes a new hydrologic equilibrium.

In the absence of comprehensive data on hydrology from shallow monitoring wells installed according to the technical standard of the Corps, I am not convinced that wetland conditions do not exist in the orchard area of the Mountain Aire site. I recommend that the applicant consult with the U.S. Army Corps of Engineers regarding the need for hydrologic monitoring and a jurisdictional determination before performing any grading or filling of the orchard area where “surficial saturation” was found after March 1.

Please let me know if you have any questions regarding this memorandum or if you need any more information.