

**WETLAND DELINEATION REPORT**

**AND**

**BUFFER AVERAGING PLAN**

**FOR**

**TAVIS PROPERTY**

*WETLAND RESOURCES, INC. PROJECT #97061*

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11/4/97

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October 17, 1997

## SITE DESCRIPTION

A site investigation was conducted by *Wetland Resources, Inc.* on May 30 1997 to identify jurisdictional wetlands on this approximate thirteen acre parcel. The site is located west of Pacific Highway South in King County, Washington as part of Section 32, Township 22N, and Range 4E, W.M.

A moderately steep west aspect slope is located on the eastern portion of the site. The sloped area appears to have been disturbed within the last ten years, as indicated by sapling alder, sapling cottonwood, Himalayan blackberry, and an assortment of trash and debris. Near the center of the property is a large depressional area dominated by willows, yellow iris, reed canarygrass, speedwell, and patches of open water (Wetland A). Investigation of aerial photography indicates that the open water areas appear to have been excavated from a scrub-shrub wetland between the years of 1946 and 1960. Remnant islands of the scrub-shrub wetland still exist near the center of the open water area. Site investigations confirmed the excavated nature of the open water area of the wetland. The steep pond side slopes and earthen berms along the eastern portion of the wetland are all typical of excavated ponds. Himalayan blackberry is well established on pond spoils, which is also typical to disturbed areas in western Washington. This wetland extends off site to the north. The western portion of the property has a slight west aspect slope and is dominated by immature alder, mountain ash, and big-leaf maple in the overstory. Understory vegetation is comprised of salmonberry, Oso-berry, vine maple, swordfern and trailing blackberry with patches of Himalayan blackberry. A small linear depressional wetland is located on the property's western boundary (Wetland B). It originates near the property's northwest corner and continues off-site approximately 300 feet south under an existing cyclone fence.

In King County wetlands and streams are classified according to the Environmentally Sensitive Areas Ordinance, KCC 21A.24, March 1996. Wetland A is greater than one acre in size and has two classes of vegetation. Wetlands with these characteristics are typically classified as Class 2. Class 2 wetlands require 50 foot protective buffers from their flagged wetland boundaries. Wetland B is less than one acre in size and has two classes of vegetation. Wetlands with these characteristics are classified under King County's Ordinance as Class 3. Class 3 wetlands require 25 foot buffers from their flagged wetland boundaries.

## BUFFER AVERAGING

Granville Southern Corporation proposes buffer averaging along the eastern and southern sides of Wetland A. KCC 21A.24.320(B) allows buffer width averaging if it will provide additional protection to wetlands or enhance their functions, provided the total areas contained in the buffer on the development proposal site does not decrease. The 1,612 sq. ft. area to be reduced through buffer averaging is dominated by Himalayan blackberry and salmonberry. In exchange for this reduction, 701 sq. ft. of buffer will be added near the northeast corner of the wetland and 1,013 sq. ft. of buffer will be added near the southernmost portion of the wetland. These areas are dominated by red alder, black cottonwood, salmonberry, and oso-berry. Overall this will provide a higher quality buffer surrounding Wetland A. The minimum proposed buffer width is 40 feet. There will be a net increase of 102 sq. ft. of buffer from the proposed buffer averaging.

## WETLAND CLASSIFICATIONS - COWARDIN SYSTEM

The wetland and stream classifications, according to the Cowardin System developed by the U.S. Fish and Wildlife Service and published in Classification of Wetlands and Deepwater Habitats of the United States (USFWS, 1979), are as follows:

**Wetland A:** Palustrine: Unconsolidated Bottom, Mud, Permanently Flooded, *Excavated*.

**Wetland B:** Palustrine: Scrub-Shrub Wetland, Broad-leaved Deciduous, Saturated.

## WETLAND CLASSIFICATIONS - KING COUNTY

Under King County's Sensitive Areas Ordinance, Title 21A, the on-site wetlands are classified as follows:

**Wetland A:** Class 2: This wetland is greater than one acre in size and has two vegetation classes. It also has an open water class that makes up less than forty percent of the total wetland area and was artificially created by excavation.

**Wetland B:** Class 3: This wetland is less than one acre in size and has two vegetation classes.

## WETLAND DETERMINATION REPORT

### Boundary Determination Findings

**Methodology:** On site, routine methodology as described in the Corps of Engineers Wetlands Delineation Manual, 1987 edition, was used for this determination, as required by King County. Under this method, the process for making a wetland determination is based on three sequential steps:

- 1.) Examination of the site for hydrophytic vegetation (species present and percentage cover);
- 2.) If hydrophytic vegetation is found, then the presence of hydric soils is determined;
- 3.) The final step is determining if wetland hydrology exists in the area examined under the first two steps.

### Vegetation

The Corps of Engineers Wetlands Delineation Manual, 1987 edition, states that more than 50 percent of the dominant species in each stratum present must be rated facultative or wetter to meet hydrophytic vegetation criteria.

**Upland:** The eastern half of this property is dominated by an immature forest, while the western half has been recently disturbed and is dominated by sapling trees and shrubs. The forested area includes deciduous trees such as big leaf maple (*Acer macrophyllum*, FacU), red alder (*Alnus rubra*, Fac), black cottonwood (*Populus trichocarpa*, Fac), and mountain ash (*Sorbus scopulina*, FacU). The shrub layer in the forested areas of the site is dominated by Himalayan blackberry (*Rubus discolor* FacU), salmonberry (*Rubus spectabilis*, Fac+), and Oso-berry (*Oemleria cerasiformis*, FacU). The forested understory is dominated by sword-fern (*Polystichum munitum*, FacU) and dewberry (*Rubus ursinus*, FacU). The upland area to the west is dominated by sapling

red alder (*Alnus rubra*, Fac), sapling black cottonwood (*Populus trichocarpa*, Fac), Himalayan blackberry (*Rubus discolor*, FacU), and Scot's broom (*Cytisus scoparius*, NI). The majority of these species are rated Facultative or drier. This indicates that hydrophytic vegetation is not supported in the areas mapped as upland.

Wetlands: The vegetation within Wetland A is dominated by willows (*Salix* sp., Fac-Obl), salmonberry (*Rubus spectabilis*, Fac+), yellow iris (*Iris pseudacorus*, Obl), lady fern (*Athyrium filix-femina*, Fac), and speedwell (*Veronica americana*, Obl). Wetland B is dominated by salmonberry (*Rubus spectabilis*, Fac+), sedges (*Carex* sp., Obl), and skunk cabbage (*Lysichitum americanum*, Obl). The dominance of Facultative or wetter rated species indicates that hydrophytic vegetation is supported in the areas mapped as wetland.

### Soils

The Corps of Engineers Wetlands Delineation Manual, 1987 edition, states that hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (within 18 inches of the surface). The criteria for a "wetland soil" is that a hydric soil must support hydrophytic vegetation and wetland hydrology indicators must be present. Field indicators are used for determining whether a given soil meets the definition and criteria for hydric soils.

The soils underlying this site are mapped in the Soil Survey of King County Area Washington, 1973 edition as Alderwood gravelly sandy loam, 0 to 6 percent slopes and Norma sandy loam. Alderwood soils are nearly level with low runoff and a low erosional hazard. Norma soils are located in basins and glaciated uplands. Inclusions of Bellingham, Tukwila, and Shalcar soils are included in the Alderwood description. Norma is rated as a hydric soil.

Upland: Soil profiles were augured approximately eighteen inches deep. All of the tested upland soils are composed of a gravelly loam. The surface layer (0 to approximately 3 inches) is typically colored a grayish brown (10YR 3/2). From approximately three to greater than eighteen inches, the soils display a dark yellowish brown color (10YR 4/4). The soils throughout all of the profiles were dry to moist. At the time of inspection the upland areas show no evidence of reduced conditions. No redoximorphic features or oxidized rhizospheres were observed. Soil chromas are two or higher, indicating that hydrology does not persist in these soils for a significant period. The criteria for hydric soils is not present in the areas mapped as upland.

Wetland: The soils within the wetlands are very distinct from the adjacent upland soils. The soils within Wetland A are composed of a silt loam. The top three inches are colored a very dark brown (2.5Y 2/2) with strong redoximorphic features. From thirteen to greater than eighteen inches the soils are colored a very dark gray (2.5Y 4/2). The soils within Wetland B are composed of a silt loam to a fine sandy loam. The top thirteen inches are a black (2.5Y 2.5/1) silt loam. From thirteen to greater than eighteen inches the soils change to a very dark gray (2.5Y 4/2) fine sandy loam with strong redoximorphic features. All of the soils within the mapped wetland boundaries meet the criteria for hydric soils. Redoximorphic features and low soil chromas are evidence of reducing conditions. To further support this determination, the wetland soils were saturated at the time of inspection and support hydrophytic vegetation.

### Hydrology

The Corps of Engineers Wetlands Delineation Manual, 1987 edition, states that in order for wetland hydrology to occur on low permeability, poorly drained soils, the water table must be within 12 inches of the soil surface for longer than 5% (12.5 days) of the growing season of an average rainfall year.

Uplands: The upland areas were dry to moist in all of the augered soil profiles. There were no field indicators such as low chroma soils, gleying, hydrophytic vegetation, or mottling that would show

that hydrology persists in the upland areas beyond the beginning of the growing season. The soils appear to be well drained to moderately well drained.

Wetlands: Within the wetland boundaries, the soils were saturated at the time of inspection. It is apparent that wetland hydrology exists within the mapped boundaries based on soil composition, drainage patterns within the wetlands, and the presence of hydrophytic vegetation. The hydrology appears to persist longer than 5% of the growing season to meet the criteria for wetland hydrology.

## WETLAND FUNCTIONS AND VALUES

### Analysis

This site provides wildlife habitat for a diverse number of species with its combined forest, shrub, and open water areas. Interspersion is moderate in the wetland areas, providing a significant area of edge which benefits wildlife. Generally, the greater the edge, the greater the diversity of wildlife in the wetland. The diversity of vegetation classes in the upland areas designated as buffer, increases the wildlife habitat for these wetlands. The vegetation along the edge of Wetland A may have potential to supply egg-laying substrate for amphibians.

Wetlands act as biofiltration systems as water drains downslope. Although the overall size of Wetland B is small, it does provide the function of stormwater attenuation with its woody and emergent vegetation. Vegetation rooted within Wetland A slows the velocity of water resulting in increased contact with the woody stemmed vegetation and therefore improving water quality. By slowing and retaining the flood waters caused during heavy storm events erosion flooding on adjacent properties is reduced.

### Conclusion

Due to the high diversity in vegetation and large wetland and buffer acreage, the entire wetland system provides moderate wildlife habitat, and moderate to high value for water quality and hydraulic control. The wetlands have some potential for recreational and educational uses. Due to the overall natural condition of this site, this wetland system has a high aesthetic quality and adds beauty to the residential area.

## WILDLIFE STUDY

Wetland Resources, Inc. conducted a wildlife study in June of 1997 on this approximate 13 acre parcel. The investigation was conducted in the morning. Birds and mammals were moderately active at the time of the investigation. Overall the site has the potential to provide habitat for a variety of species. The mixed forest with a broken canopy and numerous large habitat trees are all necessary habitat features for a variety of birds and small mammals, including cavity nesters and foragers. The presence of wetland and small open water habitat increases the potential for use by wildlife. Wetlands and open water habitats are important for the production of invertebrates, which many species use for forage.

Birds within and surrounding the subject property were inventoried by sitting quietly and observing visually and aurally for a fifteen minute period. Observed species composition is typical to islands of native vegetation within urban areas.

### The following birds were heard or seen onsite:

Steller's jay (*Cyanocitta stelleri*)  
Black capped chickadee (*Parus atricapillus*)  
Common crow (*Corvus brachyrhynchos*)  
House sparrow (*Passer domesticus*)

Robin (*Turdus migratorius*)  
Bewick wren (*Thryomanes bewickii*)  
Rufous sided towhee (pair) (*Pipilo erythrophthalmus*)  
Winter wren (*Troglodytes troglodytes*)  
Song sparrow (*Melospiza melodia*)

No Accipiters or Beutos were observed on or near the subject property. Beutos such as the Red-tailed hawk (*Buteo jamaicensis*) are typically observed in relatively urban areas along highway corridors and within greenbelts.

An inventory of small and large mammals was conducted by slowly walking the site on approximate 50 foot transect lines and looking for scat, carcass, living quarters, midden, or runways.

**The following mammals or evidence of their existence were found onsite:**

Eastern gray squirrel (*Sciurus carolinensis*)  
Mountain beaver (*Aplodontia rufa*)

Voles, mice, woodrats, and bats also typically occur within relatively urban areas. Many of these species are nocturnal and were not observed during the site investigation.

Identification of amphibian species is typically less difficult during early spring (early March). No egg masses, juveniles, or adult amphibians or reptiles were located on site during the July site visit. It is expected that several species would occur within the wetland, stream, or in adjacent habitats.

**Expected amphibian and reptile species:**

Pacific tree frog (*Gyla regilla*)  
Bullfrog (*Rana catesbiana*)  
Northwest Salamander (*Ambystoma gracile gracile*)

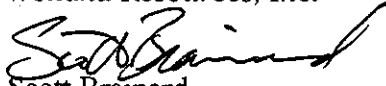
## USE OF THIS REPORT

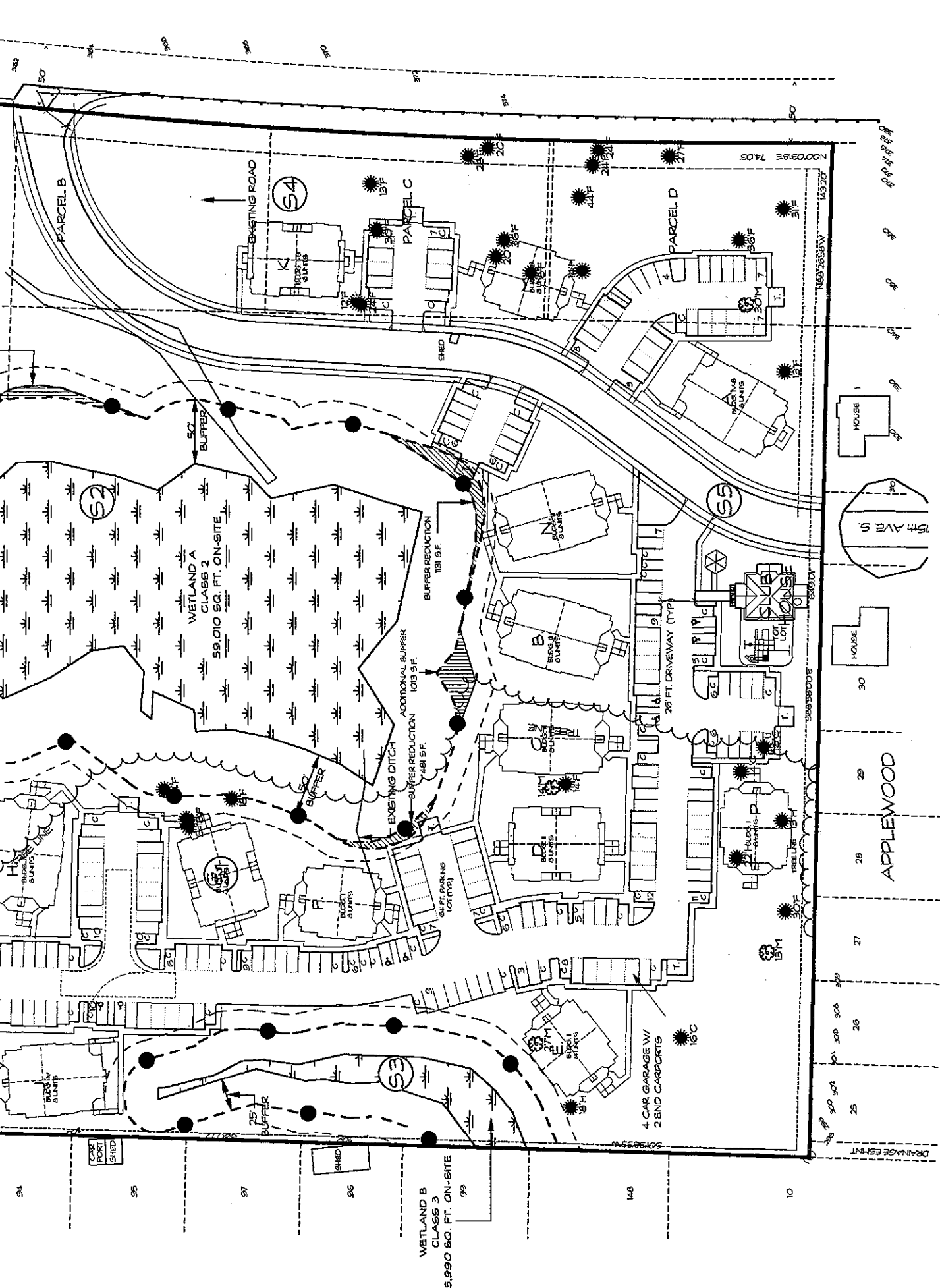
This wetland delineation report is supplied to Granville Southern Corporation as a means of determining on site wetland conditions, as required by King County's Department of Development and Environmental Services during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions. Reports may be adversely affected due to the physical condition of the site and the difficulty of access which may lead to observation or probing difficulties.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.

  
Scott Brainard  
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APPLEWOOD

