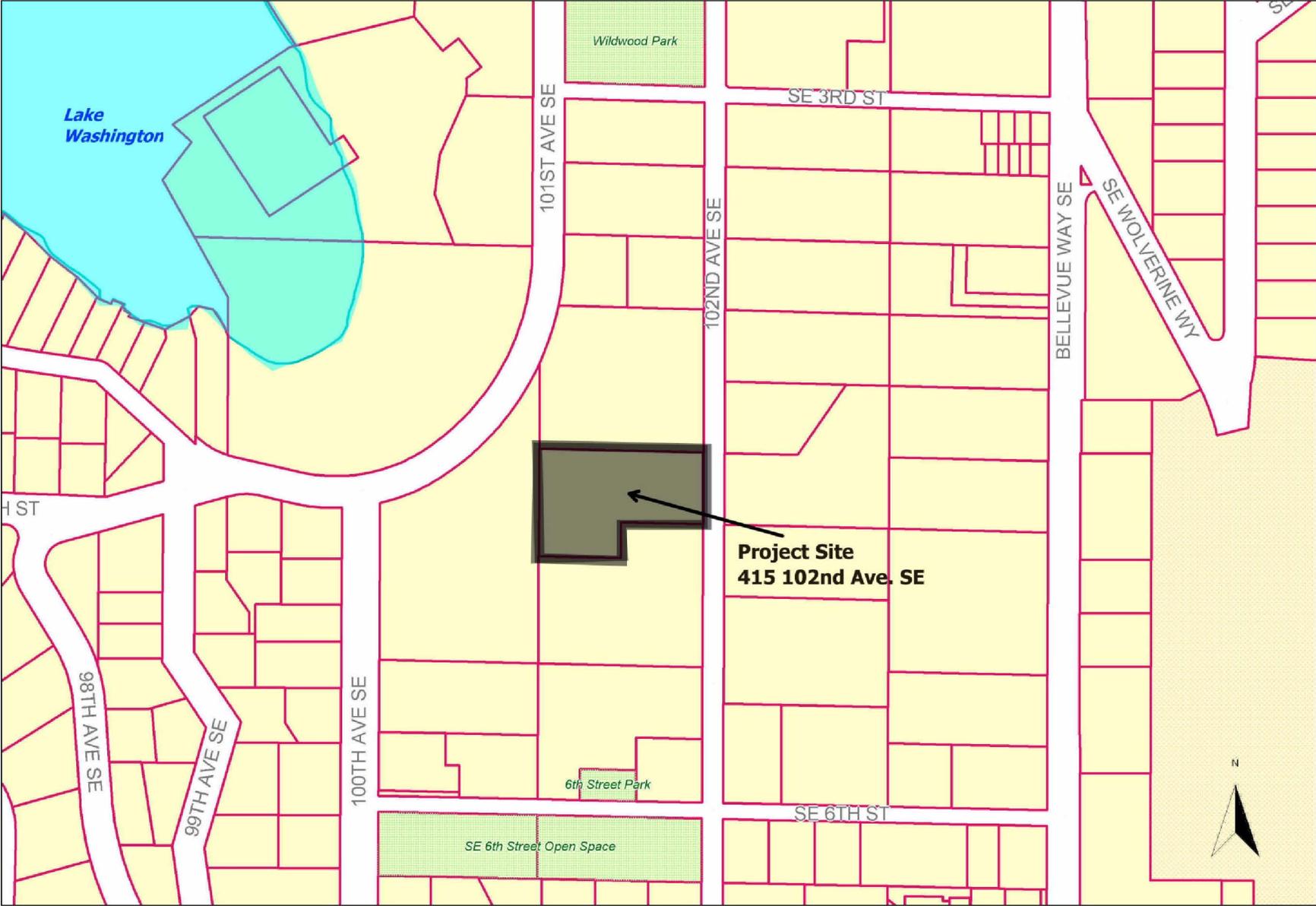


**Cacabelos Buffer Restoration  
File Number: 11-103262-LO**



# Technical Memorandum

TO:	Trisha Cacabelos
FROM:	Dan Roscoe
CC:	
DATE:	January 11, 2011
RE:	415 102 <sup>nd</sup> Ave SE Bellevue WA Wetland Buffer Restoration Plan and Vegetation Management Practices

This memorandum summarizes the existing conditions of the property located at 415 102nd Ave SE in Bellevue Washington. As part of the requirements for the code enforcement 09-125135EA, the wetland buffer restoration plan and vegetation management practices for the property are also described.

## **Existing Site Conditions**

The property located at 415 102<sup>nd</sup> Ave SE in Bellevue WA is a single family residence. Currently improvements on the property include the primary residence and patio, a garage with attached carport, and a shed. The garage is separated from the house by a covered breezeway. The shed is located behind the house and is overgrown by Himalayan blackberry (*Rubus discolor*). A second driveway apron and gravel parking area is located approximately 70 feet south of the primary driveway and carport.

There is a wetland located in the southwest portion of the property that is associated with Meydenbauer Creek (please see the attached Wetland and Stream Delineation Study, TWC Ref# 070214 prepared by The Watershed Company, dated February 23, 2007). The wetland contains a mixture of emergent and forested components with reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), soft rush (*Juncus effusus*) and cattail (*Typha latifolia*) in its emergent areas, and red alder (*Alnus rubra*), willow (*Salix spp.*), and black cottonwood (*Populus balsamifera*) in a forested area at the west end of the property.

## **Project History**

On September 17, 2009 the City of Bellevue issued a Stop Work notice (case #09-125135EA) for violation of the Critical Area Ordinance, specifically the “clearing and grading within a critical area over 1,000 square feet.” Subsequently, a letter from the City of Bellevue on November 10, 2009 provided a description of the steps necessary for the lifting of the code enforcement action. These steps include the application for a Critical Area Land Use Permit (CALUP), removal of the fill material for the second parking space, and the establishment of vegetation management practices for maintaining the critical area buffer.

Following this direction, SE Group was contracted in June 2010 to prepare a wetland buffer restoration plan and mark the wetland boundary in the field. Over the course of discussions with the City of Bellevue, the following changes in the process were agreed to as indicated in an email from Reilly Pittman dated June 18, 2010:

- All new fill material placed at the end of the parking area is located within the wetland buffer and constituted the code violation. This material would be removed and the buffer restored to its natural condition.

- Since this portion of the buffer was a grass lawn prior to the fill material, it was agreed that better protection for the wetland could be provided by creating a linear planting strip along the wetland boundary to provide improved filtering functions. The additional filled area would be returned to grass and the planting strip would include shrubs to provide additional habitat value and screening for the wetland.
- The vegetation management practices should include both short and long term measures for the property to control invasive species.

### **Wetland Buffer Restoration**

The restoration of the wetland buffer involves the removal of approximately 558 square feet of material that was placed at the west end of the existing parking area, referred to as the project site (see attached plan). The depth of material ranges from approximately 12 inches at the east end, and slopes at approximately 3 percent to existing grade at the west end. In total approximately 10 cubic yards of material will be removed. Removal of the material will be done by an excavator operating from the parking area. Material will be removed from the toe of the fill and progress to the east and away from the wetland. A mulch berm, a minimum of 12 inches high and 12 inches wide, will be placed between the wetland and toe of fill prior to any work beginning. The berm will function as a sediment and flow barrier for water leaving the project site. Following the removal of fill and establishment of grade, the berm will then be spread over exposed soils for stabilization. Additionally, should adverse weather conditions arise, the berm can quickly be spread to cover exposed soils.

The excavator will remove material to a depth of 6 inches below grade. Topsoil will be backfilled and smoothed to match existing grade adjacent the project site and provide a suitable base for the establishment of grass seed. All excavated material will be placed into a dump truck and disposed of by the contractor. Following completion of the excavation, all disturbed soils should be immediately seeded with a King County erosion control mixture at a rate of 7 pounds per 1,000 square feet and covered with mulch. If cold temperatures are forecasted, only mulch will be applied to stabilize the soil. Seeding would then occur during early March, or as temperatures allow.

The parking area that existed prior to the code violation will be stabilized with gravel of crushed rock. If the transition between the parking area and project site is steeper than 10:1, it will be covered with an erosion control blanket or jute-netting and seeded to further stabilize soils.

As an alternative to planting the project site, which would create a pocket of natural buffer within a maintained lawn, this plan proposes creating a linear vegetative strip along the wetland. Approximately 558 square feet of buffer will be revegetated with native shrubs, approximately 31 plants. This strip of vegetation will provide better buffer function than the current lawn. The use of shrubs along the wetland buffer will increase the habitat complexity and provide additional filtering function.

Planting is expected to occur after the removal of fill in early March, as soil temperatures warm and the growing season begins. The attached restoration plan includes native buffer species. Willows (*Salix spp.*) are present within the wetland and can be used as a source of cuttings for the proposed plantings. Additionally, this plan includes yellow-twig dogwood (*Cornus stolonifera*) and Douglas spirea (*Spirea douglasii*) which will increase the species diversity of the buffer. Plants will be placed on 5 foot centers, with staggered spacing. Prior to installation, a qualified professional should check each plant to ensure they are healthy. Diseased or stressed plants should be replaced prior to installation.

In order to promote survival and successful restoration, the following maintenance and monitoring plan will be followed for a maximum of three years.

- All plants will receive a 24 inch diameter mulch ring after installation to minimize competition with invasive species.
- Regular watering will occur during the first year following planting to aid in the establishment of the root system. During the spring and fall, watering should occur as necessary to supplement rainfall. Approximately 1 inch of water per week is sufficient. During the summer, regular watering should occur at a rate of 1-2 inches per week. Water will be provided by connecting a hose and sprinkler to the water supply of the house.
- During all three years, plants should be checked every spring for signs of health and vigor. All dead plants should be replaced each year.
- Invasive species will be removed from the restoration area on an annual basis using hand tools.

### **Vegetation Management Practices**

The City of Bellevue has requested a set of vegetation management practices for the maintenance and control of invasive species on the property. As part of this process, two zones for vegetation management have been established for the property; 1) the wetland and 2) non-wetland area, including the wetland buffer. The wetland boundary has been marked in the field using metal ‘T’ fence posts. This line serves as the separation between zones. No vegetation management is allowed within the wetland zone without authorization from the City of Bellevue.

The following guidelines only apply to vegetation management within the non-wetland zone. For purposes of this plan, short-term practices refer to those actions that should occur immediately. Long-term practices refer to the general care and maintenance of the property that should be conducted on a regular basis or as needed.

#### *Short-term Practices*

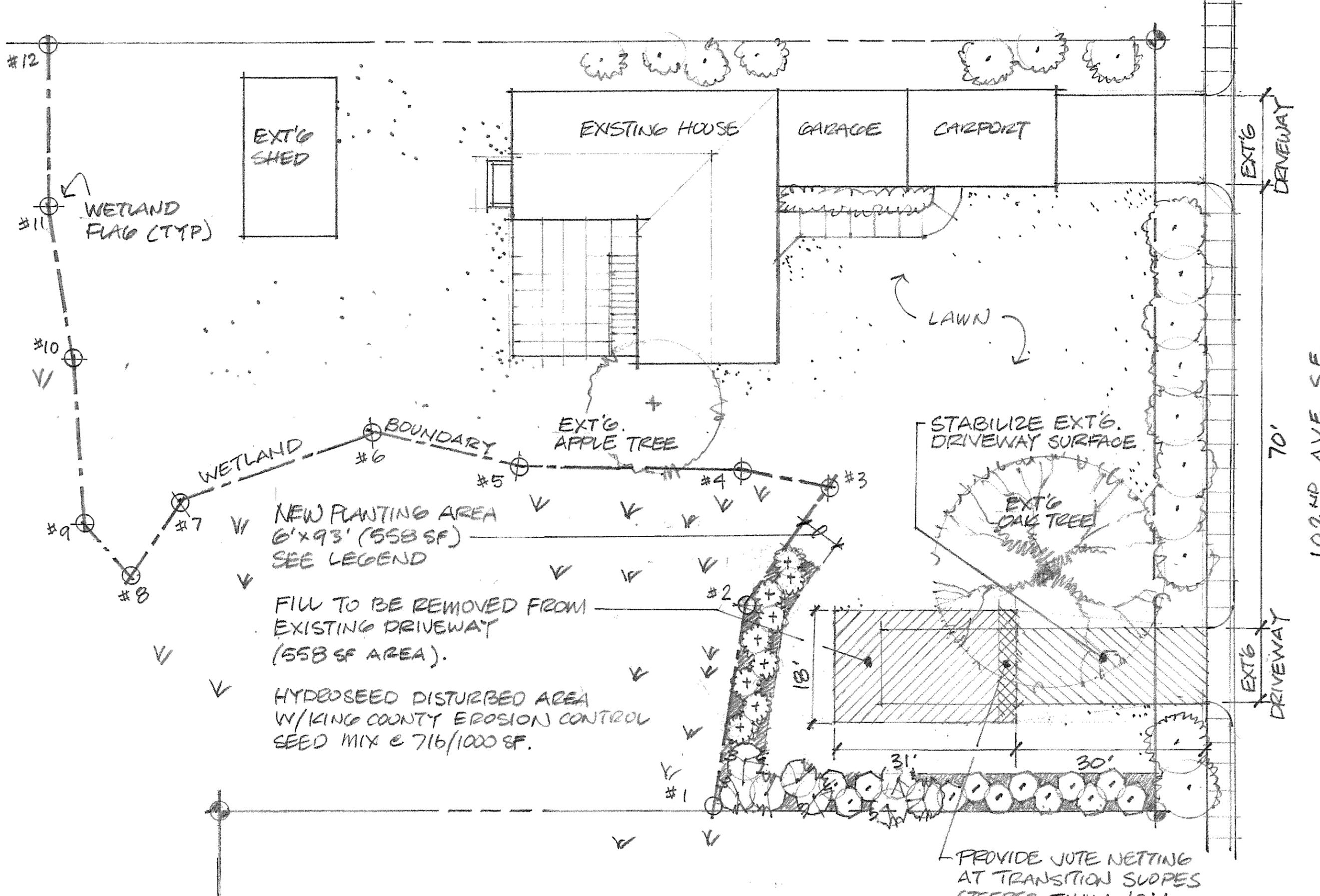
- All invasive species, e.g., blackberry and ivy, around the house can be removed by hand. Hand removal includes pruning, cutting, and digging out plants at the roots. Walkways and crawl space access should be kept clear of vegetation. All material can be disposed of as yard waste during regular pickups.
- Areas of bare soils within the lawn should be seeded to minimize erosion concerns.
- The landscaping and hedge along 102<sup>nd</sup> Ave SE can be pruned to allow for greater visibility of the driveway. All vegetation can be cut back off the edge of the sidewalk to allow for clear pedestrian access.
- Currently there is a large oak tree located in the middle of the yard that is overgrown with ivy currently poses a hazard to the house and electrical wires. This tree will be removed in conjunction with the buffer restoration as equipment will be onsite. Limbs and branches will be chipped onsite and use as mulch to stabilize exposed soils.

#### *Long-term Practices*

- Mowing the lawn outside wetland stakes with hand operated equipment (e.g., gas-powered mower or trimmers) is allowed for maintaining the lawn.
- Maintenance of the buffer restoration area will follow the protocol described above for the first three years. After which time, maintenance within the restoration area will be the same as the rest of the non-wetland zone.
- Removal of ivy and blackberry by hand around house and yard within the buffer around. Hand removal includes pruning, cutting, and digging out plants at the roots. All material can be disposed of as yard waste during regular pickups.

- Landscaping of the non-wetland zone is allowed using native or desirable non-native vegetation. A list of plant species can be found in Appendix C of the City of Bellevue Critical Area Handbook.
- The use of herbicides for invasive species control is not allowed without approval from the City of Bellevue.

## Attachments



EXT'G SHED

EXISTING HOUSE

GARAGE

CARPORT

WETLAND FLAG (TYP)

LAWN

EXT'G. APPLE TREE

STABILIZE EXT'G. DRIVEWAY SURFACE

EXT'G OAK TREE

NEW PLANTING AREA  
6' x 93' (558 SF)  
SEE LEGEND

FILL TO BE REMOVED FROM  
EXISTING DRIVEWAY  
(558 SF AREA).

HYDROSEED DISTURBED AREA  
W/ KING COUNTY EROSION CONTROL  
SEED MIX @ 716/1000 SF.

PROVIDE JUTE NETTING  
AT TRANSITION SLOPES  
STEEPER THAN 10:1.

CACABELOS PROPERTY 415 102ND AVE SE / BELLEVUE WA.

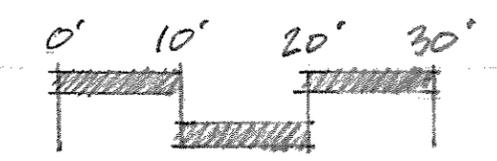
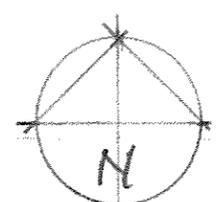
PRELIMINARY RESTORATION PLAN (09-125135)

SE GROUP 9/14/10

EXT'G DRIVEWAY

EXT'G DRIVEWAY

70'  
102ND AVE SE



8/2/2010

## Cacabelos Property

### Landscape Legend:

SYMBOL	BOTANICAL / COMMON NAME	QUANTITY	SIZE/SPACING	REMARKS
<u>Native Shrubs</u>				
	Cornus stolonifera "Flaviramea" <i>Yellowtwig Dogwood</i>	17	24" min Ht. 5' o.c. staggered spacing	B&B or containers. Healthy, vigorous stock.
	Salix sitchensis <i>Sitka willow</i>	5	36" min Ht. 6' o.c. staggered spacing	B&B or containers. Healthy, vigorous stock.
	Spiraea Douglasii <i>Western Spirea</i>	9	24" min Ht. 5' o.c. staggered spacing	B&B or containers. Healthy, vigorous stock.

### General Notes:

- 1 All plant material shall conform to American Standard for Nursery Stock (ANSI Z60.1-2004) for health, vigor, size and proportion
- 2 Excavate plant pits twice the diameter and depth of the root ball. Amend planting backfill with 25% compost by volume
- 3 Mulch entire planting area with 3" depth of well composted mulch. Pacific Topsoil's Pacific Garden Mulch or approved equal

February 23, 2007

Mohammed Ali Heidari  
16423 SE 56<sup>th</sup> Place  
Bellevue, WA 98006  
Via email: MAH1405@comcast.net

Re: **Wetland and Stream Delineation Study, TWC Ref# 070214**

Dear Mr. Heidari:

On February 16, 2007, I conducted a wetland and stream delineation study on the property located at 415 102<sup>nd</sup> Avenue SE (parcel 0666000400) in the City of Bellevue. This letter summarizes the findings of this study and details applicable federal, state, and local wetland regulations. The following attachments are included:

- Wetland Delineation Sketch
- Wetland Determination Data Forms
- Wetland Rating Forms

## Methods

The subject property was evaluated for wetlands using methodology from the *Washington State Wetlands Identification and Delineation Manual* (Manual) (Washington Department of Ecology [Ecology] 1997). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Manual were determined to be wetland. Soil, vegetation, and hydrologic data were sampled at several locations on the property to make the determination. We recorded data at two of these locations.

The eastern boundary of Wetland A is marked with 8 pink- and black-striped flags. Per City of Bellevue regulations, Wetland A was classified using the *Western Washington Wetland Rating System*.

The ordinary high water mark (OHWM) is generally interpreted as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil destruction on terrestrial vegetation, or the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding area. It is usually marked as the lowest limit of perennial vegetation. The legal definition of the OHWM used by the Department of Fish and Wildlife and defined in WAC (220-110-020(57)) is:

*"Ordinary high water line means the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in ordinary years, as to mark upon the soil or vegetation a character distinct from that of the abutting upland: Provided, That in any area where the ordinary high water line cannot be found the ordinary high water line adjoining saltwater shall be the line of mean higher high water and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood."*

The right-bank OHWM of the creek was marked with blue- and white-striped flagging. Flags are numbered WM-1A through WM-25A; a second branch of the stream is marked WM-1B through WM-5B.

## **Findings**

### Streams

A stream runs in a deep, constructed channel near the southern property boundary, turns north near the western property boundary, and leaves the property in the northwest corner. Banks are very steep, and the channel was clearly constructed where it flows on the property. Several rivulets cross the property in Wetland A (described below), and they contribute water to the stream. Stream overflow to the surrounding wetland does not appear to occur regularly. The stream drains the property in a fork, with one branch entering a culvert and a second flowing in a channel. The Bellevue Sensitive Areas Notebook shows the stream as Meydenbauer Creek.

The stream substrate is primarily sand, and vegetation is sparse immediately adjacent to the stream. Scattered willow, red alder, and black cottonwood overhang the stream. Little to no vegetation is growing within the OHWM. Large woody debris is abundant in the stream. There was low to moderate flow in the stream during our site visit.

The Bellevue Critical Areas Update Stream Inventory describes Meydenbauer Creek as sockeye salmon bearing. Fish habitat on the subject property is poor, but it could be used for migration and non-breeding life stages. The stream drains to Lake Washington less than 1000 feet from the property.

### Wetlands

An emergent/forested wetland, Wetland A, covers most of the undeveloped area on the parcel. It extends from the stream east to the existing house and south to the property line. It does not continue off-site to the north or west, but it does extend into the yard of the neighboring property to the southeast. It supports reed canarygrass, creeping buttercup, soft rush and cattail in its emergent areas, and red alder, willow, and black cottonwood in a forested area at the west end of the property. Many areas of pooled water and several rivulets are present. Soils in Wetland A are black (10YR 2/1) mucky loam with redoximorphic features in some areas. The entire wetland was either inundated or saturated at the surface during our site visit.

Habitat quality within the wetland is moderate, with abundant downed woody material and snags and potential amphibian breeding areas. However, the wetland is located in an urban landscape

and surrounded by development. Meydenbauer Creek provides a hydrologic connection to Lake Washington, but the Creek flows beneath a road and through other development before draining to the Lake. The wetland's dense vegetation and its location in a developed landscape allow for moderately high water quality and quantity values.

### Uplands

One house is located on the lot. A yard with a grass lawn and ornamental landscaping surrounds the house. Thick Himalayan blackberry covers the remaining non-wetland area in the southeast corner of the property. Soils in the yard area are dark grayish brown (10YR 4/2) sandy loam and were not saturated at the surface when we visited the site.

### **Local Regulations**

The City of Bellevue regulated streams and wetlands under the Bellevue Land Use Code (LUC) Chapter 20.25H. Stream classifications are based the presence of fish or fish habitat and connectivity to other waterways. The reach of Meydenbauer Creek that flows through the study site is rated Type F and requires a 50-foot buffer. A structure setback of an additional 50 feet is also required.

Wetlands are rated under LUC 20.25H.095, using the Washington State Wetland Rating System for Western Washington. Wetland A scores 44 points, including 16 habitat points, making it a Category III wetland. Category III wetlands with habitat scores below 20 points require 60-foot buffers (LUC 20.25H.095C) when the site has not previously been included in a Native Growth Protection Area or Easement. The minimum required structure setback on all Category III wetlands is 15 feet. The wetland buffer appears to completely encompass the stream buffer, although a survey is necessary to ascertain this conclusion.

The existing house and lawn and an overgrown gravel driveway are within the regulatory wetland buffer. According to LUC 20.25H.095.C.1b, when a primary structure is legally established within a buffer or setback prior to August 1, 2006, "the critical area buffer and/or structure setback shall be modified to exclude the footprint of the existing primary structure." The primary structure footprint would include road access.

To develop in the buffer beyond the primary structure footprint, buffers may be modified under two options detailed in LUC 20.25H.095.C.2 and LUC 20.25H.105. First, an applicant may be allowed to modify the buffer using a buffer averaging plan. Buffer averaging may be approved if the applicant demonstrates that buffer functions will be maintained, the buffer is contiguous and the total buffer area is not reduced. Second, the applicant may reduce the buffer if it can be shown that an enhancement plan will improve buffer function overall despite the buffer intrusion. Enhancement may involve removing invasive plant species, planting native vegetation, and/or installing habitat features. An approved enhancement plan would require monitoring and maintenance in accord with LUC 20.25H.210. Buffers modified under either plan must be no less than 75 percent of the require standard buffer (LUC 20.25H.095.C.2). Any plan drafted to reduce buffer widths must be approved by the City of Bellevue through a review process.

### **State and Federal Regulations**

Wetlands and streams are also regulated by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act. Any filling of Waters of the State, including wetlands (except isolated wetlands), would likely require notification and permits from the Corps. The Corps would not consider Wetland A isolated. Federally permitted actions that could affect endangered species (i.e. salmon or bull trout) may also require a biological assessment study and consultation with the U.S. Department of Fish and Wildlife and/or the National Marine Fisheries Service. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology.

Please note that the findings of this letter, including wetland classification and resulting buffer width predictions, are subject to the verification and agreement of local, state and/or federal regulatory authorities.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

A handwritten signature in cursive script that reads "Suzanne Tomassi". The signature is written in black ink and is positioned above the printed name and title.

Suzanne Tomassi  
Wetland/Wildlife Biologist

Enclosures



Notes: Locations are approximate and features are not to scale. Ordinary high water mark (WM) is marked with blue- and white-striped flagging; Wetland A is marked with pink- and black-striped flagging; data points (DP) are marked with yellow- and black-striped flagging.

**Wetland and Stream Delineation Sketch**  
 415 102<sup>nd</sup> Ave. SE, Bellevue, Washington (parcel 0666000400)  
 Prepared for Mohammad Ali Heirdari  
 02/16/07



750 Sixth Street South | Kirkland | WA 98033  
 p 425.822.5242 f 425.827.8136  
 watershedco.com