

## **Appendix G – Wetland Correspondence**

- Wetland Reconnaissance (2004)
- Stream Bank Flagging (2006)



PROJECT #: \_\_\_\_\_  
FILE CODE #: \_\_\_\_\_

*Environmental Solutions*

February 10, 2004

**RECEIVED**

FEB 11 2004

R. W. Beck, Inc.  
Attn: Mr. Karl Hufnagel, P.E.  
1001 Fourth Avenue, Suite 2500  
Seattle, WA 98154-1004

**ACTION COPY**

R.W. BECK  
SEATTLE, WA

**RE: Wetland Reconnaissance for Bow Lake Transfer Station and WSDOT Property, Tukwila, WA**

Dear Mr. Hufnagel,

Adolfson Associates, Inc. (Adolfson) is pleased to present the findings from our wetland reconnaissance for the Bow Lake Transfer Station and adjacent WSDOT property in Tukwila, Washington (Figure 1). Improvements to the Bow Lake Transfer Station are currently being considered and include the addition of a new scale facility, an enlarged transfer trailer parking yard, improved recycling facilities including a yard waste receiving area, an expanded employee building, new public facilities building and possibly a new public access road. The property is located on the east side of northbound I-5 at the Orillia Road/South 188<sup>th</sup> Street interchange area.

The approximately 8 acre WSDOT property, which is part of a proposed acquisition for expansion, is immediately north of the existing Bow Lake Transfer Station. Undeveloped wooded areas occur to the north of the WSDOT property and south of the transfer station. The eastern portion of the property, beyond the transfer station, is a mixture of disturbed and forested area to the toe of the slope that leads to the Kent Valley, which is a commercial and industrial area.

This letter describes the methodologies used to evaluate the presence of wetlands and vegetation types based on information collected during the field reconnaissance visit. This letter does not include an analysis of impacts to wetlands or buffers or mitigation planning. Wetland boundaries were not flagged and formal wetland delineations have not been conducted by Adolfson at this time.

### **Methods**

Wetland determinations were made using methods defined in the *Washington State Wetlands Identification and Delineation Manual* (Washington State Department of Ecology, 1997), a manual consistent with the *Corps of Engineers Wetlands Delineation Manual* ("1987 Manual") (Environmental Laboratory, 1987). The methods outlined in the manual are based upon three essential characteristics of wetlands: (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. Field indicators of these three

characteristics must all be present in order to make a positive wetland determination.

### Existing Information

A review of existing information was conducted prior to field work. The *United States Fish and Wildlife Service (USFWS) National Wetland Inventory* (Des Moines quadrangle) and *King County Sensitive Area Map Folio* (King County, 1990) identified no wetlands in the vicinity of the Bow Lake Transfer Station. The *Bow Lake Transfer/Recycling Station Facility Master Plan* (King County Department of Natural Resources (Solid Waste Division), 1998) identifies two potential palustrine forested (PFO1) wetland areas within the area observed during the site visit. These wetland areas were never formally delineated but were noted during a site reconnaissance based on the 1989 Corps Manual. The *Engineering Services for Bow Lake Transfer Station/Recycling Facility Master Plan Update and Implementation Proposal* (R.W. Beck, 2002) prepared for King County was also utilized for background information.

### Site Visit

Teresa Vanderburg and I met on-site with you and Beverley Charlish on January 15, 2004 prior to conducting our field investigation. Teresa and I walked the entire transfer station site and investigated possible wetland areas within the undeveloped portion of the WSDOT property proposed for a future development.

The vegetation communities within the proposed improvement areas include primarily disturbed areas. The areas immediately surrounding the transfer station are considered disturbed areas with few trees and little ground cover. The WSDOT property is a disturbed area comprised of Himalayan blackberry (*Rubus procerus*), Scot's broom (*Cytisus scoparius*), and grasses/weeds.

### Findings

No wetland areas were identified during the January 2004 site visit. The potential wetland previously identified during the 1998 reconnaissance no longer meets wetland criteria due to removal of the culvert outfall. One wetland plot (Plot 1) was taken in the previously existing wetland and another (Plot 2) was taken approximately 200 feet down-slope of Plot 1 (Figure 2). Photos one and two document conditions in this area.

Soil in Plot 1 was comprised of a sandy loam fill material (2.5 Y 4/2) with mottles and was saturated due to compaction. This area was obviously disturbed and contained non-native fill material. The water table was reached at a depth of 15 inches. Vegetation consisted of reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus procerus*), cleavers bedstraw (*Galium aparine*), and agrostis (*Agrostis alba*), black cottonwood (*Populus balsamifera*), big-leaf maple (*Acer macrophyllum*), and red alder (*Alnus rubra*). This plot contained hydric soils and hydrology (in the winter), but lacked the necessary wetland vegetation to be considered a wetland. It should also be noted that

it was raining during the site visit, which may have influenced hydrology at the time of the site visit.

Soil in Plot 2 consisted of native sandy loam (10-YR 3/2) from the surface to 10 inches in depth. Silty loam (2.5-Y 4/3) occurred from 10 inches to 16 inches in depth. Soils were not saturated and the water table was never reached. Vegetation consisted of Himalayan blackberry (*Rubus procerus*), reed canarygrass (*Phalaris arundinacea*), big-leaf maple (*Acer macrophyllum*) saplings, and red alder (*Alnus rubra*). This area was also determined to be non-wetland. Soils were not hydric, wetland hydrology did not exist, and wetland vegetation was not dominant.

Adolfson also surveyed the WSDOT site north of the transfer station facility. The WSDOT site was surveyed to the forested perimeter on the north side, to the eastern edge of the lower bench (eastern edge of blackberry thicket), to the Bow Lake Transfer Station to the south, and to I-5 to the west. The site is comprised of two parts or benches. The WSDOT site is higher in elevation than the Bow Lake Transfer Station Site. The upper-bench was created by the historical disposal of construction spoil material, and the lower bench was created by the disposal of burned refuse material (Hufnagel, personal communications, 2004). The upper bench is highly compacted resulting in water collection at the surface (Photo 3). The soils were not considered hydric (compacted fill material), there is no evidence of hydrology, and vegetation on the disturbed upper bench consists mainly of grasses and weeds while the lower bench is primarily Scot's broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus procerus*), and young red alder (*Alnus rubra*).

In addition, it was also noted that a stream appears to cross the northern portion of the WSDOT property (King County GIS; Figure 1). The stream exists within a steep slope forested ravine north of the disturbed area and is currently receiving stormwater runoff from I-5 (Photo 4). It appears that the discharge area has created landslides in the past, and has created dangerous undercut banks at the top edge of the slope. Wetlands may be associated with the bottom of this ravine near the stream; however, this area was not surveyed. It appears that both the stream and associated steep slope buffer are located on the WSDOT property.

## Regulations

Sensitive areas within the proposed improvements to the Bow Lake Transfer Station are regulated by Tukwila Municipal Code (TMC) Title 18 - Zoning. According to TMC 18.45.020, the ravine area containing a stream, steep slopes, and landslide evidence is likely considered an Area of Potential Geologic Instability with a ranking of Class 3 or 4. According to TMC 18.45.040 (Sensitive Area Buffers), a geotechnical report may be required to identify appropriate buffer widths in relation to activities proposed pursuant to the requirements of TMC 18.45.060 and 18.45.080E.4. Standard stream buffers in the code range from a 15-foot-wide buffer for a Type III stream to a 70-foot-wide buffer for a Type I stream.

## Limitations

Adolfson conducted a wetland and stream reconnaissance on the disturbed portions of the WSDOT property and to the fence line south and east of the existing Bow Lake Transfer Station property. Adolfson did not formally delineate wetlands or streams. Adolfson observed a stream, steep slopes and probable wetlands associated with the stream in the forested portion of the WSDOT property north of the disturbed areas and beyond our scoped reconnaissance area. It is recommended that these areas receive further review prior to development of this area. It should be recognized that wetland identification is an inexact science and that differences in professional opinion often occur between trained individuals. Further, wetlands are by definition transition areas and the definition of jurisdictional wetlands is subject to change.

Within the limitations of schedule, budget, and scope-of-work, we warrant that this study was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time that this study was performed. The results and conclusions expressed herein represent our best professional judgment, based upon information provided by the project proponent, in addition to that obtained during the course of this survey. No other warranty, expressed or implied, is made.

Please contact me at 206-789-9658, if you have any questions or comments

Sincerely,

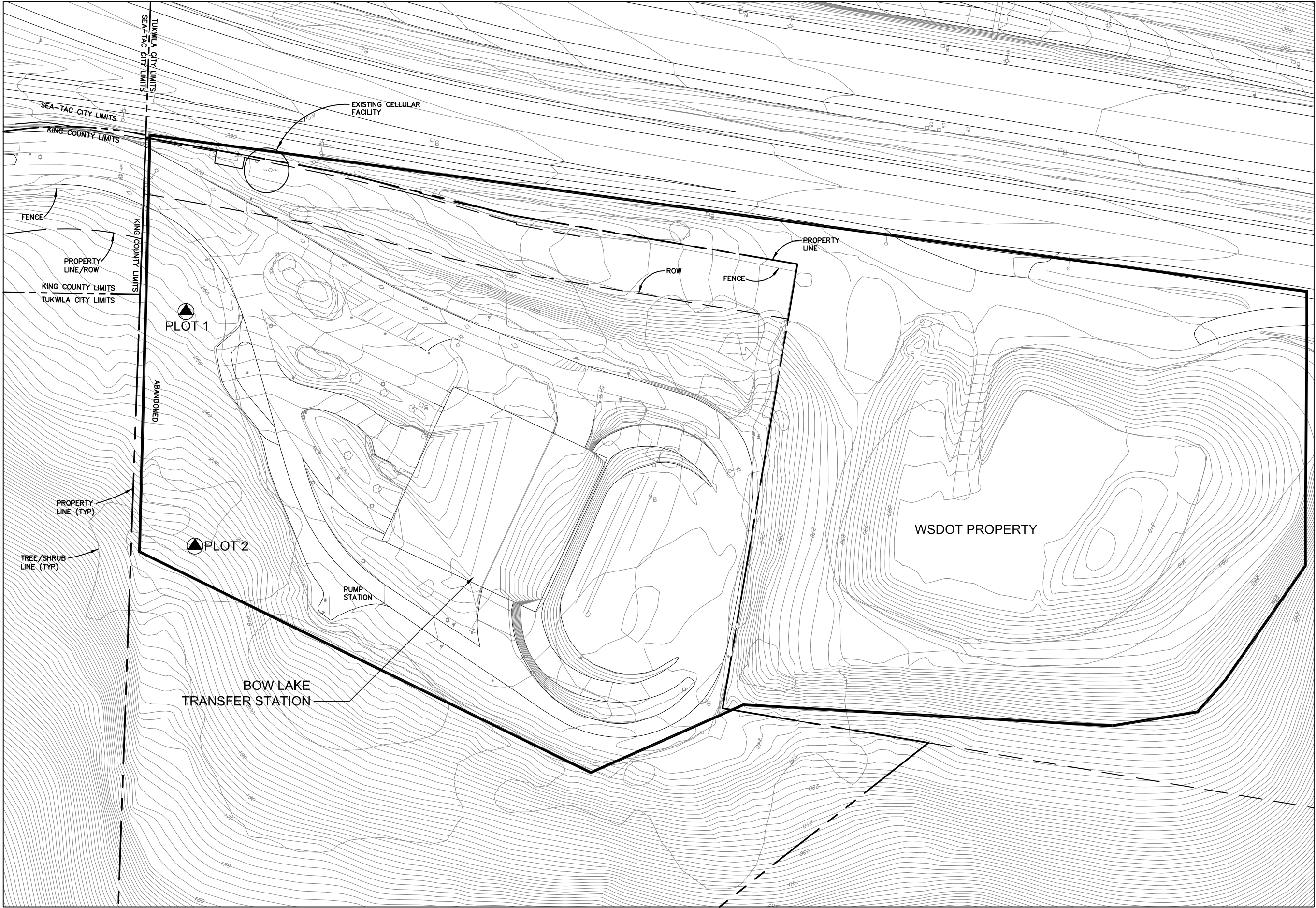
ADOLFSON ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Steven Krueger", written over the printed name.

Steven Krueger  
Staff Scientist

Attachments: Figures and Photos





LEGEND	
SD	STORM DRAIN
S	SANITARY SEWER
W	WATER
CB	CATCH BASIN
UP	UNDERGROUND POWER
UT	UNDERGROUND TELEPHONE

---	PROPERTY LINE
- - -	CITY LIMITS
---	ROW

 SOIL TEST PIT LOCATION

 RECONNAISSANCE LIMITS

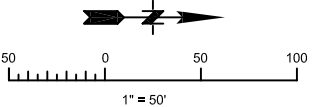


Figure 2  
Bow Lake Transfer/  
Recycling Station  
Facility Master Plan  
King County Solid Waste Division



**KPG**  
♦ Architecture ♦  
♦ Landscape Architecture ♦  
♦ Civil Engineering ♦





**PHOTO 1. Bow Lake Transfer Station, Vegetation in proximity to Plot 1 and Plot 2 (1/15/04).**



**PHOTO 2. Vegetation facing uphill (NW) toward transfer station (1/15/04).**





**PHOTO 3. Upper bench of WSDOT property looking SE toward Kent (1/15/04).**



**PHOTO 4. Ravine w/stream and steep slopes just north of WSDOT property (1/15/04).**

August 22, 2006

Mr. Karl Hufnagel, P.E.  
R.W. Beck  
1001 Fourth Avenue, Suite 2500  
Seattle, WA 98154-1004

**RE: Stream Bank Flagging, Bow Lake Transfer/Recycling Station – King County  
Solid Waste Division**

Dear Mr. Hufnagel,

Adolfson Associates, Inc. (Adolfson) is pleased to present a summary of our site visit to the Bow Lake Transfer/Recycling Station and adjacent WSDOT property in Tukwila, Washington (Figure 1) on July 6, 2006. Those in attendance at the visit included Teresa Vanderburg and Steve Krueger from Adolfson, Karl Hufnagel and Ian Sutton from R.W. Beck, and Sandra Whiting from the City of Tukwila (City). The purpose of the site visit was to review the stream flagging performed by Adolfson and the preliminary design for the new facility that was developed by R.W. Beck. Of particular concern was the encroachment of the proposed retaining wall on the City's required stream buffer.

**Background**

Expansion of the Bow Lake Transfer/Recycling Station is currently being evaluated and includes the addition of a new scale facility, an enlarged transfer trailer parking yard, a full scale recycle area with covered unloading area, a yard waste receiving area, an expanded employee building and new transfer building. The property is located on the east side of northbound I-5 near the Orilla Road South/S. 188<sup>th</sup> St. interchange.

The WSDOT property, which is part of a proposed acquisition for expansion, is immediately north of the existing Bow Lake Transfer/Recycling Station. A large stockpile or fill area is located on the WSDOT property, which was established in the 1950s during the construction of Interstate 5 (I-5). Undeveloped wooded areas occur to the north of the fill area on WSDOT property and also south of the transfer station. The eastern portion of the property, beyond the transfer station, is a mixture of disturbed and forested area to the toe of the slope that leads to the Duwamish Valley, which is a commercial and industrial area.

Previous environmental studies and site verification identified the presence of a watercourse, designated Stream E2 (Goldsmith and Associates, 2005), flowing in a west-to-east direction on a forested portion of the WSDOT property, north of the existing facility. Adolfson staff flagged the edge of the stream (top of bank) on March 23<sup>rd</sup> and

May 3<sup>rd</sup> 2006. We located the stream as part of the County's environmental review of the site.

### **Site Visit**

During the July 6, 2006 site visit, stream bank flagging was reviewed in the field along with the design for the new facility. The City and Adolfson Associates both agreed that the proper classification for the on-site stream was Class III, which requires an 80-foot buffer (TMC 18.45.100). It was apparent after reviewing the preliminary construction drawings that the proposed retaining wall along the north side of the proposed facility would extend to within 20 feet of the stream bank flagging in one particular location and would therefore encroach within the stream buffer.

Based upon further review of TMC 18.45, the City identified that the buffer could be reduced up to 50 percent of the required buffer width (40 feet) with appropriate mitigation and that building setbacks could be waived; however, the County would have to show that all feasible attempts were made during design to reduce buffer impacts to all extent practicable. R.W. Beck indicated that they would look into some design modifications that may pull the retaining wall back to 40 feet or greater from the stream flagging.

While on the site, Sandra Whiting indicated that the Director may have the flexibility to allow buffer reductions beyond 50 percent; however, it was indicated that the TMC would have to be consulted further to obtain a definitive assessment of this possibility.

During the site visit, R.W. Beck identified that it would likely be necessary to remove trees within the stream buffer. The City indicated that any tree removal would have to comply with the City's tree regulations (Tukwila Municipal Code (TMC) 18.54) with respect to tree removal within a sensitive area buffer (stream buffer in this case) and a tree removal permit would be required. Attached to this letter are the appropriate TMC sections for applying for and obtaining a Tree Clearing Permit (Attachment A).

The on-site meeting ended with the City's intent to review the Code and determine whether or not the buffer reduction would apply in this case and could be greater than 50 percent. In turn, the project team was tasked with revisiting the proposed facility design. The purpose of revisiting the facility design was to see if the facility footprint could be reduced or rearranged in a manner that would avoid a buffer reduction of greater than 50 percent.

### **Findings**

After review of the TMC, Sandra Whiting of the City indicated that the TMC does not have flexibility with respect to reducing the required buffer width beyond 50 percent. However, at the same time, the facility site layout was revised and the retaining wall was moved to a point where the proposed structure will not reduce the required buffer width greater than 50 percent.

Further, the City indicated that the stream flagging could be revised in several locations where Adolfson flagged the top of bank. Sandra Whiting indicated that the code does not

provide direct guidance on locating a stream bank. She noted that the City often uses the ordinary high water mark as the point from which the stream bank is measured. If necessary, The City recommended that the stream bank flags could be adjusted down slope, which would essentially reduce the encroachment of the proposed retaining wall upon the stream buffer.

It should be noted that if there are any recommendations by geologic studies performed at the site for building/construction setbacks, the design plans should be revised accordingly. Adolfson has not evaluated the proposed facility site plan relative to geologic hazard areas. We recommend that the project geotechnical expert analyze the location of the facility and its proximity to steep slopes and other geologic hazard areas to determine whether or not the proposal meets code requirements for protection of critical areas.

Please contact me at 206-789-9658, if you have any questions or comments

Sincerely,

ADOLFSON ASSOCIATES, INC.

Steve Krueger  
Senior Scientist

Cc: Steve Bingham, Adolfson Associates, Inc.  
Steve Krueger, Adolfson Associates, Inc.  
Sandra Whiting, City of Tukwila

Attached: TMC 18.54.080



## ATTACHMENT A - TREE CLEARING REQUIREMENTS

The following materials are required as part of the Tree Clearing Permit (TMC 18.54.080):

1. **Site Plan** of the proposal, showing:
  - a) Diameter, species name, location and canopy of existing significant trees\* in relation to proposed and existing structures, utility lines, and construction limit line;
  - b) Identification of all significant trees to be removed and/or relocated;
  - c) Existing and proposed topography of the site at 2-foot contour intervals;
  - d) Limits of any sensitive area and sensitive area buffer, and mean high water mark of the river.

\*A “significant tree” means a tree (Cottonwood excluded), which is 4 inches or more in diameter as measured 4.5 feet above grade (TMC 18.06.775).

2. **Landscape Plan** for the proposal, showing:
  - a) Diameter, species name, spacing and location of replacement trees/vegetation to be used to replace vegetation cleared;
  - b) Diameter, species name and location of all significant trees and vegetation to be retained;
  - c) Proposed vegetation protection measures;
  - d) Any other measures proposed to restore the environmental and aesthetic benefits previously provided by on-site vegetation.
3. **Professional review or recommendation** – Submittal of, or agreement to submit, a review, evaluation, recommendation or plan related to vegetation clearing or replacement prepared by a professional consultant(s), such as landscape architect, surveyor, or certified arborist. Services may include, but are not limited to:
  - a) Providing a written evaluation of the anticipated effects of proposed construction on the viability of trees on-site; and/or
  - b) Developing plans for, supervising, and/or monitoring implementation of any required tree protection or replacement measures; and/or
  - c) Post-construction site inspection and evaluation.
4. **Sensitive area mitigation plan** – Identify measures proposed for mitigation of vegetation clearing in a sensitive area and/or its buffer per the Sensitive Area Overlay District chapter of this title.
5. **Time schedule** – Proposed time schedule of vegetation removal, relocation and/or replacement, and other construction activities, which may affect on-site vegetation, sensitive area, sensitive area buffer, and/or shoreline zone...

With respect to the acquisition of a Tree Clearing Permit, It should be noted that additional studies could be required by the Director at any time during the permit process to ensure compliance with the requirements of TMC 18.54. Also, the Director may waive permit materials if information contained within the application will meet the approved criteria detailed in TMC 18.54.