DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
11511 MAIN ST., P.O. BOX 90012
BELLEVUE, WA 98009-9012

# DETERMINATION OF NON-SIGNIFICANCE

**PROPONENT:** Jordan Lott, J&J Management

**LOCATION OF PROPOSAL:** 405 114th Ave. NE

**NAME & DESCRIPTION OF PROPOSAL:** Cordova Building Stream Sediment Maintenance

Land Use review of a Critical Areas Land Use Permit proposing periodic removal of sediment buildup within a stream culvert of Type-F Sturtevant Creek to maintain flow capacity through the culvert and prevent flooding of the property.

**FILE NUMBER:** 09-113567-LO

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by 5:00 p.m. on _____.

☒ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on 11/12/09.

☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5 p.m. on _____.

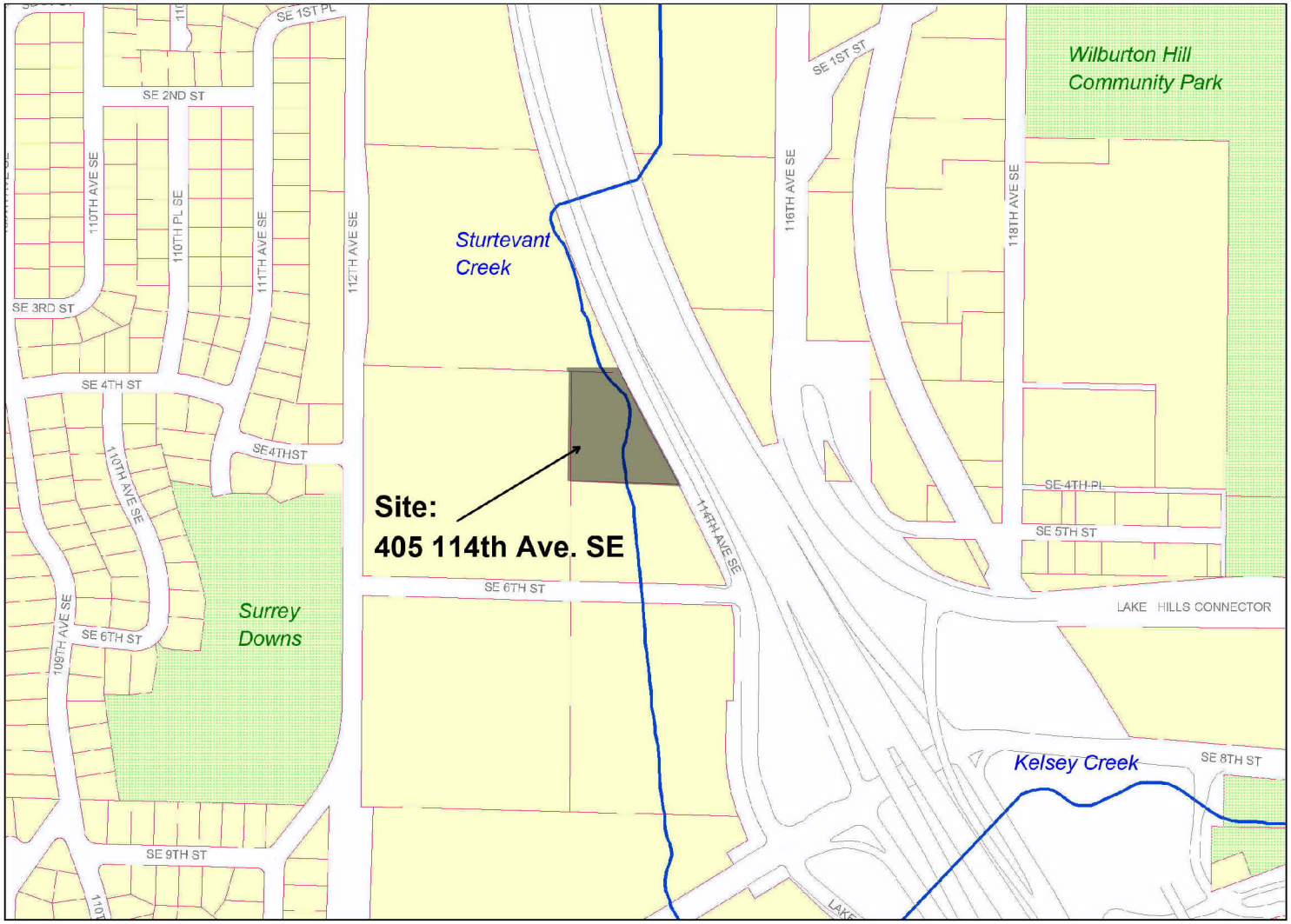
This DNS may be withdrawn at any time if the proposal is modified so that it is likely to have significant adverse environmental impacts; if there is significant new information indicating, or on, a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Richard M. Taylor
Environmental Coordinator

10/29/2009
Date

OTHERS TO RECEIVE THIS DOCUMENT:
State Department of Fish and Wildlife
State Department of Ecology,
Army Corps of Engineers
Attorney General
Muckleshoot Indian Tribe

# Cordova Building Stream Sediment Maintenance Vicinity Map



**City of Bellevue**
**Development Services Department**
**Land Use Staff Report**

| | |
|---|---|
| **Proposal Name:** | Cordova Building Stream Sediment Maintenance |
| **Proposal Address:** | 405 114th Ave. SE |
| **Proposal Description:** | Land Use review of a Critical Areas Land Use Permit proposing periodic removal of sediment buildup within a stream culvert of Type-F Sturtevant Creek to maintain flow capacity through the culvert and prevent flooding of the property. |
| **File Number:** | 09-113567-LO |
| **Applicant:** | Kerrie MacArthur, AMEC Geomatrix, Inc. |
| **Decisions Included:** | Critical Areas Land Use Permit (Process II. 20.30P) |
| **Planner:** | Reilly Pittman, Land Use Planner |
| **State Environmental Policy Act Threshold Determination:** | **Determination of Non-Significance**<br>Carol V. Helland, Environmental Coordinator<br>Development Services Department |
| **Director's Decision:** | **Approval with Conditions**<br>Michael A. Brennan, Director<br>Development Services Department<br>By: _____<br>Carol V. Helland, Land Use Director |

| | |
|---|---|
| **Application Date:** | May 14, 2009 |
| **Notice of Application Publication:** | June 11, 2009 |
| **Decision Publication Date:** | October 29, 2009 |
| **Project/SEPA Appeal Deadline:** | November 12, 2009 |

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

## CONTENTS

## I. Proposal Description

The applicant proposes to remove sediment from a Type-F stream in order to maintain the 100-year flood capacity of a culvert the stream passes through on the site.

## II. Site Description, Zoning, Land Use and Critical Areas

### A. Site Description

The project site is located at 405 114th Ave. SE in the West Bellevue area of Bellevue. The site is located in the SE quadrant of Section 32, Township 25 North, Range 5 East. The site fronts 114th Ave. SE along the eastern property line, and is surrounded to north, west, and south by other commercial uses. Sturtevant Creek enters the site across the north property line and flows south around and under the existing development. A majority of the subject site is developed with parking and an office building as is a majority of the stream corridor along 114th Ave. SE. See figure 1 for existing site condition.

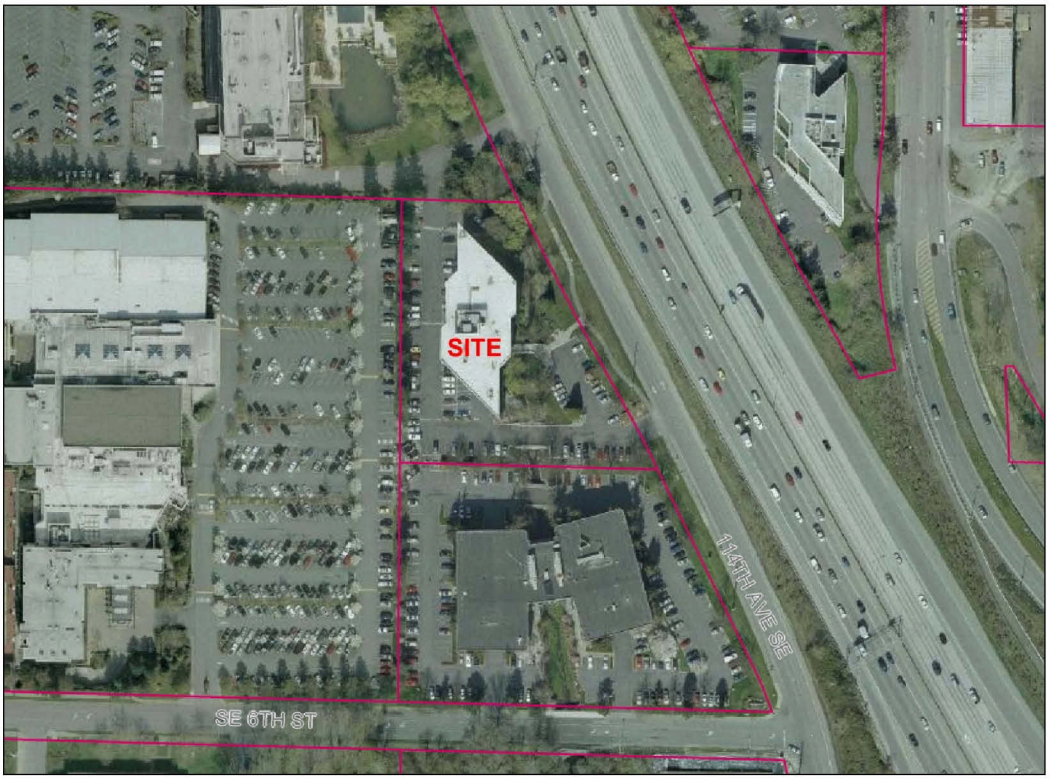



**Figure 1**

### B. Zoning

The subject site and surrounding properties are zoned OLB, Office and Limited Business. The proposed activities of sediment removal will not affect zoning.

### C. Land Use Context

The property has a Comprehensive Plan Land Use designation of OLB, Office and Limited

Business.

## D. Critical Areas Function and Value, Regulations

### i. Streams and Riparian Areas

Most of the elements necessary for a healthy aquatic environment rely on processes sustained by dynamic interaction between the stream and the adjacent riparian area (Naiman et al., 1992). Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Riparian areas support healthy stream conditions.

Riparian vegetation, particularly forested riparian areas, affect water temperature by providing shade to reduce solar exposure and regulate high ambient air temperatures, slowing or preventing increases in water temperature (Brazier and Brown, 1973; Corbett and Lynch, 1985).

Upland and wetland riparian areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff, protecting water quality in streams (Ecology, 2001; City of Portland 2001). The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods (Novitzki, 1979; Verry and Boelter, 1979 in Mitsch and Gosselink, 1993). Upland and wetland areas can infiltrate floodflows, which in turn, are released to the stream as baseflow

Stream riparian areas, or buffers, can be a significant factor in determining the quality of wildlife habitat. For example, buffers comprised of native vegetation with multi- canopy structure, snags, and down logs provide habitat for the greatest range of wildlife species (McMillan, 2000). Vegetated riparian areas also provide a source of large woody debris that helps create and maintain diverse in-stream habitat, as well as create woody debris jams that store sediments and moderate flood velocities.

Sparsely vegetated or vegetated buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated (May 2003). Until the newly planted buffer is established the near term goals for buffer functions may not be attained.

Riparian areas often have shallow groundwater tables, as well as areas where

groundwater and surface waters interact. Groundwater flows out of riparian wetlands, seeps, and springs to support stream baseflows. Surface water that flows in to riparian areas during floods or as direct precipitation infiltrates into groundwater in riparian areas and is stored for later discharge to the stream (Ecology, 2001; City of Portland, 2001).

## III. Consistency with Land Use Code Requirements:

### A. Zoning District Dimensional Requirements:

The OLB zoning dimensional requirements found in LUC 20.20.010 do not apply to this project as no structure is proposed to be constructed.

### B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes standards and procedures that apply to development on any site which contains in whole or in part any portion designated as critical area or critical area buffer.

The proposed sediment removal work is located within Sturtevant Creek which is a Type-F stream regulated as a critical area. The submitted Stream Survey Report and Sediment Maintenance Plan describes Sturtevant Creek as a:

> *"low-gradient, single-channel stream averaging 6 to 8 feet wide and 2 to 12 inches deep. Within the property, the stream is a pool/riffle complex with no large woody debris. Pools are formed by bends in the creek. Throughout the reach, the dominate substrate is sand. Areas of gravel and cobble exist in the riffles, but are highly embedded"* (Sediment Maintenance Plan, pg. 1).

Sediment removal on this site has been conducted in the past in an effort to prevent flooding of the property under various permits from the City. However, recent changes (2006) to the Land Use Code introduced new permitting requirements in critical areas and an approval of a Critical Areas Land Use Permit (CALUP) with a critical areas report subject to LUC 20.25H is now required. In 2006 work was completed to install the existing three-sided box culvert to increase the culvert capacity to handle the 100-year flood. The culvert capacity has been monitored since 2006 with yearly reports submitted in 2007 and 2008. The Year-2 monitoring report states that:

> *"Based on hydraulic modeling, a 75 square foot opening is expected to be sufficient to convey the 100-year storm event. The average opening of the culvert is 68.88 square feet. This is 6.12 square feet less than the performance standard, or an 8 percent decrease in cross-sectional area"* (Year-2 Monitoring, pg. 2).

Based on the monitoring of the culvert the increase in sediment at the culvert opening is reducing the culvert capacity below the designed 100-year flood level. Evaluation of the stream on page 2 of the Sediment Maintenance Plan has determined that the source of sediment is off-site and upstream of the subject location and caused by stream bank erosion.

As noted in page 2 of the Sediment Maintenance Plan the site was examined to determine the likelihood of continued sediment deposition and found that:

> *"the channel slope is greater downstream from the lower culvert than upstream (0.4% vs. 0.1 %). The cross sections also indicate that the width-to-depth ratio is greater downstream of the culvert than it is upstream. These two components of channel geometry suggest that deposition will tend to occur at the site. When there is a decrease in stream power, such as at an expansion of the channel, deposition can be expected. The increase in width-to-depth ratio at the culverts represents such an expansion. The lower channel slope at the two culverts also indicates that stream power is lower at this site than above or below, increasing the propensity for deposition"* (Sediment Maintenance Plan, pg. 2).

The Sediment Maintenance Plan recommends that removal of the sediment in the vicinity of the culvert will "need to occur periodically over the life of the culvert" (pg. 2). It appears from the information submitted that sediment will continue to reduce the flow capacity of the culvert until measures are taken upstream of the site to reduce the sediment input or the culvert is removed.

Generally a critical areas report must demonstrate that the proposal will lead to equivalent or better protection of critical area functions and values than would result from the application of the standard requirements. The sediment is to be removed by vacuum truck to reduce impacts to the stream. The maximum amount of sediment to be removed is stated as 20 cubic yards in the maintenance plan however, the current sediment deposition to be removed is estimated to be from 10 to 12 cubic yards. Any impacts should be temporary as the process is predicted to take less than 8 hours and the truck will be parked on the culvert crossing to avoid stream bank disturbance. If sediment is allowed to increase at the culvert opening, flooding could result which has the potential to not only damage private property but can also result in pollution entering the water from adjacent parking areas and roadways. In addition, flooding could also damage existing vegetation within the riparian buffer reducing what habitat function remains on this developed site.

There are no performance standards found in LUC 20.25H for this activity. However for City projects involving the removal of sediment from streams the performance standards below have been applied and will be applied to this private sediment removal per the submitted Sediment Maintenance Plan dated August 2009:

- Prior to sediment removal utilities shall be field located prior to sediment removal activities.

- Prior to sediment removal, block nets will be placed upstream and downstream of the sediment removal area, and a fisheries biologist will attempt to remove fish from within the block nets and release them unharmed downstream using a seine or dip net. Because there are no species listed under the Endangered Species Act in Sturtevant Creek and work will occur in the allowable work window when few if any salmonids are expected to be in the creek, seining and dip netting methods will be used to remove fish. Any fish caught will be transported and released downstream using clean buckets. The block nets will remain in place during the duration of the sediment removal. The downstream block net may be silt fence material to aid in reducing increases in turbidity downstream.

- A fisheries biologist will remain on site during the removal process to ensure that fish are not harmed or stranded. Should any fish be observed within the block net area during sediment removal, the sediment removal process will stop and the fish will be netted using a dip net and transported and released using clean buckets, unharmed downstream.

- No more than 20 cubic yards of sediment in the vicinity of the culvert will be removed from the streambed during any sediment removal event. Removal of excess sediment to increase the capacity of the culvert will not occur.

- Sediment will be removed using a vacuum truck. The truck will access the stream from the existing culvert crossing. The truck will not be parked on any pervious surface.

- Sediment removal will be conducted during the allowable in-water work window stipulated by the Corps or as specified by the WDFW (currently set from July 1 through August 31).

- Sediment removal is expected to last less than 8 hours.

- Sediment above the water surface will take precedence for removal over sediment below the water surface elevation.

- Sediment will be removed with the vacuum truck in such a way as to minimize the amount of time the vacuum is in contact with flowing water. For example, if a sediment bar is being removed, the vacuum will remove sediment from the center first, working its way toward the sediment/water interface.

- Sediment removal will not result in exposed embankments slopes abutting the creek.

- Sediment removal will not result in a stockpile of sediment as all sediment removed will be contained within the truck.

- Sediment will be taken to an approved upland disposal facility or recycled at a local landscaping facility by the vacuum truck company.

- Sediment removal may cause temporary and localized impacts on water quality in the vicinity of the removal area. A silt curtain will be placed downstream of the active work area to reduce turbidity downstream and act as a block net.

- To ensure state water quality standards are met turbidity will be monitored 100 feet upstream and downstream of the sediment removal area by a trained inspector or water quality professional will conduct the turbidity monitoring. Turbidity will be measured at both locations before the start of sediment removal and hourly thereafter until removal of the block nets and/or silt curtain. Should an exceedance of the turbidity standard occur during sediment removal. the removal process will stop. The trained inspector or water quality professional will conduct an investigation to determine the cause of the increase in turbidity and additional best management practices (BMPs) will be employed. BMPs will be at the discretion of the inspector/professional.

- A water quality monitoring report will be submitted to the City of Bellevue. Because the sediment removal process is expected to last one day or less, only one report is anticipated. However, should the removal occur for more than one day, daily or weekly reports will be submitted. Reports shall be as detailed in the submitted Sediment Maintenance Plan dated August 2009.

## IV. Public Notice and Comment

| | |
|---|---|
| Application Date: | May 14, 2009 |
| Public Notice (500 feet): | June 11, 2009 |
| Minimum Comment Period: | June 25, 2009 |

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on June 11, 2009. Notice was also mailed to property owners within 500 feet of the project site. Requests for project information were submitted but comments on the project were not received.

## V. Summary of Technical Reviews

### A. Clearing and Grading

The Clearing and Grading Division of the Development Services Department has reviewed the proposed site development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development.

## VI. State Environmental Policy Act (SEPA)

The environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate potential environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

### A. Earth, Air, and Water

No large-scale earthmoving activity is proposed. The submitted sediment maintenance plan does not intend to exceed 20 cubic yards of removal and is intended to maintain the designed culvert opening of 75 square feet to handle the 100-year flood. Removal of sediment will not exceed that which is necessary to maintain the designed 75 square feet culvert opening and estimated to be from 10 to 12 cubic yards. Erosion and sedimentation control requirements and BMPs will be reviewed by the Clearing and Grading Department. See Section X for related conditions of approval.

### B. Plants and Animals

No vegetation will be impacted by the proposed sediment removal. Fish exclusion activity may temporarily impact any fish in the vicinity. However the performance standards described in Section III above will limit impacts. See Section X for related conditions of approval.

### D. Noise

The site is adjacent to commercial uses and I-405 which generates noise. The only noise anticipated as a result of this work will be from the vacuum truck and equipment used to remove the sediment. Any noise is regulated by Chapter 9.18 BCC. See Section X for a related condition of approval.

## VII. Changes to Proposal Due to Staff Review

The applicant modified the sediment maintenance plan per the Land Use staff comment letter dated July 10, 2009. Staff requested more information on the activity and more clarity on the steps proposed to remove the sediment. A revised plan was submitted which addressed the staff comments.

## VIII. Decision Criteria

### A. 20.25H.255 Critical Areas Report – Decision Criteria – General

**The Director may approve, or approve with modifications, the proposed modification where the applicant demonstrates:**

1. **The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;**

   No permanent modification is proposed. The sediment removal will temporarily impact the stream and may increase turbidity which will be monitored. Removal of the sediment will only maintain the designed culvert capacity and not increase capacity. The functions and values being increased are related to stormwater capacity. As the work duration is very short functions and values should not be impacted by this activity. See Section X for a related condition of approval.

2. **Adequate resources to ensure completion of any required mitigation and monitoring efforts;**

   Turbidity monitoring will occur during sediment removal activity and further BMP measures may be required by the Clearing and Grading Division.

3. **The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site;**

   As described in section III above the activity will be very temporary and may not be a yearly event depending upon sediment buildup. Flow capacity of the culvert will be increased to prevent flooding which would not occur if the sediment is not removed. See Section X for a related condition of approval.

4. **The resulting development is compatible with other uses and development in the same land use district.**

   No development is proposed and the activity does not impact land uses in the vicinity. If the activity is not performed land uses in the vicinity could be impacted by flooding.

### B. 20.30P.140 Critical Area Land Use Permit Decision Criteria – Decision Criteria

The Director may approve, or approve with modifications an application for a Critical Area Land Use Permit if:

1. **The proposal obtains all other permits required by the Land Use Code;**

   This CALUP and SEPA approval will enable sediment maintenance to occur for a period of three years from the date of issuance. The applicant must obtain a clearing and grading permit for each sediment removal. The clearing and grading permit must reference this CALUP approval and SEPA review. Future sediment removal activity after three years from the date of issuance will require a new Critical Areas Land Use Permit and SEPA review or whatever approval is required at that time. See Section X for a related condition of approval.

2. **The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;**

   The sediment will be removed using a vacuum truck which can be parked entirely outside of the stream. The only contact with the stream will be the vacuum hose which will limit disturbance as much as possible. Turbidity will be monitored in case sediment is disturbed.

3. **The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;**

   As discussed in Section III of this report performance standards will be met.

4. **The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;**

   The proposed activity will not affect public services or facilities.

5. **The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and**

   No permanent modification of a critical area is occurring. See Section X for a related condition of approval.

6. **The proposal complies with other applicable requirements of this code.**

   As discussed in this report, the proposal complies with all other applicable requirements of the Land Use Code.

## IX. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, City Code and Standard compliance reviews, the Director of Development Services Department does hereby **approve with conditions** the sediment maintenance proposed within the stream buffer of Sturtevant Creek on the site located at 405 114th Ave. SE to maintain designed culvert capacity. **Approval of this Critical Areas Land Use Permit does not constitute a work permit. A Clearing and Grading permit is required and all plans are subject to review for compliance with applicable City of Bellevue codes and standards.**

**Note- Expiration of Approval:** In accordance with LUC 20.30P.150.A, a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a Clearing and Grading Permit or other necessary development permits within one year of the effective date of the approval. However per LUC 20.30P.150.B, the one year expiration can be extended to allow for a greater period of time. This CALUP approval will expire after three years from the date of approval.

## X. Conditions of Approval

**The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:**

| Applicable Ordinances | Contact Person |
|---|---|
| Clearing and Grading Code- BCC 23.76 | Janney Gwo, 425-452-6190 |
| Land Use Code- BCC Title 20 | Reilly Pittman, 425-452-4350 |
| Noise Control- BCC 9.18 | Reilly Pittman, 425-452-2973 |

**The following conditions are imposed under the Bellevue City Code or SEPA authority referenced:**

1. **Permit Approval for Future Sediment:** This approval allows sediment to be removed on the site for a period of three years without requiring additional Critical Areas Land Use Permits. During the three year allowance a clearing and grading permit will be required each time sediment is proposed to be removed. After three years a new CALUP approval or other applicable Land Use approval will be required for further sediment removal to occur.

   Authority: Land Use Code 20.30P.150
   Reviewer: Reilly Pittman, Development Services Department

2. **Clearing/Grading Permit Required:** Approval of this Critical Areas Land Use Permit does not constitute an approval of a clearing and grading permit. Application for a

clearing and grading permit must be submitted and approved prior to work commencing for each occurrence of sediment removal. Plans submitted as part of the clearing and grading permit application must be consistent with the sediment maintenance plan.

Authority: Land Use Code 20.30P.140
Reviewer: Reilly Pittman, Development Services Department

3. **Obtain all Other Applicable State and/or Federal Permits:** Before work can proceed, all required federal and state permits and approvals must be obtained by the applicant. A copy of the approved Section 404 permit issued by the Army Corps of Engineers and the approved Hydraulic Project Approval (HPA) issued by the Washington State Department of Fish and Wildlife shall be submitted to the City of Bellevue, prior to beginning construction.

   Authority: Land Use Code 20.25H.080
   Reviewer: Reilly Pittman, Development Services Department

4. **Extent of Sediment Removal:** This approval is limited to the estimated amount of 10 to 12 cubic yards of sediment or the amount sufficient to maintain the culvert at the designed and previously approved capacity. Sediment removal shall not increase the capacity of the culvert above the 75 square foot opening designed to provide capacity for the 100-year flood, shall not change the stream profile, or exceed 20 cubic yards.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

5. **Conformance with Sediment Maintenance Plan:** Sediment removal shall be conducted as detailed in the project Sediment Maintenance Plan dated August 2009 prepared by AMEC Geomatrix Inc. The performance standards with the plan and detailed in Section III above shall be followed.

   Authority: Land Use Code 20.30P.140
   Reviewer: Reilly Pittman, Development Services Department

6. **Noise Control:** Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

Authority: Bellevue City Code 9.18
Reviewer: Reilly Pittman, Development Services Department

**XI. Attachments:**

1. Sediment Maintenance Plan – Attachment 1
2. Year 1 and 2 Culvert Monitoring Reports – In File
3. Wetland Delineation and Stream Survey Report, Habitat Assessment, and other information – In File

**Attachment 1**

# REVISED STREAMBED SEDIMENT MAINTENANCE PLAN

Cordova Building
Bellevue, Washington

*Submitted to:*
**J&J Bellevue, LLC, Issaquah, WA**

*Submitted by:*
**AMEC Geomatrix, Inc., Lynnwood, WA**

August 2009

Project 10111.003

AMEC Geomatrix

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## FIGURES



## APPENDIX

# REVISED STREAMBED SEDIMENT MAINTENANCE PLAN
Cordova Building
Bellevue, Washington

## 1.0 INTRODUCTION

J&J Bellevue, LLC (J&J Bellevue) manages the property along Sturtevant Creek located at 405 114th Avenue SE, Bellevue, Washington (Figures 1 and 2). In order to maintain their property and prevent flooding, J&J Bellevue must maintain the flow capacity of the culvert on their property. AMEC Geomatrix, Inc. (AMEC), prepared a Streambed Sediment Maintenance Plan on behalf of J&J Bellevue and submitted the plan to the City of Bellevue in May 2009. In a letter dated July 20, 2009, the City of Bellevue requested additional information be provided to them (see Appendix A). This revised report documents J&J Bellevue's approach to maintaining the flow capacity of the culvert on their property and provides the additional information requested by the City. Per the City's request all revised and new information has been identified with underlining.

## 2.0 BACKGROUND

According to King County's hydrographic information (King County, 2009) and the Washington State Department of Natural Resources' water typing program (DNR, 2009), Sturtevant Creek is a Type F watercourse.

Within the property, Sturtevant Creek is a low-gradient, single-channel stream averaging 6 to 8 feet wide and 2 to 12 inches deep. Within the property, the stream is a pool/riffle complex with no large woody debris. Pools are formed by bends in the creek. Throughout the reach, the dominate substrate is sand. Areas of gravel and cobble exist in the riffles, but are highly embedded.

In 2005, a metal arch culvert adjacent to the Cordova building was replaced with a three-sided box culvert to allow the 100-year floodwaters to pass through the culvert without backing up and flooding the building's parking lot. Replacement of the undersized culvert with a three-sided box culvert resulted in the channel naturally widening, causing water velocity to slow and sediment to deposit. Over the last two years, the capacity of the culvert has been monitored (Geomatrix, 2007; AMEC, 2008). According to the monitoring, the average opening of the culvert is currently 68.88 square feet. This is 6.12 square feet less than the 75 square foot opening expected to be sufficient to convey the 100-year storm event.

A site investigation was completed on September 10, 2007, to determine the possible cause of the sediment deposition. Approximately 950 linear feet of streambank upstream of the culvert was evaluated for signs of erosion. Active erosion was apparent on the right streambank near the Hyatt Hotel, downstream of the culvert running under Interstate 405. The streambank material is dominated by cobbles and gravel. Barring any stabilization measures, this area will continue to provide sediment input to the stream.

To determine susceptibility of the site to continued deposition, basic surveying of channel geometry was conducted. A longitudinal profile and three cross sections were surveyed using a surveyor's level, stadia rod, and surveyor's tape. The longitudinal profile indicates that the channel slope is greater downstream from the lower culvert than upstream (0.4% vs. 0.1%). The cross sections also indicate that the width-to-depth ratio is greater downstream of the culvert than it is upstream. These two components of channel geometry suggest that deposition will tend to occur at the site. When there is a decrease in stream power, such as at an expansion of the channel, deposition can be expected. The increase in width-to-depth ratio at the culverts represents such an expansion. The lower channel slope at the two culverts also indicates that stream power is lower at this site than above or below, increasing the propensity for deposition. Sediment removal in the vicinity of the culvert will need to occur periodically over the life of the culvert or until measures are taken upstream of the culvert to reduce sediment input into Sturtevant Creek.

## 3.0 MAINTENANCE PLAN

To maintain the culvert's capacity to allow the 100-year floodwater to pass through the culvert without flooding the property, sediment removal in the vicinity of the culvert will need to occur periodically. To remove sediment from the streambed, the following permits will need to be obtained (Figure 3):

- Section 404/401 permit from the U.S. Army Corps of Engineers (Corps),
- Water Quality Certification from the Washington State Department of Ecology,
- Hydraulic Project Approval from the Washington Department of Fish and Wildlife (WDFW), and
- Grading permit from the City of Bellevue.

To help expedite the permitting process, this plan describes the methods to be used and will be submitted with all permit applications. The following methods will be used during each sediment removal event:

- Prior to sediment removal, utilities shall be field located prior to sediment removal activities. The appropriate jurisdictions and departments shall be contacted at 1-800-424-5555.

- Prior to sediment removal, block nets will be placed upstream and downstream of the sediment removal area, and a fisheries biologist will attempt to remove fish from within the block nets and release them unharmed downstream using a seine or dip net. Because there are no species listed under the Endangered Species Act in Sturtevant Creek and work will occur in the allowable work window when few if any salmonids are expected to be in the creek, seining and dip netting are an acceptable method to remove fish. Any fish caught will be transported and released downstream using clean buckets. The block nets will remain in place during the duration of the sediment removal. The downstream block net may be silt fence material to aid in reducing increases in turbidity downstream.

- A fisheries biologist will remain on site during the removal process to ensure that fish are not harmed or stranded. Should any fish be observed within the block net area during sediment removal, the sediment removal process will stop and the fish will be netted using a dip net and transported and released using clean buckets, unharmed downstream.

- Sufficient sediment will be removed to restore the carrying capacity of the culvert. However, no more than 20 cubic yards of sediment in the vicinity of the culvert will be removed from the streambed during any sediment removal event. Removal of excess sediment to increase the designed carrying capacity of the culvert will not occur.

- Sediment will be removed using a vacuum truck. The truck will access the stream from the existing culvert crossing. The truck will not be parked on any pervious surface.

- Sediment removal will be conducted during the allowable in-water work window stipulated by the Corps or as specified by the WDFW (currently set from July 1 through August 31).

- Sediment removal is expected to last less than 8 hours.

- Sediment above the water surface will take precedence for removal over sediment below the water surface elevation.

- Sediment will be removed with the vacuum truck in such a way as to minimize the amount of time the vacuum is in contact with flowing water. For example, if a sediment bar is being removed, the vacuum will remove sediment from the center first, working its way toward the sediment/water interface.

- Sediment removal will not result in exposed embankments slopes abutting the creek.

- Sediment removal will not result in a stockpile of sediment, as all sediment removed will be contained within the truck.

- Sediment will be taken to an approved upland disposal facility or recycled at a local landscaping facility by the vacuum truck company.

Unless required by the WDFW, a stream bypass system will not be used. The use of a vacuum truck rather than more traditional methods of sediment removal (i.e., backhoe) is a much more controlled method to remove sediment. Sediment can be removed by the vacuum truck with little to no contact with surface water. In past projects on other streams where a vacuum truck was used to remove sediment, a stream bypass system was not required by the local permitting agency, the WDFW, or the Corps.

Should new permits be required for each sediment removal project, referencing or including this plan with the permitting application should help to expedite the permitting process.

## 4.0 WATER QUALITY MONITORING

Sediment removal may cause temporary and localized impacts on water quality in the vicinity of the removal area. A slight increase in turbidity will occur in a limited mixing zone downstream of active work area. A silt curtain will be placed downstream of the active work area to reduce turbidity downstream and act as a block net. Also, elevated turbidity plumes that may occur in localized areas near active sediment removal are expected to dissipate relatively rapidly.

To ensure state water quality standards are met (i.e., not to exceed 5 nephelometric turbidity units [NTUs] above background conditions or 10 percent above background conditions if background exceeds 50 NTUs), turbidity will be monitored 100 feet upstream and downstream of the sediment removal area (Figure 2). The upstream stations will measure background conditions. A trained inspector or water quality professional will conduct the turbidity monitoring. Turbidity will be measured at both locations before the start of sediment removal and hourly thereafter until removal of the block nets and/or silt curtain. Should an exceedance of the turbidity standard occur during sediment removal, the removal process will stop. The trained inspector or water quality professional will conduct an investigation to determine the cause of the increase in turbidity and additional best management practices (BMPs) will be employed. BMPs will be at the discretion of the inspector/professional, but could include instillation of a silt fence (if not already in place), reducing the amount of sediment to be removed, reducing the rate of sediment removal, or stopping the removal altogether.

A water quality monitoring report will be submitted to the City of Bellevue. Because the sediment removal process is expected to last one day or less, only one report is anticipated. However, should the removal occur for more than one day, daily or weekly reports will be submitted. An example of a report form is show on Figure 4. At a minimum, the report will consist of the following information:

- Date – date the monitoring is occurring;
- Inspector's name;
- Instrument calibration notes;
- Station location – upstream or downstream;
- Time turbidity is measured – hh:mm;
- Turbidity value – NTU;
- Time sediment removal begins;
- Time block nets are removed; and
- Comments – fish observation, stop work issuances by inspector, additional BMPs employed, any other relevant information.

## 5.0 REFERENCES

AMEC (AMEC Geomatrix, Inc.), 2008, Year 2 Monitoring, Cordova Culvert Monitoring, Bellevue, Washington: Prepared for J&J Bellevue, LLC, Issaquah, Washington.

DNR (Washington State Department of Natural Resources), 2009, Water Typing Map: DNR, Forest Practices Division, Olympia, http://www3.wadnr.gov/dnrapp5/website/fpars/viewer.htm (accessed April 2, 2009).

Geomatrix (Geomatrix Consultants, Inc.), 2007, Year 1 Monitoring, Cordova Culvert Monitoring, Bellevue, Washington: Prepared for J&J Bellevue, LLC, Issaquah, Washington.

King County, 2009, iMAP – Hydrographic Information: King County, GIS Center, Seattle, Washington, http://www.metrokc.gov/gis/mapportal/iMAP_main.htm (accessed April 2, 2009).

# FIGURES


Photo Courtesy of USGS

APPROXIMATE SCALE IN FEET

0 200 400 800

47.60457 N Lat. / -122.18756 W Long.

Section: 32
Township: 25
Range: 5

DRIVING DIRECTIONS (From I-405 Southbound):

| | |
|---|---|
| Take exit 12 for SE 8th St | 0.2 mi |
| Turn right at SE 8th St | 279 ft |
| Turn right at 114th Ave SE | |
| Destination will be on the left | 0.3 mi |

DRIVING DIRECTIONS (From I-405 Northbound):

| | |
|---|---|
| Take exit 12 for SE 8th St | 0.2 m |
| Follow signs for 118th Ave SE | 482 ft |
| Turn left at SE 8th St | 0.1 mi |
| Turn right at 114th Ave SE | |
| Destination will be on the left | 0.3 mi |

SITE VICINITY

Cordova Building
Bellevue, Washington

| By: GSM | Date: 5/11/2009 | Project No. 10111.003 |
|---|---|---|
| AMEC Geomatrix | | Figure 1 |

Plot Date: 05/11/09 - 2:10pm, Plotted by: gary.maxwell
Drawing Path: P:\SanMar Corp\10111-003 Cordova Sediment\CAD\JARPA sediment removal figures\, Drawing Name: Sediment Removal.dwg


Photo Courtesy of USGS

47.60457 N Lat. / -122.18756 W Long.

Section: 32
Township: 25
Range: 5

N

APPROXIMATE SCALE IN FEET

0 40 80 160

Existing Mitigation Area

Sediment Removal Area

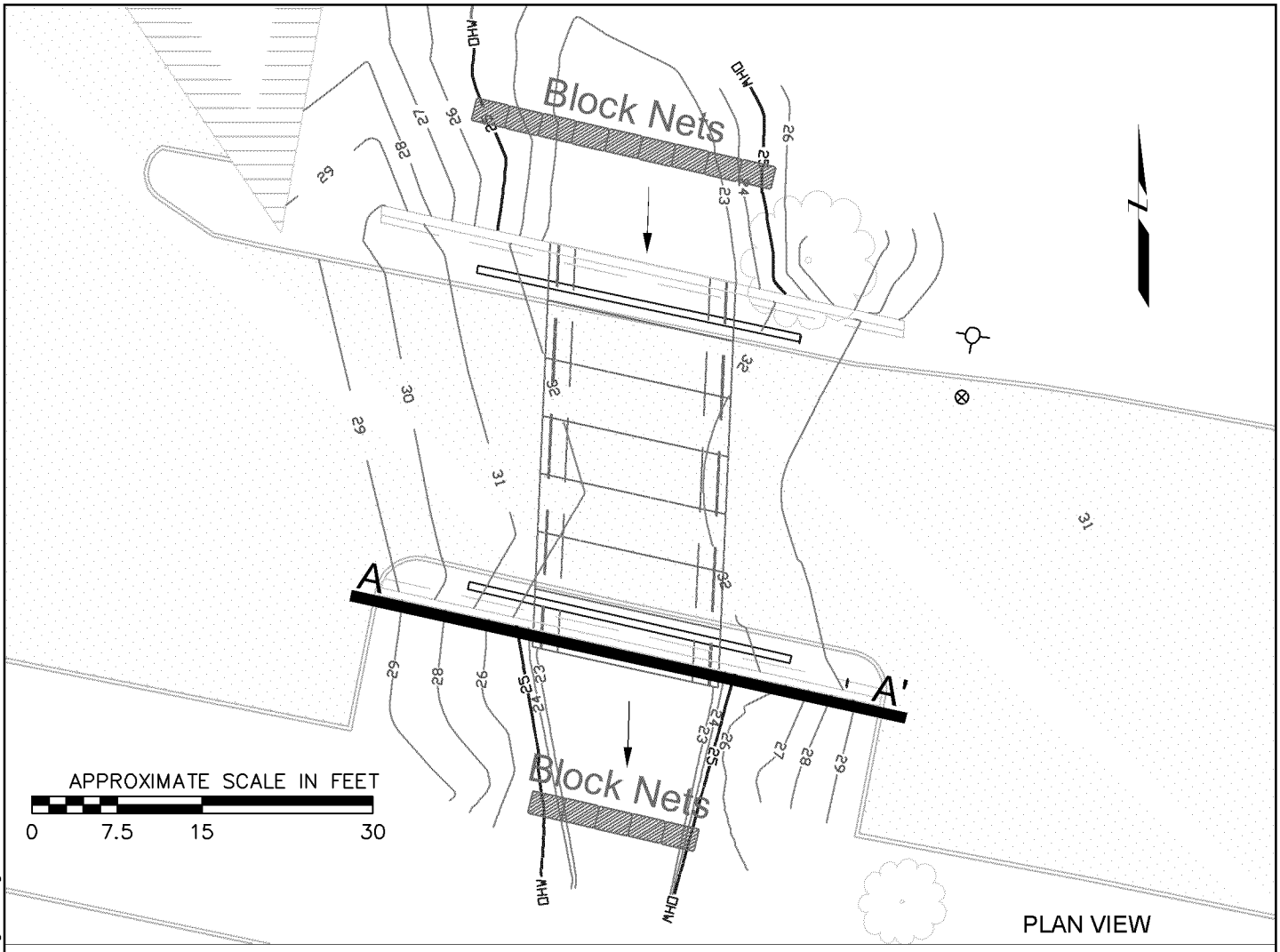
Water Quality Monitoring Station (100' Upstream & Downstream of Sediment Removal Areas)

PROJECT LOCATION

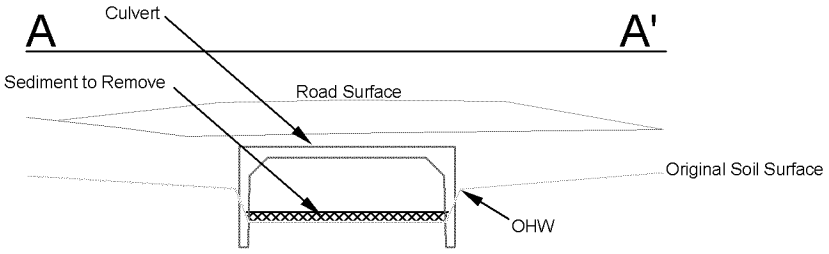
Cordova Building
Bellevue, Washington

| By: GSM | Date: 6/20/2009 | Project No. 10111.003 |
|---|---|---|
| AMEC Geomatrix | | Figure 2 |

Plot Date: 08/20/09 - 11:39am, Plotted by: gary.maxwell
Drawing Path: P:\SanMar Corp\10111-003 Cordova Sediment\CAD\JARPA sediment removal figures\, Drawing Name: Sediment Removal.dwg




PLAN VIEW




Not to Scale

CROSS SECTION VIEW

47.60457 N Lat. / -122.18756 W Long.

Section: 32
Township: 25
Range: 5

SEDIMENT REMOVAL

Cordova Building
Bellevue, Washington

| By: GSM | Date: 5/11/2009 | Project No. 10111.003 |
|---|---|---|
| AMEC Geomatrix | | Figure 3 |

Plot Date: 05/11/09 - 2:13pm, Plotted by: gary.maxwell
Drawing Path: P:\SanMar Corp\10111-003 Cordova Sediment\CAD\Sediment Removal\, Drawing Name: Sediment Removal Figure 3.dwg

# APPENDIX A

City of Bellevue June 20, 2009 Letter

City of Bellevue

Post Office Box 90012 ▪ Bellevue, Washington ▪ 98009 9012

July 20, 2009

Jordan Lott
J&J Management
30500 SE 79th St.
Issaquah, WA 98027

**RE: 09-113567-LO, Cordova Building Stream Sediment Maintenance, 405 114th Ave. NE**

Dear Mr. Lott,

I have reviewed the above Critical Area Land Use Permit (CALUP). The notice of application for this permit occurred on June 11th and had a 14-day public comment period that expired on June 25th. This application requests Land Use approval for the periodic removal of sediment from Sturtevant Creek (Type-F stream) where it passes through a culvert on the site.

The Land Use code does not have specific requirements or performance standards for sediment removal but does have general standards for streams in LUC 20.25H.080 and there are also BMPs which are applicable to this project. Approval of this application is for overall Land Use approval of the activity. A clearing and grading permit which includes SEPA review and a temporary erosion control plan will be required to conduct the proposed work now and for each occurrence when needed in the future.

**I. The following BMPS or equivalent are typically applied to sediment removal proposals and will apply to this project in addition to the proposed measures as conditions of approval. The below items may require changes to the submitted Sediment Removal Plan where applicable:**

1. To mitigate adverse impacts to the fisheries resources, in-water work in tributaries to Lake Washington shall be limited to the time period of July 1 to August 31, or as specified by the Hydraulics Project Approval issued by the Washington State Department of Fish and Wildlife. Response: See Section 3.0, 2nd Paragraph, Bullet #6

2. To mitigate impacts on existing fish populations and to prevent sediment from being conveyed downstream during construction, a stream bypass system is required. The following items must be shown on the Sediment Removal Plan and future clearing and grading plans when stream bypass systems are to be implemented during construction:

   Response: See Section 3.0, 3rd Paragraph

   a. Flow should be diverted to a point downstream of the construction sites through a pipe or pump. Ensure pipe outlet is stabilized to prevent scour and erosion. Pump and bypass should be designee or reviewed by an engineer to ensure capacity can handle peak flows.

b. The bypass systems must be in operation prior to commencing grading and clearing on the site.

c. Pumps should be provided to ensure diverted stream flow moves through the pipe. A backup pump is also required in case the primary pump fails.

d. Temporary permeable barrier structures or devices should be installed downstream of the construction sites, which are designed to trap residual sediments after construction is complete and before full flow is restored.

e. Water should be pumped from the construction sites due to groundwater flow or precipitation into the sanitary sewer, settling tanks or an appropriately designed sediment pond.

3. To mitigate potential water quality degradation or other impacts if a utility line were broken during construction, utilities shall be field located prior to construction activities. The appropriate jurisdictions and departments shall be contacted at 1-800-424-5555.
Response: See Section 3.0, 2nd Paragraph, Bullet #1
4. To minimize the downstream discharge of sediments where the magnitude of the maintenance activity could result in a discharge of more than two cubic yards of sediment, the following shall be incorporated into any temporary erosion and sedimentation control plan submitted with the clearing and grading permit application:

   a. As part of the clearing and grading applications for activities in this proposal or at the request of the clearing and grading supervisor following notification of intent to do work, turbidity monitoring plans shall be submitted to ensure state water quality standards (i.e. not to exceed 5 NTUs above background or 10% above background if background exceeds 50 NTUs) are maintained downstream of the project areas. Reporting requirements shall be identified within the Clearing and Grading Permit and at a minimum shall include:

      i. A trained inspector or water quality professional shall be engaged to conduct the required monitoring and reporting.

      ii. Monitoring locations shall be specified on the clearing and grading plans.

      iii. Weekly monitoring reports must be submitted to the PCD during the excavation and stabilization phase. Response: See Section 4.0

   b. Exposed embankment slopes abutting creeks shall be stabilized using erosion control blankets (coir or jute or equivalent) in combination with restoration planting. Response: See Section 3.0, 2nd Paragraph, Bullet #10

   c. All slopes, stockpiles and disturbed soils that could drain directly into creeks shall be covered at the end of each working day or when there is a likelihood of measurable precipitation. Response: See Section 3.0, 2nd Paragraph, Bullet #11

5. Fish within major project work areas must be removed by installing nets 30 feet upstream and downstream at either end of the project area and by four-pass electrofishing. Stranded fish must be removed with dip nets from remaining pools. Fishnets shall remain in place during construction. If threatened Puget Sound chinook are found, electrofishing will cease and fish removal will be accomplished by dragging a net downstream. Fish will be transported in clean buckets and released downstream of the project areas. Response: See Section 3.0, 2nd Paragraph, Bullets # 2 and 3

**II. The following issues were identified from review of the permit documentation:**

6. Please provide the following information in an addendum to the submitted Sediment Maintenance Plan dated May 2009: Response: See Section 3.0, 2nd Paragraph, Bullet #6
   a. A vactor truck is proposed to remove the sediment. Please clarify if the truck will access the stream from the existing culvert stream crossing or if a temporary access will be constructed. Response: See Section 3.0, 2nd Paragraph, Bullet #12
   b. Please state the disposal methods for the removed sediment.
   c. As sediment buildup will continue to be an issue on this site requiring permits for removal, a threshold needs to be established where sediment will be removed once the culvert opening is reduced to the established threshold. Response: See Section 3.0, 2nd Paragraph, Bullet #4

Please resubmit the requested information to the permit center with the enclosed revisions/additions form within 60 days of the date of this letter in order for review of the permit to continue. If no revisions or time extension requests are received within 60 days the permit will be cancelled without further notice.

If you have any questions regarding these issues and revisions I would be happy to talk with you. I can be reached at (425) 452-4350 or at rpittman@bellevuewa.gov.

Sincerely,

Reilly Pittman
Associate Planner

En: Revisions/Additions Form

Cc: Michael Paine, Environmental Planning Manager