



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

Proposal Name: Programmatic Sediment Removal

Proposal Address: City-wide Storm & Surface Water Facilities

Proposal Description: The applicant is requesting a SEPA Threshold Determination associated with a Clearing and Grading Permit for programmatic, operational maintenance that entails the removal and disposal of collected sediment from various storm water facility sites.

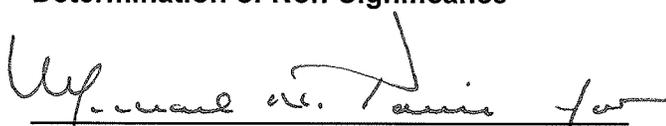
File Number: 10-109363 XD

Applicant: Don McQuilliams, City of Bellevue Utilities

Decisions Included: SEPA Threshold Determination

Planner: Kevin LeClair, Planner

**State Environmental Policy Act
Threshold Determination:** **Determination of Non-Significance**


Carol V. Helland, Environmental Coordinator
Development Services Department

Application Date: April 5, 2010
Notice of Application Publication Date: April 15, 2010
Decision Publication Date: May 20, 2010
Project/SEPA Appeal Deadline: June 3, 2010

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.

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Attachments

1. Environmental Checklist
2. *Storm & Surface Water In-Stream Sediment Removal Programmatic Permit Maintenance Standards, with Attachments*

I. Proposal Description

The Storm and Surface Water section of the Bellevue Utilities Department is requesting a SEPA Threshold Determination associated with a programmatic clearing and grading permit for the maintenance of multiple, in-stream sediment collection facilities throughout the City. The maintenance includes the removal of varying quantities of accumulated sediment that settles out of the water column and collects either in designed and constructed sedimentation or detention facilities or at the openings of culverts and flow control structures.

This permit specifies the sites that are maintained on a regular basis and establishes maximum allowable quantities of material to be removed in order for the facility to function as designed. In addition, this permit provides a procedure updating and/or adding new locations dependent on the design type and function.

This permit includes the requirement that qualified city staff and contractors use site-specific best management practices and document these activities to ensure compliance with the terms of the permit and protect the resource. A description of the proposed maintenance activities, the sites and best management practices is included in Attachment 2: *Storm & Surface Water In-Stream Sediment Removal Programmatic Permit Maintenance Standards*.

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

A. Site Description

The location and characteristics of each site vary widely, but the sites can be categorized into five types based on their intended function and design. These include:

- Detention facilities
- Sedimentation facilities
- Pipe ends & culverts
- Flow stations
- High flow bypass inlets/outlets

B. Zoning

The zoning of the properties where the storm and surface water facilities are located varies depending on the individual site. In all cases, the site would be governed by the regulations contained in the critical areas overlay, due to the in-stream nature of the facilities themselves.

C. Land Use Context

The context of the sites included in this permit varies. The detention facilities, sedimentation facilities, flow stations and high-flow bypass structures are generally isolated from residential or commercial developments and located in densely-vegetated, low-lying depressions in close proximity to arterials or highways.

The pipes and culverts are located throughout the city. These facilities cross under

arterial roadways and are generally outside of neighborhoods. The only notable exception is four culverts in the Newport Shores neighborhood.

D. Critical Areas Functions and Values

i. Streams and Riparian Areas

Streams are classified into four types, based on their flow and capacity to support fish. Artificial channels (e.g., ditches) are generally not protected, unless they are used by salmonids or convey a stream that previously occurred naturally in that location.

Stream needs healthy riparian areas along its banks and floodplain. Riparian vegetation provides shade, which protects water quality; retains soil, which prevents erosion that can affect salmon spawning and feeding areas; holds back flood flows; and provides wildlife habitat and the large woody debris that stores sediments, slows flood velocities, and creates good fish habitat.

ii. Wetlands

Wetlands include the vegetated edges of ponds and areas commonly called swamps, marshes, and bogs. Frequently, their water is only visible in the spring. Wetlands are classified into four categories, based on a combination of habitat, water quality, and flood-flow-reduction functions.

Wetlands provide rearing and foraging habitats for fish and wildlife and food chain support for downstream waters. Wetlands provide natural water quality improvement; flood-flow reduction and storage; shoreline erosion protection; and opportunities for passive recreation. Many urban wetlands are heavily disturbed, but still provide valuable water quality treatment and flood-flow reduction.

iii. Floodplains

Flood hazard areas are those subject to 100-year floods (identified on FEMA Flood Insurance Rate Maps). These areas are designated to protect development from flooding and to protect the inherent functions of floodplains. Undeveloped floodplains store water and slow the downstream delivery of flood flows, reducing the impacts of a flood and recharging wetlands, streams and underground aquifers. Floodplain development reduces the floodplain's water storage capacity and puts valued property and infrastructure in the path of floodwaters. Runoff from impervious surfaces changes flood size and frequency and can degrade water quality.

iv. Habitat Associated with Species of Local Importance

Species of local importance are specifically recognized local populations of native species that are at risk of being lost from Bellevue—western pond turtle, Oregon spotted frog, western toad, Chinook salmon, bull trout, coho salmon, river lamprey, bald eagle, peregrine falcon, common loon, pileated woodpecker, Vaux's swift, merlin, western grebe, great blue heron, osprey, green heron, red-tailed hawk, western big-eared bat, Keen's myotis (bat), long-legged myotis (bat), and long-eared myotis (bat)—and whose presence can be an indicator of environmental health.

Habitats for these species provide the food, water, nesting/rearing, and cover necessary to support their populations. Protected habitats include naturally occurring ponds under 20 acres, concentrations of dead trees, caves and roosting structures, and large stands of conifers.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The sites are located in various zoning districts. No development of structures is proposed, therefore the general dimensional requirements of the zoning district do not apply.

B. Performance Standard for Uses Allowed within Critical Areas LUC 20.25H.055 Repair and Maintenance and/or Construction Staging (LUC 20.25H.055.C.1)

The work described in the applicant's *Storm & Surface Water In-Stream Sediment Removal Programmatic Permit Maintenance Standards* (Attachment 2) and reviewed in this report is considered repair and maintenance under the terms of the critical areas overlay district.

The code requires that the work be consistent with all applicable City of Bellevue codes and standards. The applicant has applied for and demonstrated compliance with the applicable codes and standards related to the proposed work. The demonstration of these standards is described herein.

Removal of significant trees is prohibited for repair and maintenance activities associated with storm and surface water facilities, unless it is deemed a hazard. If a tree is deemed a hazard by a qualified professional, its removal would be reviewed as a revision to the clearing and grading permit, and restoration would be required.

All areas of temporary disturbance associated with the maintenance activities shall be restored to pre-project conditions, pursuant to a the application of the best management practices contained in the applicant's *Storm & Surface Water In-Stream Sediment Removal Programmatic Permit Maintenance Standard*.

C. Performance Standards for Critical Areas:

Performance Standards for streams (LUC 20.25H.080)

The applicant has demonstrated compliance with the applicable performance standards for streams.

There will be no lighting associated with proposed maintenance activities, unless there is an emergency that requires the mobilization of the activities outside of daylight hours. If this is the case, the impacts will be temporary in nature for the duration of the necessary action to ensure protection of the facility or the surrounding infrastructure that is threatened by the blockage. No permanent lighting will be installed.

The activities that generate noise will be temporary and associated with equipment used to excavate sediment, dewater work areas, and bypass the stream flow. The noise will be minimized to greatest extent possible by keeping machinery in good working condition. The noise cannot be avoided altogether because activities require the use of machinery such as dump truck, backhoes, vector trucks, and pumps.

No new impervious area will be created as part of the maintenance activities. Most of the sites are accessed from existing, developed rights-of-way. All maintenance access roads off the public right-of-way for facilities were constructed along with the installation of the facility itself.

Water that is removed from the work areas is often allowed to be released back into the stream. The water is passed through "Baker Tanks", filter fabrics or dispersed on the adjacent uplands in order to allow the suspended sediments to be filtered before reentering the stream.

No significant vegetation is planned to be removed as part of this permit, therefore replanting of the outer edge of the stream critical area buffer is not required. It is allowed and expected that some non-significant vegetation may be removed when it is physically growing in the sediments that are to be removed by the maintenance activities. Generally, this vegetation is non-woody, herbaceous material or grasses. From time to time, tree seedlings germinate in the sediment. These seedlings will be removed before they become significant.

If significant trees (greater than 4 inches in diameter at 4.5 feet above the existing grade) have developed in the sediment within the developed area of the facility and must be removed because they pose a risk to the function of the facility, their removal must be mitigated with the planting of three trees on the adjacent upland, outside of the functional area of the facility. Large woody debris (wood greater than 4 inches in diameter and/or 8 feet in length) generated from the tree removal or removed from the facilities must be placed within the stream or stream buffer either upstream or downstream of the facility.

No pesticides, insecticides and fertilizers are proposed for use within 150 feet of the stream critical area.

Performance Standards for wetlands (LUC 20.25H.100)

The applicant has demonstrated compliance with the applicable performance standards for wetlands.

There will be no lighting associated with proposed maintenance activities, unless there is an emergency that requires the mobilization of the activities outside of daylight hours. If this is the case, the impacts will be temporary in nature for the duration of the necessary action to ensure protection of the facility or the surrounding infrastructure that is threatened by the blockage. No permanent lighting will be installed.

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If significant trees have developed in the sediment within the developed area of the facility and must be removed because they are a high-risk to the function of the facility, their removal must be mitigate with the planting of three trees on the adjacent upland, outside of the functional area of the facility. The large woody debris (wood greater than 8 inches in diameter) generated from the removal must placed within the stream or stream buffer either upstream or downstream of the facility.

No pesticides, insecticides and fertilizers are proposed for use within 150 feet of the wetland critical area.

Performance standards for areas of special flood hazard (LUC 20.25H.180.C)

The code states, “where use or development is allowed pursuant to LUC 20.25H.055, the following general performance standards apply.” These performance standards are applicable to intrusions over the area of special flood hazard with structures. The proposed maintenance activities do not include the development of any additional structures with the area of special flood hazard. The maintenance activities proposed in this permit are intended to maintain the function of the storm and surface water system and prevent flooding outside of predetermined areas of the floodplain and protect permitted structures from the threat of flooding due to functional degradation of the constructed facilities.

Performance Standards for Habitat associated with Species of Local Importance (LUC 20.25H.160)

Habitat associated with species of local importance will be impacted by a proposal. The proposals included a series of best management practices that will be carried out by trained individuals. The proposal has received the approval from the Department of Fish and Wildlife.

The applicant has prepared fish exclusion and stream bypass plans to be implemented as part of the maintenance activities. Sediment removal activities at the In-Stream Detention facilities and other locations where fish have been identified, requires diverting the stream, dewatering the construction area and the implementation of measures to exclude and remove fish from the reach. BMPs to minimize or reduce impacts to aquatic resources will be implemented. Fish exclusion work prior to dewatering will be performed in accordance with the WDFW Hydraulic Project Approval issued to the City of Bellevue Utilities Department. A copy of the permit will be kept in the possession of the field personnel during fish exclusion and collection activities.

IV. Public Notice and Comment

Application Date: April 5, 2010
Public Notice (500 feet): April 15, 2010
Minimum Comment Period: April 29, 2010

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on April 15, 2010. One comment letter was received via electronic mail from Karen Walter, with the Muckleshoot Indian Tribe Fisheries Division.

The following is a summary of the comments, followed by responses prepared by the City.

How long is this programmatic SEPA environmental review applicable? The previous programmatic document was a 2-year SEPA based on the City's responses.

The permit and SEPA threshold determination will be for a period of three years from the date of issuance, unless conditions changes significantly enough to warrant a completely new review and threshold determination.

How many instream sediment ponds or facilities does the City own or maintain? Where are these facilities located?

There are two large in-stream sedimentation ponds along Coal Creek and another larger facility on Lakehurst creek. The remainder are pipe ends, inlets/outlets and control structures for the large detention sites. There are 52 individual sites contained in the permit.

Several of the sites identified in Attachment A are shown to be culverts. How many of these culvert sediment removal projects are due to undersized culverts, that is culverts that are sized incorrectly for the stream flows and contributing basin area and sediment transport? If these culverts were replaced with larger culverts, how many would still require annual sediment maintenance?

This information is unknown but it is fair to say that replacing existing culverts requiring maintenance with larger culverts may reduce the maintenance interval if not the regular maintenance.

Will instream wood be removed as part of these maintenance actions? If so, how much wood will be removed, from which streams and where will the wood be removed?

No instream LWD will be removed unless it is causing a blockage of the facility.

What are the City's long term plans to better manage stormwater to avoid and/or minimize the sediment removal maintenance activities that removes instream sediment, dewater stream sections, and forces the physical removal of any salmon occupying these areas annually? The BMPs used for this programmatic work is helpful but does not fully mitigate impacts associated with these annual maintenance activities.

Culverts have been upgraded that allow for ease of maintenance while lessening the impacts to the stream itself during maintenance operations.

What were the project changes needed in 2009 that required changes to the 2008 permit? Is there a table or other information that shows the changes by the stream or

project type and changes in sediment quantities?

The current site list with quantities is contained in Attachment 2 The 2008 project (08-123427-LM), for comparison, listed the following quantities: Creeks – 1-5 yards, Major Culverts – 10-25 yards (except SE 30th St on Sunset Creek and Kamber Rd on Richards Creek both with 50 yards), Regional Detention Facilities – 5-10 yards, and Regional Sedimentation Removal Facilities – 500-1500 yards.

Were any fish killed during dewatering and removal methods during the last programmatic permit? If so, how many and what species?

No fish were killed during the last permit cycle.

Were turbidity standards exceeded at any of the sites?

Not that the applicant is aware of. Turbidity is regularly tested at the sites, but no records exist to show any readings in excess of turbidity standards.

The Muckleshoot Indian Tribe Fisheries Division (MITFD) would like to receive all reports documenting injuries or mortalities to ESA-listed and non-ESA listed fish species as report to the Services and WDFW.

As a condition of the clearing and grading permit associated with the SEPA threshold determination (10-109363 XD), the Development Services Department will be receiving a consolidated season-end report that includes the following pieces of information: sites inspected and found to be in need of maintenance, sites maintained, quantity of sediment removed, fish exclusion reports, turbidity monitoring reports. Either Don McQuilliams or Kevin LeClair, at the end of the season, will provide MITFD notice that the report is available.

The MITFD would also like to be notified of any unanticipated workload procedures when WDFW is notified.

See response above, it will be made available at the end of the season.

V. Summary of Technical Reviews

Clearing and Grading:

The Clearing and Grading Division of the Development Services Department reviewed the proposal 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)

Adverse impacts which are less than significant are usually subject to City Codes or Standards which are intended to mitigate those impacts. Where such impacts and regulatory items correspond, further documentation is not necessary. For other adverse impacts which are less than significant, Bellevue City Code Sec. 22.02.140 provides substantive authority to mitigate impacts disclosed through the environmental review process.

While routine maintenance of the open components of the surface water system have specific benefits for long-term water quality and flood control, these maintenance

activities, if not properly implemented, could cause potentially significant adverse environmental impacts to resident and anadromous salmonids and their habitat, including species listed as threatened under the Endangered Species Act. Specific best management practices and conservation measures to mitigate possible impacts to fish are included in Attachment 2 with this application; therefore, the issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements. Please refer to Attachment 2 for list of typical BMPs based on maintenance activities. Other conservation measures used in maintenance efforts are outlined in King County's Regional Road Maintenance - Endangered Species Act Program Guidelines.

A. Earth and Water

1) Quantity of Sediment

The quantity of sediment which will be removed under this program varies based on facility type. This seasonal, annual maintenance work occurs during a period from June 15 to September 30, when in-stream work is allowed under Hydraulics Project Approval (HPA) permits from the Washington State Department of Fish and Wildlife (WDFW). The site/facility list in Attachment 2 displays the maximum allowable sediment volumes to be removed from facilities on an annual basis. This value is determined based on the designed volume or the existing configuration of the facility

The Regional Detention Facilities and Regional Sedimentation Removal Facilities are inventoried and incorporated into the maintenance schedule requirements under the Western Washington Phase II Municipal Stormwater Permit.

To ensure compliance with the allowed removal amounts, the applicant will prepare site inspections in the spring months before the work season and prepare a list of sites proposed for maintenance work. This list will include estimates of the amount of material expected to be removed. Extraction logs will be kept by the crew or contractor on site. Following the work season, a report will be presented to Development Services that contains the actual amount of material removed.

2) Method of Sediment Removal

Methods of sediment removal vary based on facility type. Attachment 2 provides the detailed best management practice information for the removal of sediment from the identified facilities. Methods for removing sediment are summarized in the bulleted list below.

- Vactor (Eductor) – Indicates removal of sediment to be conducted with the use of a Vactor (Eductor) truck capable of vacuuming sediment directly from the site into a storage tank on the truck. Water accumulated through this process will be typically decanted onsite with filtration BMP's utilized before the water is allowed to re-enter the stream. Sediment accumulated will be disposed of as outlined in the Sediment Management Plan section of Attachment A.
- Excavator – Indicates removal of sediment from the site through the use of an excavator or backhoe. Sediment will be deposited directly into awaiting dump trucks or temporarily stockpiled to allow water within the sediment to drain off. All stockpiled materials will have approved BMP measures in place to prevent sediment laden waters from re- entering the site. Excavator operators will evaluate the site for access, enter and exit the site in a manner to prevent unnecessary damages to vegetation and

stream banks and grade any ruts or other potential erosion concerns upon completion of the work.

- Hand Work – In certain circumstances, hand work will be necessary to accomplish the job. This typically entails brushing of grasses, blackberries or other shrubs to clear the work zone prior to excavation or vector activities. Hand work of this type will be restricted to the work area itself and all efforts will be taken to minimize unnecessary damages to surrounding vegetation. BMP's as needed will be utilized if the work bears erosion concerns to adjacent waters.

3) Erosion and Sediment Control

Specific erosion and sedimentation control BMP's for individual project sites will be implemented per Clear and Grade Code Section 23.76. BMP's that involve stream diversion or bypass have also received an HPA from WDFW.

Turbidity monitoring records will be kept and submitted to ensure state water quality standards are maintained downstream of the project areas. State water quality standards state, "Not to exceed 5 NTU over upstream turbidity when upstream turbidity is 50 NTU or less; and not to exceed 10% above upstream turbidity when upstream turbidity is greater than 50 NTU" (WAC 173.201A-200).

In the event that embankments or slopes abutting creeks become exposed, they shall be stabilized using erosion control blankets (coir or jute or equivalent) in combination with restoration planting.

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.

The Utilities Department shall notify the Development Services Department at least 48 hours prior to the commencement of maintenance activities of any site that is anticipated to take

Removed sediment will be tested and disposed according to WAC 173.350.

B. Animals

Chinook and Coho salmon are known to use the Kelsey Creek and Coal Creek systems for spawning and rearing. The National Marine Fisheries Service has identified Puget Sound Chinook salmon as threatened and requiring the protection afforded by the Endangered Species Act of 1973. Coho salmon are a candidate species and may be listed in the future. Both species potentially occur in the vicinity of the utilities maintenance program. In addition, United State Fish and Wildlife Service has listed the coastal population of bull trout as threatened, but they are not likely to occur in the project areas.

The proposed maintenance activities may affect populations of Chinook salmon and coho salmon within the project areas. Maintenance activities will likely result in a temporary increase in the amount of suspended sediments entering the water column which can potentially disrupt spawning areas by silting spawning gravel. Increased sediments may also deplete levels of available oxygen. However, with the implementation of best management practices and conservation measures, the populations of these species are not likely to be adversely affected. Impacts can be mitigated through the

implementation of best management practices in erosion sedimentation control outlined above, as well as creating additional passage and habitat opportunities and by limiting construction to times that reduce the risk to salmonids. Long term maintenance of these streams and ditches will likely benefit fish by improving water quality and fish passage.

Fish Protection during Work

Fish within the project work area are removed by installing nets 20-30 feet upstream and downstream at either end of the project area or 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.

Maintenance will take place during in-water windows specified by Washington between June 15 and September 15 or as regulated by the HPA issued by WDFW, whichever is more stringent.

Work sites will be monitored during work and if fish are observed in distress or water quality problems occur, work will stop and WDFW and the Department of Ecology will be notified immediately.

C. Plants

Alteration or disturbance of the land and bank vegetation shall be limited to that necessary to complete-the project. The banks of the streams shall not be disturbed. Approved erosion and sedimentation control BMPs will be implemented to protect disturbed banks and revegetation with native or other approved woody species will be required in accordance with the City of Bellevue Critical Areas Handbook.

D. Noise

Noise generated by maintenance activities will be limited by the City's Noise Ordinance (Chapter 9.18 BCC) which regulates construction hours and noise levels. See Section X for a related condition of approval.

VII. Changes to proposal as a result of City review

No significant changes were made to the proposal as a result of City review. Additional information was requested to complete the review. This information was provided and included in Attachment 2.

VIII. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of Planning and Community Development does hereby **approve with conditions** the Clearing and Grading Permit for sediment removal from various storm & surface water facilities city-wide.

Note- Expiration of Approval: In accordance with LUC 23.76, this Clearing and Grading Permit is effective for three years from the date of issuance.

IX. Conditions of Approval

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

| <u>Applicable Ordinances</u> | <u>Contact Person</u> |
|--------------------------------------|-----------------------------|
| Clearing and Grading Code- BCC 23.76 | Savina Uzunow, 425-452-7860 |
| Land Use Code- BCC 20.25H | Kevin LeClair, 425-452-2928 |
| Noise Control- BCC 9.18 | Kevin LeClair, 425-452-2928 |

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

1. Rainy Season restrictions: Due to the proximity to streams, no clearing and grading activity may occur during the rainy season, which is defined as November 1 through April 30 without written authorization of the Development Services Department. Should emergency approval be granted for work during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work. Notification of such activities shall follow the protocol described in Attachment A.

Authority: Bellevue City Code 23.76.093.A,
Reviewer: Savina Uzunow, Clearing and Grading

2. 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: Kevin LeClair, Land Use

3. In-Water Work Window: Work in the active channel approved by the associated Clearing and Grading Permit must be completed during the in-water work window specified below, unless otherwise permitted in writing by the Washington Department of Fisheries and Wildlife. The removal of small debris such as brush and limbs and wood less than 4 inches diameter and less than 8 feet long may occur at any time at all locations, if the wood is determined to be affecting or could negatively affect the function of the facility as designed.

June 16 through August 31

D502 – Coal Creek upper sedimentation facility
D501 – Coal Creek regional detention pond
D503-6 – Coal Creek Culverts – Newport Shores
D512 – Coal Creek flow station
D209 – Kelsey Creek regional detention pond
No site # – Kelsey Creek Tributary at Lake Hills Farm
D213 – Lower West Tributary of Kelsey Creek regional detention pond
D210 – West Tributary regional detention pond
PE 17099 – Richards Creek culvert
D309 – Richard Creek flow station
PE 17092 – Unnamed Tributary to Richards Creek culvert

June 16 through September 30

All other sites.

Authority: Land Use Code 20.25H.160
Reviewer: Kevin LeClair, Land Use Division

4. Annual Preconstruction Meeting: As one form of inspection related to the clearing and grading permit, and to review and communicate applicable performance standards and best management practices, an annual preconstruction meeting will be held. The attendees at this meeting shall include representatives from the Bellevue Utilities Department, Development Services Department-Land Use Division, and Development Services Department-Clearing and Grading Section. A representative from the Washington State Department of Fish and Wildlife and the Muckleshoot Indian Tribe Fisheries Division should be notified of this meeting, but his/her attendance is not mandatory. The meeting shall take place prior to the commencement of permitted maintenance activities for the season.

The agenda for the meeting shall, at a minimum include:

- Present the list of inspected sites and those scheduled for seasonal maintenance
- Compare maintenance site list with the list attached to the approved permit
- Review seasonal schedule with assignment of staff or contractor lead
- Additional maintenance sites not included on the pre-approved site list, as referenced on page 7 of the attached, *Storm & Surface Water In-Stream Sediment Removal Programmatic Permit Maintenance Standards*

Authority: Bellevue City Code 23.76.160
Reviewer: Savina Uzunow, Clearing and Grading

5. Annual Post-construction Reporting: To ensure best management practices were followed and were effective at protecting sensitive surface water resources, a report shall be prepared and submitted to the Development Services Department no

later than November 30 of the applicable season. At a minimum, the report shall include the following information organized by site:

- Sites inspected
- Sites maintained
- Quantity of material removed
- Fish capture and relocation records (include reporting of any fish kills, as necessary)
- Turbidity monitoring records
- Documentation by site of all large woody debris and any significant trees removed

Authority: Bellevue City Code 23.76.160

Reviewer: Savina Uzunow, Clearing and Grading

6. Adaptive Management of Facilities: This clearing and grading permit structured to require pre-season coordination of the anticipated workload to be completed by the Bellevue Utilities Storm & Surface Water Division. Following the work season, report is to be produced that summarizes the level of maintenance required at each facility. If it is determined necessary by the Bellevue Utilities or the Development Services Department, an off-season coordination meeting may be called to address any revisions to the approved permit. The changes will be reviewed by Development Services to ensure they are consistent with the original approval and do not result in a change in the SEPA Threshold Determination.

Authority: Bellevue City Code 22.02

Reviewer: Kevin LeClair, Land Use

Attachment 1

SEPA Environmental Checklist

ENVIRONMENTAL CHECKLIST

4/18/02

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

BACKGROUND INFORMATION

REVIEWED
By Kevin LeClair at 1:31 pm, May 13, 2010

Property Owner: *CITY OF BELLEVUE*

Proponent: *BELLEVUE UTILITIES, STORM & SURFACE WATER SECTION.*

Contact Person: *DON McQUILLANS*
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: *2901 115th AVE NE, BELLEVUE, WA. 98004*

Phone: *(425) 452-7865*

Proposal Title: *PROGRAMMATIC SEDIMENT REMOVAL*

Proposal Location: *CITYWIDE - SEE ATTACHED.*
(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 1/2" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature:

- 1. General description: *REMOVAL OF SEDIMENT FROM VARIOUS IN STREAM & OFF HNE SEDIMENTATION FACILITIES.*
- 2. Acreage of site: *UNKNOWN*
- 3. Number of dwelling units/buildings to be demolished: *Ø*
- 4. Number of dwelling units/buildings to be constructed: *Ø*
- 5. Square footage of buildings to be demolished: *Ø*
- 6. Square footage of buildings to be constructed: *Ø*
- 7. Quantity of earth movement (in cubic yards): *VARIABLE FROM YEAR TO YEAR*
- 8. Proposed land use: *TO REMAIN AS EXISTING*
- 9. Design features, including building height, number of stories and proposed exterior materials: *N/A*
- 10. Other: *N/A.*

Application of conditions and implementation to be conducted under Bellevue Permit # 10-109363 XD.

Estimated date of completion of the proposal or timing of phasing:

PROPOSED FOR MULTI YEAR ON GOING WORK.

The applicable clearing and grading permit will be effective for three years from the date of issuance per BCC 23.76

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

POTENTIAL ADDITION OF FUTURE SITES

The permit allows for possible addition of sites. Application of BMPs will be similar to existing sites.

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

NONE

Bellevue has conducted stream inventory and analysis. The construction of the facilities to be maintained, were permitted as storm and surface water facilities.

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

NONE @ THIS TIME. ALL HPA WILL BE SUBMITTED.

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

HPA & C&G w/SEPA

Please provide one or more of the following exhibits, if applicable to your proposal. (Please check appropriate box(es) for exhibits submitted with your proposal):

- Land Use Reclassification (rezone) Map of existing and proposed zoning
- Preliminary Plat or Planned Unit Development
Preliminary plat map
- Clearing & Grading Permit
Plan of existing and proposed grading
Development plans
- Building Permit (or Design Review)
Site plan
Clearing & grading plan
- Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: Flat Rolling Hilly Steep slopes Mountains Other

b. What is the steepest slope on the site (approximate percent slope)?

VARIABLE BUT UP TO 40+ %

c. What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

VARIABLE BASED ON LOCATION.

REVIEWED

By Kevin LeClair at 1:36 pm, May 13, 2010

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

None known @ this time.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

No filling will be done as part of this project. Grading will be conducted in the practice of excavating out sediment from the facilities listed in Attachment 2.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Yes, BMP's will be implemented as necessary.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

None

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

BMP's will be site specific. Regular Road Maint. Guidelines will be followed.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

None

The implementation of the activities described in Attachment 2 will produce temporary emissions from machinery related to the work.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No

c. Proposed measures to reduce or control emissions or other impacts to the air, if any:

None

The maintenance of equipment in good working condition will limit any excessive emissions.

3. WATER

a. Surface

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If

REVIEWED
By Kevin LeClair at 1:39 pm, May 13, 2010

appropriate, state what stream or river it flows into.

YES. THIS PROPOSAL HAS SITES ON MOST ALL STREAMS WITHIN BELLEVUE.

- (2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans.

YES, IN STREAM SEDIMENT REMOVAL.

- (3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

See Attachment 2

VARIABLES BASED ON EACH SITE. SEE ATTACHED WORK LOCATIONS & YARDAGES.

- (4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

TEMPORARY DIVERSIONS WILL BE IMPLEMENTED WHILE WORK IS PERFORMED.

- (5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

VARIABLES BASED ON LOCATION

- (6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

NO

b. Ground

- (1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.

NO

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

NO/E

REVIEWED

By Kevin LeClair at 1:40 pm, May 13, 2010

c. Water Runoff (Including storm water)

- (1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

NO NEW RUNOFF

- (2) Could waste materials enter ground or surface waters? If so, generally describe.

POTENTIAL FOR SEDIMENT TO GET STIRRED UP.
BMP'S WILL BE PUT IN PLACE TO MINIMIZE IMPACTS.

- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

BMP'S WILL BE EVALUATED & IMPLEMENTED ON
A SITE BY SITE BASIS.

4. Plants

- a. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
 evergreen tree: fir, cedar, pine, other
 shrubs
 grass
 pasture
 crop or grain
 wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
 water plants: water lily, eelgrass, milfoil, other
 other types of vegetation

- b. What kind and amount of vegetation will be removed or altered?

MINIMAL VEGETATIONAL REMOVAL BASED ON SITE
CONDITIONS.

- c. List threatened or endangered species known to be on or near the site.

UNKNOWN

REVIEWED

By Kevin LeClair at 1:40 pm, May 13, 2010

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

REVEGETATION w/ NATIVE PLANTS & TREES AS NEEDED.

5. ANIMALS

a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

- Birds: hawk, heron, eagle, songbirds, other:
- Mammals: deer, bear, elk, beaver, other:
- Fish: bass, salmon, trout, herring, shellfish, other:

b. List any threatened or endangered species known to be on or near the site.

unknown

c. Is the site part of a migration route? If so, explain.

See Kenney Cr. & Coar Cr. For salmon spawning

d. Proposed measures to preserve or enhance wildlife, if any:

Work will be done within the fish window as approved by HPA conditions.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.

None

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:

None

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No

(1) Describe special emergency services that might be required.

None

(2) Proposed measures to reduce or control environmental health hazards, if any.

None

b. Noise

- (1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?

None

- (2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

None

- (3) Proposed measures to reduce or control noise impacts, if any:

None

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties?

MOST ARE PROTECTED LANDS (STREAMS, DRAINAGES, ETC...)

- b. Has the site been used for agriculture? If so, describe.

UNKNOWN

- c. Describe any structures on the site.

None

- d. Will any structures be demolished? If so, what?

NO

- e. What is the current zoning classification of the site?

PROTECTED IN MOST CASES

- f. What is the current comprehensive plan designation of the site?

TO REMAIN AS PROTECTED

- g. If applicable, what is the current shoreline master program designation of the site?

N/A

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

MOST ALL SITES FALL INTO THIS CATEGORY

- i. Approximately how many people would reside or work in the completed project?

0

- j. Approximately how many people would the completed project displace?

0

- k. Proposed measures to avoid or reduce displacement impacts, if any:

None

- i. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

None

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

N/A None

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None

- c. Proposed measures to reduce or control housing impacts, if any:

None

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

N/A

- b. What views in the immediate vicinity would be altered or obstructed?

None

- c. Proposed measures to reduce or control aesthetic impacts, if any:

None

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

No

c. What existing off-site sources of light or glare may affect your proposal?

NONE

d. Proposed measures to reduce or control light or glare impacts, if any:

NONE

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

AN OCCASIONAL PARKS TRAIL CROSSING NEAR TO SITES.

b. Would the proposed project displace any existing recreational uses? If so, describe.

NO

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

NONE

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

NO

b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.

N/A

c. Proposed measures to reduce or control impacts, if any:

NONE

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

VARIOUS

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

UNKNOWN

c. How many parking spaces would be completed project have? How many would the project eliminate?

Ø

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

NO

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

NO

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

None

g. Proposed measures to reduce or control transportation impacts, if any:

None

15. Public Services

a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No

b. Proposed measures to reduce or control direct impacts on public services, if any.

None

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

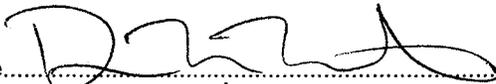
Storm & Surface Water

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None to be added

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature.....

Date Submitted.....3/9/10

Attachment 2

*2010 Storm & Surface Water In-Stream Sediment Removal Programmatic
Permit Maintenance Standards*

2010

Storm & Surface Water In-Stream Sediment Removal Programmatic Permit Maintenance Standards



Don McQuilliams, Superintendent
Storm & Surface Water Section
Bellevue Utilities Department
5/1/2010

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| | <ul style="list-style-type: none">• Attachment 'A' – Site List• Attachment 'B' – Hydraulic Approval Permit• Attachment 'C' – Construction Storm Water Pollution Prevention Plan (SWPPP)<ul style="list-style-type: none">○ General SWPPP for sites under 200 yd³○ Site Maps<ul style="list-style-type: none">▪ Coal Creek sedimentation Pond▪ I-405 Regional Pond▪ Coal Creek offline Sedimentation Pond▪ Pond A▪ SE 63rd Detention Pond▪ Lakehurst Sedimentation Pond▪ 148th & NE 8th Detention Ponds• Attachment 'D' - Applicable BMP's• Attachment 'E' – Stormwater Management Manual for Western Washington; Volume V, Section 4.6 Maintenance Standards for Drainage Facilities |

Background

The Storm and Surface Water section of the Bellevue Utilities Department maintains many in stream sedimentation collection facilities throughout the City. These facilities range from culvert ends, pipe inlets and flow control stations to large regional ponds. Dependent on the particular design, these facilities help to control storm and surface water conveyance, trap sediment, enhance water quality and provide storage as waters move through the system.

Past practices of the Storm and Surface Water section was to initiate several permits each year that would allow for the removal of sediment from these facilities. In 2008, a programmatic permit was developed that combined many of these facilities into one permit and limited the amount of sediment that could be removed in any given year. This approach worked well but it was found in 2009 that quantities needed to be updated to achieve the desired effect/purpose of several facilities which was difficult to do on short notice.

This proposal will identify those sites that are maintained on a regular basis and establish maximum quantities of materials that need to be removed in order for the facility to function as designed. In addition, this permit should provide provisions for easily updating and/or adding new locations dependent on the design type and function.

Inspection & Maintenance Procedures

Inspection and maintenance of many of the sites listed within this permit are mandated under the National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit that requires the City to annually inspect all water quality and flow control facilities. Maintenance is conducted to facilities as defined in the 2005 Stormwater Management Manual for Western Washington published by the Washington State Department of Ecology.

The Utilities department utilizes Maximo software to manage these assets and the associated work orders required for inspection and maintenance. Each site represents a Stormwater facility or infrastructure that is assigned an asset number and tracked through the Maximo system. As annual inspections are conducted, the results of the inspections are entered into Maximo for record keeping/reporting purposes and associated maintenance work orders are generated by the user if follow up actions need to occur.

Maintenance actions vary for each site dependant on the type of infrastructure that is present at the site. The following is a list of infrastructure types associated with this permit and general actions necessary to properly maintain the infrastructure:

- Detention ponds – NPDES mandates maintenance occur within 12 months after an inspection reveals sediment levels greater than 6 inches in depth or 10% of the designed pond capacity.
- Sedimentation ponds – Cleaned based on sediment levels and historical loading levels. The Coal Creek sedimentation ponds are required to be cleaned annually by legal obligations.
- Pipe ends/culverts – Inlets & outlets are kept free of debris and sediment. Sediment is cleared from around the outlet if buildup has occurred.
- Flow stations – Kept free of debris and sediment as necessary to function as designed.
- High flow bypass inlets/outlets - Inlets & outlets are kept free of debris and sediment. Sediment is cleared from around the outlet if buildup has occurred.
- Ditches/open stream – Sediment, vegetation and debris is removed as buildup occurs that impedes flow.

Appendix 'F' – The Stormwater Management Manual for Western Washington; Volume V, Section 4.6 has been attached to describe in detail, the maintenance requirements set for by the DOE.

General Work Methods

Sediments removal is typically conducted using Vactor trucks and/or backhoe/excavator and hand work. The anticipated excavation method used at each site and quantities to be removed is noted in Attachment A. Methods may vary depending on site conditions and access at the time of work. The following conditions will apply to each site:

- Excavated material will be limited to streambed sediment and detention pond accumulations that adversely affect stormwater management. Excavation quantities listed in attachment A indicate the maximum cubic yards to be removed under this permit. Removal of any additional material will require prior authorization through Development Services as outlined in the 'Unanticipated Workload' section of this proposal below.
- No trees greater than 4 inches in diameter will be removed as part of this project without prior approval/notification through the programmatic permit for clearing and grading in critical areas (permit #09-127448 XB). Vegetation removal of grasses and shrubs may also be necessary either for access purposes or because the vegetation is within the work area. Vegetation removal will be kept to a minimum and all native vegetation outside of work/access areas will be restored as soon as reasonably possible upon completion as outlined in Bellevue Land Use Code 20.25H.220H..
- Fish exclusion and stream bypass procedures will be put into place prior to any sediment removal operations.
- Erosion control will be placed as needed around the work site and equipment. Installation and monitoring of erosion control will be conducted by a CESCL (Certified Erosion and Sediment Control Lead) throughout the duration of the project. A listing of approved BMP methods can be found within the 'Regional Road Maintenance Endangered Species Act Program Guidelines' document developed as a Tri-County effort that addresses common BMP methods. The guidelines are available by request or in their entirety online at:
<http://www.kingcounty.gov/transportation/kcdot/Roads/environment/RegionalRoadMaintenanceESAGuidelines/ESAProgramGuidelines.aspx>
- Daily turbidity monitoring will be conducted upstream and downstream of each site prior to work beginning and at least once per day while work is ongoing.

Sediment Removal Methods

One or more of the following methods will be implemented to remove sediment from each work site outlined in Attachment A. Method(s) to be used at each site are indicated in Attachment A under the column heading of 'Sediment Removal Method(s)'.

- Vactor (Eductor) – Indicates removal of sediment to be conducted with the use of a Vactor (Eductor) truck capable of vacuuming sediment directly from the site into a storage tank on the truck. Water accumulated through this process will be typically decanted onsite with filtration BMP's utilized before the water is allowed to re-enter the stream. Sediment accumulated will be disposed of as outlined in the Sediment Management Plan section of this document.
- Excavator – Indicates removal of sediment from the site through the use of an excavator or backhoe. Sediment will be deposited directly into awaiting dump trucks or temporarily stockpiled to allow water within the sediment to drain off. All stockpiled materials will have approved BMP measures in place to prevent sediment laden waters from re- entering the site. Excavator operators will evaluate the site for access, enter and exit the site in a manner to prevent unnecessary damages to vegetation and stream banks and grade any ruts or other potential erosion concerns upon completion of the work.

- Hand Work – In certain circumstances, hand work will be necessary to accomplish the job. This typically entails brushing of grasses, blackberries or other shrubs to clear the work zone prior to excavation or vactor activities. Hand work of this type will be restricted to the work area itself and all efforts will be taken to minimize unnecessary damages to surrounding vegetation. BMP's as needed will be utilized if the work bears erosion concerns to adjacent waters.

Construction Sequence

The following sequence of events summarizes the proposed activities required to accomplish these projects.

1. Delineate the extent of the project site.
2. Field locate Utilities.
3. Install WDFW approved fish exclusion block nets at upper and lower extremes of each stream reach,
4. Install erosion control measures as needed around work site.
5. Conduct fish exclusion by electro-fishing, and by dragging a seine through the stream reach to remove trapped fish.
6. Construct a temporary plastic lined sandbag dike across the reach approximately upstream of the work area.
7. Set-up pumps and layout discharge piping for stream by-pass system as necessary. Discharge areas will ensure filtration through natural vegetation and/or the use of an approved bypass channel. Additional erosion control will be installed as needed.
8. Route the stream through the bypass system.
9. Allow the by-passed reach to naturally dewater.
10. Stage small backhoe/excavator and Vactor trucks as needed on existing paved or graveled surfaces (as available) adjacent to each work area.
11. Remove the permitted volume of accumulated sediments.
12. Turbidity monitoring will be conducted during sediment removal operations. This will be done according to City of Bellevue Turbidity Monitoring Requirements (copy attached).
13. Remove the temporary sandbag dike and all materials used to construct the by-pass to allow the stream to return to its channel.
14. Observe stream flow through the area of sediment removal to confirm free unhindered flow through the area impacted by construction.
15. After continuous free flow is achieved through the construction area, the downstream and upstream block nets may be removed.
16. Photo document before and after conditions for activity record keeping.

Sediment Management Plan

Projects performed under this permit will generate stream sediments and a small quantity of vegetation that require management and off-site disposal. The following methods and actions will be employed to assure that materials are properly managed.

1. All removed sediment will be either loaded directly into awaiting dump trucks, vactor storage tanks or temporarily stockpiled for dewatering purposes. Stockpiled sediment will have appropriate BMP's in place to filter runoff from the dewatering process before it is allowed to re-enter the surface water system.
2. Sediments will be removed from the dewatered streambed using a small backhoe/excavator or Vactor trucks. The specific method to be used at each site is listed in Attachment A.
3. Vehicles will be staged on paved or graveled surfaces as available. Backhoes and Vactor truck hoses and tubes are capable of reaching the excavation area at each site from the paved or graveled surface.
4. Removed sediments will be loaded directly into awaiting dump trucks or Vactor truck holding tanks.

5. Run-off from the vehicle staging and loading areas will be treated with appropriate BMP's before it is discharged back into the surface water system. Adjacent storm drains will be protected with geofabric to prevent silt from entering.
6. Removed sediments will be transported off site for disposal at an approved recycling/disposal facility or utilized for onsite improvements with prior approval from DSD staff.

Fish Exclusion Plan

Sediment removal activities at the In-Stream Detention facilities and other locations where fish have been identified, requires diverting the stream, dewatering the construction area and the implementation of measures to exclude and remove fish from the reach. BMPs to minimize or reduce impacts to aquatic resources will be implemented. Fish exclusion work prior to dewatering will be performed in accordance with the WDFW Hydraulic Project Approval issued to the City of Bellevue Utilities Department. A copy of the permit will be kept in the possession of the field personnel during fish exclusion and collection activities.

1. Bellevue Utilities trained staff will perform fish exclusion.
2. Field notes will be maintained that describe the activities performed and may also include information such as date, personnel, time, general site conditions, weather, length of stream reach, methods used, and any other general comments.
3. Any injuries or mortalities during fish exclusion will be documented and reported if it involves an ESA-listed species. Contact with an ESA-listed species during fish exclusion activities will be documented and reported to the Services.
4. Block nets will be installed a minimum of 30 ft upstream and downstream of the work area that isolate and exclude fish from entering the entire affected stream reach.
5. Block net mesh size will be the same as the seine nets (9.5 millimeters stretched). Block nets will be installed and secured across the channel and up both banks sufficiently to withstand unforeseen rain events or debris accumulation.
6. Block nets within the stream channel will be supported at 3 ft intervals using stakes or metal fence posts.
7. Block nets will be monitored by the project manager throughout the duration of the project. Block nets will be visually inspected before work starts each day, at mid-day and prior to daily shutdown.
8. Block nets will be left in place throughout the maintenance activity and maintained to ensure proper function.
9. After the stream reach has been isolated, electro shocking and seine nets will be used to remove fish from the work area.

Stream By-Pass

10. A temporary plastic lined sandbag dike will be constructed across the reach approximately 20 feet upstream of the work area and downstream of the fish block net.
11. A pump inlet will be located below the upstream block net and equipped with a 1/8-in mesh screen to prevent fish intake.
12. The stream reach will be visually inspected for the presence of fish prior to dewatering the reach.
13. The affected reach shall be dewatered slowly while observing for aquatic vertebrates. Any observed fish will be captured using hand-held dip nets and transferred immediately to the creek below the downstream block net.
14. Block nets will only be removed following completion of all sediment removal and re-establishment of permanent flow through the area where sediments were removed.
15. Block nets will be removed with care and checked for aquatic vertebrates.

Turbidity Monitoring Plan

Water quality samples will be taken prior to and during the project. Sampling will be performed by trained and experienced City staff. Samples will be taken and predetermined location above the area of work and downstream in accordance with the City of Bellevue Turbidity Monitoring and Requirements.

Unanticipated Workload Procedures

On occasion, work sites not identified on Attachment 'A' will require minor sediment removal to ensure the Storm and Surface Water system functions as designed. Since activities under this permit are generally limited to seasonal restrictions within the fish window (June 15th – August 31st), time can play a critical factor in ensuring that the work is done as allowed under all associated permits.

Should these circumstances arise, the Storm and Surface Water section will work directly with Development Services Planners and Inspectors to provide all necessary information to perform the minimum necessary work required. These procedures, at a minimum, will contain:

- An email at least 72 hours ahead of scheduled work to the Development Services representative and the Clear and Grade inspector informing them of the location, type of facility and quantity of material to be removed and reason for unanticipated work. This will not be the approval for work to be conducted. Notification must be provided in written form, letter or email, indicating the work is approved.
- Notification and approval from WDFW in written form, letter or email, indicating that the work has been review and approved under the existing HPA.

Update Process

Attachment 'A' is a list of known in stream sediment removal sites that are subject to the City's Clear and Grading requirements within a critical area. These sites are also subject to conditions as they apply under the Washington State Fish and Wildlife Hydraulic Approval Permit.

At the beginning of each calendar year, an opportunity to update Attachment 'A' will be available by submitting a revised version of the list with the City Planning Department representative and with WDFW. This revision does not indicate approval until all parties have responded via an email or letter that the revisions to the work have been approved.

Notification Process

Prior to conducting work, a pre conference meeting will be help annually with clear and grade inspectors and City planners. This meeting will outline the applicable sites where the Storm and Surface Water Utility plans to perform work during the dry work season. At that time, the inspectors and planners will have opportunities to discuss concerns or request additional information as it relates to the upcoming work season. Further site specific notification will be discussed and determined as requested by inspectors and/or planners.

Records & Reporting

Records will be kept within the Maximo database with an annual report generated at the end of the maintenance season for submittal to DSD. Information to be recorded and reported on should include:

- Site inspected and date of inspection
- Sites maintained, date & maintenance actions:
 - Quantity of materials removed from each site

- Fish capture and relocation records (including, if necessary, fish kill data)
- Turbidity monitoring results

Storm & Surface Water Staff Credentials/Trainings & Certifications

Bellevue Utilities Storm & Surface Water personnel:

-Dates in parenthesis indicate date of training.

-ISA, Pesticide application & CESCL Certification requires annual CEU's to be earned to maintain certification.

-IDDE investigation reflects staff with training in how to conduct an illicit discharge investigation. Annual renewal/training conducted.

-IDDE awareness reflects staff has knowledge of how to recognize and report an illicit discharge.

-Stream Repair training was provided by the Watershed Company onsite during project work on Coal Creek. Included Bank stabilization & flow management techniques.

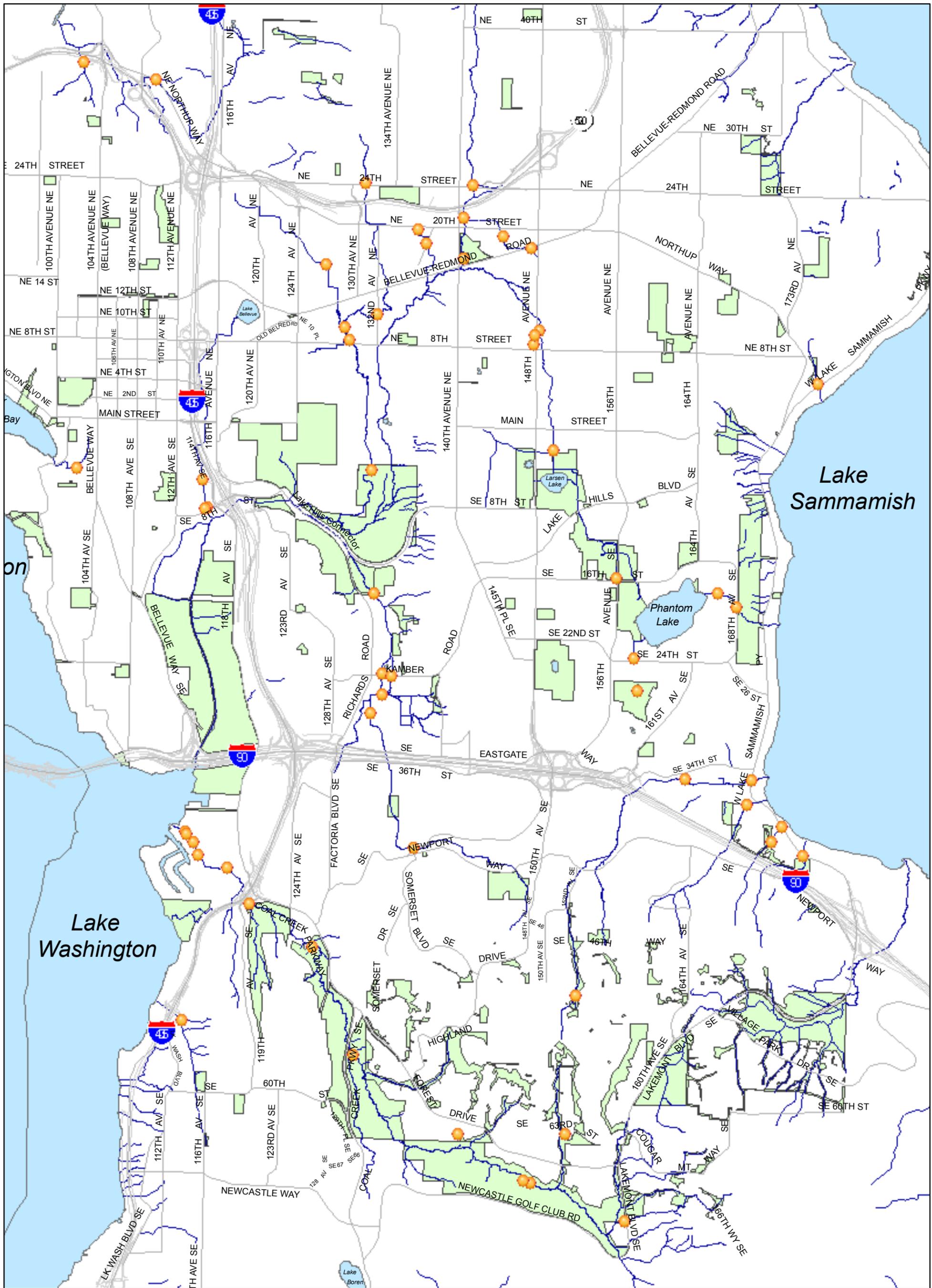
- Don McQuilliams – Superintendent
 - ISA Certified Arborist (1997)
 - Certified Tree Risk Assessor (2006)
 - Certified Erosion and Sediment Control Lead (CESCL) (2009)
 - IDDE Investigation
- Pete Blane – Senior Engineering Technician
 - CESCL (2009)
 - IDDE Investigation
- Spencer Hillesland - Technical Specialist
 - CESCL (2006)
 - Fish Exclusion (Introductory course conducted by Smith-Root, Inc. 2007)
 - IDDE Investigation
 - Pesticide applicators license (2007)
- Frank Oriel – Lead Worker (Vaults, Tanks, Ponds and Streams)
 - CESCL (2006)
 - IDDE Investigation
 - Stream Repair (2004)
- Chad Brown – Lead Worker (Construction and Repair)
 - CESCL (2007)
 - Fish Exclusion (Introductory course conducted by Smith-Root, Inc. 2007)
- Dave Horne – Lead Worker (Vector/Eductor Operations)
 - CESCL (2008)
 - IDDE Investigation
 - Stream Repair (2004)
- Paul Armstrong – Skilled Worker
 - CESCL(2007)
 - Stream Repair (2004)
- Trisha Tyo – Skilled Worker
 - CESCL (2007)
 - IDDE Investigation
- Gregg MacDonald – Skilled Worker
 - CESCL (2008)
 - IDDE Investigation
- Jeff Peacey – Skilled Worker
 - IDDE Awareness (2009)
- Jerry Campbell – Skilled Worker

- CESCL (2009)
 - IDDE Investigation
- William Whiting – Skilled Worker
 - CESCL (2009)
 - IDDE Investigation
- David Ernst – Skilled Worker
 - CESCL (2009)
 - IDDE Investigation

| Attachment 'A' Streams, Detention Pond & Flow Station Maintenance List Updated: May 2010 | | | | | | |
|---|-------------------------|---|---|--------------------------------|--------------------------------|---|
| Critical Site # or Asset # (Legacy ID) | HPA Location No. | Stream and Description | Location | Sediment Removal Method | Maximum Yds³ | Applicable BMP(s) |
| Coal Creek | | | | | | |
| D502 | 2 | Coal Creek - upper sedimentation facility | Coal Creek Parkway and Coal Creek | Excavator | 1600 | Cofferdam, Dewatering, Stream bypass |
| D501 | 1 | Coal Creek - regional detention pond | 119 th Ave Se at Coal Creek. East of I-405. | Excavator | 400 | Cofferdam, Dewatering, Stream bypass |
| D503, D504, D505, D506 | 3 | Coal Creek Culverts - Newport Shores | Skagit Key (2 locations), Glacier Key, Newport Key | Vactor | 5 | Cofferdam, Sandbags, Vactoring |
| D512 | 4 | Coal Creek - flow station | Coal Cr. Upstream of the lower Skagit Key crossing. | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| N/A | 42 | Coal Creek Tributary on Lakemont Blvd. | Directly North of 7219 Lakemont Blvd. Se | Excavator | 50 | Cofferdam, Sandbags |
| DP60152 | N/A | Cinder mine Swales – Not In-Stream, noted for Clearing Grading Programmatic Permit. | 15000 blk. of Newcastle –Coal Creek Rd Se | Excavator | 100 | Inlet protection, Soil stabilization |
| DP 14551 | N/A | Detention Facility – Gunnite Pond. – Not In-Stream, noted for Clearing Grading Programmatic Permit. | 6218 142 nd Ave Se | Excavator | 100 | Inlet protection, Soil stabilization |
| N/A | | Coal Creek - Offline sedimentation pond | 4641 125th Ave SE | Excavator | 1600 | Cofferdam, Dewatering, Stream bypass |
| DP 26790 | N/A | SE 63rd St Detention Pond - Not In-Stream, noted for Clearing Grading Programmatic Permit. | 15251 SE 63rd St | Excavator | 500 | Inlet protection, Cofferdam, Sandbags |
| Lakehurst Creek | | | | | | |
| D508 | 5 | Lakehurst Creek - sedimentation facility | Lake WA Blvd east of I-405 at 112 th Ave SE. | Excavator | 500 | Cofferdam, Dewatering, Stream bypass |
| Wilkens Creek | | | | | | |
| TR 14742 | 6 | Wilkens Creek – culvert | W Lake Samm Pkwy and about NE 8 th St | Excavator | 50 | Cofferdam, Sandbags |
| Yarrow Creek | | | | | | |
| TR 62070 | 43 | Yarrow Creek – concrete box inlet | Behind 3265 103 rd Ave Ne | Vactor | 20 | Sandbags, Vactoring |
| D102 | 7 | Yarrow Creek – culvert | 10833 Northup Way | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| Meydenbauer Creek | | | | | | |
| TR 62090 | 10 | Meydenbauer Creek - culvert | 410 102 nd Ave SE | Excavator | 25 | Cofferdam, Sandbags |
| Kelsey Creek | | | | | | |
| D209 | 8 | Kelsey Creek - regional detention pond | 920 148 th Ave Ne | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| D301 | 9 | Larson Lake - regional detention pond | 149 th Ave SE Main. St. | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| N/A | | Kelsey Creek Tributary at Lk. Hills Farm | NW corner of SE 16th St & 156th Ave SE | Vactor/Excavator | 150 | Cofferdam, Dewatering, Stream bypass, Sandbags, Vactoring |
| DP 5250 | N/A | 148th Ave NE & NE 8th St Detention ponds - Not In-Stream, noted for Clearing Grading Programmatic Permit. | NW corner of 148th Ave NE & NE 8th St intersection | Excavator | 500 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| Unnamed Tributary to Kelsey Creek | | | | | | |

| | | | | | | |
|------------|----|--|--|------------------|----|---|
| MH 2790 | 11 | Unnamed Tributary to Kelsey Creek - short section of open stream/easement. | 13433 Ne 20 th St | Excavator | 60 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| PE 63908 | 12 | Unnamed Tributary to Kelsey Creek - culvert at Earth Building | 1805 136 th Pl NE | Excavator | 25 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| | | | | | | |
| | | Kelsey Creek West Tributary | | | | |
| D213 | 13 | Lower West Trib. – regional detention pond | 12820 NE 8 th St | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| D210 | 14 | West Trib. - regional detention pond | 1770 124 th Ave NE | Excavator | 25 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| N/A | | West Trib. - At Kelsey Cr. Park | 410 130 th Pl Se | Vactor | 50 | Cofferdam, Dewatering, Stream bypass, Sandbags, Vactoring |
| D215 | | West Trib. 120th culvert | 2150 120th Ave NE | Vactor/Hand | 25 | Cofferdam, Sandbags, Vactoring |
| | | Richards Creek | | | | |
| PE 17099 | 15 | Richards Creek - culvert | 133 rd Ave SE & Kamber Rd | Excavator/Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| PE 17100 | 16 | Richards Creek - flow diversion | 13309 SE 26 th ST | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| D309 | 17 | Richards Creek - flow station | 1640 Richards Rd. | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| | | Unnamed Tributary to Richards Creek (East Creek) | | | | |
| PE 17092 | 18 | Unnamed Tributary to Richards Creek - culvert | 13301 Kamber Rd | Vactor | 60 | Cofferdam, Sandbags, Vactoring |
| | | Sturtevant Creek | | | | |
| D105 | 19 | Section of creek between I-405 and Mercer slough | SE 8 th St | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| D104 | 20 | Section of creek between I-405 and Mercer Slough | SE 6 th St | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| D107 | 21 | Sturtevant Cr - flow station | SE 6 th St | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| | | Sunset Creek | | | | |
| PE 11276 | 22 | Sunset Creek - culverts | 133 rd Ave SE & SE 30 th St | Vactor | 50 | Cofferdam, Sandbags, Vactoring |
| D510 | 23 | Sunset Creek - high-flow bypass | 13801 SE Allen Rd | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| | | Goff Creek | | | | |
| D217 | 24 | Goff Creek – regional detention pond | 12700 NE 10 th St | Excavator | 15 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| PE 4649 | 25 | Goff Creek – culvert | 132 nd Ave NE north of NE 10 th St | Excavator | 15 | Cofferdam, Sandbags |
| D202 | 26 | Goff Creek - trash rack at inlet to high flow by-pass | at NE 24 th St east of 130 th Ave NE | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| | | Valley Creek | | | | |
| D203 | 27 | Valley Creek - regional detention pond | 14040 NE 24 th St | Excavator | 50 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| D205, D206 | 28 | Valley Creek - trash rack at inlet to high flow by-pass | Culverts at NE 20th & 21 st Pl east of 140 th Ave NE | Excavator | 25 | Cofferdam, Inlet protection, Sandbags |

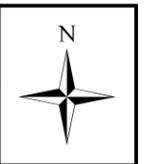
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|--|-----|---|---|-----------|-----|---|
| D220 | 29 | Valley Creek - flow station | Approx 100ft North of Bel-Red Rd | Vactor | 15 | Cofferdam, Sandbags |
| Sears Creek | | | | | | |
| D208 | 30 | Commissioners Waterway - regional detention pond | Bell Red RD & 148 th Ave NE | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| D207 | 31 | Overlake Regional Detention Pond | 14433 NE 20th St. | Excavator | 100 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| Vasa Creek | | | | | | |
| PE 64652 | 32 | Vasa Creek - box culvert | SE 35 th ST & W Lk Samm Pkwy SE | Vactor | 15 | Cofferdam, Inlet protection, Sandbags, Vactoring |
| Unnamed Tributary to Vasa Creek | | | | | | |
| PE 16033 | 33 | Unnamed Tributary To Vasa Creek -culvert | 15217 SE 48 th Drive | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| PE 30315, PE 30314, PE 29735 | 34 | Vasa Creek Tributary - culverts | 167 th Ave SE & SE 35 th ST | Excavator | 15 | Cofferdam, Sandbags |
| D305 | 35 | Unnamed Stream - stream 0160 - pond and inlet | 16903 SE 38TH PL | Excavator | 70 | Cofferdam, Inlet protection, Sandbags, Vactoring |
| Unnamed Stream | | | | | | |
| TR 62901 | 36 | Unnamed Stream – culvert | 3947 W Lk Samm Pkwy SE | Excavator | 30 | Cofferdam, Sandbags |
| PE 29104 | 37 | Unnamed Stream – culvert | 17152 SE 40 th PL | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| PE 30432 | 38 | Unnamed Stream - stream 0161- culvert | 4094 W Lk Samm Pkwy SE | Vactor | 30 | Cofferdam, Sandbags, Vactoring |
| Phantom Lake Basin | | | | | | |
| D306 | 39 | Phantom Lake - lake elevation station | Phantom Lake at approx. SE 16 th ST | Vactor | 25 | Cofferdam, Sandbags, Vactoring |
| D303 | 40 | Phantom Creek – Lake outfall – flow station | Phantom Creek at SE 17 th PL | Vactor | 15 | Cofferdam, Sandbags, Vactoring |
| D307 | 41 | Phantom Creek – Inlet channel to lake – flow station | Phantom Creek at SE 24 th St | Vactor | 50 | Cofferdam, Sandbags, Vactoring |
| D304 | N/A | Water Quality Pond A - Not In-Stream, noted for Clearing Grading Programmatic Permit. | 2645 158th Ave SE | Excavator | 250 | Cofferdam, Dewatering, Inlet protection, Sandbags |
| | | | | | | |
| | | | | | | |
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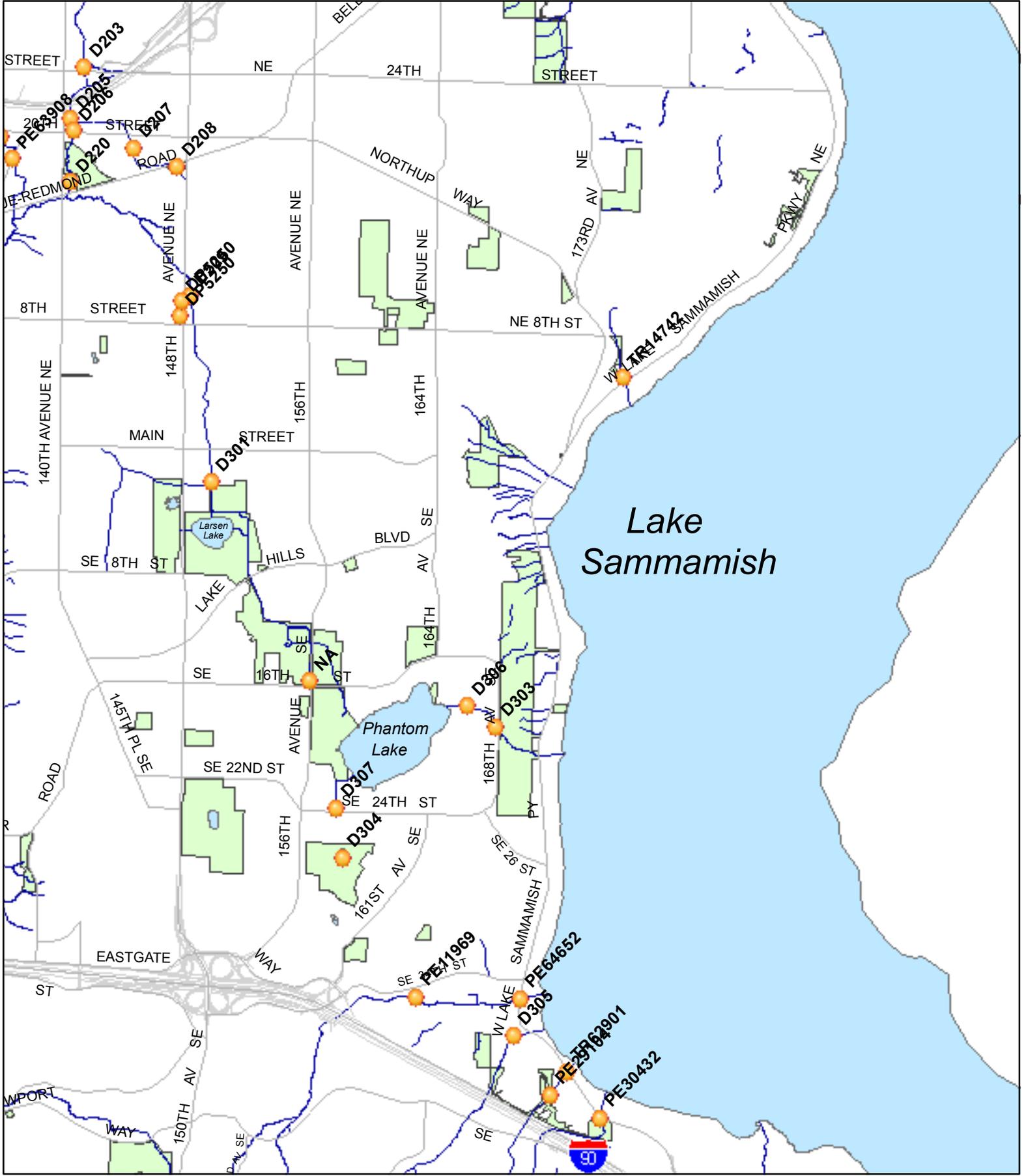


Legend

- Sediment Removal Sites
- Streams
- Parks

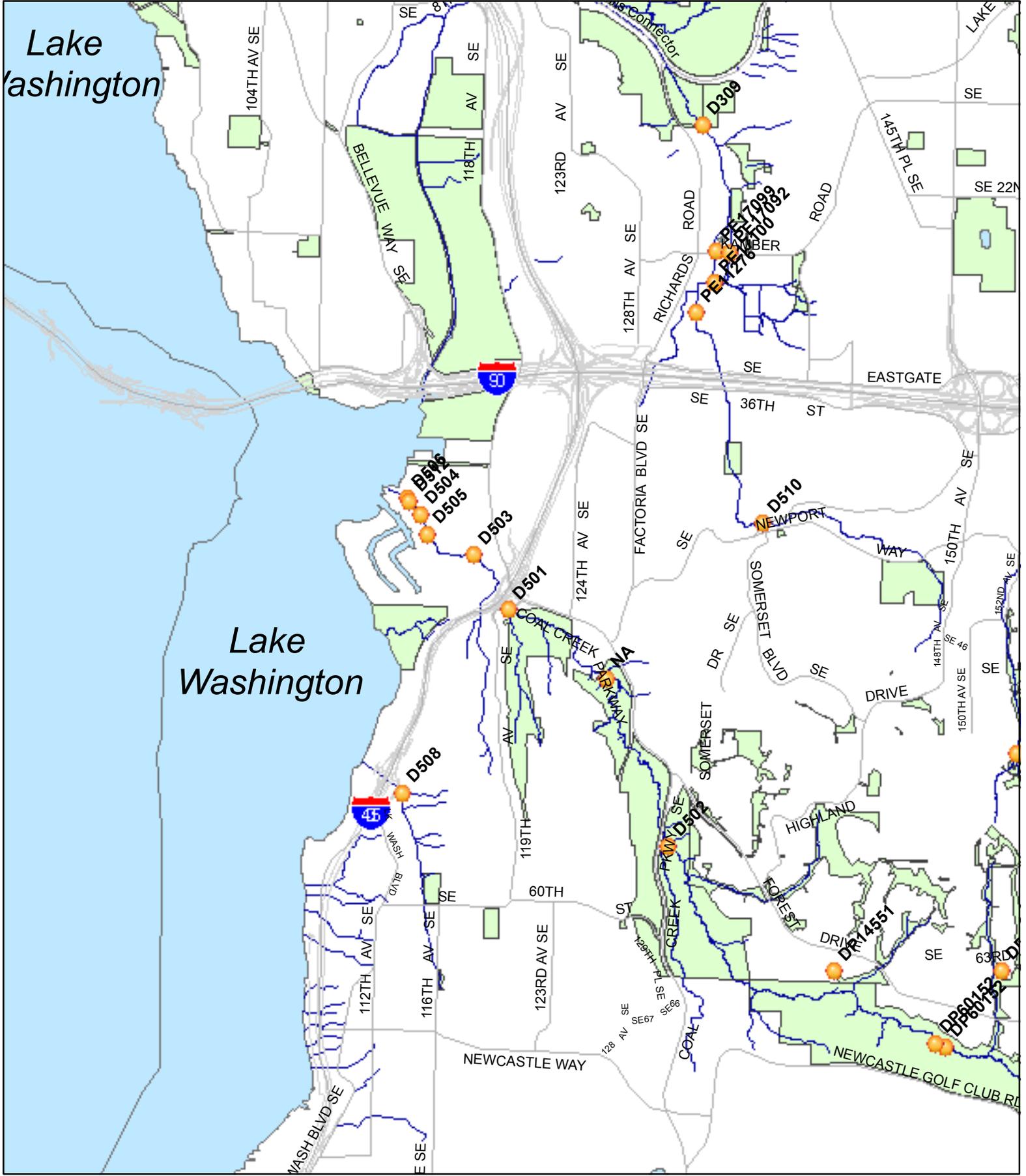
Citywide Sediment Removal Locations



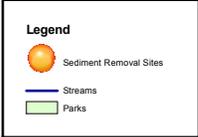


Sediment Removal Locations NE Quadrant





Sediment Removal Locations SW Quadrant





Issue Date: May 28, 2009
Project Expiration Date: August 23, 2011

Control Number: 106367-3
FPA/Public Notice #: N/A

| <u>PERMITTEE</u> | <u>AUTHORIZED AGENT OR CONTRACTOR</u> |
|---|---------------------------------------|
| Bellevue City of Utilities Department ATTENTION: Pete Blane 2901 115th Avenue NE Bellevue, WA 98004 425-452-6450 Fax: 425-452-5286 | |

Project Name: City of Bellevue Utilities Maintenance

Project Description: Maintenance of the public surface water system including stream crossings, instream detention and sediment trap facilities, and open ditches at various locations throughout the city

PROVISIONS

1. Removal of sediment below the ordinary high water line (OHWL) shall occur only between June 16 and August 31 at locations 1 - 4, 8, 13, 14, 15, 17, 18, 22, and 44 and only between June 16 and September 30 at the other listed locations; removal of small debris such as brush and limbs and wood less than 4 inches diameter and less than 8 feet long may occur at any time at all locations.
2. NOTIFICATION REQUIREMENT: At locations 1 - 4, 8, 13, 14, 15, 17, 18, 22, and 44, the Area Habitat Biologist (AHB) listed below shall receive e-mail notification (e-mail to fisheldf@dfw.wa.gov) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) no less than three working days prior to start of work, and again within seven days of completion of work to arrange for a compliance inspection. The notification shall include the permittee's name, project location, starting date for work or completion date of work, and the control number for this HPA.
3. Work shall be accomplished per plans and specifications submitted to and approved by the Washington Department of Fish and Wildlife (WDFW) entitled, "ATTACHMENT A", dated May 13, 2009, except as modified by this HPA. A copy of these plans shall be available on site during construction. Quantities of sediment removed shall not exceed those listed in ATTACHMENT A.
4. Removal of sediment at the East Creek culvert on Kamber Road (location 18) shall be limited to the area of accumulation downstream of the culvert approximately 30 feet and up into the culvert where fine sediment has accumulated; sediment removal there shall occur only down to the elevation just above the level of summer base stream flow.
5. A temporary bypass to divert flow around the work area shall be in place prior to initiation of other work in the wetted perimeter.
6. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.

Issue Date: May 28, 2009

Control Number: 106367-3

Project Expiration Date: August 23, 2011

FPA/Public Notice #: N/A

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7. Prior to releasing the water flow to the project area, all instream work shall be completed.
 8. Upon completion of the project, all material used in the temporary bypass shall be removed from the site and the site returned to preproject or improved conditions.
 9. Where fish (including juveniles) are present, the permittee shall capture and safely move all food fish, game fish, and other fish life from the job site. The permittee shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be immediately and safely transferred to free-flowing water downstream of the project site. The permittee may request the WDFW assist in capturing and safely moving fish life from the job site to free-flowing water, and assistance may be granted if personnel are available.
 10. Any device used for diverting water from a fish-bearing stream shall be equipped with a fish guard to prevent passage of fish into the diversion device pursuant to RCW 77.57.010 and 77.57.070. The pump intake shall be screened with 1/8-inch mesh to prevent fish from entering the system. The screened intake shall consist of a facility with enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. Screen maintenance shall be adequate to prevent injury or entrapment to juvenile fish and the screen shall remain in place whenever water is withdrawn from the stream through the pump intake.
 11. Dredged streambed materials shall be disposed of at approved in-water disposal sites, or upland so they will not re-enter state waters.
 12. Equipment shall be operated to minimize turbidity. During excavation, each pass with the bucket shall be complete. Dredged material shall not be stockpiled in the stream.
 13. Dredging shall be limited to maintaining the established sediment ponds. Banks shall not be disturbed.
 14. The sediment pond facilities and fishways, including weirs, shall be maintained by the City of Bellevue per RCW 77.57.030 to ensure continued, unimpeded fish passage. If a hindrance to fish passage occurs, the City shall be responsible for obtaining an HPA and providing prompt repair. Financial responsibility for maintenance and repairs shall be that of the City.
 15. Disturbance of the riparian vegetation shall be limited to that necessary to perform the maintenance activities. Affected areas of riparian vegetation shall be restored to preproject or improved habitat configuration. Establishment of native woody vegetation is encouraged to help shade invasive vegetation and prevent clogging of watercourses with fine sediments. Prior to December 31 of the year of maintenance activity, the disturbed areas of vegetation shall be revegetated with native or other woody species approved by the WDFW AHB listed below. Vegetative cuttings shall be planted at a maximum interval of three feet (on center). Plantings shall be maintained as necessary for three years to ensure 80 percent or greater survival of each species or a contingency species approved by the AHB.

Issue Date: May 28, 2009

Control Number: 106367-3

Project Expiration Date: August 23, 2011

FPA/Public Notice #: N/A

16. Equipment used for maintenance activity project shall be free of external petroleum-based products while working around the stream. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to its working below the OHWL. Equipment shall be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities along the stream.

17. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Emergency Management Division at 1-800-258-5990, and to the AHB.

18. Erosion control methods shall be used to prevent silt-laden water from entering the streams and their associated wetlands. These may include, but are not limited to, straw bales, filter fabric, temporary sediment ponds, check dams of pea gravel-filled burlap bags or other material, and/or immediate mulching of exposed areas.

19. Prior to starting work, the selected erosion control methods (Provision 18) shall be installed. Accumulated sediments shall be removed during the project and prior to removing the erosion control methods after completion of work.

20. Wastewater from project activities and water removed from within the work area shall be routed to an area landward of the OHWL to allow removal of fine sediment and other contaminants prior to being discharged to the stream or wetlands associated with the stream.

21. All waste material such as construction debris, silt, excess dirt or overburden resulting from this project shall be deposited above the limits of floodwater in an approved upland disposal site.

22. If high flow conditions that may cause siltation are encountered during this project, work shall stop until the flow subsides.

23. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream wetlands associated with the stream.

NOTE

This HPA is a modification of the original HPA issued August 24, 2006 and last modified September 8, 2006 and supercedes all previous versions of the HPA.



HYDRAULIC PROJECT APPROVAL

RCW 77.55.021 - Appeal Pursuant to Chapter 34.05 RCW

North Puget Sound
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
(425) 775-1311

Issue Date: May 28, 2009

Control Number: 106367-3

Project Expiration Date: August 23, 2011

FPA/Public Notice #: N/A

PROJECT LOCATIONS

Location #1 Coal Creek downstream pond

| | | | | | | | |
|---|----------------|--------------------------|----------------|---------------------------|----------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0268 | | Waterbody: Coal Creek | | | Tributary to: Lake Washington | | |
| 1/4 SEC: SW 1/4 | Section: 16 | Township: 25 N | Range: 05 E | Latitude: N 47.56634 | Longitude: W 122.17969 | County: King | |
| <u>Location #1 Driving Directions</u> upstream of 119th Ave SE | | | | | | | |

Location #2 Coal Creek sediment trap

| | | | | | | | |
|---|----------------|--------------------------|----------------|---------------------------|----------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0268 | | Waterbody: Coal Creek | | | Tributary to: Lake Washington | | |
| 1/4 SEC: NE 1/4 | Section: 24 | Township: 25 N | Range: 05 E | Latitude: N 47.55342 | Longitude: W 122.16602 | County: King | |
| <u>Location #2 Driving Directions</u> upstream of Coal Creek Parkway | | | | | | | |

Location #3 Coal Creek culverts

| | | | | | | | |
|---|----------------|--------------------------|----------------|---------------------------|----------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0268 | | Waterbody: Coal Creek | | | Tributary to: Lake Washington | | |
| 1/4 SEC: NE 1/4 | Section: 17 | Township: 24 N | Range: 05 E | Latitude: N 47.572 | Longitude: W 122.18758 | County: King | |
| <u>Location #3 Driving Directions</u> Newport Shores | | | | | | | |

Location #4 Coal Creek flow station

| | | | | | | | |
|--|----------------|--------------------------|----------------|---------------------------|----------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0268 | | Waterbody: Coal Creek | | | Tributary to: Lake Washington | | |
| 1/4 SEC: NE 1/4 | Section: 17 | Township: 24 N | Range: 05 E | Latitude: N 47.5729 | Longitude: W 122.18879 | County: King | |
| <u>Location #4 Driving Directions</u> upstream of lower Skagit Key crossing | | | | | | | |



HYDRAULIC PROJECT APPROVAL

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Issue Date: May 28, 2009

Control Number: 106367-3

Project Expiration Date: August 23, 2011

FPA/Public Notice #: N/A

Location #5 Lakehurst Ck sedimentation trap

| | | | | | | |
|--|----------------|-------------------------------|----------------|----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0281 | | Waterbody: Lakehurst Creek | | Tributary to: Lake Washington | | |
| 1/4 SEC: NE 1/4 | Section: 20 | Township: 24 N | Range: 05 E | Latitude: N 47.55767 | Longitude: W 122.18847 | County: King |
| <u>Location #5 Driving Directions</u> Lake Wa. Blvd. east of I-405 @ 112th Ave SE | | | | | | |

Location #6 Wilkens Ck culvert

| | | | | | | |
|---|----------------|------------------------------|----------------|-----------------------------------|--------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.6001 | | Waterbody: Lake Sammamish | | Tributary to: Sammamish Slough | | |
| 1/4 SEC: NE 1/4 | Section: 36 | Township: 25 N | Range: 05 E | Latitude: N 47.61415 | Longitude: W 122.1056 | County: King |
| <u>Location #6 Driving Directions</u> W Lake Sammamish Pkwy about NE 8th St. | | | | | | |

Location #7 Yarrow Ck culvert

| | | | | | | |
|--|----------------|----------------------------|----------------|----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0252 | | Waterbody: Yarrow Creek | | Tributary to: Lake Washington | | |
| 1/4 SEC: NW 1/4 | Section: 20 | Township: 25 N | Range: 05 E | Latitude: N 47.6441 | Longitude: W 122.20225 | County: King |
| <u>Location #7 Driving Directions</u> 10833 Northup Way | | | | | | |

Location #8 Kelsey Ck regional detention pond

| | | | | | | |
|---|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SW 1/4 | Section: 26 | Township: 25 N | Range: 05 E | Latitude: N 47.61766 | Longitude: W 122.14242 | County: King |
| <u>Location #8 Driving Directions</u> 148th Ave NE between NE 9th & 10th Streets | | | | | | |



HYDRAULIC PROJECT APPROVAL

RCW 77.55.021 - Appeal Pursuant to Chapter 34.05 RCW

North Puget Sound
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
(425) 775-1311

Issue Date: May 28, 2009

Control Number: 106367-3

Project Expiration Date: August 23, 2011

FPA/Public Notice #: N/A

Location #9 Larson Lake regional detention pond

| | | | | | | |
|---|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SW 1/4 | Section: 35 | Township: 25 N | Range: 05 E | Latitude: N 47.60784 | Longitude: W 122.14051 | County: King |
| Location #9 Driving Directions 149th Ave NE & Main St. | | | | | | |

Location #10 Meydenbauer Ck culvert

| | | | | | | |
|--|----------------|---------------------------------|----------------|----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0258 | | Waterbody: Meydenbauer Creek | | Tributary to: Lake Washington | | |
| 1/4 SEC: SE 1/4 | Section: 31 | Township: 25 N | Range: 05 E | Latitude: N 47.61221 | Longitude: W 122.21125 | County: King |
| Location #10 Driving Directions 102nd Ave SE 200' west off 102nd Ave SE | | | | | | |

Location #11 Unnamed trib to Kelsey Ck

| | | | | | | |
|---|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NW 1/4 | Section: 27 | Township: 25 N | Range: 05 E | Latitude: N 47.62796 | Longitude: W 122.15751 | County: King |
| Location #11 Driving Directions Northup Way west of 136th Ave NE | | | | | | |

Location #12 Unnamed trib to Kelsey Ck culvert

| | | | | | | |
|--|----------------|------------------------------------|----------------|-------------------------------|--------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NW 1/4 | Section: 27 | Township: 25 N | Range: 05 E | Latitude: N 47.62719 | Longitude: W 122.1577 | County: King |
| Location #12 Driving Directions Earth Bldg/136th Ave NE & NE 18th St. | | | | | | |



HYDRAULIC PROJECT APPROVAL

RCW 77.55.021 - Appeal Pursuant to Chapter 34.05 RCW

North Puget Sound
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
(425) 775-1311

Issue Date: May 28, 2009

Control Number: 106367-3

Project Expiration Date: August 23, 2011

FPA/Public Notice #: N/A

Location #13 Kelsey Ck Lower West Trib regional pond

| | | | | | | | |
|---------------------------------|----------------|------------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SE 1/4 | Section: 28 | Township: 25 N | Range: 05 E | Latitude: N 47.61754 | Longitude: W 122.1678 | County: King | |
| Location #13 Driving Directions | | | | | | | |
| 12820 NE 8th St. | | | | | | | |

Location #14 West Trib. regional detention pond

| | | | | | | | |
|---------------------------------|----------------|------------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SE 1/4 | Section: 28 | Township: 25 N | Range: 05 E | Latitude: N 47.62277 | Longitude: W 122.17104 | County: King | |
| Location #14 Driving Directions | | | | | | | |
| 1770 124th Ave NE | | | | | | | |

Location #15 Richards Ck culvert

| | | | | | | | |
|---------------------------------|----------------|-------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0261 | | Waterbody: Kelsey Creek SF | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 09 | Township: 24 N | Range: 05 E | Latitude: N 47.58724 | Longitude: W 122.16194 | County: King | |
| Location #15 Driving Directions | | | | | | | |
| 133rd Ave SE & Kamber Road | | | | | | | |

Location #16 Richards Ck flow diversion

| | | | | | | | |
|---------------------------------|----------------|-------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0261 | | Waterbody: Kelsey Creek SF | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NW 1/4 | Section: 10 | Township: 24 N | Range: 04 E | Latitude: N 47.58565 | Longitude: W 122.16213 | County: King | |
| Location #16 Driving Directions | | | | | | | |
| 13309 SE 26th St. | | | | | | | |



HYDRAULIC PROJECT APPROVAL

RCW 77.55.021 - Appeal Pursuant to Chapter 34.05 RCW

North Puget Sound
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1296
(425) 775-1311

Issue Date: May 28, 2009

Control Number: 106367-3

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FPA/Public Notice #: N/A

Location #17 Richards Ck flow station

| | | | | | | |
|---------------------------------|----------------|-------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0261 | | Waterbody: Kelsey Creek SF | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SE 1/4 | Section: 04 | Township: 24 N | Range: 05 E | Latitude: N 47.59556 | Longitude: W 122.16499 | County: King |
| Location #17 Driving Directions | | | | | | |
| 1640 Richards Road | | | | | | |

Location #18 Unnamed trib to Richards Ck culvert

| | | | | | | |
|---------------------------------|----------------|-------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0261 | | Waterbody: Kelsey Creek SF | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 09 | Township: 24 N | Range: 05 E | Latitude: N 47.58741 | Longitude: W 122.15888 | County: King |
| Location #18 Driving Directions | | | | | | |
| 134th Ave SE & Kamber Road | | | | | | |

Location #19 Sturtevant Ck culvert

| | | | | | | |
|---------------------------------|----------------|--------------------------------|----------------|---|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0260 | | Waterbody: Sturtevant Creek | | Tributary to: Mercer Sl Cont Kelsey Cr | | |
| 1/4 SEC: SE 1/4 | Section: 32 | Township: 25 N | Range: 05 E | Latitude: N 47.602 | Longitude: W 122.18651 | County: King |
| Location #19 Driving Directions | | | | | | |
| SE 8th St. west of 118th Ave SE | | | | | | |

Location #20 Sturtevant Ck culvert

| | | | | | | |
|---------------------------------|----------------|--------------------------------|----------------|---|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0260 | | Waterbody: Sturtevant Creek | | Tributary to: Mercer Sl Cont Kelsey Cr | | |
| 1/4 SEC: SE 1/4 | Section: 32 | Township: 25 N | Range: 05 E | Latitude: N 47.60449 | Longitude: W 122.18708 | County: King |
| Location #20 Driving Directions | | | | | | |
| SE 6th St. west of 118th Ave SE | | | | | | |



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Location #21 Sturtevant Ck flow station

| | | | | | | |
|---------------------------------|----------------|--------------------------------|----------------|---|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0260 | | Waterbody: Sturtevant Creek | | Tributary to: Mercer Sl Cont Kelsey Cr | | |
| 1/4 SEC: SE 1/4 | Section: 32 | Township: 25 N | Range: 05 E | Latitude: N 47.60462 | Longitude: W 122.68708 | County: King |
| Location #21 Driving Directions | | | | | | |
| SE 6th St. west of 118th Ave SE | | | | | | |

Location #22 Sunset Ck culverts

| | | | | | | |
|---------------------------------|----------------|----------------------------|----------------|----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0262 | | Waterbody: Sunset Creek | | Tributary to: Kelsey Creek SF | | |
| 1/4 SEC: SE 1/4 | Section: 09 | Township: 24 N | Range: 05 E | Latitude: N 47.58385 | Longitude: W 122.16249 | County: King |
| Location #22 Driving Directions | | | | | | |
| 133rd Ave SE & SE 30th St. | | | | | | |

Location #23 Sunset Ck high flow bypass

| | | | | | | |
|---------------------------------|----------------|----------------------------|----------------|----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0262 | | Waterbody: Sunset Creek | | Tributary to: Kelsey Creek SF | | |
| 1/4 SEC: NW 1/4 | Section: 15 | Township: 24 N | Range: 05 E | Latitude: N 47.57187 | Longitude: W 122.15704 | County: King |
| Location #23 Driving Directions | | | | | | |
| 13801 SE Allen Road | | | | | | |

Location #24 Goff Ck regional detention pond

| | | | | | | |
|---------------------------------|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SE 1/4 | Section: 28 | Township: 25 N | Range: 05 E | Latitude: N 47.62058 | Longitude: W 122.16964 | County: King |
| Location #24 Driving Directions | | | | | | |
| 12700 SE 10th St. | | | | | | |



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FPA/Public Notice #: N/A

Location #25 Goff Ck culverts

| | | | | | | | |
|-----------------------------------|----------------|------------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SE 1/4 | Section: 28 | Township: 25 N | Range: 05 E | Latitude: N 47.61878 | Longitude: W 122.16544 | County: King | |
| Location #25 Driving Directions | | | | | | | |
| 137th Ave NE north of NE 10th St. | | | | | | | |

Location #26 Goff Ck trash rack at high flow bypass

| | | | | | | | |
|----------------------------------|----------------|------------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 28 | Township: 25 N | Range: 05 E | Latitude: N 47.63165 | Longitude: W 122.16461 | County: King | |
| Location #26 Driving Directions | | | | | | | |
| NE 24th St. east of 130th Ave NE | | | | | | | |

Location #27 Valley Ck regional detention pond

| | | | | | | | |
|---------------------------------|----------------|------------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 27 | Township: 25 N | Range: 05 E | Latitude: N 47.63174 | Longitude: W 122.15226 | County: King | |
| Location #27 Driving Directions | | | | | | | |
| 14040 NE 24th St. | | | | | | | |

Location #28 Valley Ck trash rack @ high flow bypass

| | | | | | | | |
|-----------------------------------|----------------|------------------------------------|----------------|---------------------------|-------------------------------|-----------------|--|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 27 | Township: 25 N | Range: 05 E | Latitude: N 47.62865 | Longitude: W 122.15308 | County: King | |
| Location #28 Driving Directions | | | | | | | |
| NE 21st. Pl. east of 140th Ave NE | | | | | | | |



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FPA/Public Notice #: N/A

Location #29 Valley Ck flow station

| | | | | | | |
|---|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 27 | Township: 25 N | Range: 05 E | Latitude: N 47.62466 | Longitude: W 122.15296 | County: King |
| Location #29 Driving Directions 110' north of BelRed Road east of 140th Ave NE | | | | | | |

Location #30 Commission Waterway regional pond

| | | | | | | |
|---|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NW 1/4 | Section: 26 | Township: 25 N | Range: 05 E | Latitude: N 47.62633 | Longitude: W 122.14341 | County: King |
| Location #30 Driving Directions BelRed Road west of 148th Ave NE | | | | | | |

Location #31 Overlake regional detention pond

| | | | | | | |
|---|----------------|------------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0266 | | Waterbody: Kelsey Creek NF (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: NE 1/4 | Section: 27 | Township: 25 N | Range: 05 E | Latitude: N 47.62792 | Longitude: W 122.14799 | County: King |
| Location #31 Driving Directions 144th Ave NE & NE 20th St. | | | | | | |

Location #32 Vasa Ck box culvert

| | | | | | | |
|---|----------------|-------------------------------|----------------|---------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0156 | | Waterbody: Vasa Creek (ls) | | Tributary to: Lake Sammamish | | |
| 1/4 SEC: SW 1/4 | Section: 12 | Township: 24 N | Range: 05 E | Latitude: N 47.5784 | Longitude: W 122.11348 | County: King |
| Location #32 Driving Directions SW 35th St & W L Sammamish Pkwy SE | | | | | | |



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FPA/Public Notice #: N/A

Location #33 Trib to Vasa Ck culvert

| | | | | | | |
|--|----------------|-------------------------------|----------------|---------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0156 | | Waterbody: Vasa Creek (Is) | | Tributary to: Lake Sammamish | | |
| 1/4 SEC: NW 1/4 | Section: 23 | Township: 24 N | Range: 05 E | Latitude: N 47.56346 | Longitude: W 122.14484 | County: King |
| Location #33 Driving Directions 15217 SE 48th Drive | | | | | | |

Location #34 Vasa Ck trib culvert

| | | | | | | |
|---|----------------|-------------------------------|----------------|---------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0156 | | Waterbody: Vasa Creek (Is) | | Tributary to: Lake Sammamish | | |
| 1/4 SEC: SW 1/4 | Section: 12 | Township: 24 N | Range: 05 E | Latitude: N 47.57861 | Longitude: W 122.12003 | County: King |
| Location #34 Driving Directions 167th Ave SE & SE 35th St. | | | | | | |

Location #35 Unnamed stream 0160 pond and inlet

| | | | | | | |
|--|----------------|------------------------------|----------------|-----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.6001 | | Waterbody: Lake Sammamish | | Tributary to: Sammamish Slough | | |
| 1/4 SEC: SW 1/4 | Section: 12 | Township: 24 N | Range: 05 E | Latitude: N 47.57634 | Longitude: W 122.11386 | County: King |
| Location #35 Driving Directions SE 38th St. & SE 38th Pl. | | | | | | |

Location #36 Trib to L Sammamish culvert

| | | | | | | |
|--|----------------|------------------------------|----------------|-----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.6001 | | Waterbody: Lake Sammamish | | Tributary to: Sammamish Slough | | |
| 1/4 SEC: NE 1/4 | Section: 13 | Township: 24 N | Range: 05 E | Latitude: N 47.57629 | Longitude: W 122.11189 | County: King |
| Location #36 Driving Directions 4015 W L Sammamish Parkway SE | | | | | | |



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FPA/Public Notice #: N/A

Location #37 Trib to L Sammamish culvert

| | | | | | | |
|---|----------------|------------------------------|----------------|-----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.6001 | | Waterbody: Lake Sammamish | | Tributary to: Sammamish Slough | | |
| 1/4 SEC: NW 1/4 | Section: 13 | Township: 24 N | Range: 05 E | Latitude: N 47.57329 | Longitude: W 122.11113 | County: King |
| Location #37 Driving Directions 17152 SE 40th Pl | | | | | | |

Location #38 Trib 0161 to L Sammamish culvert

| | | | | | | |
|---|----------------|------------------------------|----------------|-----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.6001 | | Waterbody: Lake Sammamish | | Tributary to: Sammamish Slough | | |
| 1/4 SEC: NW 1/4 | Section: 13 | Township: 24 N | Range: 05 E | Latitude: N 47.57647 | Longitude: W 122.11253 | County: King |
| Location #38 Driving Directions 4094 W L Sammamish Pkwy SE | | | | | | |

Location #39 Phantom L lake elevation station

| | | | | | | |
|--|----------------|----------------------------|----------------|---------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.6028 | | Waterbody: Phantom Lake | | Tributary to: | | |
| 1/4 SEC: SE 1/4 | Section: 02 | Township: 24 N | Range: 05 E | Latitude: N 47.59612 | Longitude: W 122.12906 | County: King |
| Location #39 Driving Directions Phantom L about SE 16th St. | | | | | | |

Location #40 Phantom Ck flow station

| | | | | | | |
|---|----------------|----------------------------------|----------------|---------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0154 | | Waterbody: Phantom Creek (ls) | | Tributary to: Lake Sammamish | | |
| 1/4 SEC: SE 1/4 | Section: 02 | Township: 24 N | Range: 05 E | Latitude: N 47.59479 | Longitude: W 122.11965 | County: King |
| Location #40 Driving Directions Phantom Ck about SE 17th Pl. | | | | | | |



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Location #41 Phantom Ck lake inlet flow station

| | | | | | | |
|--|----------------|----------------------------------|----------------|---------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0154 | | Waterbody: Phantom Creek (ls) | | Tributary to: Lake Sammamish | | |
| 1/4 SEC: SE 1/4 | Section: 02 | Township: 24 N | Range: 05 E | Latitude: N 47.58904 | Longitude: W 122.12957 | County: King |
| Location #41 Driving Directions Phantom Ck at SE 17th Pl. | | | | | | |

Location #42 Trib to Coal Creek on Lakemont Blvd.

| | | | | | | |
|---|----------------|--------------------------|----------------|----------------------------------|--------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0268 | | Waterbody: Coal Creek | | Tributary to: Lake Washington | | |
| 1/4 SEC: NE 1/4 | Section: 26 | Township: 24 N | Range: 05 E | Latitude: N 47.5375 | Longitude: W 122.1288 | County: King |
| Location #42 Driving Directions north of 7219 Lakemont Blvd SE | | | | | | |

Location #43 Concrete Box Culvert Inlet

| | | | | | | |
|---|----------------|----------------------------|----------------|----------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0252 | | Waterbody: Yarrow Creek | | Tributary to: Lake Washington | | |
| 1/4 SEC: NW 1/4 | Section: 20 | Township: 25 N | Range: 05 E | Latitude: N 47.64208 | Longitude: W 122.20416 | County: King |
| Location #43 Driving Directions behind 3265 103rd Ave NE | | | | | | |

Location #44 Kelsey Creek Park new sediment trap

| | | | | | | |
|--|----------------|-----------------------------------|----------------|-------------------------------|---------------------------|-----------------|
| WORK START: May 28, 2009 | | | | WORK END: August 23, 2011 | | |
| WRIA: 08.0264 | | Waterbody: West Tributary (rb) | | Tributary to: Kelsey Creek | | |
| 1/4 SEC: SE 1/4 | Section: 33 | Township: 25 N | Range: 05 E | Latitude: N 47.60595 | Longitude: W 122.16482 | County: King |
| Location #44 Driving Directions 410 130th Pl SE, just upstream of the parking lot | | | | | | |



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FPA/Public Notice #: N/A

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW (formerly RCW 77.20). Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued pursuant to RCW 77.55.021 (EXCEPT agricultural irrigation, stock watering or bank stabilization projects) or 77.55.141 are subject to additional restrictions, conditions or revocation if the Department of Fish and Wildlife determines that new biological or physical information indicates the need for such action. The person(s) to whom this Hydraulic Project Approval is issued has the right pursuant to Chapter 34.04 RCW to appeal such decisions. All agricultural irrigation, stock watering or bank stabilization Hydraulic Project Approvals issued pursuant to RCW 77.55.021 may be modified by the Department of Fish and Wildlife due to changed conditions after consultation with the person(s) to whom this Hydraulic Project Approval is issued: PROVIDED HOWEVER, that such modifications shall be subject to appeal to the Hydraulic Appeals Board established in RCW 77.55.301.

APPEALS INFORMATION

If you wish to appeal the issuance or denial of, or conditions provided in a Hydraulic Project Approval, there are informal and formal appeal processes available.

A. INFORMAL APPEALS (WAC 220-110-340) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021, 77.55.141, 77.55.181, and 77.55.291: A person who is aggrieved or adversely affected by the following Department actions may request an informal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval; or

(B) An order imposing civil penalties. A request for an INFORMAL REVIEW shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, 600 Capitol Way North, Olympia, Washington 98501-1091 and shall be RECEIVED by the Department within 30 days of the denial or issuance of a Hydraulic Project Approval or receipt of an order imposing civil penalties. If agreed to by the aggrieved party, and the aggrieved party is the Hydraulic Project Approval applicant, resolution of the concerns will be facilitated through discussions with the Area Habitat Biologist and his/her supervisor. If resolution is not reached, or the aggrieved party is not the Hydraulic Project Approval applicant, the Habitat Technical Services Division Manager or his/her designee shall conduct a review and recommend a decision to the Director or his/her designee. If you are not satisfied with the results of this informal appeal, a formal appeal may be filed.



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B. FORMAL APPEALS (WAC 220-110-350) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021 (EXCEPT agricultural irrigation, stock watering or bank stabilization projects) or 77.55.291:

A person who is aggrieved or adversely affected by the following Department actions may request a formal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval;

(B) An order imposing civil penalties; or

(C) Any other 'agency action' for which an adjudicative proceeding is required under the Administrative Procedure Act, Chapter 34.05 RCW.

A request for a FORMAL APPEAL shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, shall be plainly labeled as 'REQUEST FOR FORMAL APPEAL' and shall be RECEIVED DURING OFFICE HOURS by the Department at 600 Capitol Way North, Olympia, Washington 98501-1091, within 30-days of the Department action that is being challenged. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal shall be within 30-days of the date of the Department's written decision in response to the informal appeal.

C. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021 (agricultural irrigation, stock watering or bank stabilization only), 77.55.141, 77.55.181, or 77.55.241: A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The request for FORMAL APPEAL shall be in WRITING to the Hydraulic Appeals Board per WAC 259-04 at Environmental Hearings Office, 4224 Sixth Avenue SE, Building Two - Rowe Six, Lacey, Washington 98504; telephone 360/459-6327.

D. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO CHAPTER 43.21L RCW: A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The FORMAL APPEAL shall be in accordance with the provisions of Chapter 43.21L RCW and Chapter 199-08 WAC. The request for FORMAL APPEAL shall be in WRITING to the Environmental and Land Use Hearings Board at Environmental Hearings Office, Environmental and Land Use Hearings Board, 4224 Sixth Avenue SE, Building Two - Rowe Six, P.O. Box 40903, Lacey, Washington 98504; telephone 360/459-6327.

E. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS results in forfeiture of all appeal rights. If there is no timely request for an appeal, the department action shall be final and unappealable.

ENFORCEMENT: Sergeant Chandler (34) P2

| | | | |
|-----------------------------------|--------------|--|----------------------|
| Habitat Biologist Larry Fisher | 425-313-5683 |  | for Director WDFW |
|-----------------------------------|--------------|--|----------------------|

CC:

Attachment 'C'

General Construction Storm Water Pollution Prevention Plan (CSWPPP)

1. Project Information

- Project Name: 2010 Programmatic Storm & Surface Water Sediment Removal.
- Address: Citywide sites; see attached Sediment Removal Table and Sediment Removal Location map.
- Property Owner: All sites are located on City of Bellevue ROW or properties. The Storm & Surface Water Section of Utilities is the lead on this project. Please contact Don McQuilliams @ (425) 452-7865 for questions.
- CSWPPP Preparer: Don McQuilliams, CESCL #UW-238403
- Project CESCLs: Storm & Surface Water Lead Workers Frank Oriol & Chad Brown.

2. Project Description

- Annual removal of sediment from in-stream sedimentation ponds at various locations around the City to provide storm water storage for flood protection and water quality. Most of these ponds only need maintenance every several years while a few require annual maintenance. Total size of the project varies annually dependent on site characteristics but typically annual project scope is approximately 20,000 square feet of in-stream disturbance with 2500-3000 cubic yards of sediment removed annually.

3. Existing Site Conditions

- Most all of the sites listed on attachment 'A' are located within or adjacent to stream and drainage courses. These range from year round high volume streams such as Kelsey and Coal Creek to seasonal drainages. Topography varies per site but generally is within stream course channels and critical areas. Vegetation again varies with each site but is typical of northwest native shrubs and trees.

4. Site Soils

- A Citywide Soils Map (Attachment D) has been attached with the sites overlaid to illustrate various soil types at each site. Sediment removal activities are conducted either from a gravel/asphalt staging area adjacent to the pond(s) or by working directly within the drainage channel and loading into awaiting trucks in an adjacent staging area.

5. Adjacent Areas

- No buildings are located adjacent to these sites; access roadways, drainage infrastructure and other utilities are present on many of the sites and will be located prior to any work conducted.

6. Critical Areas

- All of the sites under this program are within or adjacent to critical areas. The Storm & Surface Water Utility is accustomed to working within and adjacent to critical areas and will implement BMP's as needed to ensure unnecessary damages are not caused as a result of the sediment removal operations.

7. Erosion Problem Areas

- Many of the sites pose challenging erosion concerns if proper BMP's are not setup to address ahead of time. Each site will be dewatered before the work is to be done and

appropriate BMP's will be put in place ahead of and during work operations to minimize erosion impacts.

8. Construction Stormwater Pollution Prevention Elements

- Mark Clearing Limits – only the minimal clearing necessary will be conducted for work on each site. Most of these sites are well defined and have evident clearing limits.
- Establish Construction Access – Access roads & staging areas have been designed into many of these ponds and will be used solely for ingress/egress if a designed access is present. Sites requiring access improvements will be evaluated on a case by case basis.
- Control Flow Rates – Waters from each site will be temporarily by-passed or diverted away from the work site and into areas suitable for diversion. Many sites have built in by-pass facilities to allow for easy de-watering during maintenance frequencies.
- Install Sediment Controls – BMP's will be placed as determined by the onsite CESCL and project Lead. Please refer to the Sediment Management Plan within the Work Description for further details.
- Stabilize Soils – This will be addressed as needed and determined by the onsite CESCL and project Lead. Most sites do not require soil stabilization under normal working conditions.
- Protect Slopes - This will be addressed as needed and determined by the onsite CESCL and project Lead. Most sites do not require slope protection under normal working conditions.
- Protect Drain Inlets – Addressed as needed, BMP's will be setup to minimize sediment from entering the Storm & Surface Water System.
- Stabilize Channels and Outlets - This will be addressed as needed and determined by the onsite CESCL and project Lead. Most sites do not require Channel Stabilization under normal working conditions.
- Control Pollutants – During work activities, BMP's will be in place should a pollutant spill occur from machinery within the worksite. Additionally, the Storm & Surface Water Utility can respond to spills on short notice with additional staff and spill response supplies as needed.
- Control De-Watering – All work sites under this project will be de-watered with pumps or built in by-pass facilities prior to sediment removal operations. Fish exclusion will be conducted as needed on sites where fish are present or possibly present. De-watering equipment will remain in place throughout the duration of work at each site.
- Maintain BMP's – BMP's will be inspected and adjusted as necessary by a CESCL present on the job site at least once per day or more frequently as needed.
- Manage the Project – The Project Lead will be responsible for day to day operations of the site. The Storm and Surface Water Crew Leader and Superintendent will conduct periodic inspections to ensure project goals are being met.

9. Construction Phasing

- The Construction Sequence section of the attached Work Description outlines the typical phasing for a sediment removal project. Each job will vary slightly and additions or subtractions may be implemented as determined by the Project Lead.

10. Construction Schedule

- Scheduling of this work is determined by the available timing within the Fish window from June 16th to September 30th. A few locations are not subject to the Fish window but are still under rainy season restrictions and will be done during dry months in and surrounding the summer.

11. Financial/Ownership Responsibilities

- All activities and associated responsibilities as part of these projects are conducted by the City of Bellevue Storm and Surface Water Utility.

12. Engineering Calculations

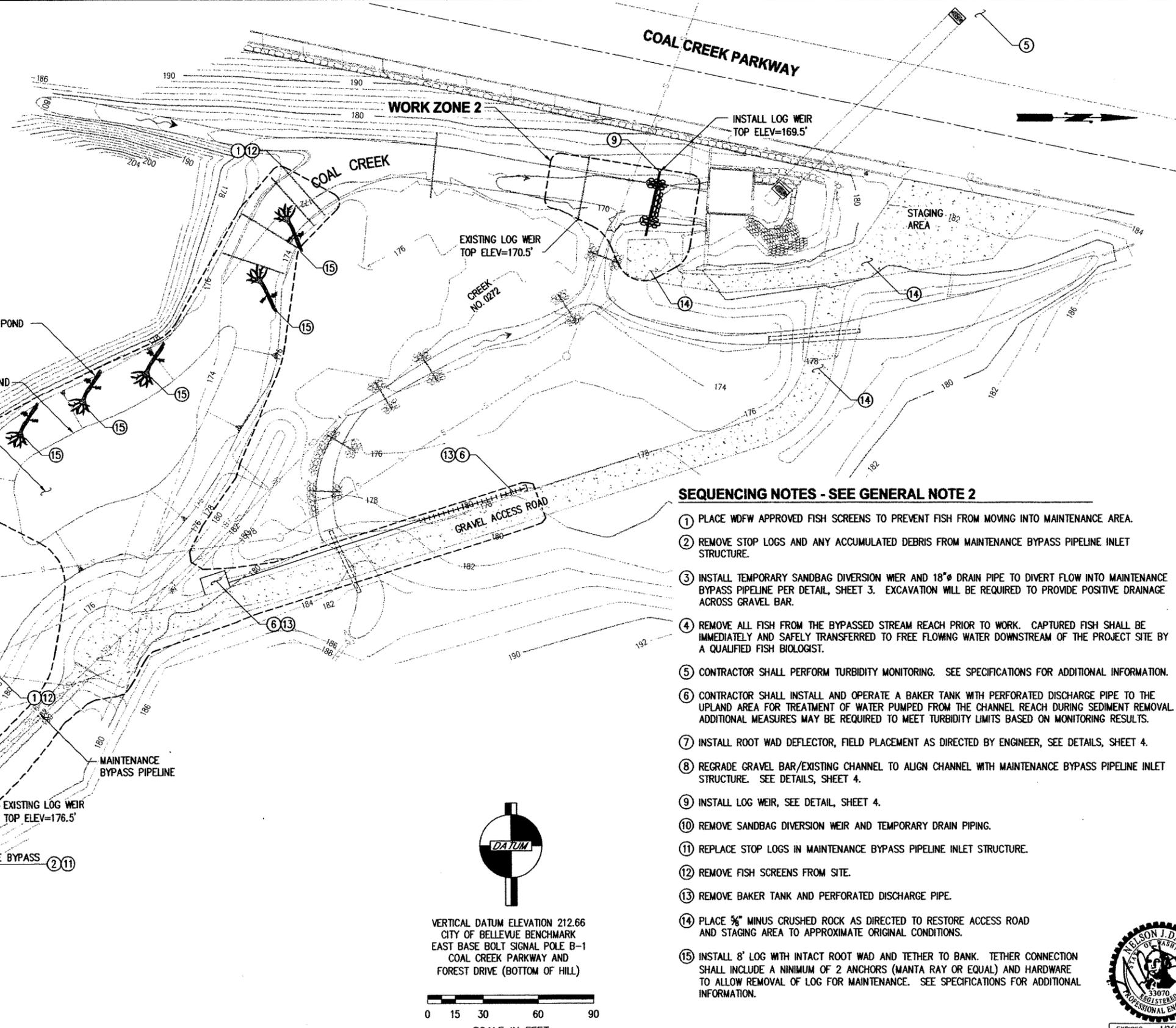
- Original Engineering designs are available for several of the sites listed and are available upon request. Each site will be returned as close to the original intent of the Engineer as possible during sediment removal. Major site modifications will be discussed with the Engineering section of Utilities prior to work being done.

13. Plans and Drawings

- Commonly used Best Management Practices (BMP) detail sheets are included with this document as Attachment 'E' with standard BMP's defined for each site on Attachment 'A'. A vicinity map is also attached showing the location of each project site. Detailed drawings for several of the larger sites have also been included with site specific BMP's as follows:
 - i. Coal Creek sedimentation Pond: Permanent stream by-pass system, pond dewatering into baker tanks during project, sandbags kept onsite during project work.
 - ii. I-405 Regional Pond: Permanent stream by-pass system, pond dewatering into baker tanks during project, sandbags kept onsite during project work.
 - iii. Coal Creek offline Sedimentation Pond: Pond dewatering into baker tanks during project, sandbags kept onsite during project work.
 - iv. Pond A: Inlet/outlet by-pass into lower cell, cell dewatering, sand bag coffer dam to isolate work area.
 - v. SE 63rd Detention Pond: Inlet/outlet by-pass into nearby control structure or baker tank (as needed). Inlet/out protection.
 - vi. Lakehurst Sedimentation Pond: Stream by-pass into control structure, dewatering work site into adjacent vegetation, inlet protection.

GENERAL NOTES

- EXISTING INFORMATION IS BASED ON "COAL CREEK PARKWAY SEDIMENTATION BASIN" PLANS (KPG, 1996). FACILITY LOCATIONS ARE APPROXIMATE AND ARE INCLUDED FOR REFERENCE ONLY.
- SEQUENCING NOTES ARE SPECIFIC TO WORK ZONE 1. CONTRACTOR SHALL PROVIDE A PUMPED BYPASS FOR WORK ZONE 2 MEETING ALL OF THE SAME CRITERIA FOR FISH REMOVAL AND EXCLUSION FROM THE WORK ZONE. PUMP LOCATION, FISH SCREEN LOCATIONS AND DISCHARGE LOCATION SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL.
- CONTRACTOR SHALL NOTIFY OLYMPIC PIPELINE (HOLLY WILLIAMSON, (425) 235-7767) TWO WEEKS PRIOR TO CONSTRUCTION. COORDINATE AS REQUIRED FOR PROTECTION OF PETROLEUM PIPELINE IN VICINITY OF WORK ZONE 2.
- FIELD LOCATE METRO SEWER IN VICINITY OF WORK ZONE 1 AND MAINTAIN 10' CLEARANCE BETWEEN SEWER AND ROOT WAD EXCAVATION.



SEQUENCING NOTES - SEE GENERAL NOTE 2

- PLACE WDFW APPROVED FISH SCREENS TO PREVENT FISH FROM MOVING INTO MAINTENANCE AREA.
- REMOVE STOP LOGS AND ANY ACCUMULATED DEBRIS FROM MAINTENANCE BYPASS PIPELINE INLET STRUCTURE.
- INSTALL TEMPORARY SANDBAG DIVERSION WEIR AND 18"Ø DRAIN PIPE TO DIVERT FLOW INTO MAINTENANCE BYPASS PIPELINE PER DETAIL, SHEET 3. EXCAVATION WILL BE REQUIRED TO PROVIDE POSITIVE DRAINAGE ACROSS GRAVEL BAR.
- REMOVE ALL FISH FROM THE BYPASSED STREAM REACH PRIOR TO WORK. CAPTURED FISH SHALL BE IMMEDIATELY AND SAFELY TRANSFERRED TO FREE FLOWING WATER DOWNSTREAM OF THE PROJECT SITE BY A QUALIFIED FISH BIOLOGIST.
- CONTRACTOR SHALL PERFORM TURBIDITY MONITORING. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL INSTALL AND OPERATE A BAKER TANK WITH PERFORATED DISCHARGE PIPE TO THE UPLAND AREA FOR TREATMENT OF WATER PUMPED FROM THE CHANNEL REACH DURING SEDIMENT REMOVAL. ADDITIONAL MEASURES MAY BE REQUIRED TO MEET TURBIDITY LIMITS BASED ON MONITORING RESULTS.
- INSTALL ROOT WAD DEFLECTOR, FIELD PLACEMENT AS DIRECTED BY ENGINEER, SEE DETAILS, SHEET 4.
- REGRADE GRAVEL BAR/EXISTING CHANNEL TO ALIGN CHANNEL WITH MAINTENANCE BYPASS PIPELINE INLET STRUCTURE. SEE DETAILS, SHEET 4.
- INSTALL LOG WEIR, SEE DETAIL, SHEET 4.
- REMOVE SANDBAG DIVERSION WEIR AND TEMPORARY DRAIN PIPING.
- REPLACE STOP LOGS IN MAINTENANCE BYPASS PIPELINE INLET STRUCTURE.
- REMOVE FISH SCREENS FROM SITE.
- REMOVE BAKER TANK AND PERFORATED DISCHARGE PIPE.
- PLACE 3/8" MINUS CRUSHED ROCK AS DIRECTED TO RESTORE ACCESS ROAD AND STAGING AREA TO APPROXIMATE ORIGINAL CONDITIONS.
- INSTALL 8' LOG WITH INTACT ROOT WAD AND TETHER TO BANK. TETHER CONNECTION SHALL INCLUDE A MINIMUM OF 2 ANCHORS (MANTA RAY OR EQUAL) AND HARDWARE TO ALLOW REMOVAL OF LOG FOR MAINTENANCE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



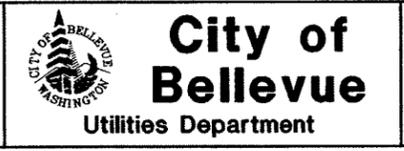
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Approved By

ENGINEERING DESIGN MANAGER _____ DATE _____

PROJECT ENGINEER _____ DATE _____

0202PLN02A.DWG
 FILENAME
 A/JJ DESIGNED BY 3/07 DATE
 S/AE DRAWN BY 3/07 DATE
 A/JJ CHECKED BY 3/07 DATE



KPG
 Architecture
 Landscape Architecture
 Civil Engineering
 Urban Design

BID DOCUMENT

**SITE 1.
 COAL CREEK SEDIMENT BASIN
 DIVERSION WEIR**

SITE PLAN
 21-24-5 H-15
 SCALE H: 1"=30'
 V: N/A
 SHT 2 OF 6

LEGEND
 24" THICK LAYER OF HEAVY LOOSE RIPRAP WITH 12" THICK FILTER BLANKET OF CLASS B GRAVEL COVER WITH 12" THICK LAYER OF SELECT SITE FILL AND HYDROSEED.
 18" THICK LAYER OF LIGHT-LOOSE RIPRAP WITH 12" THICK FILTER BLANKET OF CLASS B GRAVEL COVER WITH 12" THICK LAYER OF SELECT SITE FILL AND HYDROSEED.

ACCESS ROAD REALIGNMENT CURVE DATA

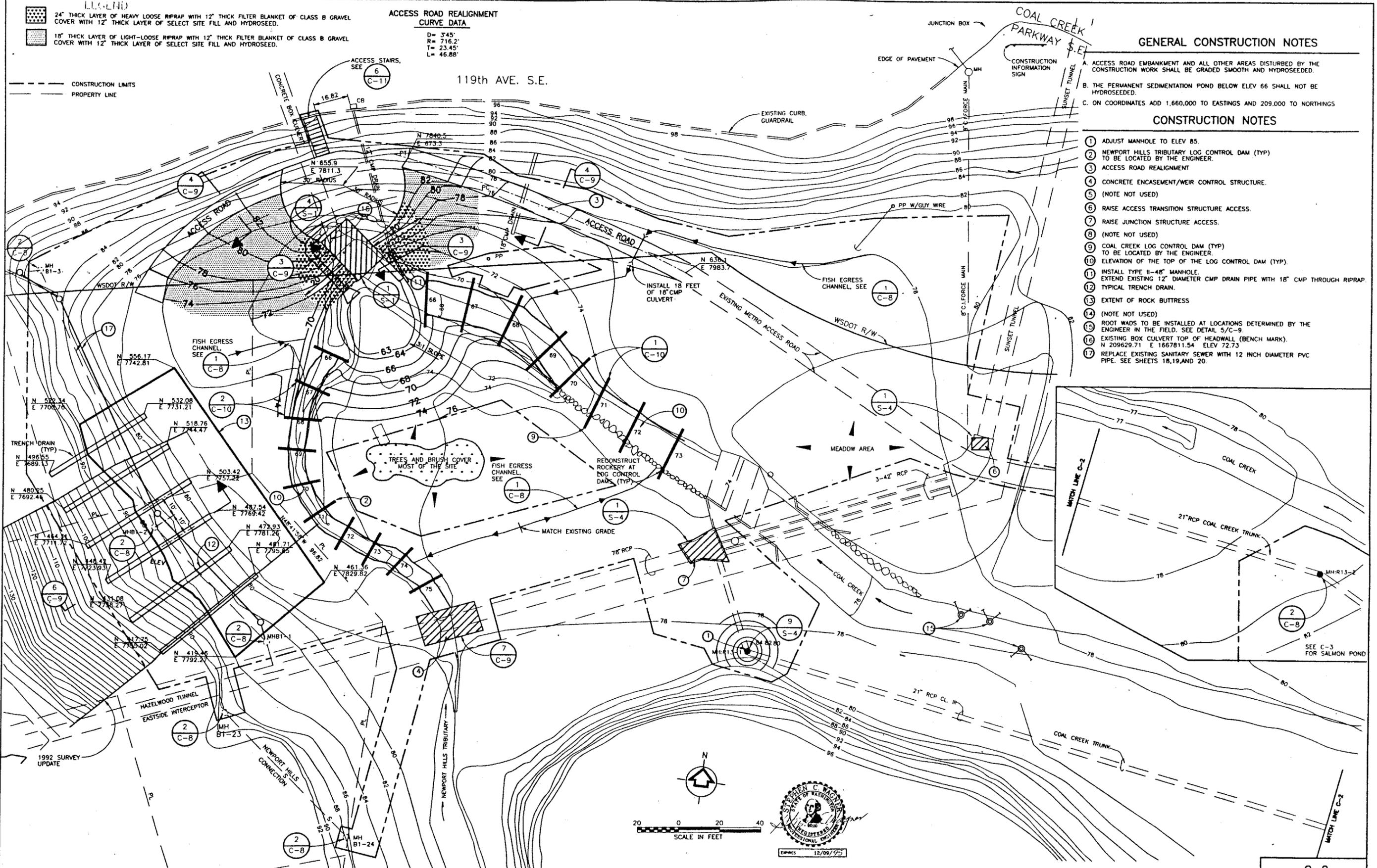
D= 345'
 R= 716.2'
 T= 23.45'
 L= 46.88'

GENERAL CONSTRUCTION NOTES

- A. ACCESS ROAD EMBANKMENT AND ALL OTHER AREAS DISTURBED BY THE CONSTRUCTION WORK SHALL BE GRADED SMOOTH AND HYDROSEEDED.
- B. THE PERMANENT SEDIMENTATION POND BELOW ELEV 66 SHALL NOT BE HYDROSEEDED.
- C. ON COORDINATES ADD 1,660,000 TO EASTINGS AND 209,000 TO NORTHINGS

CONSTRUCTION NOTES

- 1. ADJUST MANHOLE TO ELEV 85.
- 2. NEWPORT HILLS TRIBUTARY LOG CONTROL DAM (TYP) TO BE LOCATED BY THE ENGINEER.
- 3. ACCESS ROAD REALIGNMENT
- 4. CONCRETE ENCASMENT/WEIR CONTROL STRUCTURE.
- 5. (NOTE NOT USED)
- 6. RAISE ACCESS TRANSITION STRUCTURE ACCESS.
- 7. RAISE JUNCTION STRUCTURE ACCESS.
- 8. (NOTE NOT USED)
- 9. COAL CREEK LOG CONTROL DAM (TYP) TO BE LOCATED BY THE ENGINEER.
- 10. ELEVATION OF THE TOP OF THE LOG CONTROL DAM (TYP).
- 11. INSTALL TYPE II-48" MANHOLE.
- 12. EXTEND EXISTING 12" DIAMETER CMP DRAIN PIPE WITH 18" CMP THROUGH RIPRAP. TYPICAL TRENCH DRAIN.
- 13. EXTENT OF ROCK BUTTRESS
- 14. (NOTE NOT USED)
- 15. ROOT WADS TO BE INSTALLED AT LOCATIONS DETERMINED BY THE ENGINEER IN THE FIELD. SEE DETAIL 5/C-9
- 16. EXISTING BOX CULVERT TOP OF HEADWALL (BENCH MARK). N 209629.71 E 1667811.54 ELEV 72.73
- 17. REPLACE EXISTING SANITARY SEWER WITH 12 INCH DIAMETER PVC PIPE. SEE SHEETS 18, 19 AND 20.



| NO. | DATE | BY | APPR | REVISION |
|-----|---------|-----|------|--------------------------------|
| 1 | 4-29-93 | MSG | DW | REVIEW COMMENTS |
| 2 | 5-11-93 | DW | DW | REVISIONS |
| 3 | 3/22/94 | DW | DW | REV. TO LIMIT SITE DISTURBANCE |

Approved By
Scott Taylor

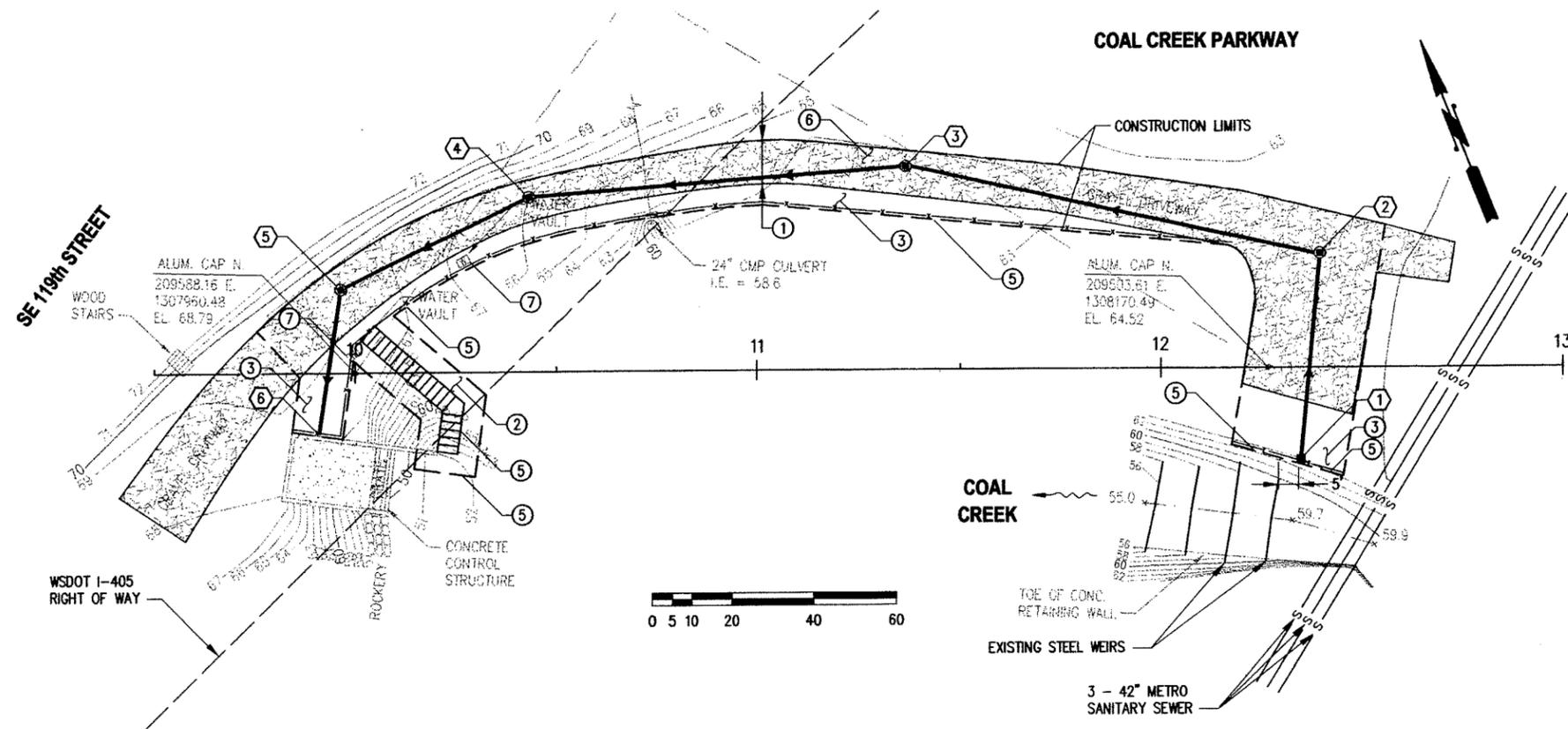
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 DESIGNED BY
 DW 6/15/87 DATE
 DRAWN BY
 SW 4/6/88 DATE
 CHECKED BY

CITY OF BELLEVUE
 UTILITIES DEPARTMENT

1-405/COAL CREEK REGIONAL DETENTION/SEDIMENTATION FACILITY
SITE PLAN

C-2
KCM
 KCM, Inc.
 1817 First Avenue
 Seattle, Washington 98101
 SHT 2 OF 20

03089C22 DWG ROTATE 7.5660 DEG.; DVIEW TWIST 336.20; PLOT 1-20

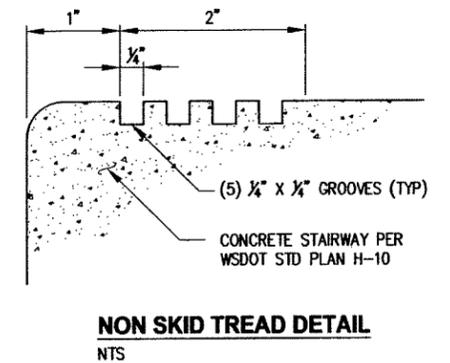
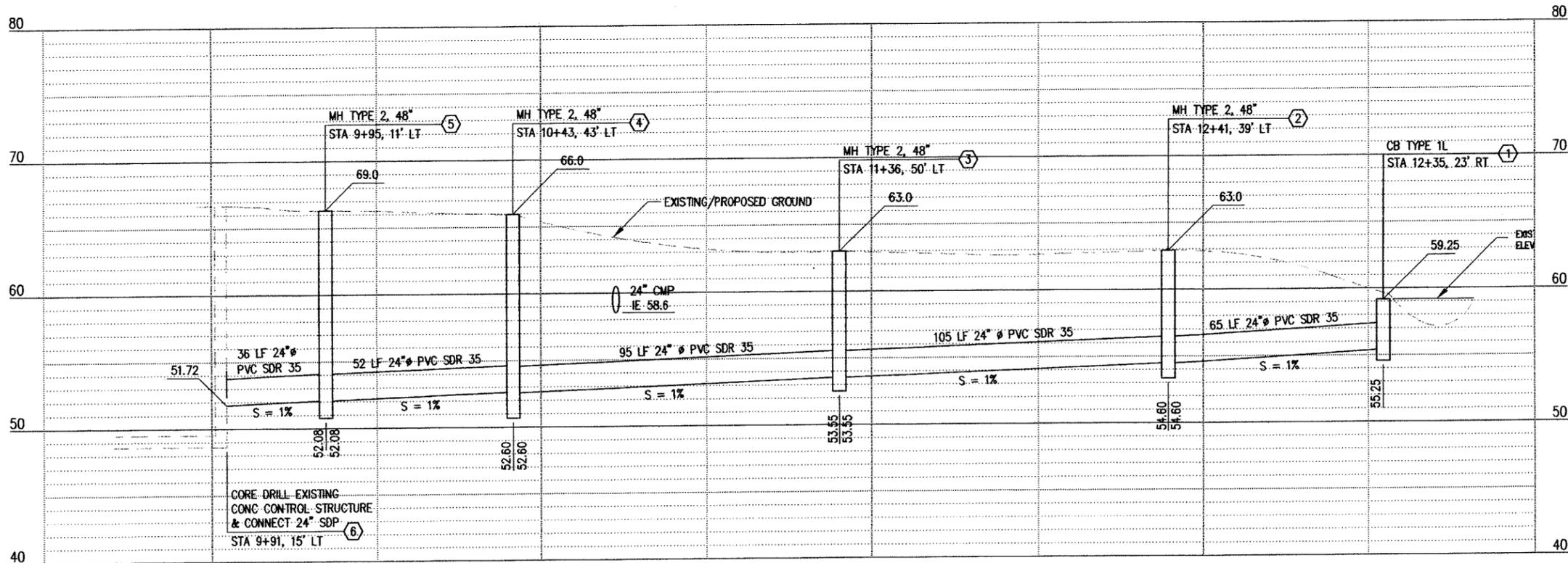


CONSTRUCTION NOTES

- ① RESTORE GRAVEL ACCESS ROAD TO MATCH EXISTING DIMENSIONS (TYP).
- ② INSTALL 5' WIDE CONCRETE STAIRWAY WITH HANDRAILS PER WSDOT STD PLAN H-10 TO PROVIDE FOOT ACCESS FOR TRASH MAINTENANCE. PROVIDE NON SKID TREAD PER DETAIL THIS SHEET. FIELD LOCATE FOR APPROVAL BY THE ENGINEER.
- ③ HYDROSEED DISTURBED SLOPE AREAS WITH EROSION CONTROL SEED MIX. MAXIMUM PAY LIMITS ARE CONSTRUCTION LIMITS SHOWN.
- ④ PLACE SANDBAG COFFERDAM PRIOR TO CATCH BASIN INSTALLATION TO ISOLATE WORK AREA FROM CREEK FLOWS. SEE DETAIL, SHEET 6.
- ⑤ INSTALL STRAW WATTLES ALONG TOP OF BANK BASE OF STAIRWELL PRIOR TO BEGINNING CONSTRUCTION.
- ⑥ RESTORE GRAVEL DRIVEWAY (APPROX 600 SY) WITH 4" DEPTH COMPACTED CSBC.
- ⑦ PROTECT WATER VAULTS (IRRIGATION BLOWOFF).

GENERAL NOTES

1. SAND COLLARS SHALL BE USED AT ALL PVC PIPE/MANHOLE CONNECTIONS.
2. CONTRACTOR TO PROVIDE TURBIDITY MONITORING DURING CONSTRUCTION. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. WSDOT RIGHT OF WAY AND METRO SANITARY SEWER LOCATIONS ARE APPROXIMATE. LOCATIONS ARE PER I-405/COAL CREEK REGIONAL POND AS BUILTS (KCM, 1994).
4. INVERTED ELEVATIONS SHOWN ARE TO PROJECTED COVER OF STRUCTURE.
5. INSTALL TESC MEASURES AND TEMPORARY COFFERDAM PRIOR TO EXCAVATION AND GRADING.



| NO. | DATE | BY | APPR. | REVISIONS |
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Approved By

ENGINEERING DESIGN MANAGER DATE

PROJECT ENGINEER DATE

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FILENAME

NJD DESIGNED BY DATE 3/07

SAA DRAWN BY DATE 3/07

NJD CHECKED BY DATE 3/07



KPG

Architecture
Landscape Architecture
Civil Engineering
Urban Design

BID DOCUMENT

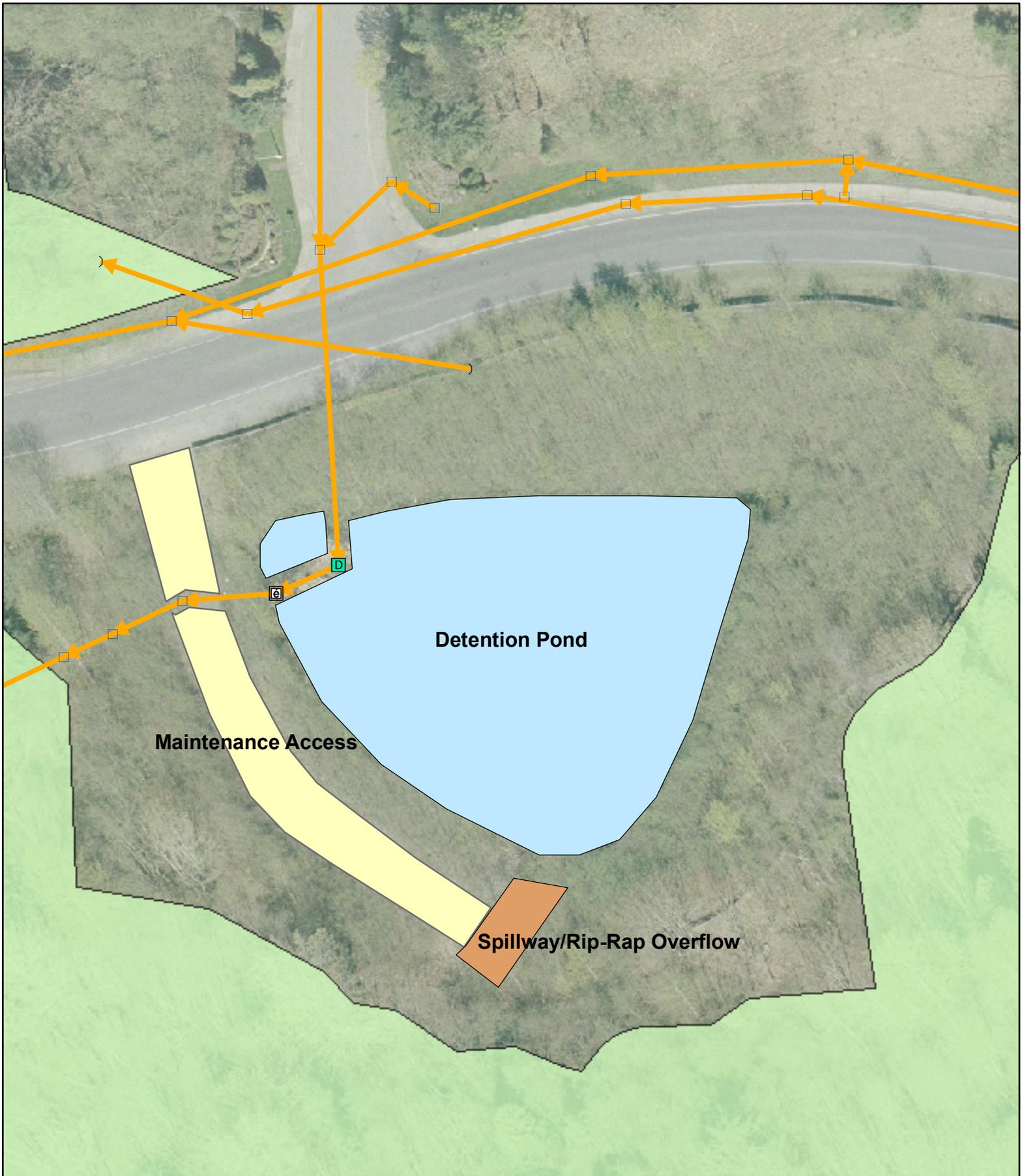
SITE 2.
I-405 POND BYPASS PIPE

I-405 POND BYPASS PIPE INSTALLATION

21-24-5 H-15

SCALE H: N/A V: N/A

SHT 5 OF 6

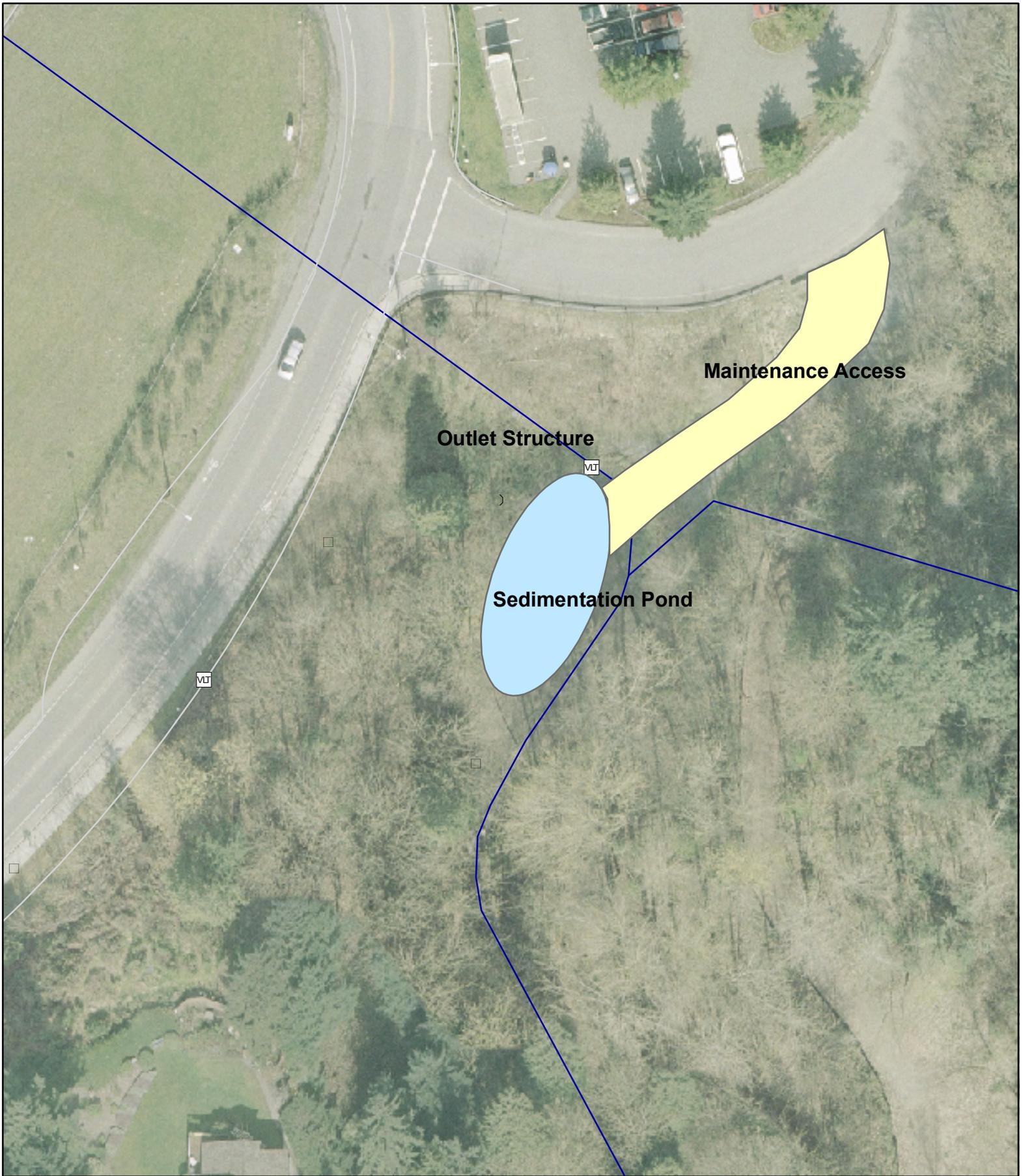


Legend

- Streams
- Parks
- Drainage Pipes

DP26790 - SE 63rd Detention Pond



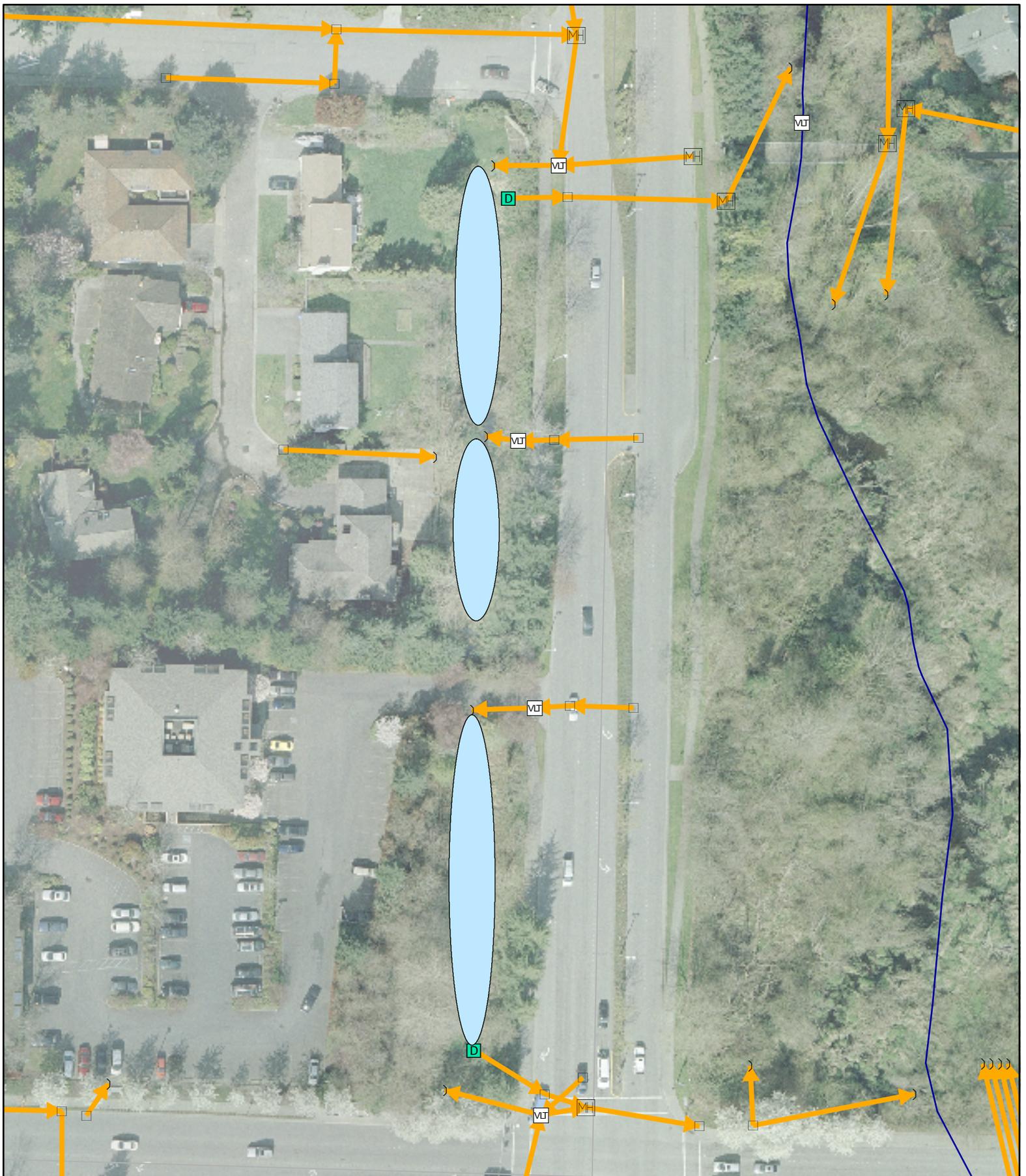


Legend

- Streams
- Parks

D508 - Lakehurst Sedimentation Pond





Legend

-  Streams
-  Parks
-  Drainage Pipes

DP5250 - NE 8th & 148th Detention Ponds



Attachment 'D' - Best Management Practices

Included on the following pages are detailed specification sheets related to BMP's that are commonly utilized during operations related to in stream and pond maintenance activities. The specifications sheets have been taken directly from the Regional Road Maintenance Endangered Species Act Program Guidelines and are used in the CESCL certification course. A table indicates the comparable BMP as defined in the City of Bellevue Clear and Grade code.

| Regional Road Maintenance ESA Manual | Comparable CoB BMP |
|--|------------------------|
| | |
| Cofferdam | |
| Dewatering | |
| Inlet protection | C209 Outlet protection |
| Large woody debris | |
| Sand bags | |
| Stream bypass | |
| Vactoring | |
| Mulching | C121 Mulching |
| Soil stabilization (blankets & mating) | C122 Nets and blankets |
| | |



BMP: COFFERDAM

DESCRIPTION

A cofferdam is a temporary structure built into a waterway to enclose a construction area and reduce sediment pollution from construction work in and under water. Cofferdams can be made of steel, rock, sand bags, wood or aqua barriers.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Dewatering construction areas.

APPLICATIONS

This BMP may be used in construction activities such as culvert installation, bridges, piers, or abutments. It may be used in combination with other barriers and is commonly used in conjunction with stream bypass and/or pumps.

LIMITATIONS

This BMP should not be used:

- In deep water unless designed or reviewed by an engineer.

CONSTRUCTION GUIDELINES

- When used in watercourses or streams, cofferdams must be used in accordance with permit requirements.
- Refer to Appendix B for Fish Exclusion Protocols.
- Construction guidelines depend on cofferdam material selection. See pictures for construction details.

BMP MAINTENANCE

- During construction, inspect BMPs daily during the workweek. Schedule additional inspections during storm events. Make any required repairs.
- Repair gaps, holes or scour.

BMP REMOVAL

- Evaluate site to determine BMP is no longer needed (the area has stabilized- potential of sediment laden water exiting the area has passed).
- Remove sediment buildup in front of BMP.
- Remove BMP (recycle and/or re-use if applicable).
- Re-vegetate area disturbed by BMP removal (if applicable).



Sandbags used as a cofferdam



BMP: DEWATERING

DESCRIPTION

Dewatering can be used to keep water from a work area by using any or all of the following: pump, barrier, vector, or bypass culvert.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Allowing work to be performed in dry conditions.
- Reducing the transport of soil particles by flowing water.
- Reducing the liquefaction of soils.

APPLICATIONS

This BMP may be used in, but not limited to, ditches, watercourses or streams, channels, swales and excavations. It will generally be used in combination with other BMPs.

LIMITATIONS

This BMP should not be used:

- Where flows are greater than pump capacity.

CONSTRUCTION GUIDELINES

- Determine if the project will require continuous dewatering.
- Schedule pumping, monitoring and maintenance activities accordingly.
- Dewatering must be used in accordance with applicable design and/or permit conditions.
- Refer to Appendix B for Fish Exclusion Protocols.
- Install a "Keep Water from Work Area" BMP.
- Install dewatering devices.
- Install site specific barrier, prior to dewatering, to prevent exterior water from entering construction area.
- Ensure water discharged from the site is not allowed to cause erosion.
- Dewatered water will be discharged to:
 - A containment device.
 - A sanitary sewage system.
 - Other BMPs to remove water borne soil particles prior to the water being reintroduced to a storm drainage system, water course or stream.

BMP: DEWATERING (continued)

BMP MAINTENANCE

- Schedule pumping, monitoring and maintenance activities in accordance with dewatering needs.
- During construction, inspect BMPs daily during the workweek. Schedule additional inspections during storm events. Make any required repairs immediately.
- Inspect bypass, pump, and barrier periodically. Make necessary repairs.
- Check for erosion at discharge. Repair or move as necessary.
- Have adequate fuel supply and backup pumps in the event of mechanical failure.

BMP REMOVAL

- Remove BMP (recycle and/or re-use if applicable).
- Reintroduce water gradually.
- Re-vegetate area disturbed by BMP removal (if applicable).



BMP: INLET PROTECTION

DESCRIPTION

Inlet protection is a sediment filter located at the inlet to a storm drainage conveyance. It may be an external structure such as a filter fence box or a gravel berm. Inlet protection may also be an internal device such as a silt sock or a silt trap.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Reducing soil particles from entering storm drainage systems.

APPLICATIONS

This BMP may be used in ditches at the inlet to enclosed drainage systems. They may also be used in manholes or catch basins. This BMP may be used in combination with other BMPs.

LIMITATIONS

This BMP should not be used:

- Where there are traffic conflicts.
- In areas where it creates excessive ponding.
- To remove excessive fines.

CONSTRUCTION GUIDELINES

- Refer to sketches on following pages for details and specific construction guidelines.

BMP MAINTENANCE

- During construction, inspect BMPs daily during the workweek. Schedule additional inspections during storm events. Make any required repairs.
- Sediment should be removed when deposits reach one-half the height of the BMP.

BMP REMOVAL

- Evaluate site to determine BMP is no longer needed (the area has

BMP: INLET PROTECTION (continued)

stabilized- potential of sediment laden water exiting the area has passed).

- Remove sediment buildup in front of BMP.
- Remove BMP (recycle and/or re-use if applicable).
- Re-vegetate area disturbed by BMP removal (if applicable).



Inlet protection: filter fence surrounding catch basin to reduce soil particles from entering drainage system



BMP: LARGE WOODY DEBRIS

DESCRIPTION

Large woody debris is any large piece of woody material (including the trunk and root mass) that intrudes or is imbedded in the stream channel. Woody debris affects local flow velocities, streambed and streambank stability, and local stream characteristics. For example: see DOE, WSDFW, and/or King County Bank Stabilization Guidelines. Large Woody Debris is used to reduce water velocity/erosive forces and to provide habitat for fish.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Improving aquatic habitat by re-directing flows away from eroding banks, providing cover, creating pools and storing sediment.
- Providing stream bed and bank stabilization.

APPLICATIONS

When incorporating woody material into projects, it is necessary to identify the desired engineering performance and the desired habitat benefits. Each project must be specifically tailored to meet the engineering objectives identified for the habitat requirements of the target species. It can be used in combination with other BMPs.

LIMITATIONS

This BMP should not be used:

- When the specific design requirements and desired habitat benefits have not been identified.
- Without consideration of the factors that influence the relative permanence of the wood in the stream channel.

CONSTRUCTION GUIDELINES

- These will vary based on existing site conditions, design features, size and shape of the wood, its exposure to the forces exerted by moving water, and its resistance to movement because of wedging, or embedding with adjacent materials.
- Construct in accordance with design, specifications and permit conditions.

BMP MAINTENANCE

- Monitor the large woody debris to ensure it remains "as built".
- Consult a qualified biologist for specific repairs.

BMP REMOVAL

- BMP removal is not applicable.



Large woody debris placed in streambed to provide salmonid refuge. Note use of streambed gravel, dewatering with pump, and mulching



BMP: SANDBAG

DESCRIPTION

A sandbag is a pre-manufactured cloth or plastic bag (polypropylene) filled with sand or gravel. Sandbags can be used to keep water from the work area, for settling and reduction in water velocity/erosive forces.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- A barrier.
- A protective barrier against flooding.
- Using in combination with other methods, to form a cofferdam.
- Using as a sediment filter (when used with clean pea gravel).
- Using as a ballast.
- Other multi-purpose situations.

APPLICATIONS

This BMP may be used during emergencies to control the flow and level of water. It may be used in combination with other barriers.

This BMP may be used during construction to form dewatered areas, for example, cofferdams, and for various other impromptu situations.

LIMITATIONS

This BMP should not be used:

- Where permit conditions state otherwise.
- When maintenance activities conducted in locations could reduce actual or potential high flow salmonid refuge functions, this BMP will be used if required by permit conditions.

CONSTRUCTION GUIDELINES

- When used in watercourses or streams, this BMP must be used in accordance with permit requirements.
- Refer to Appendix B for Fish Exclusion Protocols.
- If sandbag filling is to be used as streambed gravel, it must be washed prior to filling bags, appropriately sized according to design and placed in accordance with permit conditions. Wash rock off-site (at a location where washed water can not enter watercourses, streams or wetlands)

BMP: SANDBAG (continued)

until water runs clear.

- Secure ends of sandbags to ensure material does not scatter.
- When used as a barrier stack bags tightly together and in alternating, brick-layer fashion.

BMP MAINTENANCE

- During construction, inspect BMP's daily during the workweek. Schedule additional inspections during storm events. Make any required repairs.
- Replace damaged sandbags.
- Repair damaged sandbag berm due to end runs or undercutting.
- Sediment should be removed when deposits reach one-half the height of the BMP.
- Check bags often for seepage and replace or add as needed.

BMP REMOVAL

- Evaluate site to determine BMP is no longer needed (the area has stabilized- potential of sediment laden water exiting the area has passed).
- Remove sediment buildup in front of BMP.
- Remove BMP (recycle and/or re-use if applicable).
- Re-vegetate area disturbed by BMP removal (if applicable).
- Gravel filled bags may be split and the contents left in place, in streams, when so stated in the specific permit conditions (Bags are to be removed from job site).



Sandbags acting as a barrier



BMP: STREAM BYPASS

DESCRIPTION

A stream bypass is a method of diverting the main flow of a stream to a temporary alternate route during construction. It is used in conjunction with a cofferdam and pumps. A stream bypass may be constructed by various methods or combination of methods such as earthen berms, sand bags, ecology blocks and aqua barriers.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Diverting flowing water away from or around a construction site.
- Minimizing sedimentation.
- In limited cases, it may provide for fish passage.

APPLICATIONS

This BMP may be used at stream crossings during culvert replacement, at bridge repair sites, and other sites where the stream flow cannot be interrupted. It may be used in combination with other barriers.

CONSTRUCTION GUIDELINES

- Stream bypass BMPs must be installed according to applicable permit requirements.
- Refer to Appendix B for Fish Exclusion Protocols.
- Determine best method for specific site.
- Discuss strategy with crew.
- Work quickly to avoid water contamination by sediment.
- Ensure pipe outlet is stabilized to prevent scour and erosion.
- Pump and bypass should be designed or reviewed by an engineer to ensure capacity can handle peak flows.

BMP MAINTENANCE

- Inspect bypass, pump, and dam periodically. Repair any leaks.
- Check for scour at bypass outfall. Repair or move as necessary.
- Have adequate fuel supply and backup pumps in the event of mechanical failure.
- Inspect fish isolation nets to ensure complete exclusion. Remove any accumulated debris from isolation net.

BMP REMOVAL

- Remove BMP when in water work is complete.
- Fish passage for all life stages will be restored following in water work.
- Remove BMP (recycle and/or re-use if applicable).
- Re-vegetate area disturbed by BMP removal (if applicable).



*A stream bypass used to divert water
around a construction site*



BMP: VACTORING

DESCRIPTION

Vactoring is the use of a truck mounted drainage system cleaning device.

The cleaning device operates on the principle of large volume, high-speed air movement to lift water, soil particles/sediment, contaminants and debris. A large tube conveys the collected materials into a tank mounted on the truck. The cleaning device also includes a freshwater supply and high-pressure pump system to flush and clean pipes and structures. Collected material is transported in the truck to approved disposal sites.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Cleaning drainage systems.
- Dewatering the work area.

APPLICATIONS

This BMP may be used to clean and/or dewater enclosed drainage systems, open drainage systems, excavations and settling ponds. It may be used in conjunction with other BMPs.

LIMITATIONS

This BMP should not be used:

- Where the flow exceeds the capacity of the cleaning device.
- To remove large debris.

CONSTRUCTION GUIDELINES

- When used in a watercourse or stream, vactoring should be done according to applicable permit requirements.
- Reduce potential for sediments and debris from re-entering water.
- If entering a confined space use appropriate air testing and entry procedures.
- Prepare work sequence to address backup equipment or project phasing when tank is full.

BMP MAINTENANCE

- Follow manufacturer's operation and service guidelines.

BMP REMOVAL

- BMP removal is not applicable.



Vactor truck removing sediment from catch basin



BMP: MULCHING

DESCRIPTION

Mulching is the application of straw, wood chips, or other suitable materials on the soil surface applied manually or by machine. This BMP is used to reduce potential for soil becoming water or air borne and to reduce water velocity/erosive forces after vegetation establishment.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Reducing erosion by protecting the soil surface from raindrop impact or wind.
- Decreasing surface water or wind velocity impacts.
- Fostering the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold.

APPLICATIONS

This BMP can be used in areas to provide protection to the soil surface. Areas that have been seeded can be mulched to provide additional protection. This BMP may be used in combination with plantings of trees, shrubs, certain ground covers or in conjunction with seeding.

LIMITATIONS

This BMP should not be used:

- On slopes steeper than 2 horizontal to 1 vertical.
- In watercourse and streams.
- In ditches where water flow is continuous.

CONSTRUCTION GUIDELINES

- When used near watercourses or streams, this BMP must be used in accordance with permit requirements.
- Mulch should be applied so that the soil is covered sufficiently enough to allow seeds to germinate, but also protects the soil from erosion.
- Nets and matting may be used in combination with mulch.
- Various types and sizes of mulch are available.
- If used to stabilize soil from wind forces, the mulch needs to be tilled or incorporated into the soil.

BMP: MULCHING (continued)

BMP MAINTENANCE

- During construction, inspect BMPs daily during the workweek. Schedule additional inspections during storm events. Make any required repairs.
- Additional mulch should be applied where erosion or scouring occurs.
- If a tear occurs in the cover netting or matting, repair as necessary.

BMP REMOVAL

- BMP removal is not necessary under normal circumstances.



Using straw to reduce erosion in a slide area prior to a major stabilizing project



BMP: SOIL STABILIZATION (BLANKETS AND MATTING)

DESCRIPTION

Soil stabilization can be accomplished through the installation of a protective blanket (covering) or a soil stabilization mat on a prepared planting area, a steep slope, channel and/or shoreline.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Reducing erosion.
- Providing a microclimate that protects young vegetation and promotes its establishment.
- "Reinforcing the turf" to resist the forces of erosion during storm events.

APPLICATIONS

This BMP may be used on short, steep slopes where erosion hazard is high and planting is likely to be slow in establishment. It may also be used on stream banks or tidal shorelines where moving water is likely to wash out new plantings. Soil stabilization blankets and matting may be used in combination with other BMPs.

LIMITATIONS

This BMP should not be used:

- In watercourses or streams without proper permits.

CONSTRUCTION GUIDELINES

- Installation is site specific.
- See following drawings and specifications.

BMP MAINTENANCE

- If vegetation is incorporated, inspect during the plant establishment period. Re-plant, due to mortality, as necessary.
- Schedule additional inspections during storm events. Check for erosion or undermining; any required repairs shall be made.

BMP REMOVAL

- BMP removal is not necessary.



Stabilizing the soil in a sensitive area using blankets



Lining a ditch with soil stabilization matting to reduce erosion



Stabilizing the soil using matting and hydroseeding

4.6 Maintenance Standards for Drainage Facilities

The facility-specific maintenance standards contained in this section are intended to be conditions for determining if maintenance actions are required as identified through inspection. They are not intended to be measures of the facility's required condition at all times between inspections. In other words, exceedence of these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance schedules shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

Table 4.5 – Maintenance Standards

No. 1 – Detention Ponds

| General | Trash & Debris | Any trash and debris which exceed 5 cubic feet per 1,000 square feet (this is about equal to the amount of trash it would take to fill up one standard size garbage can). In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance. | Trash and debris cleared from site. |
|---------|--|--|---|
| | Poisonous Vegetation and noxious weeds | Any poisonous or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations. (Apply requirements of adopted IPM policies for the use of herbicides). | No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with local health department) Complete eradication of noxious weeds may not be possible. Compliance with State or local eradication policies required |
| | Contaminants and Pollution | Any evidence of oil, gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency). | No contaminants or pollutants present. |
| | Rodent Holes | Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes. | Rodents destroyed and dam or berm repaired. (Coordinate with local health department; coordinate with Ecology Dam Safety Office if pond exceeds 10 acre-feet.) |

No. 1 – Detention Ponds

| Maintenance Component | Defect | Conditions When Maintenance Is Needed | Results Expected When Maintenance Is Performed |
|-----------------------|------------------------------|---|--|
| | Beaver Dams | Dam results in change or function of the facility. | Facility is returned to design function. (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies) |
| | Insects | When insects such as wasps and hornets interfere with maintenance activities. | Insects destroyed or removed from site. Apply insecticides in compliance with adopted IPM policies |
| | Tree Growth and Hazard Trees | Tree growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vactoring, or equipment movements). If trees are not interfering with access or maintenance, do not remove If dead, diseased, or dying trees are identified (Use a certified Arborist to determine health of tree or removal requirements) | Trees do not hinder maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., alders for firewood). Remove hazard Trees |
| Side Slopes of Pond | Erosion | Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment. | Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion. |
| Storage Area | Sediment | Accumulated sediment that exceeds 10% of the designed pond depth unless otherwise specified or affects inletting or outletting condition of the facility. | Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion. |
| | Liner (If Applicable) | Liner is visible and has more than three 1/4-inch holes in it. | Liner repaired or replaced. Liner is fully covered. |

No. 1 – Detention Ponds

| Maintenance Component | Defect | Conditions When Maintenance Is Needed | Results Expected When Maintenance Is Performed |
|---|------------------------------|--|---|
| Pond Berms (Dikes) | Settlements | <p>Any part of berm which has settled 4 inches lower than the design elevation.</p> <p>If settlement is apparent, measure berm to determine amount of settlement.</p> <p>Settling can be an indication of more severe problems with the berm or outlet works. A licensed civil engineer should be consulted to determine the source of the settlement.</p> | Dike is built back to the design elevation. |
| | Piping | <p>Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue.</p> <p>(Recommend a Goethechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.</p> | Piping eliminated. Erosion potential resolved. |
| Emergency Overflow/ Spillway and Berms over 4 feet in height. | Tree Growth | <p>Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping.</p> <p>Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.</p> | Trees should be removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration. |
| | Piping | <p>Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue.</p> <p>(Recommend a Goethechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.</p> | Piping eliminated. Erosion potential resolved. |
| Emergency Overflow/ Spillway | Emergency Overflow/ Spillway | <p>Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of out flow path of spillway.</p> <p>(Rip-rap on inside slopes need not be replaced.)</p> | Rocks and pad depth are restored to design standards. |
| | Erosion | See "Side Slopes of Pond" | |

No. 2 – Infiltration

| General | Trash & Debris | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
|--|---|--|---|
| | Poisonous/Noxious Vegetation | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| | Contaminants and Pollution | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| | Rodent Holes | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| Storage Area | Sediment | Water ponding in infiltration pond after rainfall ceases and appropriate time allowed for infiltration. (A percolation test pit or test of facility indicates facility is only working at 90% of its designed capabilities. If two inches or more sediment is present, remove). | Sediment is removed and/or facility is cleaned so that infiltration system works according to design. |
| Filter Bags (if applicable) | Filled with Sediment and Debris | Sediment and debris fill bag more than 1/2 full. | Filter bag is replaced or system is redesigned. |
| Rock Filters | Sediment and Debris | By visual inspection, little or no water flows through filter during heavy rain storms. | Gravel in rock filter is replaced. |
| Side Slopes of Pond | Erosion | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| Emergency Overflow Spillway and Berms over 4 feet in height. | Tree Growth | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| | Piping | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| Emergency Overflow Spillway | Rock Missing | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| | Erosion | See "Detention Ponds" (No. 1). | See "Detention Ponds" (No. 1). |
| Pre-settling Ponds and Vaults | Facility or sump filled with Sediment and/or debris | 6" or designed sediment trap depth of sediment. | Sediment is removed. |

No. 3 – Closed Detention Systems (Tanks/Vaults)

| Storage Area | Plugged Air Vents | One-half of the cross section of a vent is blocked at any point or the vent is damaged. | Vents open and functioning. |
|--------------|--|---|--|
| | Debris and Sediment | Accumulated sediment depth exceeds 10% of the diameter of the storage area for 1/2 length of storage vault or any point depth exceeds 15% of diameter. (Example: 72-inch storage tank would require cleaning when sediment reaches depth of 7 inches for more than 1/2 length of tank.) | All sediment and debris removed from storage area. |
| | Joints Between Tank/Pipe Section | Any openings or voids allowing material to be transported into facility. (Will require engineering analysis to determine structural stability). | All joint between tank/pipe sections are sealed. |
| | Tank Pipe Bent Out of Shape | Any part of tank/pipe is bent out of shape more than 10% of its design shape. (Review required by engineer to determine structural stability). | Tank/pipe repaired or replaced to design. |
| | Vault Structure Includes Cracks in Wall, Bottom, Damage to Frame and/or Top Slab | Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determines that the vault is not structurally sound. Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or any evidence of soil particles entering the vault through the walls. | Vault replaced or repaired to design specifications and is structurally sound. No cracks more than 1/4-inch wide at the joint of the inlet/outlet pipe. |
| Manhole | Cover Not in Place | Cover is missing or only partially in place. Any open manhole requires maintenance. | Manhole is closed. |
| | Locking Mechanism Not Working | Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread (may not apply to self-locking lids). | Mechanism opens with proper tools. |
| | Cover Difficult to Remove | One maintenance person cannot remove lid after applying normal lifting pressure. Intent is to keep cover from sealing off access to maintenance. | Cover can be removed and reinstalled by one maintenance person. |
| | Ladder Rungs Unsafe | Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks. | Ladder meets design standards. Allows maintenance person safe access. |
| Catch Basins | See "Catch Basins" (No. 5) | See "Catch Basins" (No. 5). | See "Catch Basins" (No. 5). |

No. 4 – Control Structure/Flow Restrictor

| General | Trash and Debris (Includes Sediment) | Material exceeds 25% of sump depth or 1 foot below orifice plate. | Control structure orifice is not blocked. All trash and debris removed. |
|---------------|---|---|---|
| | Structural Damage | Structure is not securely attached to manhole wall. | Structure securely attached to wall and outlet pipe. |
| | | Structure is not in upright position (allow up to 10% from plumb). | Structure in correct position. |
| | | Connections to outlet pipe are not watertight and show signs of rust. | Connections to outlet pipe are water tight; structure repaired or replaced and works as designed. |
| | | Any holes--other than designed holes--in the structure. | Structure has no holes other than designed holes. |
| Cleanout Gate | Damaged or Missing | Cleanout gate is not watertight or is missing. | Gate is watertight and works as designed. |
| | | Gate cannot be moved up and down by one maintenance person. | Gate moves up and down easily and is watertight. |
| | | Chain/rod leading to gate is missing or damaged. | Chain is in place and works as designed. |
| | | Gate is rusted over 50% of its surface area. | Gate is repaired or replaced to meet design standards. |
| Orifice Plate | Damaged or Missing | Control device is not working properly due to missing, out of place, or bent orifice plate. | Plate is in place and works as designed. |
| | Obstructions | Any trash, debris, sediment, or vegetation blocking the plate. | Plate is free of all obstructions and works as designed. |
| Overflow Pipe | Obstructions | Any trash or debris blocking (or having the potential of blocking) the overflow pipe. | Pipe is free of all obstructions and works as designed. |
| Manhole | See "Closed Detention Systems" (No. 3). | See "Closed Detention Systems" (No. 3). | See "Closed Detention Systems" (No. 3). |
| Catch Basin | See "Catch Basins" (No. 5). | See "Catch Basins" (No. 5). | See "Catch Basins" (No. 5). |

No. 5 – Catch Basins

| General | Trash & Debris | Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%. | No Trash or debris located immediately in front of catch basin or on grate opening. |
|---------|--|---|---|
| | | Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe. | No trash or debris in the catch basin. |
| | | Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height. | Inlet and outlet pipes free of trash or debris. |
| | | Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane). | No dead animals or vegetation present within the catch basin. |
| | Sediment | Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe. | No sediment in the catch basin |
| | Structure Damage to Frame and/or Top Slab | Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch (Intent is to make sure no material is running into basin). | Top slab is free of holes and cracks. |
| | | Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached | Frame is sitting flush on the riser rings or top slab and firmly attached. |
| | Fractures or Cracks in Basin Walls/ Bottom | Maintenance person judges that structure is unsound. | Basin replaced or repaired to design standards. |
| | | Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks. | Pipe is regouted and secure at basin wall. |
| | Settlement/ Misalignment | If failure of basin has created a safety, function, or design problem. | Basin replaced or repaired to design standards. |
| | Vegetation | Vegetation growing across and blocking more than 10% of the basin opening. | No vegetation blocking opening to basin. |
| | | Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart. | No vegetation or root growth present. |

No. 5 – Catch Basins

| Maintenance Component | Defect | Conditions When Maintenance is Needed | Results Expected When Maintenance is performed |
|------------------------------|-------------------------------|--|--|
| | Contamination and Pollution | See "Detention Ponds" (No. 1). | No pollution present. |
| Catch Basin Cover | Cover Not in Place | Cover is missing or only partially in place. Any open catch basin requires maintenance. | Catch basin cover is closed |
| | Locking Mechanism Not Working | Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread. | Mechanism opens with proper tools. |
| | Cover Difficult to Remove | One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.) | Cover can be removed by one maintenance person. |
| Ladder | Ladder Rungs Unsafe | Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges. | Ladder meets design standards and allows maintenance person safe access. |
| Metal Grates (If Applicable) | Grate opening Unsafe | Grate with opening wider than 7/8 inch. | Grate opening meets design standards. |
| | Trash and Debris | Trash and debris that is blocking more than 20% of grate surface inletting capacity. | Grate free of trash and debris. |
| | Damaged or Missing. | Grate missing or broken member(s) of the grate. | Grate is in place and meets design standards. |

No. 6 – Debris Barriers (e.g., Trash Racks)

| General | Trash and Debris | Trash or debris that is plugging more than 20% of the openings in the barrier. | Barrier cleared to design flow capacity. |
|---------|------------------------|--|---|
| Metal | Damaged/ Missing Bars. | Bars are bent out of shape more than 3 inches. | Bars in place with no bends more than 3/4 inch. |
| | | Bars are missing or entire barrier missing. | Bars in place according to design. |
| | | Bars are loose and rust is causing 50% deterioration to any part of barrier. | Barrier replaced or repaired to design standards. |
| | Inlet/Outlet Pipe | Debris barrier missing or not attached to pipe | Barrier firmly attached to pipe |

No. 7 – Energy Dissipaters

| External: | | | |
|-------------------|---|--|---|
| Rock Pad | Missing or Moved Rock | Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil. | Rock pad replaced to design standards. |
| | Erosion | Soil erosion in or adjacent to rock pad. | Rock pad replaced to design standards. |
| Dispersion Trench | Pipe Plugged with Sediment | Accumulated sediment that exceeds 20% of the design depth. | Pipe cleaned/flushed so that it matches design. |
| | Not Discharging Water Properly | Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" of water along trench). Intent is to prevent erosion damage. | Trench redesigned or rebuilt to standards. |
| | Perforations Plugged. | Over 1/2 of perforations in pipe are plugged with debris and sediment. | Perforated pipe cleaned or replaced. |
| | Water Flows Out Top of "Distributor" Catch Basin. | Maintenance person observes or receives credible report of water flowing out during any storm less than the design storm or its causing or appears likely to cause damage. | Facility rebuilt or redesigned to standards. |
| | Receiving Area Over-Saturated | Water in receiving area is causing or has potential of causing landslide problems. | No danger of landslides. |
| Internal: | | | |
| Manhole/Chamber | Worn or Damaged Post, Baffles, Side of Chamber | Structure dissipating flow deteriorates to 1/2 of original size or any concentrated worn spot exceeding one square foot which would make structure unsound. | Structure replaced to design standards. |
| | Other Defects | See "Catch Basins" (No. 5). | See "Catch Basins" (No. 5). |

No. 8 – Typical Biofiltration Swale

| General | Sediment Accumulation on Grass | Sediment depth exceeds 2 inches. | Remove sediment deposits on grass treatment area of the bio-swale. When finished, swale should be level from side to side and drain freely toward outlet. There should be no areas of standing water once inflow has ceased. |
|---------|--------------------------------|--|--|
| | Standing Water | When water stands in the swale between storms and does not drain freely. | Any of the following may apply: remove sediment or trash blockages, improve grade from head to foot of swale, remove clogged check dams, add underdrains or convert to a wet biofiltration swale. |
| | Flow spreader | Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width. | Level the spreader and clean so that flows are spread evenly over entire swale width. |
| | Constant Baseflow | When small quantities of water continually flow through the swale, even when it has been dry for weeks, and an eroded, muddy channel has formed in the swale bottom. | Add a low-flow pea-gravel drain the length of the swale or by-pass the baseflow around the swale. |
| | Poor Vegetation Coverage | When grass is sparse or bare or eroded patches occur in more than 10% of the swale bottom. | Determine why grass growth is poor and correct that condition. Re-plant with plugs of grass from the upper slope: plant in the swale bottom at 8-inch intervals. Or re-seed into loosened, fertile soil. |
| | Vegetation | When the grass becomes excessively tall (greater than 10-inches); when nuisance weeds and other vegetation starts to take over. | Mow vegetation or remove nuisance vegetation so that flow not impeded. Grass should be mowed to a height of 3 to 4 inches. Remove grass clippings. |
| | Excessive Shading | Grass growth is poor because sunlight does not reach swale. | If possible, trim back over-hanging limbs and remove brushy vegetation on adjacent slopes. |
| | Inlet/Outlet | Inlet/outlet areas clogged with sediment and/or debris. | Remove material so that there is no clogging or blockage in the inlet and outlet area. |
| | Trash and Debris Accumulation | Trash and debris accumulated in the bio-swale. | Remove trash and debris from bioswale. |
| | Erosion/Scouring | Eroded or scoured swale bottom due to flow channelization, or higher flows. | For ruts or bare areas less than 12 inches wide, repair the damaged area by filling with crushed gravel. If bare areas are large, generally greater than 12 inches wide, the swale should be re-graded and re-seeded. For smaller bare areas, overseed when bare spots are evident, or take plugs of grass from the upper slope and plant in the swale bottom at 8-inch intervals. |

No. 9 – Wet Biofiltration Swale

| General | Sediment Accumulation | Sediment depth exceeds 2-inches in 10% of the swale treatment area. | Remove sediment deposits in treatment area. |
|---------|-------------------------------|--|--|
| | Water Depth | Water not retained to a depth of about 4 inches during the wet season. | Build up or repair outlet berm so that water is retained in the wet swale. |
| | Wetland Vegetation | Vegetation becomes sparse and does not provide adequate filtration, OR vegetation is crowded out by very dense clumps of cattail, which do not allow water to flow through the clumps. | Determine cause of lack of vigor of vegetation and correct. Replant as needed. For excessive cattail growth, cut cattail shoots back and compost off-site. Note: normally wetland vegetation does not need to be harvested unless die-back is causing oxygen depletion in downstream waters. |
| | Inlet/Outlet | Inlet/outlet area clogged with sediment and/or debris. | Remove clogging or blockage in the inlet and outlet areas. |
| | Trash and Debris Accumulation | See "Detention Ponds" (No. 1). | Remove trash and debris from wet swale. |
| | Erosion/Scouring | Swale has eroded or scoured due to flow channelization, or higher flows. | Check design flows to assure swale is large enough to handle flows. By-pass excess flows or enlarge swale. Replant eroded areas with fibrous-rooted plants such as <i>Juncus effusus</i> (soft rush) in wet areas or snowberry (<i>Symphoricarpos albus</i>) in dryer areas. |

No. 10 – Filter Strips

| General | Sediment Accumulation on Grass | Sediment depth exceeds 2 inches. | Remove sediment deposits, re-level so slope is even and flows pass evenly through strip. |
|---------|--------------------------------|---|---|
| | Vegetation | When the grass becomes excessively tall (greater than 10-inches); when nuisance weeds and other vegetation starts to take over. | Mow grass, control nuisance vegetation, such that flow not impeded. Grass should be mowed to a height between 3-4 inches. |
| | Trash and Debris Accumulation | Trash and debris accumulated on the filter strip. | Remove trash and Debris from filter. |
| | Erosion/Scouring | Eroded or scoured areas due to flow channelization, or higher flows. | For ruts or bare areas less than 12 inches wide, repair the damaged area by filling with crushed gravel. The grass will creep in over the rock in time. If bare areas are large, generally greater than 12 inches wide, the filter strip should be re-graded and re-seeded. For smaller bare areas, overseed when bare spots are evident. |
| | Flow spreader | Flow spreader uneven or clogged so that flows are not uniformly distributed through entire filter width. | Level the spreader and clean so that flows are spread evenly over entire filter width. |

No. 11 – Wetponds

| General | Water level | First cell is empty, doesn't hold water. | Line the first cell to maintain at least 4 feet of water. Although the second cell may drain, the first cell must remain full to control turbulence of the incoming flow and reduce sediment resuspension. |
|-------------------|--|--|--|
| | Trash and Debris | Accumulation that exceeds 1 CF per 1000-SF of pond area. | Trash and debris removed from pond. |
| | Inlet/Outlet Pipe | Inlet/Outlet pipe clogged with sediment and/or debris material. | No clogging or blockage in the inlet and outlet piping. |
| | Sediment Accumulation in Pond Bottom | Sediment accumulations in pond bottom that exceeds the depth of sediment zone plus 6-inches, usually in the first cell. | Sediment removed from pond bottom. |
| | Oil Sheen on Water | Prevalent and visible oil sheen. | Oil removed from water using oil-absorbent pads or vactor truck. Source of oil located and corrected. If chronic low levels of oil persist, plant wetland plants such as <i>Juncus effusus</i> (soft rush) which can uptake small concentrations of oil. |
| | Erosion | Erosion of the pond's side slopes and/or scouring of the pond bottom, that exceeds 6-inches, or where continued erosion is prevalent. | Slopes stabilized using proper erosion control measures and repair methods. |
| | Settlement of Pond Dike/Berm | Any part of these components that has settled 4-inches or lower than the design elevation, or inspector determines dike/berm is unsound. | Dike/berm is repaired to specifications. |
| | Internal Berm | Berm dividing cells should be level. | Berm surface is leveled so that water flows evenly over entire length of berm. |
| Overflow Spillway | Rock is missing and soil is exposed at top of spillway or outside slope. | Rocks replaced to specifications. | |

No. 12 – Wetvaults

| General | Trash/Debris Accumulation | Trash and debris accumulated in vault, pipe or inlet/outlet (includes floatables and non-floatables). | Remove trash and debris from vault. |
|----------------------|---|---|---|
| | Sediment Accumulation in Vault | Sediment accumulation in vault bottom exceeds the depth of the sediment zone plus 6-inches. | Remove sediment from vault. |
| | Damaged Pipes | Inlet/outlet piping damaged or broken and in need of repair. | Pipe repaired and/or replaced. |
| | Access Cover Damaged/Not Working | Cover cannot be opened or removed, especially by one person. | Pipe repaired or replaced to proper working specifications. |
| | Ventilation | Ventilation area blocked or plugged. | Blocking material removed or cleared from ventilation area. A specified % of the vault surface area must provide ventilation to the vault interior (see design specifications). |
| | Vault Structure Damage - Includes Cracks in Walls Bottom, Damage to Frame and/or Top Slab | Maintenance/inspection personnel determine that the vault is not structurally sound. | Vault replaced or repairs made so that vault meets design specifications and is structurally sound. |
| | | Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks. | Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe. |
| | Baffles | Baffles corroding, cracking, warping and/or showing signs of failure as determined by maintenance/inspection staff. | Baffles repaired or replaced to specifications. |
| Access Ladder Damage | Ladder is corroded or deteriorated, not functioning properly, not attached to structure wall, missing rungs, has cracks and/or misaligned. Confined space warning sign missing. | Ladder replaced or repaired to specifications, and is safe to use as determined by inspection personnel. Replace sign warning of confined space entry requirements. Ladder and entry notification complies with OSHA standards. | |

No. 13 – Sand Filters (above ground/open)

| Above Ground (open sand filter) | Sediment Accumulation on top layer | Sediment depth exceeds 1/2-inch. | No sediment deposit on grass layer of sand filter that would impede permeability of the filter section. |
|------------------------------------|--|---|--|
| | Trash and Debris Accumulations | Trash and debris accumulated on sand filter bed. | Trash and debris removed from sand filter bed. |
| | Sediment/ Debris in Clean-Outs | When the clean-outs become full or partially plugged with sediment and/or debris. | Sediment removed from clean-outs. |
| | Sand Filter Media | Drawdown of water through the sand filter media takes longer than 24-hours, and/or flow through the overflow pipes occurs frequently. | Top several inches of sand are scraped. May require replacement of entire sand filter depth depending on extent of plugging (a sieve analysis is helpful to determine if the lower sand has too high a proportion of fine material). |
| | Prolonged Flows | Sand is saturated for prolonged periods of time (several weeks) and does not dry out between storms due to continuous base flow or prolonged flows from detention facilities. | Low, continuous flows are limited to a small portion of the facility by using a low wooden divider or slightly depressed sand surface. |
| | Short Circuiting | When flows become concentrated over one section of the sand filter rather than dispersed. | Flow and percolation of water through sand filter is uniform and dispersed across the entire filter area. |
| | Erosion Damage to Slopes | Erosion over 2-inches deep where cause of damage is prevalent or potential for continued erosion is evident. | Slopes stabilized using proper erosion control measures. |
| | Rock Pad Missing or Out of Place | Soil beneath the rock is visible. | Rock pad replaced or rebuilt to design specifications. |
| | Flow Spreader | Flow spreader uneven or clogged so that flows are not uniformly distributed across sand filter. | Spreader leveled and cleaned so that flows are spread evenly over sand filter. |
| Damaged Pipes | Any part of the piping that is crushed or deformed more than 20% or any other failure to the piping. | Pipe repaired or replaced. | |

No. 14 –Sand Filters (below ground/enclosed)

| | | | |
|---|---|---|---|
| | | | |
| Below Ground Vault. | Sediment Accumulation on Sand Media Section | Sediment depth exceeds 1/2-inch. | No sediment deposits on sand filter section that which would impede permeability of the filter section. |
| | Sediment Accumulation in Pre-Settling Portion of Vault | Sediment accumulation in vault bottom exceeds the depth of the sediment zone plus 6-inches. | No sediment deposits in first chamber of vault. |
| | Trash/Debris Accumulation | Trash and debris accumulated in vault, or pipe inlet/outlet, floatables and non-floatables. | Trash and debris removed from vault and inlet/outlet piping. |
| | Sediment in Drain Pipes/Cleanouts | When drain pipes, cleanouts become full with sediment and/or debris. | Sediment and debris removed. |
| | Short Circuiting | When seepage/flow occurs along the vault walls and corners. Sand eroding near inflow area. | Sand filter media section re-laid and compacted along perimeter of vault to form a semi-seal. Erosion protection added to dissipate force of incoming flow and curtail erosion. |
| | Damaged Pipes | Inlet or outlet piping damaged or broken and in need of repair. | Pipe repaired and/or replaced. |
| | Access Cover Damaged/Not Working | Cover cannot be opened, corrosion/deformation of cover. Maintenance person cannot remove cover using normal lifting pressure. | Cover repaired to proper working specifications or replaced. |
| | Ventilation | Ventilation area blocked or plugged | Blocking material removed or cleared from ventilation area. A specified % of the vault surface area must provide ventilation to the vault interior (see design specifications). |
| | Vault Structure Damaged; Includes Cracks in Walls, Bottom, Damage to Frame and/or Top Slab. | Cracks wider than 1/2-inch or evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determine that the vault is not structurally sound. | Vault replaced or repairs made so that vault meets design specifications and is structurally sound. |
| Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks. | | Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe. | |
| Baffles/Internal walls | | Baffles or walls corroding, cracking, warping and/or showing signs of failure as determined by maintenance/inspection person. | Baffles repaired or replaced to specifications. |

No. 14 –Sand Filters (below ground/enclosed)

| Maintenance Component | Defect | Condition When Maintenance is Needed | Results Expected When Maintenance is Performed |
|------------------------------|-----------------------|---|--|
| | Access Ladder Damaged | Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and misaligned. | Ladder replaced or repaired to specifications, and is safe to use as determined by inspection personnel. |

No. 15 – Stormfilter™ (leaf compost filter)

| Below Ground Vault | Sediment Accumulation on Media. | Sediment depth exceeds 0.25-inches. | No sediment deposits which would impede permeability of the compost media. |
|-----------------------------|---|---|---|
| | Sediment Accumulation in Vault | Sediment depth exceeds 6-inches in first chamber. | No sediment deposits in vault bottom of first chamber. |
| | Trash/Debris Accumulation | Trash and debris accumulated on compost filter bed. | Trash and debris removed from the compost filter bed. |
| | Sediment in Drain Pipes/Clean-Outs | When drain pipes, clean-outs, become full with sediment and/or debris. | Sediment and debris removed. |
| | Damaged Pipes | Any part of the pipes that are crushed or damaged due to corrosion and/or settlement. | Pipe repaired and/or replaced. |
| | Access Cover Damaged/Not Working | Cover cannot be opened; one person cannot open the cover using normal lifting pressure, corrosion/deformation of cover. | Cover repaired to proper working specifications or replaced. |
| | Vault Structure Includes Cracks in Wall, Bottom, Frame and/or Top Slab | Cracks wider than 1/2-inch or evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determine that the vault is not structurally sound. | Vault replaced or repairs made so that vault meets design specifications and is structurally sound. |
| | | Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks. | Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe. |
| | Baffles | Baffles corroding, cracking warping, and/or showing signs of failure as determined by maintenance/inspection person. | Baffles repaired or replaced to specifications. |
| Access Ladder Damaged | Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and misaligned. | Ladder replaced or repaired and meets specifications, and is safe to use as determined by inspection personnel. | |
| Below Ground Cartridge Type | Compost Media | Drawdown of water through the media takes longer than 1 hour, and/or overflow occurs frequently. | Media cartridges replaced. |
| | Short Circuiting | Flows do not properly enter filter cartridges. | Filter cartridges replaced. |

No. 16 – Baffle Oil/Water Separators (API Type)

| General | Monitoring | Inspection of discharge water for obvious signs of poor water quality. | Effluent discharge from vault should be clear with out thick visible sheen. |
|-----------------------|---|---|---|
| | Sediment Accumulation | Sediment depth in bottom of vault exceeds 6-inches in depth. | No sediment deposits on vault bottom that would impede flow through the vault and reduce separation efficiency. |
| | Trash and Debris Accumulation | Trash and debris accumulation in vault, or pipe inlet/outlet, floatables and non-floatables. | Trash and debris removed from vault, and inlet/outlet piping. |
| | Oil Accumulation | Oil accumulations that exceed 1-inch, at the surface of the water. | Extract oil from vault by vactoring. Disposal in accordance with state and local rules and regulations. |
| | Damaged Pipes | Inlet or outlet piping damaged or broken and in need of repair. | Pipe repaired or replaced. |
| | Access Cover Damaged/Not Working | Cover cannot be opened, corrosion/deformation of cover. | Cover repaired to proper working specifications or replaced. |
| | Vault Structure Damage - Includes Cracks in Walls Bottom, Damage to Frame and/or Top Slab | See "Catch Basins" (No. 5) | Vault replaced or repairs made so that vault meets design specifications and is structurally sound. |
| | | Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks. | Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe. |
| | Baffles | Baffles corroding, cracking, warping and/or showing signs of failure as determined by maintenance/inspection person. | Baffles repaired or replaced to specifications. |
| Access Ladder Damaged | Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and misaligned. | Ladder replaced or repaired and meets specifications, and is safe to use as determined by inspection personnel. | |

No. 17 – Coalescing Plate Oil/Water Separators

| General | Monitoring | Inspection of discharge water for obvious signs of poor water quality. | Effluent discharge from vault should be clear with no thick visible sheen. |
|-----------------------|---|---|---|
| | Sediment Accumulation | Sediment depth in bottom of vault exceeds 6-inches in depth and/or visible signs of sediment on plates. | No sediment deposits on vault bottom and plate media, which would impede flow through the vault and reduce separation efficiency. |
| | Trash and Debris Accumulation | Trash and debris accumulated in vault, or pipe inlet/outlet, floatables and non-floatables. | Trash and debris removed from vault, and inlet/outlet piping. |
| | Oil Accumulation | Oil accumulation that exceeds 1-inch at the water surface. | Oil is extracted from vault using vactoring methods. Coalescing plates are cleaned by thoroughly rinsing and flushing. Should be no visible oil depth on water. |
| | Damaged Coalescing Plates | Plate media broken, deformed, cracked and/or showing signs of failure. | A portion of the media pack or the entire plate pack is replaced depending on severity of failure. |
| | Damaged Pipes | Inlet or outlet piping damaged or broken and in need of repair. | Pipe repaired and or replaced. |
| | Baffles | Baffles corroding, cracking, warping and/or showing signs of failure as determined by maintenance/inspection person. | Baffles repaired or replaced to specifications. |
| | Vault Structure Damage - Includes Cracks in Walls, Bottom, Damage to Frame and/or Top Slab | Cracks wider than 1/2-inch or evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determine that the vault is not structurally sound. | Vault replaced or repairs made so that vault meets design specifications and is structurally sound. |
| | | Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks. | Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe. |
| Access Ladder Damaged | Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and misaligned. | Ladder replaced or repaired and meets specifications, and is safe to use as determined by inspection personnel. | |

No. 18 – Catchbasin Inserts

| General | Sediment Accumulation | When sediment forms a cap over the insert media of the insert and/or unit. | No sediment cap on the insert media and its unit. |
|---------|---|--|--|
| | Trash and Debris Accumulation | Trash and debris accumulates on insert unit creating a blockage/restriction. | Trash and debris removed from insert unit. Runoff freely flows into catch basin. |
| | Media Insert Not Removing Oil | Effluent water from media insert has a visible sheen. | Effluent water from media insert is free of oils and has no visible sheen. |
| | Media Insert Water Saturated | Catch basin insert is saturated with water and no longer has the capacity to absorb. | Remove and replace media insert |
| | Media Insert-Oil Saturated | Media oil saturated due to petroleum spill that drains into catch basin. | Remove and replace media insert. |
| | Media Insert Use Beyond Normal Product Life | Media has been used beyond the typical average life of media insert product. | Remove and replace media at regular intervals, depending on insert product. |