



# Kelsey Creek Fish Viewing Platform

# City of Bellevue, WA



SITE PHOTO



SITE PHOTO

## CLEARING AND GRADING STANDARD NOTES:

1. All clearing & grading construction must be in accordance with City of Bellevue (COB) Clearing & Grading Code; Clearing & Grading Erosion Control Standard Details (EC-1 through EC-23); Development Standards; Land Use Code; Uniform Building Code; permit conditions; and all other applicable codes, ordinances, and standards. The design elements within these plans have been reviewed according to these requirements. Any variance from adopted erosion control standards is not allowed unless specifically approved by the City of Bellevue Department of Planning & Community Development (PCD) prior to construction.
2. A copy of the approved plans must be on-site during construction. The applicant is responsible for obtaining any other required or related permits prior to beginning construction.
3. All locations of existing utilities have been established by field survey or obtained from available records and should, therefore, be considered only approximate and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations and to discover and avoid any other utilities not shown which may be affected by the implementation of this plan.
4. The area to be cleared and graded must be flagged by the contractor and approved by the clearing & grading inspector prior to beginning any work on the site.
5. A reinforced silt fence must be installed in accordance with COB EC-5 and located as shown on the approved plans or per the clearing & grading inspector, along slope contours and down slope from the building site.
6. Clearing will be limited to the areas within the approved disturbance limits. Exposed soils must be covered at the end of each working day when working from October 1st through April 30th. From May 1st through September 30th, exposed soils must be covered at the end of each construction week and also at the threat of rain.
7. Any excavated material removed from the construction site and deposited on property within the City limits must be done in compliance with a valid clearing & grading permit. Locations for the mobilization area and stockpiled material must be approved by the clearing & grading inspector at least 24 hours in advance of any stockpiling.
8. To reduce the potential for erosion of exposed soils, or when rainy season construction is permitted, the following Best Management Practices (BMPs) are required: Preserve natural vegetation for as long as possible or as required by the clearing & grading inspector. Protect exposed soil using plastic (EC-14), erosion control blankets, straw or mulch (COB Guide to Mulch Materials, Rates, and Use Chart), or as directed by the clearing & grading inspector. Install catch basin inserts as required by the clearing & grading inspector or permit conditions of approval. Install a temporary sediment pond, a series of sedimentation tanks, temporary filter vaults, or other sediment control facilities. Installation of exposed aggregate surfaces requires a separate effluent collection pond on-site.
10. Final site grading must direct drainage away from all building structures at a minimum 2% slope, per the Uniform Building Code.
11. The contractor must maintain a sweeper on-site during earthwork and immediately remove soil that has been tracked onto paved areas as result of construction.
12. A public information sign listing 24-hour emergency phone numbers for the city and the contractor may be provided to the applicant at the time the clearing & grading permit is issued. The applicant must post the sign at the project site in full view of the public and the contractors, and it must remain posted until final sign-off by the clearing & grading inspector.
13. Turbidity monitoring may be required as a condition of clearing & grading permit approval. If required, turbidity monitoring must be performed in accordance with the approved turbidity monitoring plan and as directed by the clearing & grading inspector. Monitoring must continue during site (earthwork) construction until the final sign-off by the clearing & grading inspector.
14. Any project that is subject to Rainy Season Restrictions will not be allowed to perform clearing & grading activities without written approval from the PCD director. The rainy season extends from November 1st through April 30th, as defined in section 23.76.093A of the Clearing & Grading Code.

## GENERAL NOTES:

1. All construction must be in accordance with the City of Bellevue's Development Standards; the City of Bellevue's Engineering and Utility Standards; the Bellevue City Code; the Uniform Building Codes; permit conditions; and all other applicable codes, ordinances, standards and policies. Applicable installation details are incorporated by reference to Bellevue's Engineering and Utilities published Standards. All applicable erosion control measures must be taken.
2. A copy of the approved plans must be on-site whenever construction is in progress.
3. The Contractor is responsible for obtaining any mechanical, electrical or other required permits prior to beginning construction.
4. All locations of existing utilities have been established by field survey or obtained from available records and should, therefore, be considered approximate only and not necessarily complete. It is the sole responsibility of the contractor (1) to independently verify the accuracy of all utility locations and (2) to discover and avoid any other utilities not shown which may be affected by the implementation of this plan.
5. Site shall be restored to better or equal condition in any areas affected by this work.
6. Scheduling: All work shall be coordinated with Owner to achieve minimal disturbance to roadway operation.
7. Contractor shall have proven experience in similar projects and be thoroughly familiar with City of Bellevue applicable standards and codes prior to commencement of work.
8. This layout is diagrammatic. Contractor shall coordinate exact location of points of connection to existing systems with Owner prior to beginning any work.
9. Prior to commencing work, the Contractor, the City's Inspectors and the Owner's Representatives shall meet on the site to review existing site conditions. Logistical items will be determined at the pre-construction meeting and subsequent construction meetings, including the specific locations and methods to be used for staging, trail closure locations and timing and fencing materials. The Contractor is to coordinate with Owner's representative on all construction logistical items not explicitly described in the drawings and specifications.

## PROJECT DESCRIPTION:

Contracted work includes site preparation, environmental protection, minor earthwork, 1 wooden diamond pier viewing platform, timber stairs, timber retaining wall, restoration planting, trail construction, and site restoration. For technical questions, call Barker Landscape Architects, (Nic) 206-783-2870.

## CONTACTS:

**Client:**  
City of Bellevue  
Utilities Engineering Division  
Watershed Planning Team  
Contact: Katie Jensen  
(425) 452-6879  
KJensen@bellevuewa.gov

**Geotechnical Engineer:**  
Stantec  
Contact: Phil Haberman  
12034 134th Court NE  
Suite 102  
Redmond, WA 98052  
425-298-1031 (p)  
425-298-1019 (f)

## Landscape Architect:

Barker Landscape Architects  
Contact: Nic Morin  
1514 NW 52nd Street,  
Seattle, WA 98107  
206-783-2870  
206-783-8312 fax.  
nicolas@barkerla.com

## DRAWING INDEX

- 1 COVER
- 2 EXISTING CONDITIONS
- 3 TESC / DEMO
- 4 LAYOUT / GRADING
- 5 PLANTING
- 6 DETAILS I
- 7 DETAILS II
- 8 DETAILS III

Received

APR 12 2013

Permit Processing  
City of Bellevue



VICINITY MAP  
NTS

NO.	DATE	BY	APPR.	REVISIONS
1	4/06/12	EJS	JFB	SCHEMATIC DESIGN
2	5/29/12	SJW	JFB	100% CONSTRUCTION

Approved By	
TRANSPORTATION DESIGN MANAGER	DATE
PROJECT MANAGER	DATE

NM_jfb	5/29/12
DESIGNED BY	DATE
SW	5/29/12
DRAWN BY	DATE
NM_jfb	5/29/12
CHECKED BY	DATE

## City of Bellevue

**BARKER LANDSCAPE ARCHITECTS**  
1514 NW 52nd St.  
Seattle, WA 98107  
tel: 206.783.2870  
fax: 206.783.3212

## Kelsey Creek Fish Viewing Platform

COVER
SHT <b>1</b> OF <b>8</b>



**DOWL HKM**  
 8420 154TH AVENUE NE, REDMOND, WA 98052  
 TEL: (425) 869-2670 FAX: (425) 869-2679

NOTE: INFORMATION DEPICTED IN THIS EXISTING CONDITIONS MAP IS A COMBINATION OF SURVEY PERFORMED BY DOWL KHM, AND LIDAR DATA AND DRAWING INFORMATION FROM ANCHOR QEA. IT IS MEANT TO DEPICT SITE CONDITIONS AS ACCURATELY AS POSSIBLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS ON SITE AND MAKING FIELD ADJUSTMENTS AS NECESSARY TO FIT ACTUAL SITE CONDITIONS.

- Additional Notes:
- Existing Conditions Sheet does not show Phase I construction, which was completed in 2012
  - The extent of the area is within the Lower Kelsey Creek Shoreline Overlay District area.

EXISTING CONDITIONS LEGEND	
	LIMIT OF WORK
	EXISTING TOPOGRAPHY
	ORDINARY HIGH WATER MARK
	EXISTING TREES
	EXISTING ELEVATION
	EXISTING LAWN AREA
	EXISTING CONC. SIDEWALK
	BASE FLOOD ELEVATION = 30.5 FEET

# EXISTING CONDITIONS

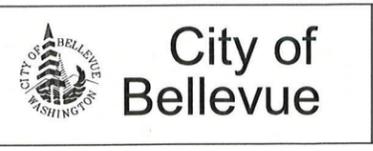


NO.	DATE	BY	APPR.	REVISIONS
1	4/05/12	EJS	JFB	SCHEMATIC DESIGN
2	5/29/12	SJW	JFB	100% CONSTRUCTION

Approved By

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PROJECT MANAGER	DATE

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	LIMIT OF WORK
	EXISTING TOPOGRAPHY
	ORDINARY HIGH WATER MARK
	EXISTING TREES
	EXISTING ELEVATION
	EXISTING LAWN AREA
	EXISTING CONC. SIDEWALK
	BASE FLOOD ELEVATION = 30.5 FEET

**EXISTING CONDITIONS**



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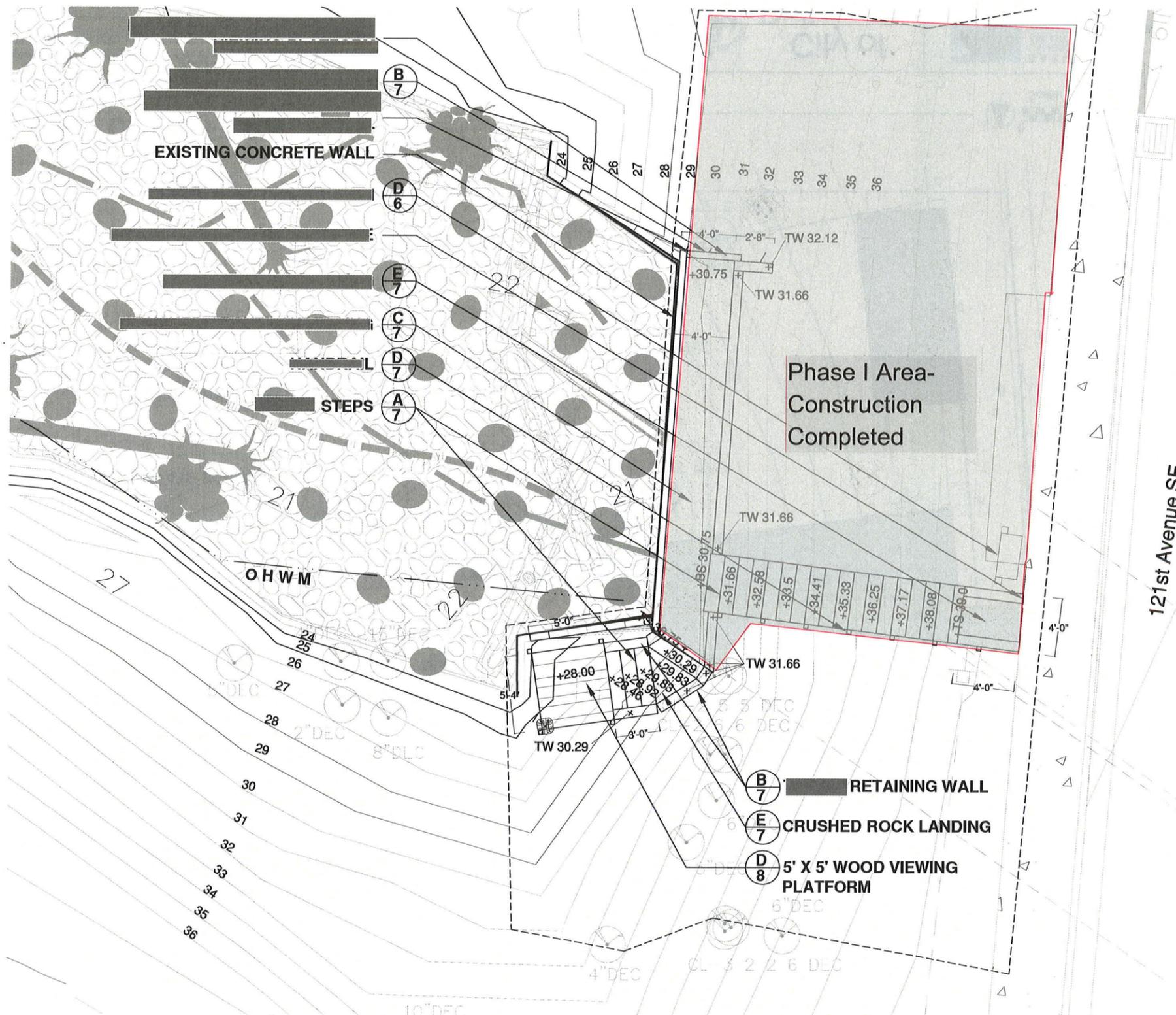
**City of Bellevue**

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**Kelsey Creek Fish Viewing Platform**

**EXISTING CONDITIONS**

SHT **2** OF **8**



NOTE: The proposed structure will add approximately up to 70 square feet of structure (steps and platform) to the area. Approximately 50 square feet of the area (the platform) will be elevated and allow for infiltration.

LEGEND	
---	LIMIT OF WORK
---	EXISTING TOPOGRAPHY
	EXISTING TREES
+30.0	PROPOSED SPOT ELEV.
30	EXISTING ELEVATION
—●—	PROPOSED GRADING
TW	TOP OF WALL
BW	BOTTOM OF WALL
TS	TOP OF STAIR
BS	BOTTOM OF STAIR
---	ORDINARY HIGH WATER MARK (OHWM)
	PROPOSED LAWN AREA

# LAYOUT / GRADING PLAN



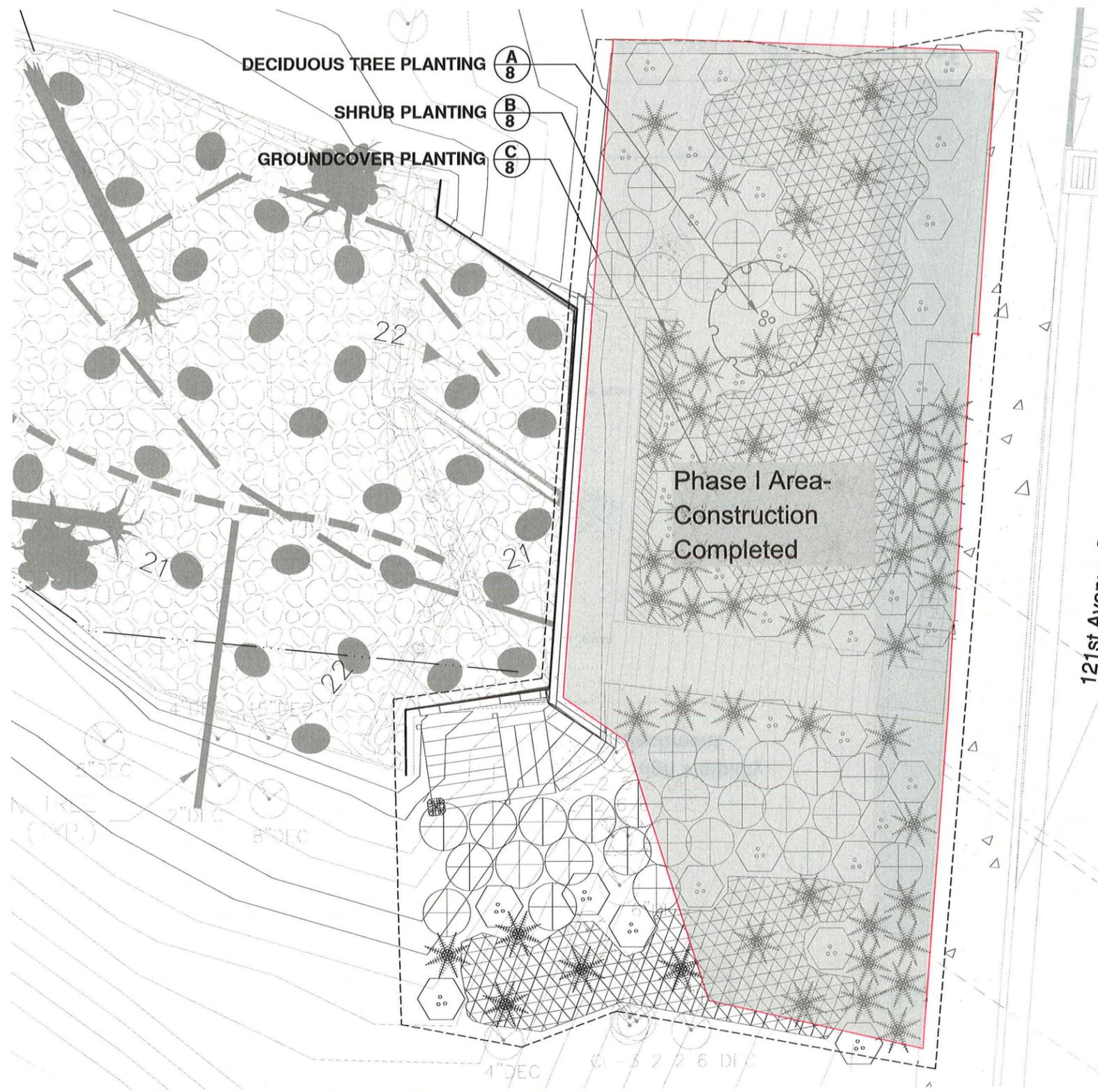
NO.	DATE	BY	APPR.	REVISIONS
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2	5/29/12	SJW	JFB	100% CONSTRUCTION

Approved By		DATE
TRANSPORTATION DESIGN MANAGER		
PROJECT MANAGER		

**City of Bellevue**  
 NM, JFB 5/29/12  
 DESIGNED BY DATE  
 SW 5/29/12  
 DRAWN BY DATE  
 NM, JFB 5/29/12  
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## Kelsey Creek Fish Viewing Platform



**PLANTING PLAN**

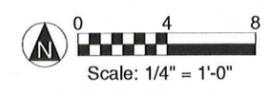
**GENERAL PLANTING NOTES:**

1. All plants shall conform to American Association of Nurserymen (AAN) grades and standards as published in the "American Standard for Nursery Stock" manual.
2. Protect tree bark from abrasion due to installation.
3. Remove all inorganic burlap, container, wires or twine from plants prior to planting. Thoroughly water backfill soil and water as necessary to establish plant during warranty period.
4. Contractor shall prepare all planting areas by fine grading and removing all deleterious material to plant growth, including all debris over 2" in any dimension.
5. Soils in planting areas shall have adequate porosity to allow root growth. Soils which have been compacted shall be loosened to increase aeration to a minimum depth of twenty-four (24) inches or to the depth of the largest plant root ball, whichever is greater. Imported topsoils shall be tilled into existing soils to prevent a distinct soil interface from forming. After soil preparation is completed, motorized vehicles shall be kept off to prevent excessive compaction and underground pipe damage. The organic content of soils in any landscape area shall be as necessary to provide adequate nutrient and moisture-retention levels for the establishment of plantings.
6. Required plantings, except turf or areas of established ground cover, shall be covered with three inches or more of organic mulch to minimize evaporation and runoff. Mulch shall consist of materials such as yard waste, sawdust, and/or manure that are fully composted.
7. All mulches used in planter beds shall be kept at least six (6) inches away from the trunks of shrubs and trees.
8. All required landscaped areas, particularly trees and shrubs, must be protected from potential damage by adjacent uses and development, including parking and storage areas. Protective devices such as bollards, wheel stops, trunk guards, root guards, etc., may be required in some situations.
9. All disturbed areas shall be finish graded and hydroseeded.

**PLANT SCHEDULE**

SMALL TREES						
SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	REMARKS	TOTAL QUANT.
⊙	<i>Acer circinatum</i>	Vine Maple	1 Gallon	As shown	-	1
SHRUBS & PERENNIALS						
SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	REMARKS	TOTAL QUANT.
✱	<i>Polystichum munitum</i>	Sword Fern	1 Gallon	As shown	container	56
⬠	<i>Symphoricarpos albus</i>	Snowberry	1 Gallon	As shown	-	35
⊕	<i>Rosa gymnocarpa</i>	Woods rose	1 Gallon	As shown	-	33
GROUNDCOVERS & PERENNIALS						
SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	REMARKS	TOTAL QUANT.
⊘	<i>Gaultheria shallon</i>	Salal	1 Gallon	18" o.c.	tri-spacing, container	233
⊘	<i>Asarum caudatum</i>	Wild Ginger	1 Gallon	18" o.c.	tri-spacing, container	12

LEGEND	
-----	LIMIT OF WORK
-----	ORDINARY HIGH WATER MARK



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PROJECT MANAGER			SW	5/29/12
			NM, JFB	5/29/12
			CHECKED BY	DATE

**City of Bellevue**

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**Kelsey Creek Fish Viewing Platform**

**PLANTING**

SHT **5** OF **8**

NO.	DATE	BY	APPR.	REVISIONS
1	4/06/12	CLS	JFB	SCHEMATIC DESIGN
2	5/29/12	SJM	JFB	100% CONSTRUCTION

DATE	DESIGNED BY	DATE	TRANSPORTATION DESIGN MANAGER
5/29/12	DATE	5/29/12	DATE
5/29/12	DATE	5/29/12	DATE
5/29/12	DATE	5/29/12	DATE



City of  
Bellevue

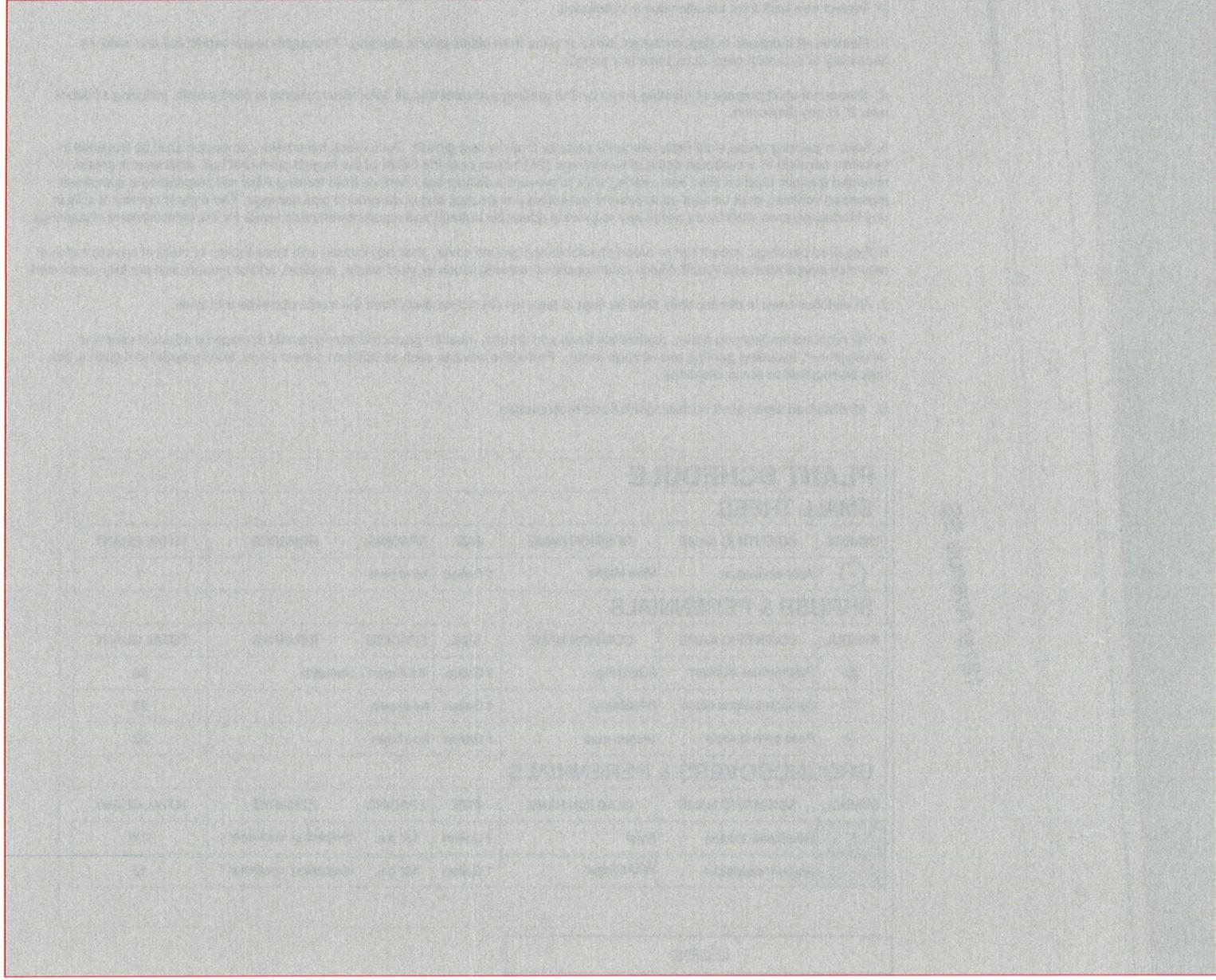


BARKER  
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ARCHITECTS  
1514 NW 52nd St.  
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tel: 206.783.2870  
fax: 206.783.2121

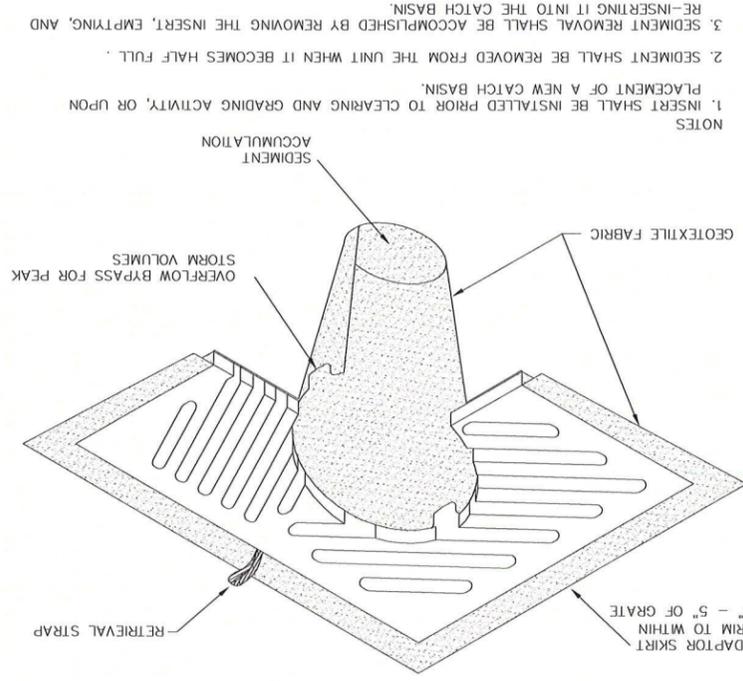
Kelsey Creek Fish Viewing Platform

DETAILS 1

SHT 6 OF 8



CATCH BASIN INSERT  
N.T.S.

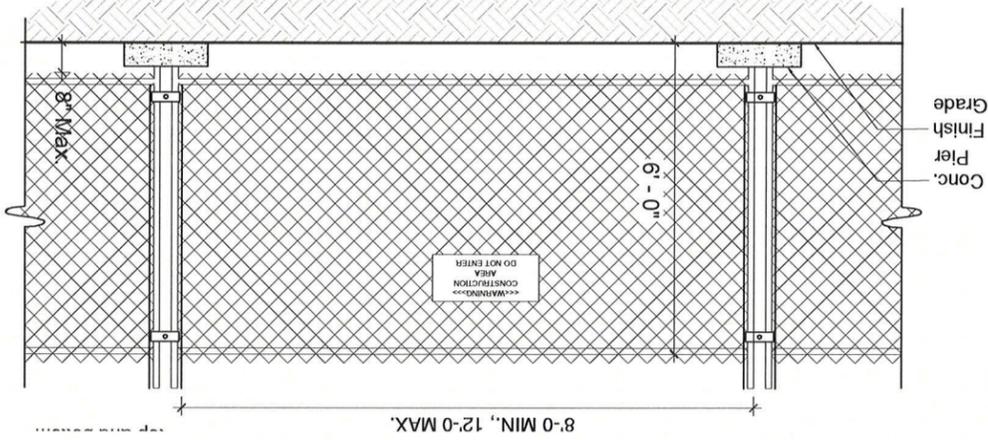


- NOTES
1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
  2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL.
  3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.

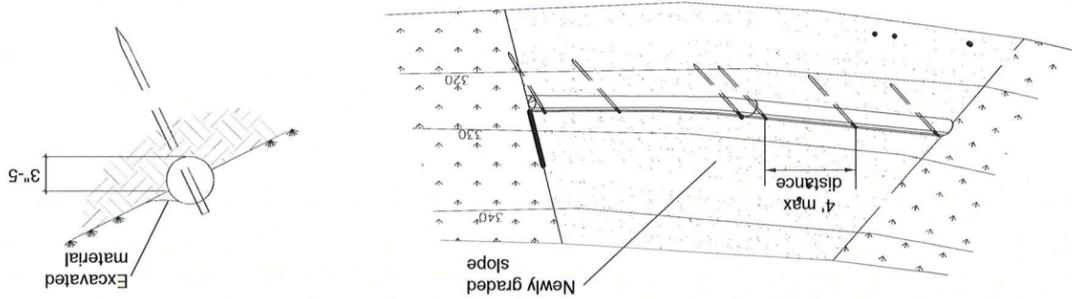
TEMPORARY CHAIN LINK FENCE  
N.T.S.

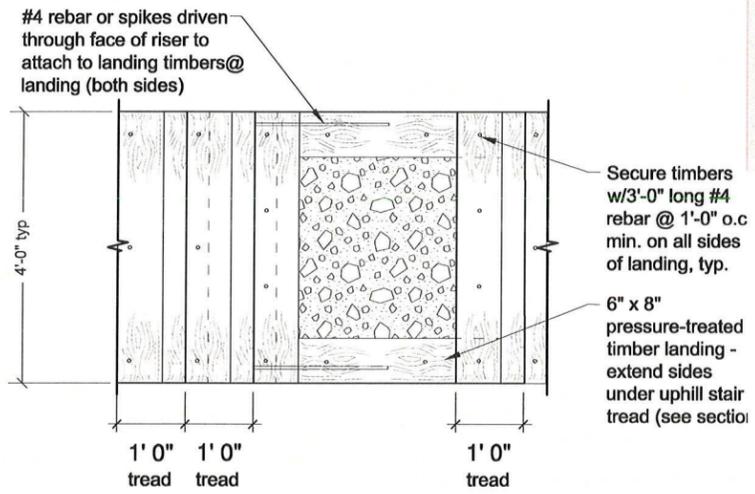
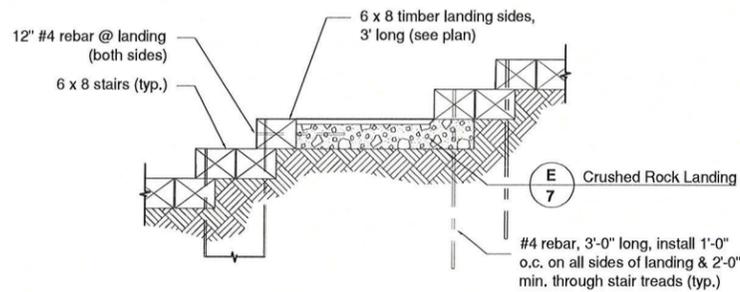
Alternative temporary high visibility fencing is shown in attachment.

- Notes:
1. Chain link fabric to be min. 11 gauge, galvanized. No rusted or excessively malfomed fabric.
  2. Fence bases shall be of sufficient weight and/or spread to adequately support each panel.
  3. Panel-to-panel connections shall be made at a min. Two locations per connection unless otherwise approved.
  4. Provide construction warning signage 50' o.c. Along fencing installation.



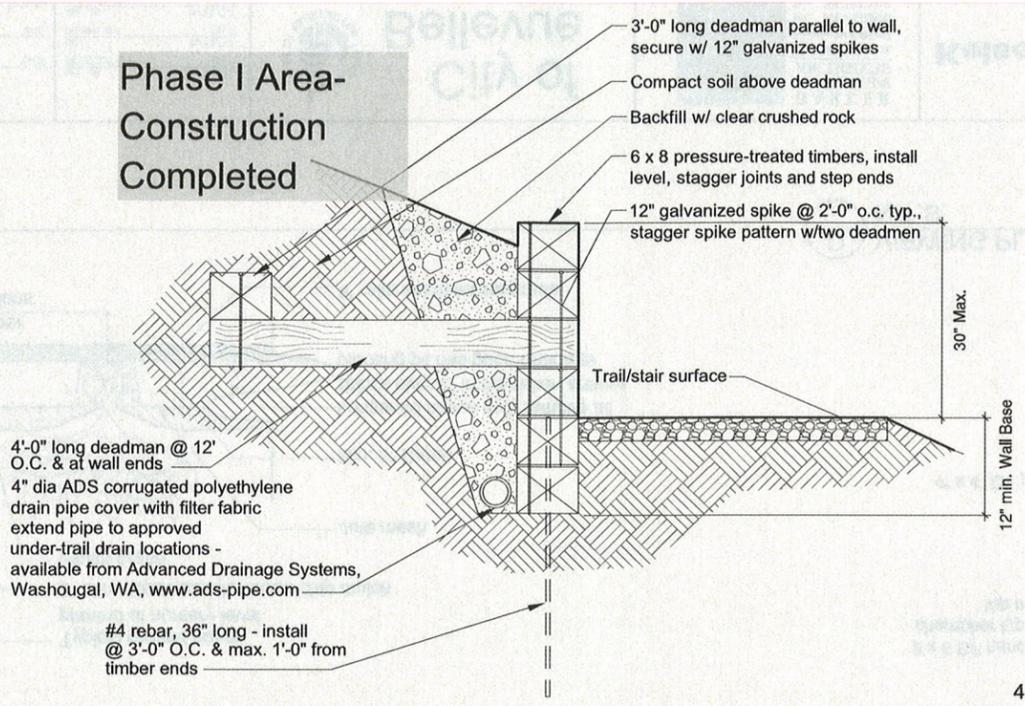
STRAW ROLL  
N.T.S.



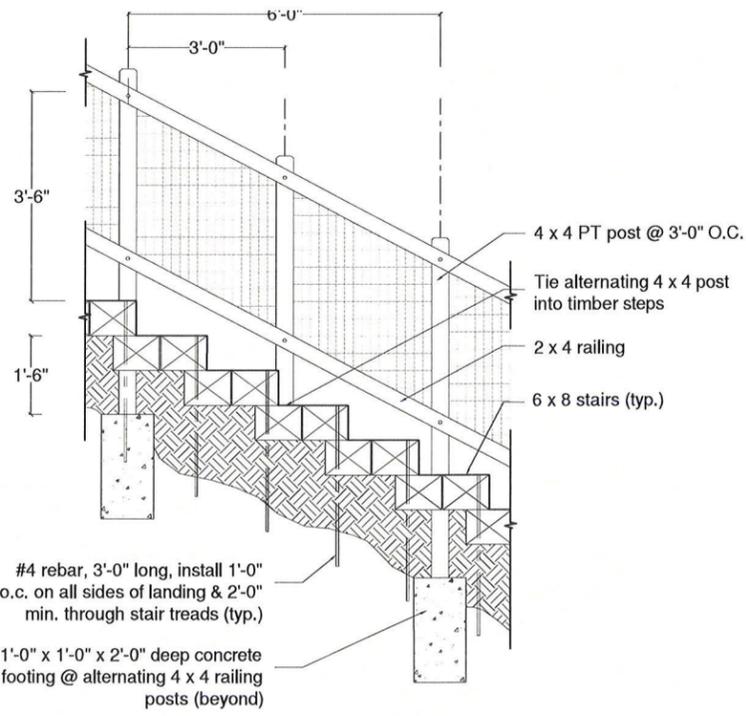


**A** TIMBER STEPS  
N.T.S.

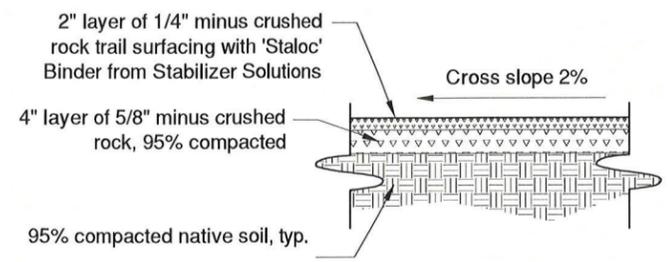
**Phase I Area-Construction Completed**



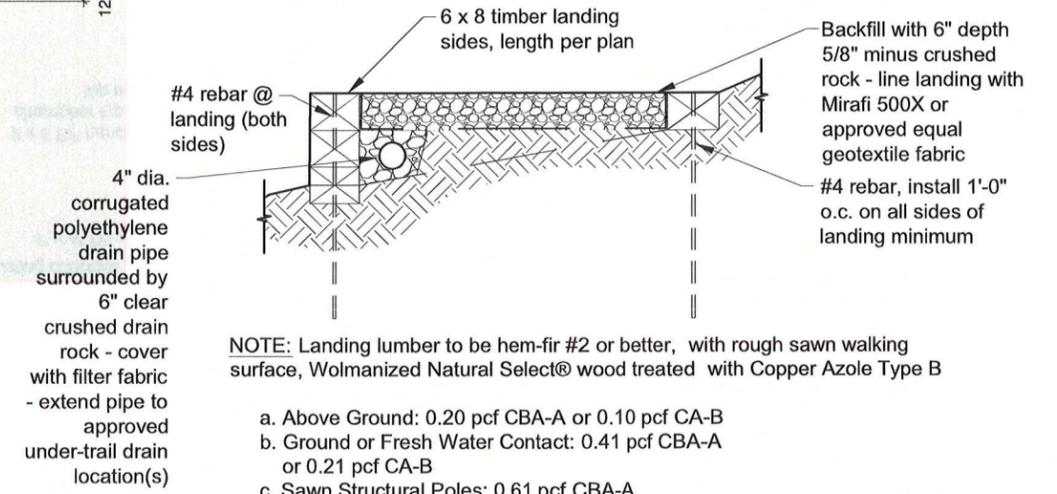
**B** TIMBER RETAINING WALL  
N.T.S.



**D** TIMBER STEPS RAILING SECTION ELEVATION  
N.T.S.

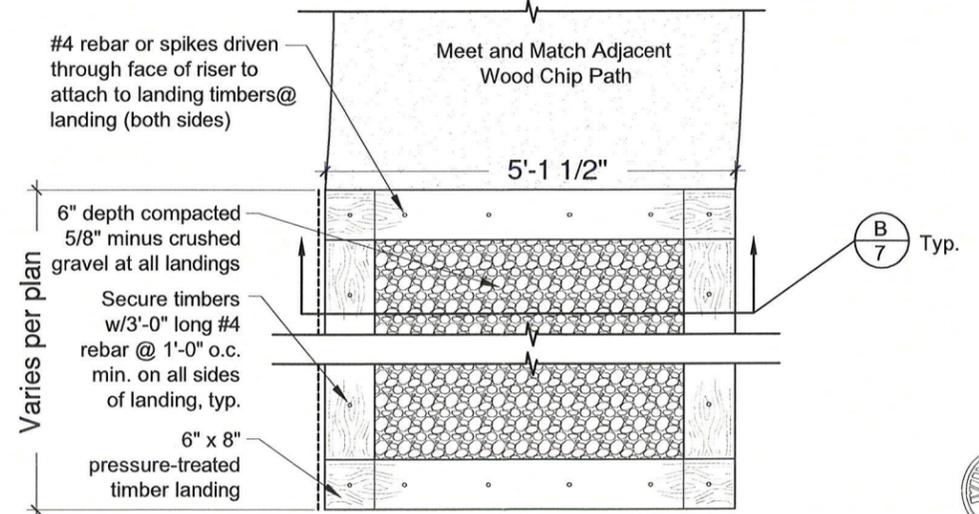


Note: Provide drainage as required  
**C** CRUSHED ROCK SURFACING  
N.T.S.



NOTE: Landing lumber to be hem-fir #2 or better, with rough sawn walking surface, Wolmanized Natural Select® wood treated with Copper Azole Type B

- a. Above Ground: 0.20 pcf CBA-A or 0.10 pcf CA-B
- b. Ground or Fresh Water Contact: 0.41 pcf CBA-A or 0.21 pcf CA-B
- c. Sawn Structural Poles: 0.61 pcf CBA-A or 0.31 pcf CA-B



**E** CRUSHED ROCK LANDING  
N.T.S.

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Approved By		DATE
TRANSPORTATION DESIGN MANAGER		5/29/12
PROJECT MANAGER		5/29/12

City of Bellevue

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**Kelsey Creek Fish Viewing Platform**

**DETAILS 2**  
SHT 7 OF 8





**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**

Property Owner: City of Bellevue

Proponent: Bellevue Utilities Department

Contact Person: Katie Jensen

(If different from the owner. All questions and correspondence will be directed to the person listed.)

Address: City Hall, 450 110th Ave NE, Bellevue, WA 98009

Phone: 425-452-6879

**Received**  
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 Permit Processing  
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Proposal Title: Kelsey Creek Fish Viewing Platform

Kelsey Creek at 121st Ave SE & SE 8th St. Portion of the northeast quarter of Section

Proposal Location: 4, Township 24 North, Range 5 East, W.M., in King County, WA.

(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: The proposed project includes constructing steps, hand railings, and an elevated 5'x5' platform. The platform will be on post and pile foundation system. The project area will be in-filled with native plants. Interpretive outreach signs will be installed on hand railings.
2. Acreage of site: 0.01 acres
3. Number of dwelling units/buildings to be demolished: None
4. Number of dwelling units/buildings to be constructed: No DUs/buildings to be constructed. Stairs and platform only.
5. Square footage of buildings to be demolished: Not applicable
6. Square footage of buildings to be constructed: Stairs and platform will be approximately 72-sq ft.
7. Quantity of earth movement (in cubic yards): 0.2-cubic yards
8. Proposed land use: No change in current land use.
9. Design features, including building height, number of stories and proposed exterior materials: Wooden steps, hand railings, and 5'x5' platform. Platform maximum height will be appropriately 4-ft above slope elevation.
10. Other

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

Construction of the proposed project will occur in the dry, summer period (July-August) of 2013. Construction of the project is expected to take approximately 1 week to complete. Plantings will ideally be completed in the frost-free portions of the first month of the dormant season (October) 2013. The schedule is dependent on the attainment of required environmental permitting approvals.

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

Yes, the City of Bellevue (City) is evaluating other projects on Kelsey Creek and its tributaries (i.e., the West Tributary), as well as Mercer Slough to improve fish passage and improve wetland and other aquatic and terrestrial habitats. Although these other projects may not all be immediately adjacent the project site, they are intended to improve the overall habitat values along Kelsey Creek. In addition, the City plans to continue ongoing efforts for invasive plant species control along the stream corridor and in adjacent wetlands using various experimental techniques.

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

- City of Bellevue. Floodplain Habitat Assessment Report. March 2013.
- Stantec Consulting Services, Inc. (Stantec). Limited Soils Evaluation. April 2012. SPN: 212302780
- Permit documentation references environmental information prepared for the Kelsey Creek Stream Channel Modification Improvement Project.

**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.**

No.

**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.**

1. Critical Areas Land Use Permit
2. Shoreline Development Permit
3. Clearing and Grading in Critical Areas Permit
4. Right-of-way Street Use Permit

**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 [See Exhibit 1. Design Plan Set Sheet 1-8

- (TESC/DEMO Plan on Sheet 3 of 8), and Exhibit 2. Limited Soils Evaluation].
- Development plans
- Building Permit (or Design Review)
  - Site plan
  - Clearing & grading plan
- ✓ Shoreline Management (Development) Permit
  - Site plan

## A. ENVIRONMENTAL ELEMENTS

### 1. Earth

- a. General description of the site: Flat Rolling Hilly Step slopes Mountains Other
- b. What is the steepest slope on the site (approximate percent slope)?

As per Stantec's 2012 Limited Soils Evaluation Report, the steepest slopes are 41 to up to 80 % with an overall height of 15-ft (Exhibit 2 attached).

- 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.

The soil mapping unit found in the project area is Bellingham silt loam (NRCS 2006). Stantec's 2012 Limited Soils Evaluation Report prepared for the project states:

The soils encountered in the hand boring just above creek level included approximately 12 inches of loose, silty-sand with variable amounts of gravel underlain by loose to medium dense, silty-sand with gravel. These materials are generally consistent with weathered outwash soils.

The average soil parameters within the upper 3 feet from the hand boring location are as follows:

Unit Weight	Friction Angle	Cohesion	Description
105 pcf	28 degrees	0 psf	Silty-Sand (SM)

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

Yes, the proposed project will help alleviate current erosion problems along the slope. Several social foot paths exist in the project area down to stream. The stream banks in the project area are deeply incised and supported on both banks with riprap, angular rock, and fill material positioned for support of the trestle crossing, the adjacent roadway (Southeast 8th Street), and surrounding the stream box culvert for 121<sup>st</sup> Avenue Southeast. Historically, Kelsey Creek has changed course as manipulated for agricultural purposes.

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

Approximately 0.1-cubic yards of clear crushed rock may be used as a base for the steps. The material will likely be imported to the site by the construction contractor from local suppliers.

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

Erosion could occur during clearing and excavation of selective site areas during construction, while disturbed soils may be exposed to the weather. However, areas will be exposed for only short periods prior to temporary cover or permanent stabilization (estimating less than 1 week for construction), and the exposure would occur in July and August when the lowest precipitation amounts occur. Best management practice (BMP) measures will be taken to limit or control erosion potential.

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

The proposed project will contain approximately 70 square feet of impervious surface in the form of wood/rock for the stairs and platform. Approximately 50 -square feet of the impervious surface will be elevated and the underlying soils undisturbed to allow for infiltration.

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

The following measures will be taken to reduce or minimize erosion potential:

- Work will be restricted to the WDFW in-water work window, set for when salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*) are unlikely to be present or would be present in low numbers. The work window extends from July 1 to August 31 (Corps work window).
- Clearing limits will be defined on the design plans with requirements to mark those limits prior to initiation of grading activities. The contract documents will include provisions to confine construction activities to the minimum area necessary to complete the improvements within the flagged clearing limits. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared as guidance for implementation of contractor TESC measures.

Construction phase BMP measures to reduce erosion (and sedimentation) will include:

- Temporary Erosion and Sedimentation Control (TESC) BMPs (e.g., temporary high visibility fencing and core logs) will be used to minimize impact to critical areas.
- Any excavated soils would be immediately reused on site or stored temporarily at an approved upland location. Temporary material stockpiles will be covered with plastic sheeting when not in active use and prior to storms to minimize the potential for them to erode.
- The approved native planting plan will be implemented during the first month of frost-free portions of the first dormant season (in October) following completion of work.

All TESC practices and measures will be consistent with the NPDES Construction Stormwater General Permit (Ecology 2010), the Stormwater Management Manual for Western Washington (Ecology 2005), and with applicable project permit conditions.

## 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.

Some dust may be present during construction of this project; however, the soil should typically not be dry enough to create dusty conditions as the work area is within the riparian stream corridor. No large machinery should be used in the construction of the proposed project, which should limit emissions. The contractor's truck will like emit automobile odors.

As the quantity of dust and standard exhaust emissions likely to be present is related to weather conditions, unanticipated site conditions, type of equipment used, and/or duration of on-site activities, a specific quantity cannot be estimated. However, such emissions (if present) will be temporary in nature and generally of short duration.

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

There are no known off-site sources of emissions or odor that would affect this proposal.

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

Exposed soils will be covered daily, during non-working periods to limit potential of airborne dust. Other emissions beyond automobile emissions are not anticipated during construction.

## 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 appropriate, state what stream or river it flows into.

The proposed project is located along lower Kelsey Creek. Kelsey Creek is a tributary to Mercer Slough and ultimately Lake Washington.

- (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, the proposed project is located adjacent lower Kelsey Creek. Project plans are included in Exhibit 1 (attached design plans). Overall, the project will include stairs, hand railings, an elevated viewing platform, and interpretive signage located behind the southern downstream culvert wing wall along Kelsey Creek at 121<sup>st</sup> Ave SE and SE 8<sup>th</sup> St.

- (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.

No fill or dredge material is proposed to be placed or removed from surface water or wetlands.

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

No.

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

The project lies within the 100-year floodplain of Kelsey Creek. The project area is shown on Federal Emergency Management Agency (FEMA) Map 53033C0656 F (May 16, 1995). The base (100-year) flood elevation (BFE) approximately 30 feet and is indicated on the design plans Sheet 2 of 8.

- (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.

Not applicable.

#### 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.

Runoff in Kelsey Creek is from natural and urban areas within the watershed. Runoff is collected via curb and gutters and discharged to the creek and numerous locations. Various on-site and regional detention basins exist within the watershed area, which control the runoff rates to Kelsey Creek from the watershed. The proposed project restoration improvements will not create additional runoff volume or modify runoff rates to a measurable degree.

Runoff is not anticipated from the site as the proposed construction will occur during the dry season, the site is under moderate to heavy tree canopy, and TESC BMPs will be implemented with construction activities.

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

Waste materials are not expected to be discharged to ground or surface waters as TESC BMPs and a site-specific CSPPP will be implemented.

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

The following measures will be taken to reduce or minimize runoff potential:

- Work will be restricted to the WDFW in-water work window, set for when salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*) are unlikely to be present or would be present in low numbers. The work window extends from July 1 to August 31 (Corps work window).
- Clearing limits will be defined on the design plans with requirements to mark those limits prior to initiation of grading activities. The contract documents will include provisions to confine construction activities to the minimum area necessary to complete the improvements within the flagged clearing limits.
- A Stormwater Pollution Prevention Plan (SWPPP) will be prepared as guidance for implementation of contractor TESC measures.

Construction phase BMP measures to protect stream water quality will include:

- Temporary Erosion and Sedimentation Control (TESC) BMPs (e.g., temporary high visibility fencing and core logs) will be used to minimize impact to critical areas.
- Any excavated soils would be immediately reused on site or stored temporarily at an approved upland location. Temporary material stockpiles will be covered with plastic sheeting when not in active use and prior to storms to minimize the potential for them to erode.
- The approved native planting plan will be implemented during the first month of frost-free portions of the first dormant season (October) following completion of work.

All TESC practices and measures will be consistent with the NPDES Construction Stormwater General Permit (Ecology 2010), the Stormwater Management Manual for Western Washington (Ecology 2005), and with applicable project permit conditions.

#### 4. Plants

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

- ✓ deciduous tree: alder, maple, aspen, other: black cottonwood, black hawthorn, Oregon ash
- ✓ evergreen tree: fir, cedar, pine, other
- ✓ shrubs: Himalayan blackberry, Scot's broom, red elderberry, red-osier dogwood, vine maple, wild ginger, sword fern, kinnikinick, salal, low Oregon grape, snowberry, and wood rose.
- grass
- pasture
- crop or grain
- wet soil pants: cattail, buttercup, bulrush, skunk cabbage, other
- water pants: water lily, eelgrass, milfoil, other
- ✓ other types of vegetation: English ivy

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

In the proposed excavation areas, the upper soil horizon with root mass will be stripped and hauled off site to an acceptable upland disposal site. To the extent possible, construction access will be set up to avoid native riparian species and focus disturbance on areas dominated by invasive species such as English ivy and Himalayan blackberry.

c. List threatened or endangered (plant) species known to be on or near the site.

There are no known threatened or endangered plant species on or near the site.

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

To increase the number and variety of vegetation communities along Kelsey Creek, invasive species will be removed where encountered in the work area and will be replanted with appropriate native plant species. Native species will also be planted in designated areas to create a more continuous riparian corridor. Plant species were selected that are known to occur naturally in the project area, that will provide cover for wildlife, that are tolerant to the site conditions, and that will have a high likelihood of success.

Proposed plant species and locations are shown in Sheet 5 of 8 of the design plans. The woods rose, snowberry, and low Oregon grape were selected because of their "prickliness" and their natural ability to encourage people to stay on designated pathways. Other considerations for plantings included plant proliferation and height in order to prevent the creation of too much privacy at the site.

## 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: ducks and geese
- ✓ mammals: deer, bear, elk, beaver, other: mice, moles, rats, raccons, and opossums
- ✓ fish: bass, salmon, trout, herring, shellfish, other: Peamouth minnow.

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

Puget Sound Chinook salmon are known to use Kelsey Creek; steelhead trout and bull trout have the potential to use Kelsey Creek.

Critical habitat for Puget Sound Chinook salmon was designated on September 2, 2005 (50 Code of Federal Regulations [CFR] Part 226). Bull trout critical habitat was designated on September 26, 2005 (50 CFR Part 17; USFWS 2005). Designated Chinook and bull trout critical habitat in the action area includes Lake Washington, and all of its accessible tributaries were excluded. Table 1 is a list of threatened species known to be near the site.

Table 1 Listed Threatened Species near the Project Area

Occurrence of Listed Species and Critical Habitat Near the Project Area				
Common Name	Scientific Name	ESA Status	Jurisdiction	Critical Habitat
Puget Sound ESU, Fall Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Threatened	NMFS	Designated; Lake Washington Tributaries excluded
Coastal/Puget Sound, Bull Trout	<i>Salvelinus confluentus</i>	Threatened	USFWS	Designated; Lake Washington Tributaries excluded
Puget Sound ESU, Steelhead	<i>O. mykiss</i>	Threatened	NMFS	Not designated

NMFS has identified threatened Chinook salmon as potentially occurring in the project vicinity (NMFS 2007; Table 1; Appendix B). Mercer/Kelsey Creek is identified as a satellite spawning area in the Lake Washington/Cedar/Sammamish (WRIA 8) Chinook Salmon Recovery Plan, vol.1, chapter 3, page 11.

Bull trout use of the lake has been documented, and bull trout are thus presumed to be present at the mouth of Mercer Slough; however, these locations are outside of the Project Area. It is presumed that bull trout could use Kelsey Creek due to its association with Lake Washington through Mercer Slough; however, due to the highly urbanized nature of Kelsey Creek in this area and the high summer water temperatures, bull trout use of Kelsey Creek is highly unlikely. If present, both adults and juvenile bull trout would occur in extremely low numbers (adults in fall and juveniles in spring) based on the above information (Anchor QEA 2009).

Steelhead have not been seen by King County's volunteer Salmon Watcher program (King County 1998 to 2006). However, because steelhead have been documented to occur in the watershed, and suitable habitat exists in Kelsey Creek, their presence is assumed.

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

The site lies within the Pacific Flyway bird migration route. Historically, salmon used Kelsey Creek for spawning and rearing, but numbers have been declining (Kerwin 2001). Kelsey Creek provides for annual returns of Chinook, coho *O. kisutch*, and sockeye (*O. nerka*) salmon as well as migratory cutthroat trout (*O. clarki*).

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

The proposed project will reduce on-site erosion and plant riparian vegetation to provided more continues canopy.

## 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.

No energy sources will be used or needed for the completed project. Equipment that requires fuel may be used during construction.

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

This project will not affect the potential use of solar energy by adjacent properties.

- 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:

Energy will not be used to operate the finished project; therefore, no energy conservation measures are proposed.

## 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.

Equipment will primarily be limited to hand tools. However, there is minor potential risk from the normal hazards associated with other equipment operation and general construction practices. Spills of machine fluids, risk of fire or explosion, and other similar and normal circumstances may exist during construction phases of the proposed project. Fuel, hydraulic fluid, or oils may be discharged to the surrounding environment if a piece of construction equipment were accidentally damaged, vandalized, or improperly maintained.

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

No special emergency services will be needed. Normal emergency medical services may be needed in the event of an accident during construction.

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

All construction equipment used on the project will be properly maintained. Construction site safety equipment and procedures (to be determined by the construction contractor) will be utilized during construction phases of the project. The construction contractor will be required to have an adequate supply of oil-absorbent pads, booms, and erosion control material to control possible inadvertent spills of oil from construction equipment.

#### b. Noise

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

Noise will not affect the project. The project area currently experiences normal urban noise such as traffic, yard and golf course maintenance equipment, music, etc.

- (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.

Short-term Noise: Short-term noise impacts will occur during construction; however, this area is already exposed to levels of ambient noise from normal operations of the golf course and nearby roads.

Long-term Noise: There will be no post-construction noise related to implementation of the project.

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

Construction activities will be limited to normal construction contractor work hours as permitted under City Code.

### 8. Land and Shoreline Use

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

The site is located on City right-of-way and adjacent open space and recreation areas (Kelsey

Creek Park and Farm).

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

Adjacent the project site, areas have been used for agriculture in the past but not currently. Kelsey Creek Park and Farm are located on the site of the prior Twin Valley Dairy Farm. The dairy was operated until 1968. The City acquired the site in 1969 and maintains the dairy barns and some of the pastures as part of the farm facilities.

- c. Describe any structures on the site.

The stream box culvert with wing wall abutments for the roadway, 121<sup>st</sup> Avenue Southeast, is located in the project site. The Burlington Northern Santa Fe (BNSF) Railroad Wilburton Trestle crossing and Interstate 405 is located just downstream of the project site. The surrounding stream banks are filled with riprap, angular rock, and fill material positioned to support the trestle, culvert, and adjacent roadways (SE 8<sup>th</sup> St and 121<sup>st</sup> Ave SE).

Stream channel modifications were completed adjacent the project area in 2011, which included removal of the existing angular rock immediately downstream from an existing box culvert, addition of buried hydraulic control logs at the culvert outlet, and placement of a section of roughened channel backfill (cobble/boulder mix) to create a stable, fish-passable riffle at the downstream approach to the culvert. LWD (approximately 7 pieces total, logs with root wads) were also placed in the cobble/boulder backfill (anchored and partially buried) to increase the channel roughness and habitat complexity.

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

No structures will be demolished.

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

The site does not have a zoning classification. It is in the City's right-of-way.

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

The site is designated as single-family medium-density in the current comprehensive plan.

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

The current shoreline master program designates the site as shoreline jurisdiction.

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

The project will be located within an area designated by the City as Critical Areas, including

adjacent a salmon bearing stream, adjacent to wetlands, and within the 100-year floodplain boundary.

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

No one will reside in or work within the boundaries of the completed project.

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

No one will be displaced by the completed project.

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

No displacement impacts are anticipated; therefore, no avoidance or reduction measures are proposed.

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

The project will provide erosion control along Kelsey Creek and improve riparian habitat, thus minimizing potential damages to the adjacent landowners. The safe fish viewing access the proposed project will provide is compatible with the existing parks and nature trails located adjacent the site at the Wilburton Park Hill, Bellevue Botanical Gardens, and Kelsey Creek Park and Farm.

## 9. Housing

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

No housing units will be provided by this project.

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

No housing units will be eliminated by this project.

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

No housing impacts are anticipated; therefore, no reduction or control measures are proposed.

## 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?

The tallest height expected for the viewing platform will be up to four feet. The platform will be constructed from wood and be built on post and pile foundation.

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

The proposed platform will provide closer stream viewing and will not block views. As newly planted riparian vegetation establishes, street side views of the stream may become limited. Particular attention was given towards plant selection as to not create too much vegetation privacy in the area.

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

The proposed project may alter views; however, no significant aesthetic impacts are anticipated. It is anticipated that the project will improve aesthetic values through the placement of native vegetation.

## **11. Light and Glare**

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

The proposal will not produce light or glare.

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

The proposal will not produce light or glare; therefore, light and/or glare should not be a safety hazard or interfere with views.

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

There are no existing known sources of light or glare that may affect this proposal.

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

No light and glare impacts are proposed; therefore, no reduction or control measures are proposed.

## **12. Recreation**

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

The site provides opportunities to observe fish and wildlife along Kelsey Creek. In the site vicinity, the City's Wilburton Park Hill, Bellevue Botanical Gardens and the Kelsey Creek Park and Farm provide opportunities for nature and wildlife viewing.

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

The project will not displace any existing recreational uses.

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

There are no significant site impacts anticipated. The proposed project will improve recreation opportunity to observe fish and wildlife.

### **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.

The Wilburton Trestle crosses Kelsey Creek just downstream of the project area.

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

The Wilburton Trestle is a wooden railroad trestle that is still in use by the BNSF Railroad. The trestle was constructed by the Northern Pacific Railway in 1904.

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

No major earth disturbance or water diversion is proposed near the trestle. In the unlikely event that any cultural artifacts are encountered during construction, work will stop immediately in that area and the State Office of Archaeology and Historic Preservation will be immediately informed.

### **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.

The site can be accessed from I-405 at Southeast 8<sup>th</sup> Street via 121<sup>st</sup> Avenue Southeast.

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

Yes, King County Metro bus #246 services the site.

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

The project will not provide or eliminate any parking spaces.

- 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, the project will not require any new streets or improvements to existing streets.

- 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.

No vehicular trips will be generated by the completed project.

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

None proposed.

## 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.

The project will not result in an increased need for public services.

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

No impacts on public services are anticipated; therefore, no reduction or control measures are proposed.

## 16. Utilities

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

No utilities area available at the site.

- 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.

No utilities are planned for the proposed project.

**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: Katie Jensen

Date Submitted: April 9, 2013 .....

**References:**

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## Stantec

April 4, 2012  
Bellevue, WA  
Page 2 of 2

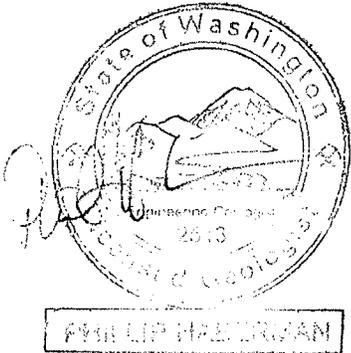
Reference: Proposed Kelsey Creek Fish Viewing Platform

### CLOSURE

The recommendations contained in this report are based on assumed continuity of soils with those of the test hole, and anticipated site usage. Our scope of work did not include geologic hazard analyses. Stantec should be provided with final architectural, civil, and structural drawings when they become available in order that we may review our design recommendations and advise of any revisions, if necessary.

Sincerely,

**Stantec Consulting Services, Inc.**



Phil Haberman, P.G., P.E.G.  
Senior Engineering Geologist

PH/ms

pah document2

# Critical Areas Permit – Habitat Assessment Report Kelsey Creek Fish Viewing Platform Project

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**Received**

APR 12 2013

**Permit Processing  
City of Bellevue**

**Prepared by**

Katie Jensen

City of Bellevue Utilities Department

450 110<sup>th</sup> Ave. NE

Bellevue, Washington 98009

**Funding provided in part by**

City of Bellevue

King Conservation District

**April 2013**

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## **1 Introduction**

This Floodplain Habitat Assessment (HA) is prepared in accordance with the FEMA Region 10 Floodplain Habitat Assessment and Mitigation Draft Regional Guidance and the City of Bellevue Land Use Code Section 20.25H.165.A. The purpose of this HA is to address the potential effects of the Kelsey Creek Fish Viewing Platform Project (Project) on listed endangered and/or threatened species under the federal and state Endangered Species Act (ESA) and their critical habitat. This project is funded in part by the City of Bellevue and through an awarded King Conservation District grant. City of Bellevue is responsible for administering the funds and the project.

The City of Bellevue (City), Washington, intends to install steps, a small viewing platform, and native plantings in the lower mainstem reach of Kelsey Creek (the portion of Kelsey Creek extending upstream from the Burlington Northern Santa Fe [BNSF] Railroad Trestle to 121<sup>st</sup> Avenue Southeast). Because the work will occur within the floodplain of Kelsey Creek, but above the ordinary high water mark (OHWM), the project has the potential to impact to ESA listed Puget Sound salmon and bull trout habitat.

The purpose the proposed Project is to provide erosion control to a site that the community and Bellevue's Stream Team volunteers access to monitor spawning salmon and peamouth fish and other wildlife. The end result of the project will reduce erosion and enhance riparian native vegetation at the Project site, and provide benefits to water quality, the vegetation communities, and an overall healthier environment resulting from the Project would promote more diverse use by songbirds, shorebirds, and other non-ESA listed fish species.

## **2 Project Area Summary**

The following sections provide the location, water resources information, fish and wildlife habitat conservation areas description, and a project area map for the proposed work.

### **2.1 Location**

The project site is located in the City of Bellevue, King County, Washington, within and along Kelsey Creek in Section 28, Township 25N, Range 5E (Figure 1). The project site is located approximately at latitude 47.6029 and longitude -122.1805. The nearest intersection is Southeast 8<sup>th</sup> Street and 121<sup>st</sup> Avenue Southeast. Surrounding properties include residential and park areas. There is no tax parcel number associated with this property. The property is owned by the City of Bellevue and is located within the City's street right-of-way. A more detailed map of the project area with parcel boundaries, area of proposed work, soils, topography, floodplain area, the base flood elevation (BFE), onsite structures, etc. is shown in Figure 2.

### **2.2 Water Resource Information**

The project area is located in the Cedar-Sammamish Basin Water Resource Inventory Area (WRIA) 8 (Ecology 2013). The project site is located at approximately Kelsey Creek river mile 0.2, just upstream from the Burlington Northern Santa Fe (BNSF) Railroad Wilburton Trestle and Interstate 405 (I-405) to 121<sup>st</sup> Ave Southeast. Kelsey Creek is a tributary to Lake Washington and outfalls to Mercer Slough

immediately south of Southeast 8th Street on the west side of Interstate 405 in Bellevue, Washington. Hydrologic characteristics in the project area are influenced by regional groundwater, direct precipitation, surface water runoff, and Kelsey Creek. The ordinary high water mark (OHWM) of Kelsey Creek was identified in the as part of the investigation the Kelsey Creek Stream Modification Improvement Project (Anchor 2008). Kelsey Creek is identified by the City of Bellevue as a Type F, fish-bearing stream (City of Bellevue 2013). The City requires a minimum 50 foot critical area buffer and structure setback for Kelsey Creek drainage basin (LUC 20.25H.75.C.1 & D2).

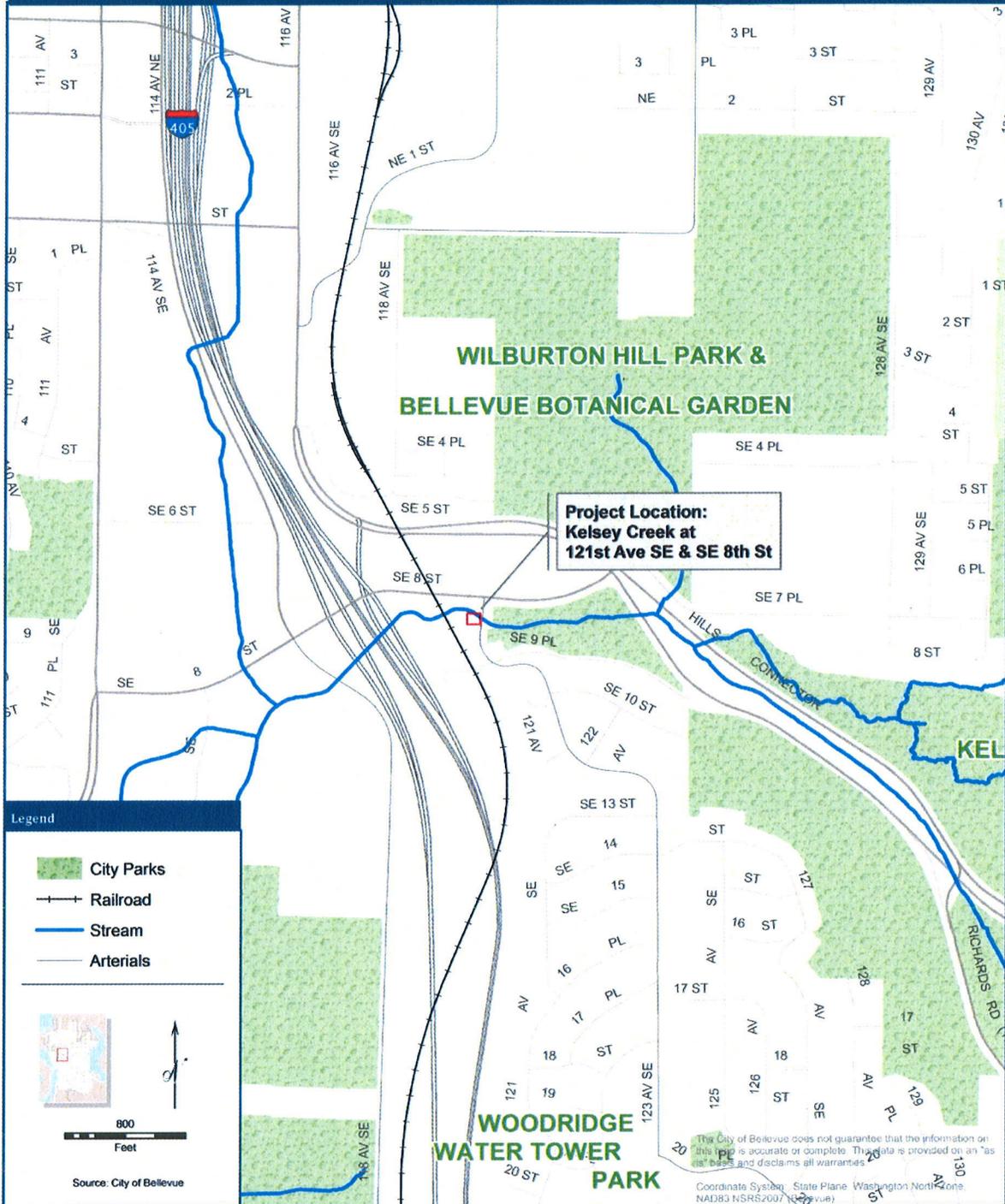
The project site is located within the Lower Kelsey Creek Shoreline Overlay Area (City of Bellevue 2013). The Lower Kelsey Creek Shoreline Overlay district includes creek waters, underlying lands, and territory between 200 feet on either side of the top of the banks, plus associated floodways, floodplains, marshes, bogs, swamps and river deltas (LUC 20.25E.010.C). The City requires a minimum 25 foot critical area buffer and structure setback for developed sites (LUC 20.25H.115 & 230).

### **2.3 Fish & Wildlife Habitat Conservation Areas**

The City of Bellevue has designated habitat areas associated with species of local importance (LUC 20.25H.150). Habitat (other than the critical areas and critical area buffers otherwise designated in LUC 20.25H.025) associated with species of local importance is hereby designated a critical area; provided, that compliance with these species of local importance regulations, LUC 20.25H.150 through LUC 20.25H.170 inclusive, shall constitute compliance with the requirements of this part where such habitat is located outside of other critical areas designated in this part. Habitat of local importance is within the critical areas buffer of this site.

# Kelsey Creek Fish Viewing Platform Vicinity Map

Utilities Department



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Figure 1 Project Vicinity Map

# Kelsey Creek Fish Viewing Platform Project Site

Project Area Map

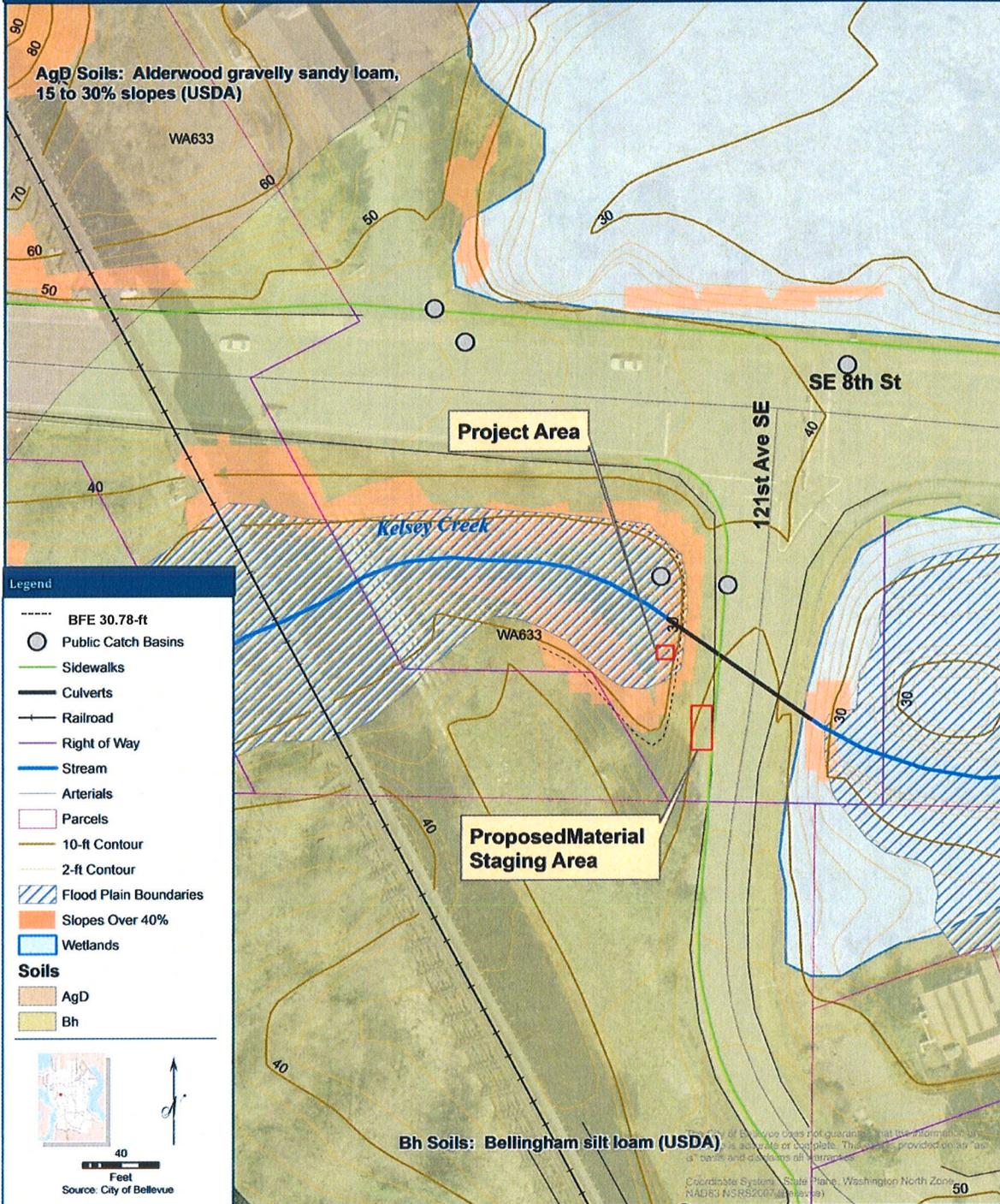


Figure 2 Project Area Map

### **3 Project Area Habitat**

The following sections provide information on background research, protected species identification, site investigation, and habitat area information for the proposed work.

#### **3.1.1 Background Research**

In order to identify and assess ESA-listed species and their critical habitat areas within the project area, the following sources were accessed:

- Bellevue City Code (City of Bellevue 2013)
- Natural Resource Conservation Service (NRCS) Soil Series Mapping (USDA 2009)
- Hydric Soil List for King County, Washington (USDA 2001)
- Soil Survey of King County, Washington (USDA 1973)
- U.S. Fish and Wildlife Service (USFWS) Wetlands Mapper for National Wetlands Inventory (NWI) Map Information (USFWS 2009)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitat Species (PHS) maps (WDFW 2007)
- National Marine Fisheries Services Essential Fish Habitat criteria (NMFS 1996)
- WDFW Management recommendations for Washington's priority species, Volume III: Amphibians and Reptiles (Larsen 1997)
- WDFW Management recommendations for Washington's priority species, Volume IV: Bird (Larsen et. al. 2005)
- Final Assessment of NOAA Fisheries' Critical Habitat Analytical Review Teams For 12 Evolutionarily Significant Units of West Coast Salmon and Steelhead (NOAA 2005)
- Aerial photographs
- Fish and Wildlife Habitat Investigation, Evaluation, and Recommendations Kelsey Creek Fish Passage and Habitat Restoration Project (Anchor 2008)
- Kelsey Creek Stream Channel Modification Improvement Project Biological Evaluation (Anchor QEA 2009)
- Personal communication with City of Bellevue biologist, Kit Paulsen.

#### **3.1.2 Project Species Identification**

This HA evaluates the potential effects on ESA-listed species and critical habitat for compliance with Section 7(a)(2) and Section 3(5)(A) of the ESA. Table 1 presents a summary of threatened and endangered species potentially occurring in the Project area (NMFS 2007a; NMFS 2007b; USFWS 2007) with ESA-listed species under National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) jurisdiction identified based on the geographic boundaries of Distinct Population Segments (DPSs) and Evolutionary Significant Units (ESUs). The table also identifies whether critical habitat has been designated by NMFS or USFWS for those species within the vicinity of the project area.

### **3.1.2.1 Species Status and Presence in Project Area**

#### **3.1.2.2 Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*)**

NMFS has identified threatened Chinook salmon as potentially occurring in the project vicinity (NMFS 2007a; Table 1; Appendix B). Mercer/Kelsey Creek is identified as a satellite spawning area in the Lake Washington/Cedar/Sammamish (WRIA 8) Chinook Salmon Recovery Plan, vol.1, chapter 3, page 11.

The Puget Sound ESU of Chinook is listed as threatened by the ESA, and includes all naturally spawned populations of Chinook salmon from rivers and streams flowing into Puget Sound including the Straits of Juan De Fuca from the Elwha River; eastward, including rivers and streams flowing into Hood Canal; South Sound; North Sound; and the Strait of Georgia in Washington; as well as 26 artificial propagation programs. Most Chinook salmon in this ESU exhibit an ocean-type life history.

Chinook returns to the Kelsey Creek mainstem have been variable in recent years. The Watershed Company has conducted extensive spawner surveys in Kelsey Creek from 2000 to 2006, indicating that the total Chinook run was between 0 and 15 fish from 2000 to 2005, but there were unusually large numbers of returns in 2006 (200 Chinook; TWC 2007). Of the more than 200 Chinook adults observed, more than 80 percent were determined to be hatchery-origin fish (TWC 2007). Observations by volunteers of adult Chinook in Kelsey Creek provided the following data: in 1988 to 1989, returns averaged 114 Chinook per year; when counting was resumed from 1996 to 1998, returns averaged 38 Chinook per year; and from 1999 to 2006, observations averaged 19 Chinook per year (King County 1998 to 2006). WDFW spawner surveys indicated that the Chinook return was 228 in 1999 but only 23 Chinook in 2000 (Kerwin 2001).

Puget Sound Chinook that would occur in the Action Area are from the North Lake Washington stock. Chinook of this stock typically enter Mercer Slough near the beginning of September and proceed to spawning areas further upstream where spawning continues into early November (TWC 2007). Based on this information, adult Chinook salmon would be expected to be in the Action Area during the spawning season in the fall. Juveniles would be expected to use the Action Area until spring when they would be expected to move toward Lake Washington on their seaward migration.

#### **3.1.2.3 Bull Trout (*Salvelinus confluentus*)**

The bull trout in the coterminous lower 48 states is listed as threatened under the ESA. Bull trout (*Salvelinus confluentus*) and Dolly Varden (*S. malma*) are the only char in the family Salmonidae native to Washington. Currently, information on the distribution and life history of each species is not yet distinct because the species are biologically similar and methods to separate them are new and not widely applied (Bonar et al., 1997). There is no survey protocol currently endorsed by the USFWS for establishing absence of bull trout, so its presence is assumed where there is suitable habitat (USFWS 1999).

The USFWS' critical habitat rule for bull trout states that the Lake Washington system has been identified as containing important foraging, migration, and over-wintering habitat necessary for bull trout recovery (USFWS 2005). Bull trout use of the lake has been documented, and bull trout are thus presumed to be present at the mouth of Mercer Slough; however, these locations are outside of the

Project Area. It is presumed that bull trout could use Kelsey Creek due to its association with Lake Washington through Mercer Slough; however, due to the highly urbanized nature of Kelsey Creek in this area and the high summer water temperatures, bull trout use of Kelsey Creek is highly unlikely. If present, both adults and juvenile bull trout would occur in extremely low numbers (adults in fall and juveniles in spring) based on the above information (Anchor QEA 2009).

### 3.1.2.4 Puget Sound Steelhead (*Oncorhynchus mykiss*)

The winter steelhead population in the Cedar-Sammamish watershed is classified as “depressed” and has been declining steadily since the early 1980s (Kerwin 2001). Limiting factors to the steelhead population include barriers to passage, lack of LWD, and lack of channel complexity (Kerwin 2001). Steelhead are not documented to occur in Kelsey Creek (WDFW 2008). Steelhead have not been seen by King County’s volunteer Salmon Watcher program (King County 1998 to 2006). However, because steelhead have been documented to occur in the watershed, and suitable habitat exists in Kelsey Creek, their presence is assumed.

### 3.1.3 Protected Species Critical Habitat Designations

Critical habitat for Puget Sound Chinook salmon was designated on September 2, 2005 (50 CFR Part 226). Kelsey Creek is a tributary to Lake Washington and therefore excluded from critical habitat designation for Puget Sound Chinook salmon (70 Fed. Reg. 52657).

Critical habitat was designated for bull trout on September 26, 2005 (50 CFR Part 17) (USFWS 2005). Designated critical habitat for bull trout does not include Kelsey Creek. Lake Washington is the closest designated critical habitat to the Project area.

Critical habitat has not been designated for Puget Sound steelhead.

**Table 1 Listed Species and Critical Habitat in or near project area**

Occurrence of Listed Species and Critical Habitat in or Near the Project Area				
Common Name	Scientific Name	ESA Status	Jurisdiction	Critical Habitat
Puget Sound ESU, Fall Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Threatened	NMFS	Designated; Lake Washington Tributaries excluded
Coastal/Puget Sound, Bull Trout	<i>Salvelinus confluentus</i>	Threatened	USFWS	Designated; Lake Washington Tributaries excluded
Puget Sound ESU, Steelhead	<i>O. mykiss</i>	Threatened	NMFS	Not designated

### 3.1.4 Other Species of Importance

Bald eagles have been removed from the endangered species list, the final de-listing rule went into effect on August 8, 2007, and are now primarily protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act and the National Bald Eagle Management Guidelines (NBEMG; USFWS 2007). Because the closest bald eagle nest is more than 1.5 miles from the project area (WDFW 2007), this Project will be in compliance with the NBEMG, and no actions to protect eagles will be necessary.

### **3.1.5 Habitat Needs for Protected Species**

Key habitat components, also referred to as primary constituent elements (PCEs), are required to be addressed when critical habitat may potentially be affected. The Project site is located in a Lake Washington tributary, which is excluded from the ESA listed salmon and bull trout's "Critical Habitat" (NOAA NWR n.d.). Although the Project site is not located in an area listed as Critical Habitat, the key habitat features are described below in the Habitat Narrative Section.

Key habitat factors that are important for the species' protection include fish access and passage barriers, increased sedimentation/altered sediment transport, loss of channel complexity/connectivity, degradation of riparian conditions, altered hydrology/flow, poor water quality, and biological processes.

With ESA-listed salmon and trout present in a freshwater area, the following PCEs would be applicable:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.
2. Freshwater rearing sites with water quantity and floodplain connectivity.
3. Freshwater migration corridors free of obstruction.

### **3.1.6 Site Investigation**

In general, Kelsey Creek is situated within the Lake Washington watershed where stream habitats have been partially degraded due to conversion of the landscape to residential, commercial, and industrial uses (Fresh and Lucchetti 2000). The Kelsey Creek basin has been extensively modified from natural conditions, as it is located in a suburban environment. Approximately 50 percent of the basin is composed of residential areas (City of Bellevue Planning and Community Development 2000), with 42 percent of the basin covered in impervious surfaces as of 2000 (Kerwin 2001). Less than 25 percent of historic floodplain connectivity remains; however, approximately 25 percent of the basin's riparian wetlands remain (May 1996). There are a number of non-fish-passable culvert barriers within the Kelsey Creek basin (Kerwin, 2001), which includes several concrete and rock weirs that are partial barriers to fish passage dependent on species, life stage (i.e., juvenile and adult), and stream flow rate (Anchor 2008).

The stream banks in the project area are deeply incised and supported on both banks with riprap, angular rock, and fill material positioned for support of the trestle crossing, the adjacent roadway (Southeast 8th Street), and surrounding the stream box culvert for 121<sup>st</sup> Avenue Southeast.

Stream channel modifications were completed adjacent the Project area in 2011, which included removal of the existing angular rock immediately downstream from an existing box culvert, addition of buried hydraulic control logs at the culvert outlet, and placement of a section of roughened channel backfill (cobble/boulder mix) to create a stable, fish-passable riffle at the downstream approach to the culvert. LWD (approximately 7 pieces total, logs with root wads) were also placed in the cobble/boulder backfill (anchored and partially buried) to increase the channel roughness and habitat complexity.

Under the site's developed conditions, potential channel movement in this reach is constrained. The substrate contains suitable spawning gravels and some pieces of LWD (Anchor QEA 2009).

There is a U.S. Geological Survey (USGS) stream gage located downstream approximately 125 feet.

Vegetation communities within the project area are dominated by a forested canopy of red alder (*Alnus rubrus*) and big-leaf maple (*Acer macrophyllum*) with a shrub understory of vine maple (*Acer circinatum*) and Himalayan blackberry. The vegetation forms a relatively dense canopy of overhanging vegetation over both banks of the creek. Stinging nettle (*Urtica dioica*) is a dominant emergent plant with patches of the nonnative invasive plant reed canarygrass observed occasionally along both banks of the creek (Anchor QEA 2009).

Above the culvert in the project area (within the right-of-way of 121<sup>st</sup> Avenue Southeast), the area was infilled with native plantings for Phase I of this project in fall of 2012. The native plantings included: woods rose (*Rosagymnocarpa*), snowberry (*Symphoricarpos albus*), low Oregon grape (*Mahonia nervosa*), sword fern (*Polystichum munitum*), kinnikinnick (*Arctostaphylos uva-ursi*), salal (*Gaultheria shallon*), and wild ginger (*Asarum caudatum*).

### 3.1.7 Habitat Narrative

This habitat narrative is an assessment of the condition of habitat factors. To evaluate the environmental conditions of the project area habitat and floodplain, the City’s qualified biologist, Kit Paulsen, and hydrologist, Brian Ward, were consulted. Additional local, state and federal information on habitat conditions were accessed and assessed. The Project area’s environmental baseline conditions are shown in Table 2.

Table 2 Environmental Baseline Assessment

Pathways Indicators:	Environmental Baseline		
	Properly functioning	At Risk	Not Properly Functioning
<b>PCE#1- Freshwater Spawning</b>			
Water Quality		See below	
Water Quantity		See below	
Substrate		x	
<b>PCE#1- Freshwater Spawning</b>			
Water Quantity		See below	
Floodplain Refugia		See below	
<b>PCE#3- Freshwater Migration</b>			
Habitat Access			x
<b>Water Quality</b>			
Temperature		x	
Sediment			x
Chem./Nutrients			x
<b>Water Quantity</b>			
Peak/Base Flows			x
Drainage Network			x
<b>Vegetation Communities &amp; Habitat Structures</b>			
Substrate		x	
Large woody debris			x

Pathways Indicators:	Environmental Baseline		
	Properly functioning	At Risk	Not Properly Functioning
Pool Frequency			X
Pool Quality		X	
<b>Spawning Substrate</b>			
Substrate			
<b>Floodplain Refugia</b>			
Off-channel habitat		X	
Refugia			X
Width/Depth ratio			X
Streambank condition		X	
Floodplain connectivity		X	
Road Density/location			X
Disturbance History			X
Riparian Reserve			X

Information on habitat needs and the species' factors of decline in the Kelsey Creek basin was taken from the Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (WRIA 8) (Kerwin 2001) and the City of Bellevue's Draft 2012 Storm and Surface Water System Plan. Habitat factors of decline results for salmon and steelhead include:

1. **Primary Constituent Elements.** Critical Habitat for ESA-listed species is not present near the project action area.
  - a. **PCE #1** – The Project action area may be used as a freshwater spawning site; however, the habitat conditions are at risk or not functioning properly. Spawning conditions are described in the water quality and quantity and the spawning substrate factors below. Spawning habitat improvements were made in 2011 with the CIP Kelsey Creek Stream Channel Modification Improvements Project.
  - b. **PCE #2** – The Project action area may be used as a freshwater rearing site; however, the habitat conditions are at risk or not functioning properly. Water quantity and floodplain connectivity are described in the water quantity and floodplain refugia factors.
  - c. **PCE #3** – The Project action area migration corridor access is not functioning properly. Fish passage barriers were analyzed according to WDFW guidelines during a comprehensive city-wide survey in 1998 (Menconi and Johnson 1998) and a follow-up survey in 2001 (Kerwin 2001). During these surveys, 19 of 62 publicly owned culverts on 7 streams in the Kelsey Creek basin were identified as partial or complete barriers to salmonid passage (Kerwin 2001). Of the barriers that were found, 4 have since been addressed through capital projects, and 7 projects are in the design phase as of 2010 (City of Bellevue 2012).
  
2. **Water Quality** – Kelsey Creek is on Ecology's 2004 303(d) list for temperature, based on King County unpublished data showing temperature criterion was exceeded in all years between

1998 and 2002 (Ecology 2004, as referenced in Anchor QEA 2009). During synoptic summer temperature surveys conducted by staff from the University of Washington in 1998 to 1999, Kelsey Creek temperatures ranged from 61 to 63°F (CUWRM 1999). Kelsey Creek is also on Ecology's 2004 303(d) list for dissolved oxygen, based on King County unpublished data showing excursions beyond the dissolved oxygen criterion in all years between 1998 and 2002. In addition, the creek is also on the 303(d) list for fecal coliform, based on King County unpublished data indicating that standards were not met each year in samples collected between 1998 and 2002 (Ecology 2004, as referenced in Anchor QEA 2009).

The City has studied stormwater chemistry at approximately 10-year intervals (City of Bellevue Utilities Department 1995). These studies indicate a stability of water pollutants with the exception of decreasing lead concentrations and increasing heavy metal concentrations. Storm flows are of greatest concern for heavy metals. Copper was noted as exceeding U.S. Environmental Protection Agency's (EPA's) acute toxicity criteria in 50 percent or more of the stormwater samples taken at each site. Zinc exceeded U.S. Environmental Protection Agency's (EPA's) acute toxicity criteria 61 percent of the time in storm flows (Bellevue Utilities 1995). In addition, staff from the U.S. Geological Service (USGS) examined urban stream for the presence of pesticides, including the West Tributary of Kelsey Creek and Mercer Slough. Eighteen pesticides were detected—some at levels that may be detrimental to aquatic life (Kerwin 2001).

1. **Water Quantity.** An analysis comparing flows during peak storm events from 1961-1975 to 1961-1983 concluded that the mean peak discharges in Kelsey Creek had increased 1.5 to 1.8 times higher than instantaneous peak discharges before 1983 (City of Bellevue 1988).

Staff from the University of Washington and the U.S. Geological Survey conducted two of the numerous studies of Kelsey Creek hydrology. The University of Washington evaluated the hydrologic impacts of human development in the Kelsey basin, based on historical land development patterns (Richey et al. 1981). The study showed that although the total volume expressed as a monthly average increased only slightly in Kelsey Creek, the storm peaks increased two to three times over the same historical period. In 1979-80, staff from the University of Washington and the U.S. Geological Survey compared the base flow and storm flow conditions of Kelsey Creek to the then rural Bear Creek (Perkins, 1982; Richey et al, 1981). The two streams response to storm flows was significantly different. Kelsey Creek showed a very rapid response to rain events, while Bear Creek responded much slower. After the storm peak, Kelsey Creek returned to base flow rates in less than 24 hours, while more than 48 hours was required for Bear Creek. Bear Creek summer flows were also greater than 30 percent higher than Kelsey Creek on a unit area basis (Richey et al. 1981).

Flow gage data is available on Kelsey Creek. Flow studies have been conducted on Kelsey Creek. Mean daily discharges (MDD) at the USGS station on Mercer Creek from 1945-1979 found a 1.34 maximum to mean flow ratio and 1.96 maximum to minimum flow ratio (City of Bellevue; unpublished data).

2. **Vegetation communities and habitat structures.**

As reported in Kerwin's 2001 report, urbanization has impacted riparian conditions in Kelsey Creek through road crossings, encroachment of buildings and landscaping, and intrusion of non-native invasive weed species (May 1996). A 1996 study found less than 5 percent mature riparian forests remaining in the basin (May 1996). The number of storm drain outfalls per reach ranges between 0.6 – 4.5 outfalls per mile (May 1996). Multispectral analysis of riparian buffers found approximately 18 percent impervious surfaces within 50 feet of the stream in Kelsey Creek, due to road crossings and encroachment by development (City of Bellevue; unpublished data).

Escapement goals are not set for this creek, nor is any reach of the creek an index area. Counts of adult salmonids spawners and their redds, primarily for chinook, sockeye and coho have varied over the years.

The Benthic Index of Biotic Integrity (B-IBI) for Kelsey Creek ranges from 10-20, indicating impaired biological processes. The B-IBI is a methodology to measure the diversity, abundance, and pollution tolerance of invertebrate organisms living on the stream bottom (Kerwin 2001).

3. **Spawning Substrate.** As reported in Kerwin 2001, fine sediments have been identified as a habitat limiting factor for salmonid production in Kelsey Creek, with fine sediment comprising 22 percent of the spawning substrate (Scott et al. 1986). This sedimentation and interstitial infilling has contributed to low dissolved oxygen transport through salmon redds (Scott et al. 1986). Ten years later, in a 1995-96 study, fine sediment amounts as high as 39 percent were observed (May, 1996).

4. **Floodplain Refugia.** As reported in Kerwin 2001, habitat complexity in Kelsey Creek is considered to be simplified compared to other Puget Sound Lowland streams having less urban development (May 1996). May (1996) determined that the average pool frequency was less than 13 pools per mile. The average amount of large woody debris was fewer than 17 pieces per mile. There was less than 25 percent floodplain connectivity remaining, however approximately 25 percent riparian wetlands existed (May 1996).

The methodology for these surveys were based on US Forest Service protocols, but modified for volunteers with professional oversight. Preliminary review of these data indicates a lack of large woody debris and pools throughout the basin. However, analysis of the data has not been finalized (City of Bellevue; unpublished data).

## 4 Project Description

The purpose of the Project is to reduce localized sediment erosion occurring along the banks, provide a safe access for fish viewing, and enhance riparian habitat in the project area. The following sections

describe the proposed final Project, the proposed construction process, and techniques that will be utilized to minimize and prevent damage to the existing habitat.

#### **4.1 Final Project**

The final project will include:

- A trail (i.e., stairs) from the existing landing on the top of the box culvert following behind the culvert's southern wing wall to a small viewing platform.
- A small platform (4-ft by 4-ft) along southern culvert wing wall for closer, but separated, viewing of stream. Platform will be anchored into wing wall and a minimal foundation system will be used to support the riparian side of the platform.
- Guard railings along steps and platform.
- The open areas in the riparian area will be in filled and replanted with native plantings, approximately 250 square feet. Some native plants will be selected because of their "prickliness" and their natural ability to encourage people to stay on designated pathways (i.e., woods rose, snowberry, and low Oregon grape). Other considerations for plantings included plant proliferation and height in order to prevent creating too much privacy at the site.

All site disturbances will be located behind or above culvert walls and top, within the fill material of the culvert. Should flood waters extend beyond the culvert boundaries, water will be able to flow around and through the platform and stairs. Overall, the area of riparian buffer disturbed, including trail and platform creation will be approximately 70 square feet. Vegetation enhancements in the project area will include approximately 250 square feet. The total site area is approximately 320 square feet.

Ongoing activities at the project site will be similar to existing activities. The area is currently used by the community and Stream Team volunteers to view spawning salmon and peamouth fish, as well as other aquatic and wildlife species. Areas adjacent to the project area were enhanced in 2012 to provide safer access to the top of the culvert and vegetation enhancements to approximately 800 square feet of the surrounding right-of-way area along the 121<sup>st</sup> Ave SE. The proposed environmental enhancements to the lower site will provide safer access to viewing and reduce slope erosion.

#### **4.2 Construction Process**

Land clearing in the project area will be limited to where the stairs and platform will be installed. This area currently consists of riprap and gravel with some soil and leaf litter that has eroded from above the wing wall. The existing riprap from behind the wing wall will be cleared minimally as needed to place and secure the minimum excavation foundation system (MEFS) and steps (See Sheet 3 of 8 "TESC/DEMO PLAN").

Stormwater management and construction access measures will include installation of temporary construction fencing around project area, installation of a coir log along the culvert wing wall extending out beyond disturbance areas to prevent erosion and run off from entering the stream. Exposed soils

will be covered with tarping during construction for temporary erosion control measures. For more permanent protection measures, exposed soils will be re-vegetated prior to project completion.

Materials may be staged adjacent the sidewalk within the project area temporary construction fencing. Vehicles will be staged in parking area south of culvert. Vegetation and soils that are temporarily disturbed will be restored prior to project completion.

Equipment to perform the project will include hand tools and an automatic hammer for the diamond pier foundation system.

Anticipated construction timing will be in the drier months of July to August, 2013. Construction is anticipated to last only a short period (less than a week).

### **4.3 Protection Measures**

MEFS is a low impact development technique that will help reduce the amount of disturbance to the site both during construction and permanently. Guard rails placed along the stairs and platform will have open panels. Should flood waters extend beyond the culvert boundaries, water and fish will be able to flow and swim around and through the platform, guard rails, and stairs.

Vegetation and soils that are temporarily disturbed during construction will be replaced prior to project completion.

## **5 Effects Analysis and Effects Determination**

Species under both NMFS and USFWS jurisdiction are addressed in this HA. NMFS has identified threatened Chinook salmon as potentially occurring in the Project vicinity (NMFS 2007a; Table 1; Appendix B). The USFWS has identified threatened bull trout as potentially occurring in the Project vicinity (USFWS 2007; Table 1; Appendix B). No other ESA-listed or threatened species are expected to be present within the Project area. In this section, general Project effects are considered, and then effects to ESA-listed species are addressed.

The Project Area is defined as the area to be affected directly or indirectly by the federal action (50 Code of Federal Regulations [CFR] §402.02). The Project Area is based on potential effects of in-air noise from construction activities related to the Project. There have been no noise studies in the vicinity of the Project; however, based on expected general background conditions in the area (e.g., automobile traffic) and considering that construction equipment will be the greatest source of temporary noise from the Project during construction, it is estimated that peak baseline noise levels at the Project site would be in a range similar to light automobile traffic (approximately 50 decibels [dB]). In addition, the following assumptions were used in the in-air noise analysis:

- According to the standard reduction for point source noise, airborne noise generated by the Project will attenuate at a rate of 6 dB per doubling distance.
- Typical Project airborne noise level (measured at 50 feet from the source) from construction equipment will be 90 dB (WSDOT 2006).

Based on these assumptions, peak airborne noise levels will decrease to ambient airborne noise levels within 3,200 feet (0.6 mile). Therefore, the in-air portion of the Action Area will extend laterally 0.6 mile from the extent of construction.

## **5.1 Project Direct and Indirect Effects to Fish**

Guidance from the NMFS on Essential Fish Habitat criteria for analyzing impacts to listed species, “Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale” (1996) was used for this evaluation. Essential Fish Habitat is defined by the Magnuson-Stevens Act in 50 Code of Federal Regulations (CFR) 600.905.930 as “those waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity.”

This section provides details on the potential Project effects during construction, to PCEs, and to other habitat factors.

### **5.1.1 Construction Effects**

#### **5.1.1.1 Short-term**

Short-term effects during construction include noise and limited slope exposure. Noise levels will not be injurious to fish because there is no in-stream work for this Project and only hand equipment will be used. Additionally, work will occur during approved work windows when the ESA-listed species are not present and will be limited to the minimum necessary to construct the Project. The exposed slope will be mitigated through following the City’s erosion control best management practices.

#### **5.1.1.2 Long-term**

The overall effect of the proposed Project is expected to be a net benefit to salmonids because the project will help reduce current erosion along slope and infill the Project area with native plantings. Effects to Chinook salmon from the proposed Project are related to the physical, chemical, and biological indicators described in Section 3. These potential effects are discussed below within the context of the proposed activities.

### **5.1.2 Habitat Effects**

An overview of habitat effects is summarized in Table 3.

#### **5.1.2.1 Primary Constituent Element #1**

The proposed Project should help to restore water quality in the Project action area.

Riparian improvements, especially overhanging vegetation, may result in measurable cooling of the water temperature in Kelsey Creek. Water temperature is especially important to salmonids, which require colder water for survival than most native fish species.

Additionally, the sediment erosion should be reduced at the site, which will further help improve water quality conditions by reducing turbidity. Improved water quality should help improve spawning conditions in the area.

### ***5.1.2.2 Primary Constituent Element #2***

The proposed Project should help to restore water quality in the Project action area.

Riparian improvements, especially overhanging vegetation, may result in measurable cooling of the water temperature in Kelsey Creek. Water temperature is especially important to salmonids, which require colder water for survival than most native fish species.

Additionally, the sediment erosion should be reduced at the site, which will further help improve water quality conditions by reducing turbidity. Improved water quality should help improve rearing conditions in the area.

### ***5.1.2.3 Primary Constituent Element #3***

No migration corridors will be affected. Kelsey Creek contains many fish passage partial or full barriers that limit or obstruct passage under a variety of flow conditions, but especially during low flows. In 2011, in-stream channel improvements were made to improve fish habitat and access adjacent the Project action area.

### ***5.1.2.4 Water Quality***

Riparian improvements, especially overhanging vegetation, may result in measurable cooling of the water temperature in Kelsey Creek. Water temperature is especially important to salmonids, which require colder water for survival than most native fish species.

The other water quality issues in Kelsey Creek (dissolved oxygen, fecal coliform and agricultural pollutants) cannot be influenced by the activities associated with this Project as these conditions are likely caused by agricultural activities, farm and pet wastes, golf course operations, and residential use of lawn chemicals.

### ***5.1.2.5 Water Quantity***

Water quantity should not be affected at the Project action area. A minimum amount of runoff and compaction disturbance should occur in the Project action area as a foundation system and post and pile footings will be used.

### ***5.1.2.6 Vegetation Communities and habitat structure***

Invasive vegetation is prevalent within and surrounding the Project area. Reed canary grass, Japanese knotweed, and Himalayan blackberry are choking out native plants in many areas. Site restoration will include revegetation of the work area with native plants. Large-scale invasive plant control is not planned as part of this Project, but the City has been conducting work under an independent City program.

Salmonids in the creek environment depend heavily on insect prey. Overhanging vegetation attracts insects to the creek, and fallen organic matter furnishes both epibenthic and insect prey (Meehan et al. 1977). Limited riparian planting will improve prey availability in localized areas.

The creek lacks habitat complexity, especially pools, and does not recruit sufficient woody debris. Substrates in the creek have a high proportion of fine particles. This is less than ideal for spawning and

rearing. The fine substrate is naturally occurring and fine sediments would continue to flow downstream even if the substrate were temporarily altered by placing spawning gravel. Because of development and tree removal in the riparian areas, Kelsey Creek does not naturally recruit sufficient LWD to maintain habitat complexity. Part of this Project will reduce localized slope erosion that has contributed fine sediments to the stream load.

Kelsey Creek contains many fish passage partial or full barriers that limit or obstruct passage under a variety of flow conditions, but especially during low flows. In 2011, in-stream channel improvements were made to improve fish habitat and access adjacent the Project area.

**5.1.2.7 Spawning Substrate**

Construction of a trail and platform should reduce sediment erosion conditions in the Project area; however, the high proportion of fine sediments in Kelsey Creek is a naturally occurring condition. Fine sediments reduce the survival of newly hatched salmon (alevin stage) because the alevins depend on the interstitial spaces in the gravel for refuge from predators (KRISweb 2008).

**5.1.2.8 Floodplain Refugia**

The proposed Project will add approximately 23 cubic feet of volume to the floodplain in the way of lumber used for steps and decking. Because the deck is supported on a post and pile construction format, the added volume to the floodplain is small relative to the volume of the floodplain. The HEC-RAS model estimates that the floodplain volume in the project site is approximately 2.75 acre-feet or nearly 120,000 cubic feet.

City of Bellevue’s professional engineer, Brian Ward, gave the statement: “Based on the small added volume relative to the total, it stands to reason that the proposed project will not increase the base flood elevation” (See Engineer’s Statement in Attachment A).

**Table 3 Habitat Factors Effects**

Pathways Indicators:	Effects of the Action(s)		
	Restore	Maintain	Degrade
<b>PCE#1- Freshwater Spawning</b>			
Water Quality	See below		
Water Quantity		Not applicable	
Substrate		Not applicable	
<b>PCE#1- Freshwater Spawning</b>			
Water Quantity		Not applicable	
Floodplain Refugia		Not applicable	
<b>PCE#3- Freshwater Migration</b>			
Habitat Access		Not applicable	
<b>Water Quality</b>			
Temperature	Improve riparian cover		
Sediment	Reduce erosion		
Chem./Nutrients		Not applicable	

Pathways Indicators:	Effects of the Action(s)		
	Restore	Maintain	Degrade
<b>Water Quantity</b>			
Peak/Base Flows		Not applicable	
Drainage Network		Not applicable	
<b>Vegetation Communities &amp; Habitat Structures</b>			
Substrate		Not applicable	
Large woody debris		Not applicable	
Pool Frequency		Not applicable	
Pool Quality		Not applicable	
<b>Spawning Substrate</b>			
Substrate			
<b>Floodplain Refugia</b>			
Off-channel habitat		Not applicable	
Refugia		Not applicable	
Width/Depth ratio		Not applicable	
Streambank condition		Not applicable	
Floodplain connectivity		Not applicable	
Road Density/location		Not applicable	
Disturbance History		Not applicable	
Riparian Reserve		Not applicable	

## 5.2 Effects Determination

### 5.2.1 Species Effects Determination

This Project is not likely to create any adverse impacts to Chinook salmon, bull trout, or steelhead species (Table 3). Project timing and other avoidance and minimization measures will be taken to ensure no likely impact occurs. The net effect of the Project will help improve biological quality of riparian habitat and improve water quality. Because of the analysis of effects in Section 6.1 and the avoidance and minimization measures listed in Section 6.2, it is determined that this Project is **not likely to adversely** affect Puget Sound Chinook salmon, bull trout, or steelhead.

### 5.2.2 Critical Habitat Effects

Kelsey Creek is excluded from the Chinook salmon and bull trout critical habitat designations (Table 3). While the Project will result in habitat benefits to Puget Sound Chinook salmon and bull trout, it is determined that this Project will have **no effect on designated critical habitat** for Puget Sound Chinook salmon or bull trout.

Critical habitat has not been designated for Puget Sound steelhead; therefore, **not applicable**.

**Table 4 Effects Determination**

Effects Determination for Listed Species and Critical Habitat in or Near the Project Area					
Common Name	ESA Status	Jurisdiction	Species Effects Determination	Critical Habitat	Critical Habitat Effects Determination
Puget Sound ESU, Fall Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	Threatened	NMFS	Not likely to adversely impact	Designated; Lake Washington Tributaries excluded	Not applicable
Coastal/Puget Sound, Bull Trout ( <i>Salvelinus confluentus</i> )	Threatened	USFWS	Not likely to adversely impact	Designated; Lake Washington Tributaries excluded	Not applicable
Puget Sound ESU, Steelhead ( <i>O. mykiss</i> )	Threatened	NMFS	Not likely to adversely impact	Not designated	Not applicable

### 5.3 Summary

The effects determination for the proposed project is “Not Likely to Adversely Affect (NLAA)”. The effects to the listed species are insignificant and/or discountable. The proposed project will have a beneficial effect on reducing erosion and enhancing riparian area function at the site. Minimization and conservation measures that will help minimize the impact during construction are described in Section 6.

## 6 Avoidance, Minimization, Restoration, and Compensation Measures

### 6.1.1 Avoidance

Unnecessary impacts to critical areas have been avoided wherever possible. However, as a fish viewing project, the project area occurs within critical areas associated with Kelsey Creek. Native tree and shrub vegetation communities and significant trees will be avoided when possible when creating access to the creek.

One of the project’s primary environmental objectives is to reduce the amount of slope erosion occurring at the project site. Avoidance or no action would leave this problem untreated.

Other project goals and objectives would not be met, including:

- Improve streamside access with a designated path for safety concerns.
- Enhance quality of native riparian habitat in the Kelsey Creek critical area.
- Enhance environmental outreach opportunity at the site for the community and the City’s Stream Team volunteers.

### 6.1.2 Minimization

Alternative trail pathways were considered; however, path alternatives were greater in length, thus disturbed a larger amount of area within the critical area. The proposed trail path is the most direct to

viewing the stream. This approach is consistent with Bellevue’s LUC 20.25H.055.3.g.i.(E). The project area is not located in higher value habitat areas.

The proposed trail and platform are located in an area that the stream banks are deeply incised and supported on both banks with riprap, angular rock, and fill material positioned for support of the Wilburton trestle crossing, the adjacent road (Southeast 8th Street), and surrounding the Kelsey Creek 121<sup>st</sup> Avenue Southeast culvert box. The proposed platform will be constructed using post and pin piling techniques in order to reduce the amount of disturbance to the area.

The construction work is proposed to be performed during the dry season (summer) to reduce potential of sedimentation runoff from exposed soils and before salmon spawners arrive in Kelsey Creek. Additional temporary erosion control measures will be required until the project is complete and permanent erosion control measures are installed (e.g., replace and cover all disturbed areas with mulch and vegetation). A site specific Construction Stormwater Pollution Prevention Plan (CSWPP) short form for small construction projects has been prepared. No heavy equipment is proposed for the project. Staged materials will be located outside of the riparian habitat zone.

### **6.1.3 Restoration**

The vegetation in the project area will be restored to like or better native vegetation conditions. The riparian area will be in filled with native plantings, an area approximately 250 square feet. Some native plants will be selected because of their “prickliness” and their natural ability to encourage people to avoid contact and stay on designated pathways (i.e., woods rose, snowberry, and low Oregon grape). Other considerations for plantings included plant proliferation and height in order to prevent creating too much privacy at the site.

The restoration proposed will help achieve the following environmental goals and objectives:

- Reduce site soil erosion by establishing a trail (steps) to a viewing platform and planting native vegetation that will encourage people to stay on the designated pathway.
- Enhance the Kelsey Creek riparian habitat and corridor by planting native vegetation.
- Enhance environmental outreach opportunity at the site for the community and the City’s Stream Team volunteers by providing signage and information about the fish and wildlife species that can be observed at the site.

### **6.1.4 Compensation**

The area of riparian buffer disturbance proposed at the site, including trail and platform creation will be no greater than 72 square feet. Vegetation enhancements on-site will include approximately 250 square feet.

## **7 Mitigation Measures**

Per LUC 20.25H.055, new and expanded City and Public Parks and habitat improvement projects are allowable activities in critical areas. Because the proposed project’s design and purpose is to reduce the amount of on-site erosion, improve riparian habitat, and provide safe access for fish viewing, minimal

impacts to the critical area will be self-mitigating. The proposed mitigation should restore and improve on-site riparian functions and values to the Kelsey Creek riparian corridor. The City is not proposing a formal mitigation plan as part of this application.

## **8 Post-Construction Monitoring & Maintenance Plan**

On-site vegetation monitoring will be conducted in partnership with the City of Bellevue's Parks Department and the Utilities Department. The Parks Department and contracted crews maintain the landscaping vegetation along the right-of-way at the site. The Parks Department is responsible for vegetation maintenance for the trails and parks surrounding the project area. The City has previously undertaken habitat restoration and enhancement activities throughout Kelsey Creek to maintain fish passage and improve habitat quality. Additional habitat improvement projects for Kelsey Creek are in anticipated for construction in summer 2013.

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City of  
Bellevue



## MEMORANDUM

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**DATE:** March 1, 2013  
**TO:** Katie Jensen  
**FROM:** Brian Ward

**SUBJECT: Kelsey Creek Fish Viewing Platform—Floodplain Encroachment**

The purpose of the memo is to describe the evaluation used to assess the effect of building the Kelsey Creek fish viewing platform on localized flood storage. City of Bellevue code 20.25H.180 requires that any allowed use or development shall not result in a rise in the BFE.

The proposed project will add approximately 23 cubic feet of volume to the floodplain in the way of lumber used for steps and decking. Because the deck is supported on a post and pile construction format, the added volume to the floodplain is small relative to the volume of the floodplain. The HEC-RAS model estimates that the floodplain volume in the project site is approximately 2.75 acre-feet or nearly 120,000 cubic feet.

Based on the small added volume relative to the total, it stands to reason that the proposed project will not increase the base flood elevation.

I recommend allowing the project to be permitted for construction.