ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

University of Washington (UW)-Tacoma, Howe Parcel
Interim Action Cleanup of Groundwater

2. Name of applicant:

University of Washington - Tacoma

3. Address and phone number of applicant and contact person:

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4. Date checklist prepared:

November 7, 2012

5. Agency requesting checklist:

Washington State Department of Ecology

6. Proposed timing or schedule (including phasing, if applicable):

Interim Action Implementation - Injection borings	2-3 month period
Interim Action Compliance Monitoring	approximately 2-10 years

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

The project entails long-term monitoring of a groundwater plume. If additional cleanup measures are required beyond those already proposed, they would be conducted as needed.

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

An RI/FS assessment (1998-2002) and supplemental groundwater investigations (2008-2010) were prepared or conducted previously. A series of technical memoranda on site conditions were also prepared between 2003-2011. Indoor air sampling in the Federal Courthouse Building near the Howe Parcel to determine air quality parameters was conducted in December 2010. A follow-up Draft Interim Action Analysis report was completed in 2011. An Interim Action Work Plan for the groundwater remediation was prepared in 2012.

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

   None known.

10. **List any government approvals or permits that will be needed for your proposal, if known.**

    - State of Washington Well Installation Permit
    - State of Washington Underground Injection Control Well Permit
    - Approvals by State Department of Ecology and the University of Washington.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

    An interim action cleanup is planned for the University of Washington-Tacoma (UW) Howe Parcel (University Bookstore) in Tacoma as part of an Amendment to the Agreed Order between UW and the Washington Department of Ecology (Ecology) under the Model Toxics Control Act (MTCA). The cleanup action is necessary because of previous contamination and the potential for further migration of a contaminated groundwater plume underneath and beyond the adjacent Federal Courthouse property across (east of) Pacific Avenue from the Howe parcel. In addition, vapor migration into the Courthouse building may occur if cleanup of the groundwater plume is delayed. Timely cleanup of the groundwater plume will reduce the threat of the vapor intrusion pathway and prevent downgradient plume migration beneath the I-705 freeway towards the Thea Foss Waterway.

    The recommended alternative for the cleanup action is a combination of zero valent iron (ZVI) and enhanced reductive dechlorination technologies (ERD). Shorter-term treatment involving more rapid treatment of perchloroethene (PCE) would occur through direct contact with ZVI. Longer-term treatment within the proposed injection and downgradient areas would occur with ERD. Implementation of the alternative would include installing temporary injection borings to inject groundwater treatment reagents perpendicular to groundwater flow within the sidewalk areas adjacent to the Howe parcel and the Federal Courthouse as well as additional groundwater monitoring wells. The existing well monitoring network will be supplemented by additional wells. In addition, several temporary injection points (borings) would be installed upgradient of the Howe parcel to treat groundwater beneath the Bookstore, unless it is impractical because of subsurface utility constraints. It is expected that PCE concentrations in groundwater would immediately be reduced after groundwater flows through the ZVI curtain. The injected ZVI/ERD substrate materials are intended to promote favorable geochemical conditions (reducing environment) to continue to degrade residual PCE in groundwater by enhanced reductive dechlorination. Although 2010 air sampling detected PCE and trichloroethene (TCE) levels marginally above MTCA levels, the levels are below health-based air action levels. Performance and Compliance monitoring, including air sampling and groundwater monitoring will be continued.

12. **Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

    The Howe Parcel is located on the UW-Tacoma campus in Tacoma, Washington at 1754 Pacific Avenue, within Section 4, Township 3N, R4 E, W.M. The project also includes adjacent properties along the east

side of Pacific Avenue (Federal Courthouse, 1717 Pacific Avenue). A site plan (Exhibit A) showing the Howe Parcel location is attached. A map showing the location of planned interim action activities is also attached (Exhibit B).

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): Flat, rolling, **hilly**, steep slopes, mountainous, other. . . . .

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

Approximately 18% (between Pacific Avenue and Federal Courthouse).

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

Soils in the vicinity generally consist of Vashon till and outwash layers overlain by a combination of natural and fill soils. Vashon till is generally composed of a heterogeneous mixture of boulders, gravel, sand, silt, and clay. Natural and fill soils are generally composed of sand and silt.

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

No.

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

No filling or grading is proposed.

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

No.

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

N/A.

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

None needed.

2. Air

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

The Federal Courthouse Building Indoor Air Study (2010) detected low levels of PCE and TCE levels below current MTCA Method B cleanup levels.

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

No.

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

Although vapor intrusion is of some concern, no immediate action is proposed other than performance of the groundwater cleanup at this time. This is because PCE and TCE air concentration levels measured inside the Federal Courthouse building are currently below MTCA Method B and health-based air action levels. The proposed groundwater interim action is intended to reduce VOCs in groundwater in the vicinity of the Federal Courthouse. Therefore, the potential for indoor air concentration exceedances at the Federal Courthouse are deemed low. However, should groundwater PCE and/or TCE contaminant concentration increase significantly, then air sampling would be conducted.

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 Thea Foss Waterway is downgradient from the site area. The downgradient portion of the plume is approximately ¼ mile from the Waterway.

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.

No.

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.

None.

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 flood plain? If so, note location on the site plan.

No.

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 groundwater be withdrawn, or will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

Yes. A slurry mixture of ZVI and degradable organic substrates will be injected into the aquifer to facilitate groundwater cleanup. The quantities of materials injected into the aquifer are also expected to be small (i.e., less than 10% of the available pore space of the aquifer material).

Groundwater will be withdrawn from monitoring wells to monitor the contaminant concentrations. The quantities of groundwater removed are expected to be small (i.e., a few gallons per well).

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.

None.

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.

None anticipated.

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

No.

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

Injection borings (and monitoring wells) will be conducted under City of Tacoma and Department of Ecology permits.

4. Plant

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

- __√__ deciduous tree: Alder, **maple**, aspen, other: **Poplars**
- _____ evergreen tree: fir, cedar, pine, other:
- __√__ Shrubs: **Groundcovers (streetscape)**
- __√__ Grass
- _____ Pasture
- _____ crop or grain
- _____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- _____ water plants: Water lily, eelgrass, milfoil, other
- _____ other types of vegetation

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

None.

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

None known.

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

None needed.

5. Animals

a. 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: **Waterfowl**
mammals: deer, bear, elk, beaver, other: **Rodents**
fish: bass, **salmon**, **trout**, herring, **shellfish**, other: **Southern Resident Killer Whale and Humpback Whale (Commencement Bay and Puget Sound).**

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

Chinook Salmon, Bull Trout, Steelhead Trout, Steller Sea Lion, Humpback Whale and Southern Resident Killer Whale are found in nearby waters.

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

The nearby Thea Foss Waterway and Puyallup River are part of a migration corridor (Pacific Flyway) for birds. In addition, fish migrate along the waterways.

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

None needed (the nearby waterways are over 1,000 feet from the project area).

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 needs? Describe whether it will be used for heating, manufacturing, etc.

None.

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

No.

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

None.

7. Environmental health

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

Some risk of exposure to PCE and TCE in groundwater could occur to construction site workers although this is expected to be minimal. Work will be monitored in accordance with a site-specific Health and Safety Plan to control exposure to acceptable levels.

1) Describe special emergency services that might be required.

   In the event of an accidental exposure to workers, emergency services (EMS) might be required. A Health and Safety Plan will be prepared.

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

   Work will be conducted under Federal and State safety standards and measures. A site-specific Health and Safety plan will be prepared by the contractor and implemented.

b. Noise

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

   Although traffic (automobiles, transit) exists along Pacific Avenue (a major arterial), no effects on the project or site are expected.

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

   Some construction noise resulting from injection borings and monitoring well installations would occur at times. Installation is expected to occur during daylight hours. However, UW could perform at night if required by the City of Tacoma to minimize parking access disruption at Pacific Avenue.

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

   Construction work will be timed and limited so as not to be noise intrusive.

8. Land and shoreline use

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

   The site area is part of the University of Washington – Tacoma campus. The property east of Pacific Avenue is occupied by the Federal Courthouse.

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

   No.

c. Describe any structures on the site.

   The UW-Tacoma Bookstore (Howe Parcel) and the Federal Courthouse.

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

   No.

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

Downtown Mixed Use (Historic and Conservation Districts).

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

Mixed Use Center (High Intensity)

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

N/A

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

No.

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

Not applicable.

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

None.

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

None needed.

l. Proposed measures to ensure the proposal are compatible with existing and projected land uses and plans, if any:

None needed.

9. Housing

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

Not applicable.

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

Not applicable.

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

Not applicable.

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?

Not applicable.

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

None.

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

None needed.

11. Light and glare

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

None.

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

No.

c. What existing offsite sources of light or glare may affect your proposal?

None.

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

None needed.

12. Recreation

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

Some waterfront uses are present along Thea Foss Waterway and cultural/historical institutions (museums etc.) are located near the downtown location.

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

No.

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

None.

13. Historic and cultural preservation

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

The UW-Tacoma Bookstore (Howe Parcel) is located on the UW Tacoma Campus. The UW Tacoma Campus is a designated National Historic District by the National Register of Historic Places. The UW Tacoma Campus is also located within the Tacoma Landmark District. The Federal Courthouse is listed on national, state and local registers.

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

The Federal Courthouse was a historic train station (Union Station).

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

Work in the general area will be coordinated with the City of Tacoma. No impacts are anticipated to the structures within the historic or conservation districts.

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.

Pacific Avenue provides access to the site.

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

Yes. The UW Tacoma Campus is served by Pierce County Transit (buses) and Sound Transit (buses and light rail) along Pacific Ave.

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

None would be provided and none eliminated. Several parking spaces may be temporarily closed during construction to maintain a safe work zone, but will be reopened after construction.

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

No.

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

The project is upland from the Thea Foss Waterway. Pierce County Transit and Sound Transit buses travel along Pacific Avenue. A Sound Transit light rail line is located in the median of Pacific Avenue.

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

None.

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

Work near or along Pacific Avenue will occur during non-peak hours (evening) to minimize potential effects on traffic. The work will be coordinated with the City of Tacoma.

15. Public services

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

No.

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

None needed.

16. Utilities

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

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

None.

C. 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: _____

Steve Harrison, Capital Projects Office, UW-Tacoma

Date Submitted: 11/7/12