

Appendix G Hazardous Materials Report

**Alignment Hazardous Materials Discipline
Report**

Totem Lake Pedestrian Bridge
Kirkland, Washington

for

City of Kirkland Public Works Department

February 17, 2017



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Alignment Hazardous Materials Discipline Report

Totem Lake Pedestrian Bridge Project Kirkland, Washington

File No. 0231-090-00

February 17, 2017

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INTRODUCTION

This Alignment Hazardous Materials Discipline Report evaluates potential environmental conditions for the proposed Totem Lake Pedestrian Bridge project in Kirkland, Washington (“Project”). The bridge will be located at the intersection of NE 124th Street and 124th Avenue NE, and will provide an elevated connection between segments of the existing Cross Kirkland Corridor (CKC) trail. A Vicinity Map of the Project location is provided as Figure 1. The portion of the CKC where the Project is located is generally within King County Tax Parcel 2826059027. GeoEngineers, Inc. (GeoEngineers) has also completed biological and geotechnical services for the Project, the results of which are provided in separate reports. This report summarizes the potential for environmental contamination to affect the Project. The area where project construction activities are planned to occur is herein referred to as the “Approximate Study Area” and is outlined in Figure 2.

PURPOSE

The purpose of this report is to identify and evaluate potential and known environmental conditions relating to hazardous materials that could affect project design, construction and human health or the environment. Hazardous materials include materials that may pose a threat to human health or the environment based on quantity, concentration, and physical and chemical characteristics. Identifying hazardous materials sites prior to construction can decrease the possibility of exposing the public and the environment to hazardous substances. Further, this information can minimize unexpected or additional cleanup or hazardous materials management costs and reduce the potential for additional adverse effects on the environment. This alignment hazardous materials report also provides information needed to evaluate whether supplemental hazardous material investigations should be conducted to estimate possible cleanup cost or hazardous materials handling costs resulting from project construction activities. Typical regulatory requirements that may apply to project design or construction on or near contaminated sites are listed in Appendix A.

The information contained in this report may be used by the City of Kirkland and the design team to assess potential environmental liability associated with project development in or near contaminated sites. The information contained in this report may be used by the project design team to identify mitigation options.

PROJECT DESCRIPTION

The Project includes the construction of the Totem Lake Pedestrian Bridge, spanning across the intersection of NE 124th Street and Totem Lake Boulevard in Kirkland, Washington. Once completed, the bridge will provide an elevated connection between segments of the existing CKC trail.

Geology and Hydrology

The existing CKC trail segments within and adjacent to the Project are composed of either compacted gravel or asphalt pavement with a gravel subgrade.

The Project area is mapped as recessional outwash, derived from the Vashon glacier. Recessional outwash consists of mostly clean stratified sand and gravel that was deposited by meltwater flowing from the receding glacier (USGS, 1983). Recessional outwash is typically medium dense. Accumulations of organic material and peat are often encountered near or within water-filled depressions overlying the glacial till (in swamps, bogs, and lake areas) (USGS, 1983).

Subsurface soils encountered in recent geotechnical explorations consisted of loose to medium dense fill material (sand with gravel and cobbles) extending from approximately 0 to 7 feet below ground surface (bgs). Underlying materials consist of varying layers of sands, gravels, silts, and clays ranging from medium dense/stiff to very dense/hard to depths up to 71 feet bgs. Additionally, lenses of peat were observed between 5 and 15 feet bgs.

Groundwater was observed at depths ranging between 6 and 16 feet bgs in geotechnical explorations and monitoring wells completed recently for the Project. Groundwater flows to the north/northeast based on an environmental assessment report completed for a nearby site (Washington Department of Ecology, 2014). We anticipate groundwater in the area may be in a “perched,” discontinuous layer that fluctuates with changes in season, precipitation, and other factors.

Estimated Depths of Excavation

The potential risk of hazardous materials environmental concerns during construction is evaluated in part based on planned excavation depths associated with the Project area. Preliminary shallow foundation excavations and pile/shaft caps are not anticipated to exceed 6 feet bgs. There may be augercast piles or 6- to 8-foot diameter drilled shafts completed in four locations that may be up to 60 feet deep, and below groundwater, although no groundwater will be withdrawn, based on our discussions with the Project design team. Actual excavation depths may vary from preliminary depths as the design is refined and finalized.

Proposed Property Acquisitions

The City does not anticipate any full parcel acquisitions in connection with the Project.

SCOPE AND METHODOLOGY

The scope of assessment has similarities to, but is not intended to represent, a Phase I Environmental Site Assessment (ESA) study per ASTM International (ASTM) Standard 1527-13 for Phase I ESAs. The following tasks were performed as part of this alignment hazardous materials study:

1. **Review of Previous Report(s)** - Review previous hazardous materials assessment report(s) for the project provided by City of Kirkland. Evaluate prior reports for applicability and use to the project and integrate previous information into this hazardous materials report as applicable.
2. **Site Screening/Regulatory Database Study.** Review the results of a January 2017 federal, state, local and tribal environmental database search (Environmental Database Resources [EDR] Report) for listings of sites with known or suspected environmental conditions on or near the project within the search distances specified by ASTM Standard E 1527-13. Property title searches were not conducted as part of the technical report. The database search report is included in Appendix B.

3. **Field Reconnaissance/Windshield Survey** - Conducted a drive-by reconnaissance of the Project approximate study area. The windshield survey focused on sites with known or suspected environmental concerns that could potentially affect acquisition, design or construction decisions. The windshield survey was limited to features readily observed from public access corridors. We did not enter private property during the field reconnaissance. Information regarding the sites was recorded in field notes and photographs.
4. **File Review/Aerial Photograph Review** - Figure 2 illustrates includes suspect hazardous materials sites both within and outside of the proposed Project alignment that have a potential to affect acquisition decisions and/or design/construction due to possible or known contaminants. Available historical records and agency files for suspect sites were reviewed to identify potential sources of contamination, the nature and extent of known contamination, remedial activities completed or in-process, and the possible affect these sites may have on the Project. The following records review sub-tasks were completed:
 - Reviewed publicly-available files and records from the Washington State Department of Ecology (Ecology) and requested Ecology hard copy files as necessary.
 - Reviewed available geologic literature and topographic maps to evaluate surface drainage paths as well as groundwater depths and flow direction in the project area.
 - Interpreted historical use and development within and surrounding the Project based on available aerial photographs provided by EDR dated 1941, 1944, 1952, 1965, 1968, 1973, 1977, 1980, 1985, 1990, 2005, 2006, 2009, and 2011.
 - Reviewed tax assessor records available on the King County tax assessor website.
 - Reviewed historic city directories as available between 1972 and 2013 for business listings.
 - Screened the suspect properties based on their location relative to the Project construction areas as well as on additional site-specific environmental data available in regulatory agency files. This screening process is used to identify conditions that represent the potential to significantly affect the Project design, acquisition or construction.
5. **Risk Analysis of Impacts and Mitigation Measures**
 - Evaluated potential impacts that known or suspected contamination may have on project development, including design and construction activities and costs.
 - Identified potential mitigation measures and options to minimize potential impacts of hazardous substances to the proposed Project.
6. **Report** - Prepared this “right-sized” hazardous materials analysis report in general accordance with Chapter 447 of the WSDOT’s Environmental Manual (June 2016). This report and scope of study do not constitute a Phase I ESA report per ASTM 1527-13.

SUMMARY FINDINGS

Potential hazardous materials concerns identified by the study are described in this section. An opinion was made regarding the relative risk impact (low, moderate or high) posed by each hazardous materials concern. The relative risk impact refers to the potential for the hazardous materials concern to affect the environment, construction and/or the City of Kirkland's potential environmental liability. Relative risk impact was assessed based on best professional judgment considering the distance between the identified concern and the Project footprint, depth of planned excavation or type of Project construction, type and duration of historical development on identified hazardous materials sites, potential media that is contaminated, known and suspected chemicals of concern, regulatory cleanup status, surface topography, hydraulic gradient and contaminant migration potential.

Sites were classified as "low risk" if a suspect concern exists based on historical or current development, but the likelihood for the conditions to affect the project is assessed to be relatively low. Sites were classified as "moderate risk" if a documented hazardous materials concern exists based on historical or current development, and the conditions may affect the project. Sites for which sufficient documentation to inform an opinion regarding risk was not available were also ranked as "moderate." Sites were classified as "high risk" if a documented hazardous materials concern exists based on historical or current development, and documented contamination has a high probability to affect the Project in some way. It should be noted that rankings of relative risk could change if additional historical records or environmental data are identified or if project design or construction assumptions change significantly from those known as the time of publishing this report.

Study findings are explained below and summarized in Table 1; hazardous materials site locations in relation to the alignment are shown on Figure 2.

Trail Corridor

Four potential hazardous materials concerns common to the length of the trail corridor were identified for soil, groundwater, sediment in ditches along the corridor, and/or surface water in ditches or low lying areas along the corridor. The length of the trail corridor where these concerns may be present is identified as Site A on Figure 2 and corresponds to the King County tax parcel on which the Project is situated (2826059027). The four potential hazardous materials concerns common to the length of the trail corridor are:

1. **Past use of treated railroad ties.** Creosote or other wood treatment chemicals were used on railroad ties associated with the historic railroad previously located along the current trail alignment. Wood treatment preservatives, metals, carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and/or petroleum hydrocarbons from wood treatment may have impacted railroad ballast materials and/or surface soil.
2. **Fill of unknown origin** is expected to be present along the corridor. The fill may include soil with contaminants such as metals, PAHs and/or petroleum hydrocarbons which are contaminants commonly found in fill of unknown origin. The fill could also include slag, which was commonly placed as fill in railroad corridors. Typical contaminants associated with slag are metals and elevated pH.

3. Historic vegetation management practices along the railroad corridor may have included application of potentially persistent **herbicides, pesticides or other chemicals** including metals and/or petroleum-related constituents that could have impacted surrounding railroad ballast material and/or surface soil.
4. The many years of railroad operations on the corridor pose a risk for prior **leaks, spills or releases of chemicals used in railroad equipment** (fuels, etc.) or other hazardous substances in railroad cargo that could have spilled in a railroad incident such as derailment. No documented derailments or spills were reported in the research obtained for this report.

In 2008, limited Phase II ESA soil sampling was conducted along portions of the railroad corridor by Pinnacle GeoSciences to evaluate potential impacts from most of the concerns identified above (Pinnacle Geosciences, 2008). Samples obtained during the 2008 study that were closest to the Project footprint consisted of the following: seven soil samples ranging in depth from 1 to 5 feet bgs from four boring locations, one sediment sample, and one surface soil sample. The samples were submitted for chemical analysis of contaminants of concern associated with the past railroad activities. The boring and sediment sampling locations were advanced along the railroad corridor near milepost 20.3, which is approximately 1,900 feet to the northwest of the northern Project limit. The surface soil sample was located near milepost 20.0 (approximately 1,000 feet to the northwest of the Project area – see Figure 2).

Metals, cPAHs and diesel- and lube oil-range petroleum hydrocarbons in the 2008 samples either were non-detect or the detected concentrations were less than the Model Toxics Control Act (MTCA) cleanup levels. Arsenic concentrations in the sediment sample (9.1 mg/kg) and in a soil sample from one boring at a depth of approximately 5 feet bgs (7.62 mg/kg) were less than MTCA Method A cleanup levels but were slightly above the Natural Background Soil Metals Concentrations in Washington State – Puget Sound (7 mg/kg). The surface soil sample was tested for arsenic, lead and cPAHs. The detected concentrations of these chemicals in the surface soil sample were below MTCA Method A cleanup and background soil concentration levels.

The four potential hazardous materials concerns common to the length of the trail corridor represent a high risk to the project.

Adjacent Hazardous Materials Sites

Seven individual hazardous materials concerns associated with parcels adjacent to the trail corridor were identified (Table 1) due to past or current land use activities or documented soil or groundwater contamination.

TABLE 1. HAZARDOUS MATERIALS CONCERNS

Map ID (Generally Arranged West to East)	King County Parcel Number	Current Business (Listed Business) Current Address (Former Address)	Relative Risk	Site Information	Potential to Encounter Contamination During Construction
A (Site A is the CKC, corresponding to the previous railroad corridor)	2826059027	None	High	<p>Database Listing: None</p> <p>Concerns:</p> <ul style="list-style-type: none"> • Past use of treated railroad ties. • Fill of unknown origin. • Herbicides, pesticides or other chemicals. • Leaks, spills or releases of chemicals used in railroad equipment. 	No evidence of contamination was reported when the CKC trail was constructed. However, based on the expected depths of excavation associated with the Project, soil encountered may have detectable contaminants that could limit re-use options, result in additional cost for handling and disposal, and/or trigger the need for contractor HAZWOPER health and safety protocol.
B	2826059139	Shell Oil 12221 NE 124 th Street	Moderate	<p>Database Listing: WA CSCSL, WA LUST# 9061, WA UST, WA ALLSITES, MANIFEST, FINDS, EDR Historical Auto Stations, ECHO, ICR, SPILLS, RCRA Non-gen/NLR</p> <p>Two leaking UST incidents were reported (in 1991 and in 2011). Soil and groundwater were reported to be impacted by gasoline and diesel. Based on reports in Ecology's files, petroleum hydrocarbon concentrations in soil and groundwater samples obtained from areas surrounding the service station USTs in 2008 were either not detected or detected at concentrations below MTCA Method A cleanup levels. Ecology's database shows the site status as "clean-up started."</p>	Available information indicates groundwater on this parcel is impacted by petroleum hydrocarbons; however, documentation does not indicate that contaminants in groundwater have migrated beyond the Shell parcel. Based on proximity, the overall risk of impact is considered moderate.

Map ID (Generally Arranged West to East)	King County Parcel Number	Current Business (Listed Business) Current Address (Former Address)	Relative Risk	Site Information	Potential to Encounter Contamination During Construction
C	2826059138	Rite Aid (Car Wash Enterprises, Brown Bear Car Wash): 12421 Totem Lake Boulevard (12302 NE 124 th Street)	Moderate	Database Listing: EDR Historical Auto Stations, ICR, HSL, CESQG, FINDS, MANIFEST, CECSL, ALLSITES, HSL, ECHO, LUST# 1951, RCRA Non- gen/NLR Petroleum-related soil and groundwater contamination were reported during removal of three UST systems in 1990. Site remediation followed including groundwater sampling and bioremediation efforts. As of 2005, contamination remained in off-site groundwater near the southwest corner of the property (groundwater monitoring well MW-4).	Available information indicates groundwater on this parcel is impacted by petroleum hydrocarbons; however, documentation does not indicate that contaminants in groundwater have migrated beyond the Rite Aid parcel. Based on proximity, the overall risk of impact is considered moderate.
D	2826059124	Discount Tire Store 12408/12410 NE 124 th Street	Moderate	Database Listing: UST, ALLSITES Two USTs removed in 1999. No additional information is available with Ecology.	The property was used as a vehicle junk yard from 1968 to 1977 and for vehicle maintenance in at least the 1990s (up to 1999). Considered moderate risk based on potential for contaminant migration due to its close proximity.
E	2826059177	ABRA Auto Body & Glass (Evergreen Auto Rebuild Inc.) 12350 124 th Avenue NE	Low	Database Listing: EDR Historical Auto Stations, FINDS, ALLSITES, CESQG, CSCSL, ECHO Suspect contamination by metals, solvents, and petroleum products reported. Available information indicates the site received a No Further Action (NFA) determination from Ecology in 1996.	Considered low risk for contaminant migration based on relative distance from the Project footprint and site closure status.

Map ID (Generally Arranged West to East)	King County Parcel Number	Current Business (Listed Business) Current Address (Former Address)	Relative Risk	Site Information	Potential to Encounter Contamination During Construction
F	2826059163	C&D Engine Performance, Jiffy Lube, Pristine Car Salez 12415/12417/12 423/12427 NE 124 th Street	Low	Database Listing: EDR Historical Auto Stations, ICR, LUST# 5642, UST: One leaking petroleum UST reported for the Jiffy Lube. The tank was removed in 1996 and petroleum contaminated soils were discovered. The site received an NFA from Ecology in 2012.	Considered low risk for contaminant migration based on relative distance from the Project footprint and site closure status.
G	2826059137, 2826059154, 2826059134	RJB Wholesale 12418/12432/12 446 NE 124 th Street	Low	Database Listing: ALLSITES, UST Two steel USTs were removed in 1996. No reported impacts to soil or groundwater.	Considered low risk for contaminant migration based on relative distance from the Project footprint and lack of reported impacts.

Notes:

AAI = All Appropriate Inquiries

ALLSITES = Ecology database of sites on other databases

bgs = below ground surface

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

CSCSL = Confirmed and Suspected Contaminated Sites List

ECHO = Enforcement and Compliance History Online

Ecology = Washington State Department of Ecology

FINDS = Facility Index System

HAZWOPER = Hazardous Waste Operations and Emergency Response

ICR = Independent Cleanup Report

IRAP = Independent Remedial Action Program

LUST = Leaking Underground Storage Tank

MTCA = Model Toxics Control Act

NFA = No Further Action

RCRA NonGen/NLR = Resource Conservation Recovery Act – Non Generator/No Longer Regulated

VCP = Voluntary Cleanup Program

UST = Underground Storage Tank

CONCLUSIONS AND RECOMMENDATIONS

This report identifies potential hazardous materials concerns on or near the Totem Lake Pedestrian Bridge Project that pose a risk for contaminants to be encountered in soil, groundwater, sediment in ditches along the trail corridor, and/or surface water in ditches or low lying areas along the trail corridor, that could impact City of Kirkland's Project design, construction or related costs.

Four potential hazardous materials concerns common to the length of the trail corridor were identified:

- Wood treatment chemicals used for railroad ties associated with the historic railroad may have impacted railroad ballast materials and/or surface soil;
- Fill of unknown origin, including possible slag, may have contaminants;
- Historic vegetation management practices along the railroad corridor may have used herbicides, pesticides or other chemicals; and,
- The many years of railroad operations on the corridor pose a risk for prior leaks, spills or releases of chemicals used in railroad equipment (fuels, etc.) or other hazardous substances in railroad cargo that could have spilled in a railroad incident such as derailment.

The study classified these four concerns as High risk of impact to affect City of Kirkland's project design or construction based on information available at this time and our experience at similar sites.

Six hazardous materials sites adjacent to the trail corridor were identified (Table 1 and Figure 2) that pose potential risks of impact to the Project based on past or current land use activities or documented soil or groundwater contamination. Three of the sites are considered moderate risk and three are considered low risk.

Recommendations to mitigate risks posed by the identified concerns includes the following:

- Obtain representative environmental samples of soil, groundwater, sediment in ditches along the corridor, and/or surface water in ditches or low lying areas corresponding to where significant excavation will occur for construction of the Project. The samples should be evaluated for potential contaminants of concern including: petroleum hydrocarbons, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, herbicides, metals and pH if evidence of slag is noted. Results of chemical analysis should be compared to MTCA cleanup levels as well as end use disposal criteria for material that may be transported off site for disposal in connection with Project construction.
- The City of Kirkland should inform the Project contractor of potential hazardous materials that could be encountered during construction of the Project by providing a copy of this report and any environmental sampling results. Construction specifications should require contractors to develop plans to protect their employees and the public from exposure to hazardous materials (HAZWOPER), and to manage hazardous materials encountered during construction in accordance with local, state and federal regulations and requirements. Soil reuse on- or off-site and discharge or disposal of construction-generated water should be in accordance with all applicable local, state and federal requirements, guidance and best management practices.

- City of Kirkland's contractor should develop a contaminated media identification and management plan (CMMP) in relation to the alignment-wide potential environmental concerns and for specific sites of concern. The plan should include methods for identification, handling and management of potentially contaminated soil, sediment and dewatering fluids that may be generated during construction. The Project requirements should also include HAZWOPER requirements for contractors working in the vicinity of known contaminated sites.

Alignment-wide hazardous materials concerns, adjacent sites of potential concern and rankings of relative risk and mitigation measures should be reevaluated as project design details are refined, or if additional historical records or environmental data are identified.

Certification Statement

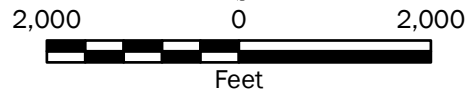
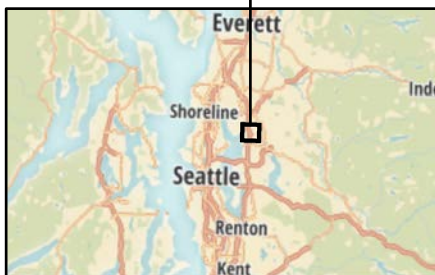
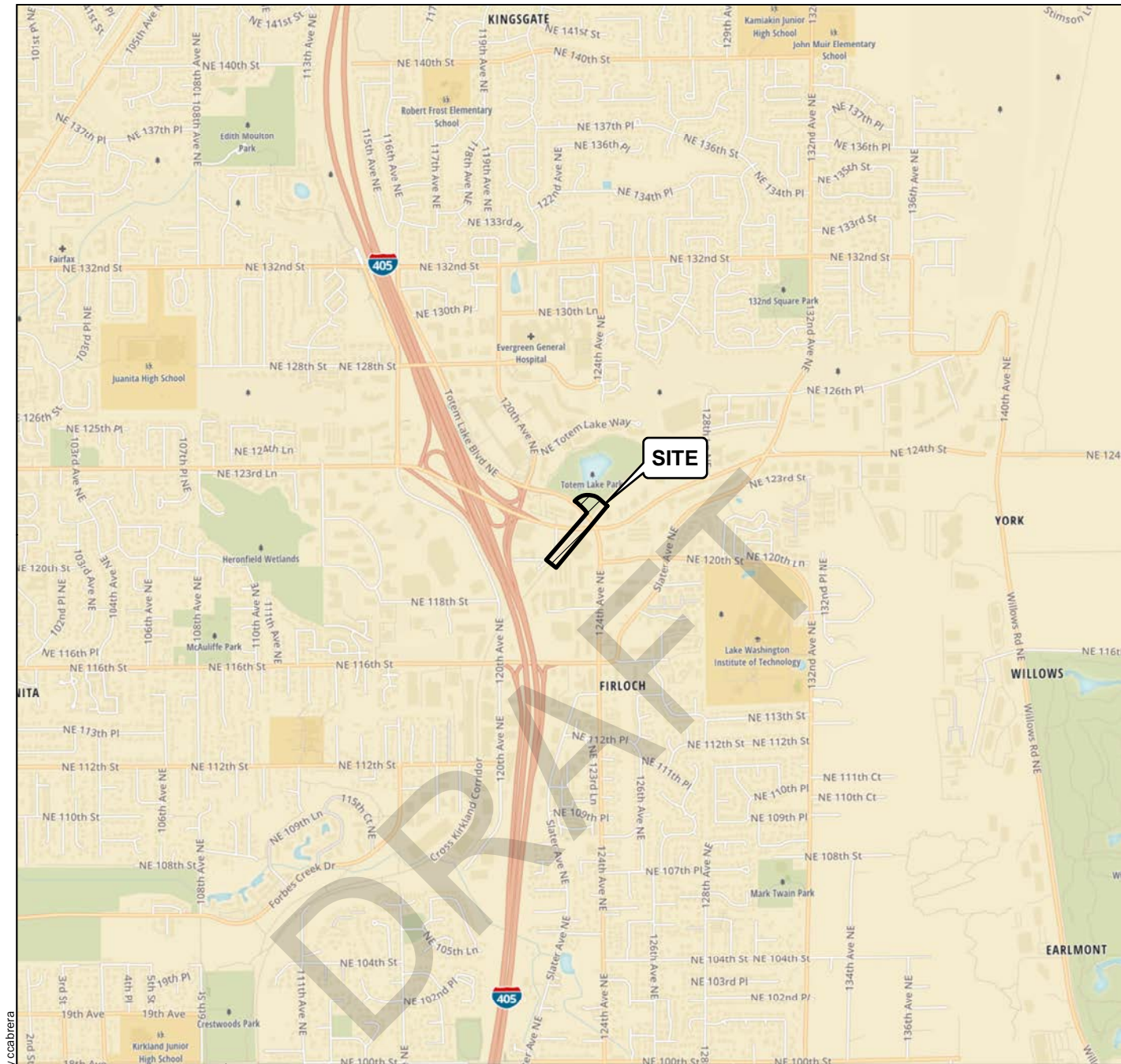
Based on the judgement of Dana Carlisle and Marsi Beeson, this report documents the appropriate level of investigation necessary to identify potentially contaminated sites that may affect the environment, create construction impacts, and/or incur potential cleanup liability to the City. This report is based upon our understanding of the project footprint at the time this report was prepared. Changes to the footprint will likely affect the conclusions and recommendations of this report. We recommend updating this report if the footprint is modified or adjusted.

LIMITATIONS

This report has been prepared for use by City of Kirkland. The report may be provided to the project design and construction team for review. GeoEngineers has performed this report for the proposed Totem Lake Pedestrian Bridge project in Kirkland, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted environmental science practices for this report in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix D titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.



Vicinity Map

Totem Lake Pedestrian Bridge Construction Kirkland, Washington



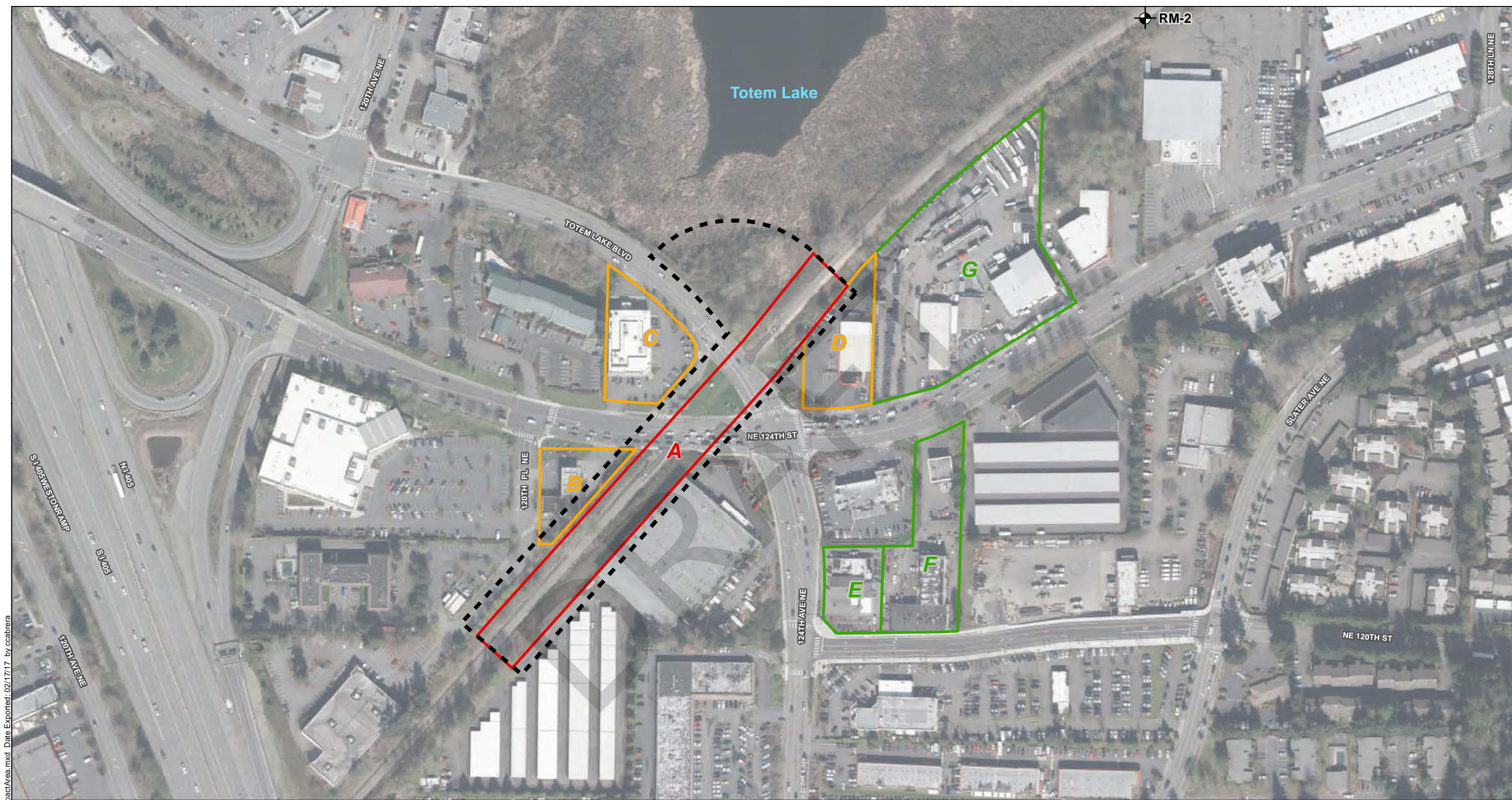
Figure 1

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2016

Projection: NAD 1983 UTM Zone 10N



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Data from City of Kirkland, 2016.
Roads from King County, Washington GIS.

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

RM-2 Soil Sampling Location (Pinnacle GeoSciences, 2008)

Approximate Study Area

Low Risk Site of Concern

Moderate Risk Site of Concern

High Risk Site of Concern

200 0 200

Feet

Overview of Sites of Concern	
Totem Lake Pedestrian Bridge Construction Kirkland, Washington	
	Figure 2

APPENDIX A

Regulatory Requirements

DRAFT

APPENDIX A REGULATORY REQUIREMENTS

Applicable Federal and State Regulations

Numerous federal, state and local regulations and policies relate to hazardous materials. This appendix outlines many, but not all, of those federal and state regulations and is intended as a guide for potentially applicable hazardous materials considerations for construction projects. The project owner and their agents are typically responsible for regulatory applicability, relevant, appropriateness and compliance, which should be reviewed for each project.

Federal Regulations

Federal law and regulations relating to hazardous materials and wastes that affect the project include the following:

Comprehensive Environmental Response, Compensation, and Liability Act and All Appropriate Inquiries (40 CFR Part 312)

Section 101(35)(B)(ii) and (iii) of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) define liability for hazardous waste contamination and require liable parties to take responsibility for cleanup. 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries, establishes specific regulatory requirements and standards for conducting AAI provisions necessary to qualify for certain landowner liability protections under CERCLA.

Resource Conservation and Recovery Act

Resource Conservation and Recovery Act (RCRA) provides requirements for handling, transportation, treatment, storage, and disposal of hazardous materials and wastes. It includes provisions for identifying and classifying hazardous materials and wastes, and through the Hazardous and Solid Waste Amendments (HSWA), creates treatment standards for specific wastes. HSWA also establishes requirements for ownership, operation, maintenance and closure of underground storage tanks (USTs). Any removal, treatment or transportation of contaminated soils as part of the proposed project may need to be conducted in compliance with RCRA.

Occupational Safety and Health Act

Occupational Safety and Health Act (OSHA) establishes requirements for site safety procedures, worker training, and worker safety and health standards for employees engaged in work related to hazardous materials. All work relating to the handling of, and potential exposure to, hazardous substances by workers while conducting activities associated with the project must be in compliance with the relevant sections of OSHA.

Clean Water Act

The Clean Water Act (CWA) provides for comprehensive federal regulation of all sources of water pollution. Pollution of state waters is controlled by two administrative regulations that implement Chapter 90.48 Revised Code of Washington (RCW), Water Pollution Control Act; Chapter 173-201A Washington Administrative Code (WAC), Water Quality Standards for Surface Waters of the State of Washington; and Chapter 173-200 WAC, Water Quality Standards for Groundwater of the State of Washington.

Chapter 173-201 WAC indicates that toxic substances above natural background levels will not be introduced into waters of the state if the substance will: (1) singularly or cumulatively adversely affect characteristic water uses, (2) cause acute or chronic toxicity to the most sensitive biota dependent on the water, or (3) adversely affect public health. Ecology would employ or require chemical toxicity testing and biological assessments as appropriate to evaluate compliance with the above-mentioned requirements. WAC 173-201A-160 lists the primary means for controlling municipal, commercial and industrial waste discharges through the issuance of waste disposal permits.

Several permit programs have been established to address the construction projects that may introduce hazardous substances to surface waters, including wetlands. The State Water Discharge Permit (WAC 173-216) program includes a variety of exemptions, most of which relate to discharges that are permitted under a National Pollution Discharge Elimination System (NPDES) permit or are otherwise authorized by a publicly owned treatment works (POTW) with an authorized pretreatment program. The NPDES General Stormwater Permit for Construction Activities requires the development and implementation of a Stormwater Pollution Prevention Plan.

National Environmental Policy Act

National Environmental Policy Act (NEPA) requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations are given due weight in project decision-making. One of the major elements addressed in a NEPA assessment is environmental health. Assessment of impacts associated with hazardous materials and waste is a component of the environmental health evaluation.

Endangered Species Act

Endangered Species Act regulates a wide range of activities affecting plants and animals designated as “endangered” or “threatened.” The Endangered Species Act states that it is unlawful to “take” any animal listed as an endangered species. The Endangered Species Act lists “Endangered” animals or plants that are in danger of being extinct. The Endangered Species Act broadly defines a “take” to include, “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect,” or an attempt to engage in such conduct.

National Emission Standards for Hazardous Air Pollutants (Code of Federal Regulations, Title 40, Volume 5, Parts 61 to 71)

The Environmental Protection Agency’s rules concerning the removal and disposal of asbestos-containing materials (ACM) were issued under National Emission Standards for Hazardous Air Pollutants (NESHAP). NESHAP requires a thorough inspection for friable and non-friable ACM within a structure prior to demolition activities. An accredited inspector as required by the Asbestos Hazard Emergency Response Act (AHERA) must conduct all inspections. The NESHAP regulation also includes specific notification, work practice, packaging, labeling and disposal requirements.

The Puget Sound Clean Air Agency (PSCAA) requires that a notice of intent be submitted prior to beginning any work on an asbestos demolition. The only exception is asbestos projects involving less than 48 square feet and the removal of non-friable asbestos containing roofing material. An AHERA building inspector or competent person must make determinations regarding friability. There is a notification waiting period and fee required prior abatement work. Asbestos removed from buildings prior to demolition must be disposed in a landfill permitted to receive ACM.

State Regulations

Washington State implements many of the federal statutes pertaining to hazardous materials and wastes along with its own, often more stringent, laws and regulations.

Model Toxics Control Act Regulations (Chapter 173-340 WAC)

Chapter 173-340 WAC implements Model Toxics Control Act (MTCA), RCW 70.105D. The State has published numerous guidance documents and policy related to MTCA. MTCA rules include requirements for site discovery and reporting, site assessment, hazardous site listing, cleanup and public participation. This regulation defines standard methods used to assess risk to human health and the environment. Cleanup standards are presented in WAC 173-340-700 through -760. WAC 173-340-450 sets forth the requirements for addressing USTs.

MTCA typically applies when environmental contamination that may pose a threat to human health and/or the environment is discovered.

Sediment Management Standards (Chapter 173-204 WAC)

Chapter 173-340 WAC implements the sediment management standards. The purpose of this chapter is to reduce and ultimately eliminate adverse effects on biological resources and significant health threats to humans from surface sediment contamination by: (a) establishing standards for the quality of surface sediments; (b) applying these standards as the basis for management and reduction of pollutant discharges; and (c) providing a management and decision process for the cleanup of contaminated sediments. The sediment quality standards of WAC 173-204-320 through WAC 173-204-340 include chemical concentration criteria, biological effects criteria, human health criteria, other toxic, radioactive, biological, or deleterious substances criteria, and nonanthropogenically affected sediment quality criteria which are used to identify sediments that have no adverse effects on biological resources, and correspond to no significant health risk to humans. Designation determinations using the sediment quality standards of WAC 173-204-320 through WAC 173-204-340 shall be conducted as stipulated in WAC 173-204-310, Sediment Quality Standards Designation Procedures.

Dangerous Waste Regulations (Chapter 173-303 WAC)

Chapter 173-303 WAC implements RCRA and the Hazardous Waste Management Act, RCW 70.105 describing requirements and procedures for designating, storing, generating, transporting, treating and disposing of dangerous wastes in Washington State. Any handling, treatment or transport of hazardous waste associated with the project would be required to be in compliance with RCRA and also with Washington's Dangerous Waste Regulations and Hazardous Waste Management Act. Contaminated materials generated during construction, including soil, water, and debris, would need to be properly designated before disposal (WAC 173-303-070 through WAC 173-303-110). The requirements for generators of dangerous waste are included in WAC 173-303-170 through WAC 173-303-230. A transporter of dangerous waste must comply with the procedures listed in WAC 173-303-240 through WAC 173-303-270.

WAC 173-303-145 lists the reporting requirements for spills and discharges into the environment, except when otherwise permitted under state or federal law. This section of the WAC applies "when any dangerous waste or hazardous substance is intentionally or accidentally spilled or discharged into the environment such that human health or the environment is threatened, regardless of the quantity of dangerous waste or hazardous substance." This portion of the regulation also details the required procedures for notification and mitigation should a spill occur on site.

Solid (Non-Dangerous) Waste Disposal (RCW 70.95, Chapter 173-304 WAC)

The State Solid Waste Management Act, RCW 70.95, states that primary responsibility for managing solid waste is assigned to local government. The state, however, is responsible for assuring the establishment of effective local programs throughout the state.

The local jurisdiction's Health Department regulates the handling and disposal of solid waste. The local Health Department evaluates whether a waste material is acceptable at one or more of the public and private solid waste facilities in the county. In some cases, testing may be required prior to disposal. Waste that is being shipped to a disposal facility out of the county, and soil treatment facilities, falls under the jurisdiction of the local Health Department.

WAC 173-304 lists the Minimum Functional Standards for Solid Waste Handling. WAC 173-304-200 designates the on-site containerized storage, collection and transportation standards for solid waste. The regulations apply to all persons storing containerized solid waste that is generated on site.

Oil Spill Contingency Act (Chapter 173-182 WAC)

Chapter 173-182 WAC implements the requirements of the Oil Spill Contingency Act (Chapter 173-182 WAC). The purpose of this chapter is to establish covered vessel and facility oil spill contingency plan requirements (Part II), drill and equipment verification requirements (Part III), primary response contractor standards (Part IV) and recordkeeping and compliance information (Part V). The requirements provide in Part II of Chapter 173-182 WAC are typically used for contractors to develop spill prevention plans to be implemented during construction activities.

Water Pollution Control Act (RCW 90.48)

RCW 90.48 implements two administrative regulations that control pollution in state waters. Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC, establishes standards for toxic substances, conventional parameters (i.e., pH, dissolved oxygen, temperature), and aesthetic values for marine and fresh surface waters. Water Quality Standards for Groundwater of the State of Washington contain similar regulations for groundwater, with special emphasis on radionuclides and carcinogens, due to potability issues. Any construction or operational activities associated with the project must comply with Washington's water quality standards. Wastewater Discharges to Surface Waters, Chapter 173-220 WAC regulates discharges to surface water from construction projects. Under this program, it is unlawful to discharge polluting matter to surface waters without an NPDES permit. Wastewater Discharges to the Ground, Chapter 173-216 WAC, regulates discharge of stormwater to detention basins if this water contains unacceptable concentrations of polluting matter.

Water Quality Standards for Surface Waters (Chapter 173-201A WAC)

WAC 173-201A-040 is the section of the Water Quality Standards that specifically deals with toxic substances within surface waters of the state. The WAC indicates that toxic substances, above natural background levels, shall not be introduced into waters of the state if: 1) The substance will singularly or cumulatively adversely affect characteristic water uses, 2) cause acute or chronic toxicity to the most sensitive biota dependent on the water, or 3) adversely affect public health. Ecology shall employ or require chemical toxicity testing and biological assessments as appropriate to evaluate compliance with the above-mentioned requirements. WAC 173-201A-160 lists the primary means for controlling municipal, commercial and industrial waste discharges through the issuance of waste disposal permits.

Wastewater Discharges to Ground (Chapter 173-216 WAC)

The State Water Discharge Permit program includes a variety of exemptions, most of which relate to discharges that are permitted under an NPDES permit or are otherwise authorized by a POTW with an authorized pretreatment program.

Underground Utilities (RCW 19.122)

There are multiple operating utilities that exist within the project footprint. RCW 19.122 states that an excavator shall provide notice of the scheduled commencement of excavation to all owners of underground facilities through a one-number locator service. The RCW also states that all owners of underground facilities within a one-number locator service shall subscribe to the service. Notice needs to be communicated to the locator service no less than 2 days and no more than 10 days prior to the commencement of excavation activities. If the excavator discovers utilities that were not identified or damages a utility, the excavator will stop work and notify the locator service and the owner of the utility service if possible. If the damage causes an emergency situation, the excavator shall also alert the appropriate public health agencies and take all steps necessary to ensure public safety. A failure to notify the locator service of damage to a hazardous liquid or gas pipeline is subject to a civil penalty of not more than ten thousand dollars for each violation. Any excavator who willfully or maliciously damages a field-marked underground facility shall be liable for triple the costs incurred in repairing or relocating the facility.

Underground Storage Tank Statute and Regulations (RCW 90-76, Chapter 173-360 WAC)

The purpose of RCW 90.76 and the Chapter 173-360 WAC regulations is to address the threat posed to human health and the environment by leaking underground storage tank (LUST) systems containing petroleum and other regulated substances. The regulations describe the enforcement, notification and reporting requirements. The regulations also detail the performance standards and operating and closure requirements.

Washington Industrial Safety and Health Act (WISHA)

Occupational Health Standards Chapter 296-62 WAC implements RCW 49.17. RCW 49.17 also implements Safety Standards for Construction Work, Chapter 296-155 WAC, which contains the Safety Standards for Asbestos and Encapsulation Chapter 296-65 WAC. These safety requirements apply to construction activities, and the regulations are enforced by the Washington State Department of Labor and Industries (L&I).

The standards include rules covering operations at known hazardous waste sites and initial investigations conducted at sites before the presence or absence of hazardous substances has been determined. Rules are also included on site assessment and control, training, protective equipment and emergency response. Chapter 296-155 WAC requires employers to inform their workers of the potentially hazardous conditions of the workplace. Contractors are required to train their workers to recognize hazardous conditions in the workplace and train them how to respond to and report such conditions.

The safety requirements also provide specific procedures for work with ACM and lead-based paint (LBP). L&I regulates asbestos and LBP removal and encapsulation (WAC 296-62 Part I-1 and 296-155). Contractors must be certified in asbestos and LBP removal and supervisors and laborers must be trained. For asbestos, L&I and the PSCAA must be notified of asbestos abatement or removal. ACM and LBP must be disposed of in a specially permitted landfill. This includes disposable clothing, respirator filters, and equipment, as well as the ACM and LBP itself.

Hazardous Waste Operations and Treatment, Storage, and Disposal Facilities (Chapter 296-62 WAC Part P, RCW 49.17)

Chapter 296-62 WAC Part P includes all of the required procedures for work involving hazardous materials.

Chapter 296-62 WAC Part P also details the requirements for handling drums and containers. Unlabeled drums and containers must be considered to contain hazardous waste and handled accordingly until the contents are positively identified and labeled. Drums and containers that cannot be moved without rupture, leakage or spillage must be emptied into a sound container. Personal protective equipment (PPE) selection protocol is outlined in WAC 296-62-30605. The training requirements for site personnel are included within multiple sections of Part P depending upon the designation of contamination.

Safety Standards for Construction Work - Lead (Chapter 296-155 WAC)

Chapter 296-1556 WAC indicates that workers may not be exposed to lead at concentrations greater than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air averaged over an 8-hour period. Chapter 296-166 WAC also outlines the PPE that shall be given to employees as well as medical surveillance procedures that are to be implemented for exposed personnel.

General Occupational Health Standards – Asbestos (Chapter 296-62 WAC Part I-1)

Chapter 296-62 WAC requires that prior to commencement of work an owner must conduct a good faith inspection to determine whether materials to be worked on or removed contain asbestos. An accredited inspector must conduct the good faith inspection. Chapter 296-62 WAC Part I-1 requires that an employer ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (f/cc) of air as an 8-hour time-weighted average. Besides the permissible exposure limit, the regulation also requires appropriate respiratory protection as well as exposure assessment and monitoring.

APPENDIX B
Database Search Report

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APPENDIX C
List of References and
Excerpts from Site-Specific Ecology Files

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APPENDIX C

LIST OF REFERENCES AND SITE-SPECIFIC ECOLOGY FILES

Aerial photographs provided by EDR dated 1941, 1944, 1952, 1965, 1968, 1973, 1977, 1980, 1985, 1990, 2005, 2006, 2009, and 2011.

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Environmental Partners, Inc. Quarterly Groundwater Monitoring Reports, Prepared for Car Wash Enterprises. 2004-2005.

GeoEngineers, Inc., 1995. Geotechnical Engineering Services, Totem Lake Development, Kirkland, Washington, dated January 17, 1995.

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URS. Phase II Environmental Site Assessment, prepared for Shell Oil Products, dated August 14, 2008.

USGS Geologic Map of the Kirkland Quadrangle, Washington, dated 1983.

Washington Department of Ecology, 2014, Site Hazard Assessment – Brown Bear Carwash 5495, Kirkland, Washington, dated February 3, 2014.

APPENDIX D
Report Limitations and Guidelines for Use

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APPENDIX D

REPORT LIMITATIONS AND GUIDELINES FOR USE¹

This appendix provides information to help clients manage their risks with respect to the use of this report.

Environmental Services Are Performed For Specific Purposes, Persons and Projects

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except City of Kirkland should rely on this environmental report without first conferring with GeoEngineers. We do not authorize, and will not be responsible for, the use of this report for any purposes or projects other than those identified in the report.

Within the limitations of our contract with City of Kirkland and scope, schedule and budget for this study, our services have been executed in accordance with our Agreement with City of Kirkland and generally accepted environmental site assessment practices in this area at the time this report was prepared.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the Totem Lake Pedestrian Bridge project. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made to the project or site after the date of this report, GeoEngineers should be retained to review our interpretations and recommendations and to provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

If a lending agency or other parties intend to place legal reliance on the product of our services, we require that those parties indicate in writing their acknowledgement that the scope of services provided, and the general conditions under which the services were rendered including the limitation of professional liability, are understood and accepted by them. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

¹ Developed based on material provided by ASFE www.asfe.org.

Historical Information Provided by Others

GeoEngineers makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others. The information presented in this report is based on the above-described research and recent site visits. GeoEngineers has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data do not provide definitive information with regard to all past uses, operations or incidents at the site or adjacent properties.

Uncertainty Remains Even After this Environmental Practices Study is Completed

No environmental assessment study can wholly eliminate uncertainty regarding the potential for environmental conditions of concern in connection with a property, site, facility or business. Performance of an environmental assessment study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions of concern in connection with a property site, facility or business. There is always a potential that areas with contamination that were not identified during this environmental study exist at the site or in the project footprint. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Environmental Regulations are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Report Recommendations Are Not Final

The recommendations included in this report are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction.

We recommend that GeoEngineers be retained to monitor construction activities where hazardous materials are encountered to confirm that the conditions encountered are similar to those anticipated based on this environmental assessment, and to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated.

Site Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, a Phase I ESA report is typically applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report so that GeoEngineers may evaluate reliability of the report to changed conditions.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

Geotechnical, Geologic and Environmental Reports Should not be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our recommendations are not intended to direct the contractor’s procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

Biological Pollutants

GeoEngineers’ Scope of Work specifically excludes the investigation, detection, prevention, or assessment of the presence of Biological Pollutants in or around any structure. Accordingly, this report includes no interpretations, recommendations, findings, or conclusions for the purpose of detecting, preventing, assessing, or abating Biological Pollutants. The term “Biological Pollutants” includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

