DRAFT FINAL

ECOLOGY TOXICS CLEANUP PROGRAM

EPA BROWNFIELDS PROGRAM

WORK PLANS

Little Squalicum Park Remedial Investigation/ Feasibility Study Bellingham, WA

Prepared for
City of Bellingham
Parks & Recreation Department
3424 Meridian Street
Bellingham, WA 98225

Prepared by

1201 Cornwall Avenue, Suite 208
Bellingham, WA 98225

July 29, 2005

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

ARARs	Applicable or Relevant and Appropriate Requirements
ARI	Analytical Resources, Inc.
BNSF	Burlington Northern Santa Fe Railway
BTC	Bellingham Technical College
CMT	Coast Millennium Trail
Creek	Little Squalicum Creek
DQO	data quality objectives
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EPA	U.S. Environmental Protection Agency
FCR	Field Change Request
HASP	health and safety plan
MTCA	Model Toxics Control Act
NAS	Northwest Aquatics Services, Inc.
OESER	OESER Company
Park	Little Squalicum Park
PLP	potentially responsible party
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI/FS	remedial investigation and feasibility study
SAP	sampling and analysis plan
SHA	site hazard assessment
SMS	Washington State Sediment Management Standards
SOPs	standard operating procedures
SOW	Statement of Work
SQVs	Sediment Quality Values
STL	Severn Trent Laboratories
WAC	Washington Administrative Code
WISHA	Washington Industrial Safety and Health Act
WQC	water quality criteria

DRAFT FINAL

ECOLOGY TOXICS CLEANUP PROGRAM
EPA BROWNFIELDS PROGRAM

WORK PLAN

Little Squalicum Park
Remedial Investigation/Feasibility Study
Bellingham, WA

Prepared for

City of Bellingham

Parks & Recreation Department
3424 Meridian Street
Bellingham, WA 98225

Prepared by

integral consulting inc.

1201 Cornwall Avenue, Suite 208
Bellingham, WA 98225

July 29, 2005

EXECUTIVE SUMMARY

This Work Plan describes the activities that will be undertaken by Integral Consulting to conduct a remedial investigation and feasibility study (RI/FS) for Little Squalicum Park (the Park), located in Bellingham, Washington. The Work Plan includes project objectives and describes a project strategy to address these objectives. The Work Plan also describes the project background, regulatory framework, project schedule, reporting requirements, and project team and responsibilities. Elements and design of the RI/FS are detailed in the accompanying sampling and analysis plan (SAP), quality assurance project plan (QAPP), and health and safety plan (HASP). The Work Plan and accompanying SAP, QAPP and HASP have been prepared in general accordance with an *Agreed Order* negotiated between the City of Bellingham and the Washington State Department of Ecology and finalized on March 22, 2005.

The primary objectives of the RI/FS are to provide critical data necessary to understand the nature and extent of environmental problems at the Park, to assess potential risk to human health and the environment, to determine if cleanup actions are required, and to determine how these actions may be accomplished as part of specific wildlife enhancement and park development actions. These objectives will be met by sampling soil, groundwater, surface water, and sediments and evaluating the results with historical data.

The SAP presents an evaluation of data quality and usability for eight historical studies conducted within the boundaries of the Park. A five-step data quality objective (DQO) process was used to identify the adequacy of existing data and the need for additional data, to develop the overall sampling approach to each study element, and ultimately to develop the field sampling plan. The results of this review indicate the following spatial and temporal data gaps for the site:

- No recent soil data are available for the gravel pit areas on the south side of the park, and only limited data are available in the vicinity of the Burlington Northern Santa Fe (BNSF) railroad tracks. Soil sampling at depth in these areas is necessary because of the possibility of rerouting the creek into these areas.
- Groundwater does not appear to be a medium of primary concern at the Park based on previous sampling and testing results. No additional wells are proposed within the boundaries of the Park. However, additional groundwater sampling of wells located downgradient of the OESER Company (OESER) site is warranted to provide current data verifying that groundwater is not a medium of primary concern.
- Data gaps for surface water are primarily temporal. Contaminant concentrations in the surface water of the creek are expected to vary over time, because of variable inputs from upstream sources and the discharges from Marine Drive, OESER, Bellingham Technical College, and the Birchwood neighborhood.

Additional surface water sampling is warranted to provide current data, focusing on discharge areas and identification of sources.

- Sediment concentrations in the creek are expected to vary to some extent over time because of interactions with surface water; therefore, historical data may not be entirely representative of current sediment conditions. Historical sediment sampling has covered most of the length of the creek, but it has not characterized the depth or width of the contaminated sediments. These spatial issues will be important in determining a requirement for sediment remediation.

The proposed sampling and testing program design includes stratification and tiering. Stratification places a greater density of sampling locations in areas for which little or no historical data are available. For example, additional soil samples are proposed in areas of the site where gravel mining was historically conducted but where few samples have been collected and analyzed in previous investigations. Tiering will be used to determine whether certain types of analyses will be necessary based on the results of initial sampling and testing. For example, if a surface sediment sample exceeds a chemical screening level, additional testing may be conducted on that sample and samples at greater depth for that location. An adequate volume of sample will be archived for each sample depth to allow analysis of all analytes for a given medium. The tiered sampling and testing approach will reduce the cost of conducting unnecessary sample analyses and may avoid the time and expense for remobilization to collect additional samples at a later date.

One prehistoric archaeological site (a shell midden) has been identified in the Little Squalicum Creek ravine and it is possible that additional sites could also be present. The presence of a potentially significant archaeological site requires that cultural resources be addressed before starting any intrusive sampling activities. These resources will be addressed using a staged approach. The cultural resource management activities planned for the Park RI/FS may have as many as three stages: 1) inventory of impact areas, 2) evaluation of the identified resources, and 3) development and implementation of a management plan.

The QAPP provides detailed direction to the analytical laboratories on analytical methods, data quality objectives, sample custody, quality assurance/quality control procedures, data deliverables, data management and reporting. The QAPP is provided to office personnel and each analytical laboratory.

The HASP describes the procedures and equipment that will be used to protect the health and safety of project staff and the public during sampling. The HASP identifies chemical and physical hazards, types of work zones, protective equipment and procedures, responsible individuals, and an emergency plan.

1 INTRODUCTION

This document is the Work Plan for the remedial investigation and feasibility study (RI/FS) of Little Squalicum Park (the Park) located in Bellingham, Washington (Figure 1-1). The Work Plan describes the project management strategy for implementing and reporting on RI/FS activities for the site, including a description of individual RI/FS tasks and subtasks. The Work Plan also describes the RI/FS schedule, project team, project responsibilities, and reporting requirements. Elements and design of the RI/FS are detailed in the sampling and analysis plan (SAP) and quality assurance project plan (QAPP), which also describe specific field and laboratory procedures, respectively.

Integral Consulting Inc. (Integral) is conducting this work under contract No. 2004-014 with the City of Bellingham, Parks and Recreation Department (City), with direction from the Washington State Department of Ecology (Ecology) Toxics Cleanup Program and the U.S. Environmental Protection Agency, Region 10 (EPA) Brownfields Program.[1] This Work Plan has been prepared in general accordance with an *Agreed Order* and Statement of Work (SOW) negotiated between the City and Ecology on March 22, 2005 (Document No. DE 2016). The *Agreed Order* and SOW are presented in Attachment A of this Work Plan.

This Work Plan meets the requirements of the EPA Brownfields Program and represents an expanded revision of the August 26, 2004 interim version originally prepared for EPA (City of Bellingham 2004). The *Cooperative Agreement* between the City and EPA dated September 16, 2003 is presented in Attachment B of this Work Plan.

Several documents are cited repeatedly and accompany this Work Plan. Altogether, these documents are referred to as the Work Plans for the Park RI/FS:

- *Sampling and Analysis Plan for the RI/FS of Little Squalicum Park, Bellingham, Washington.* The SAP describes the sampling strategy and design to meet the data needs of the RI/FS and provides specific guidance for field methodology and quality assurance procedures that will be followed by Integral and its subcontractors.
- *Quality Assurance Project Plan for the RI/FS of Little Squalicum Park, Bellingham, Washington.* The QAPP describes laboratory methodology and quality assurance/quality control (QA/QC) procedures that will be used to complete the RI/FS for the Park site.

[1] Funding for this work was received by the City of Bellingham (2004) from the EPA Brownfields Program. Additional funding is expected from the Ecology Remedial Action Grant Program (City of Bellingham 2005).

- *Project Health and Safety Plan, Little Squalicum Park RI/FS, Bellingham, Washington.* The HASP has been prepared in conformance with Integral's Health and Safety Plan guidelines and in accordance with Washington Administrative Code (WAC) 173-340-810, applicable Washington Industrial Safety and Health Act (WISHA) regulations, and project requirements. It addresses those activities associated with work to be performed in the Park.
- *Integral Standard Operating Procedures* (SOPs). These numbered documents provide specific, detailed information on conducting routine, repetitive field techniques (e.g., split-spoon sampling from a drill rig). These documents are found in Appendix A of the SAP.

1.1 PROJECT BACKGROUND

Little Squalicum Park consists of 32 publicly owned acres located within the Birchwood neighborhood and adjacent to Bellingham Technical College (BTC) (Figure 1-1). Little Squalicum Creek (the Creek) and the Park are currently used for passive recreational activities and as wildlife habitat. Since the 1980s, development plans by the City have called for enhancing the passive recreational activities at the Park by constructing trail and park facilities, realigning the Creek inside the park, and enhancing fish and wildlife habitat. Two major trails have been improved and presently pass through the park on old railroad and road corridors. Since the 1990s, local, state, and federal funds have been budgeted, but development plans were put on hold due to concerns voiced by EPA, Ecology, Whatcom County Health Department, and the public that the creek and adjacent areas may be contaminated. Public investments have been limited to maintaining the major historic trails that have been used by the public for over 25 years.

In 2002, EPA completed an RI/FS for the OESER Company Superfund site located approximately 500 ft upgradient from the park (E&E 2002a, b). Portions of the Park area were included in that study. EPA reported to the City that they did not find contamination on park property that would require cleanup actions under the Superfund Program. Further, it would be the City's responsibility to conduct additional environmental studies necessary for the proposed park development.

Significant questions regarding the nature and extent of contaminants on the site remain unanswered and overshadowed decisions to enhance and develop the park and trail system. EPA Superfund Program staff recommended that the City seek EPA Brownfields assessment funds for any additional investigation within the park boundaries.

The City applied for an EPA Brownfields assessment grant in 2002/2003. This additional funding was to be used to determine the nature and extent of contamination within the Park area as it related to actual park development plans. As part of the assessment, four potential sources of contamination would be investigated:

- Wastewater and stormwater discharges from the OESER Company
- Non-point stormwater discharges from the Birchwood neighborhood and Marine Drive
- Reported pesticide use along the Burlington Northern Santa Fe (BNSF) railroad right-of-way
- Former gravel mining in the creek ravine.

The City was awarded Brownfields assessment funding in September 2003. The *Cooperative Agreement* between the City and EPA is presented in Attachment B.

The assessment work funded under the EPA Brownfields grant specifically excludes portions of the site owned by the City. EPA has determined that environmental assessment work on City-owned properties extends beyond the granting authority of the Brownfields program. Consequently, the City must limit the use of the Brownfields grant funds to the properties in the project area that are not owned by the City, such as the properties owned by Whatcom County, Port of Bellingham, and BNSF (refer to Figure 1-1). Eligible properties represent approximately 65% of the designated park area with the remaining 35% area owned by the City and considered ineligible.

The Park was listed on Ecology's Confirmed and Suspected Contaminated Sites List on January 14, 2004. It had been listed earlier as part of the Oeser Company site, located upgradient from the proposed Park (Ecology 2004). Whatcom County Health and Human Services completed a site hazard assessment (SHA) of the Park site in February 2004, as required under the Model Toxics Control Act (MTCA). The site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to other Washington State sites assessed at that time, was determined to be a 1, where 1 represents the highest relative risk and 5 the lowest (Ecology 2004). Based on the results of the SHA, Ecology and the City elected to enter into an agreement for the development of an RI/FS pursuant to WAC 173-340-350 and WAC 173-204-560. Ecology recently negotiated an *Agreed Order* (DE-2016) with the City to conduct an RI/FS of the Park site (dated March 22, 2005). The *Agreed Order* and *SOW* are presented in Attachment A.

The RI/FS will include an assessment of all properties within the Park, both eligible and ineligible under the Brownfields grant. Consequently, the City needed to find other (non-EPA Brownfields) sources of funding to complete the project. In March 2005, the City applied for an Ecology Remedial Action Grant to complete the RI/FS tasks for this project. Ecology approved the grant application on April 27, 2005. The EPA Brownfields award will be the source of matching funds required under the Ecology grant.

1.2 REGULATORY FRAMEWORK

The RI/FS for the Park will be conducted under MTCA (WAC 173-340), which addresses identification and cleanup of contamination in soils, surface water, and groundwater. For contamination in sediments, MTCA refers to the Sediment Management Standards (SMS) (WAC 173-204), which includes standards for marine sediments. Since standards for freshwater sediment are "Reserved" under WAC 173-204-340, the City has been coordinating with Ecology during the development of these project work plans in order to clarify site-specific requirements.

Additional regulations that are Applicable or Relevant and Appropriate Requirements (ARARs) include the following:

- Federal Clean Water Act and National Toxics Rule [40 Code of Federal Regulations (CFR) 131], which provide water quality criteria (WQC) for protection of human health and aquatic organisms
- Water Quality Standards for Surface Water of the State of Washington (WAC 173-201A), which also provides WQC for protection of aquatic organisms
- Ecology's (2003) Freshwater Sediment Quality Values (SQVs), which cover contamination of freshwater sediments. The SQVs are currently guidelines and do not replace bioassays as the definitive determination of sediment toxicity.
- Federal Safe Drinking Water Act (40 CFR 141), which provides maximum contaminant levels (MCLs) for protection of drinking water
- Washington State Department of health rules for Public Water Supplies (WAC 246-290-310), which also provides MCLs.

EPA's (1990) guidance on soil cleanup levels for PCBs could be an ARAR, although PCBs are not anticipated to be a chemical of concern in the Park. The Federal and State MCLs are listed as ARARs pending further investigation, which might conclude that hydrologic connections with Bellingham Bay render the groundwater unsuitable for drinking. Additional regulatory values used for screening data are discussed in the SAP.

MTCA addresses sites with contaminated soils, groundwater, or surface water in Washington State. The regulation establishes a process for managing contaminated sites, from the discovery phase through cleanup. The RI/FS, for which this Work Plan is designed, generates the data necessary to confirm whether the site requires cleanup and to design the cleanup action (if necessary). If it is determined during the RI/FS that cleanup is warranted, the next step is to develop a cleanup action plan that must comply with several requirements, including protection of human health and the environment, compliance with cleanup standards and ARARs, and provisions for compliance

monitoring. The cleanup phase involves design, construction, operation, and monitoring of cleanup activities. At the Park, the cleanup phase would likely be performed in conjunction with park enhancement activities.

The SMS establish standards for the quality of surface sediments, apply those standards as the basis for management and reduction of pollutant discharges, and provide a management and decision process for the cleanup of contaminated sediments. Part V of the SMS, Sediment Cleanup Standards, establishes procedures and criteria to identify, prioritize, and clean up contaminated surface sediment sites.

1.3 WORK PLAN ORGANIZATION

The remaining sections of this Work Plan include the following sections and two appendices:

- **Section 2: Project Objectives.** Identifies the major project objectives for the RI/FS and the redevelopment of the Park.
- **Section 3: Project Management Strategy.** Describes the project tasks and subtasks for the RI/FS and the proposed schedule to complete these tasks.
- **Section 4: Project Team and Responsibilities.** Identifies the organizations and key individuals that will oversee and implement the RI/FS, along with their respective responsibilities.
- **Section 5: References.** Provides full citations for all references cited in the Work Plan.
- **Attachment A: Agreed Order – Little Squalicum Park – Signed March 2005.** Presents a copy of the *Agreed Order* and *SOW* negotiated between the City and Ecology.
- **Attachment B: Cooperative Agreement – EPA Brownfields Program.** Presents a copy of the *Cooperative Agreement* negotiated between the City and EPA.

2 PROJECT OBJECTIVES

This section of the Work Plan presents major project objectives for the RI/FS and potential redevelopment of the Park. The RI/FS is intended to provide sufficient data, analysis, and evaluations to enable Ecology to select a cleanup action alternative for the site (refer to the *Agreed Order* and Statement of Work in Attachment A). The selected cleanup action will be coordinated with potential redevelopment of the Park. Project objectives include the following:

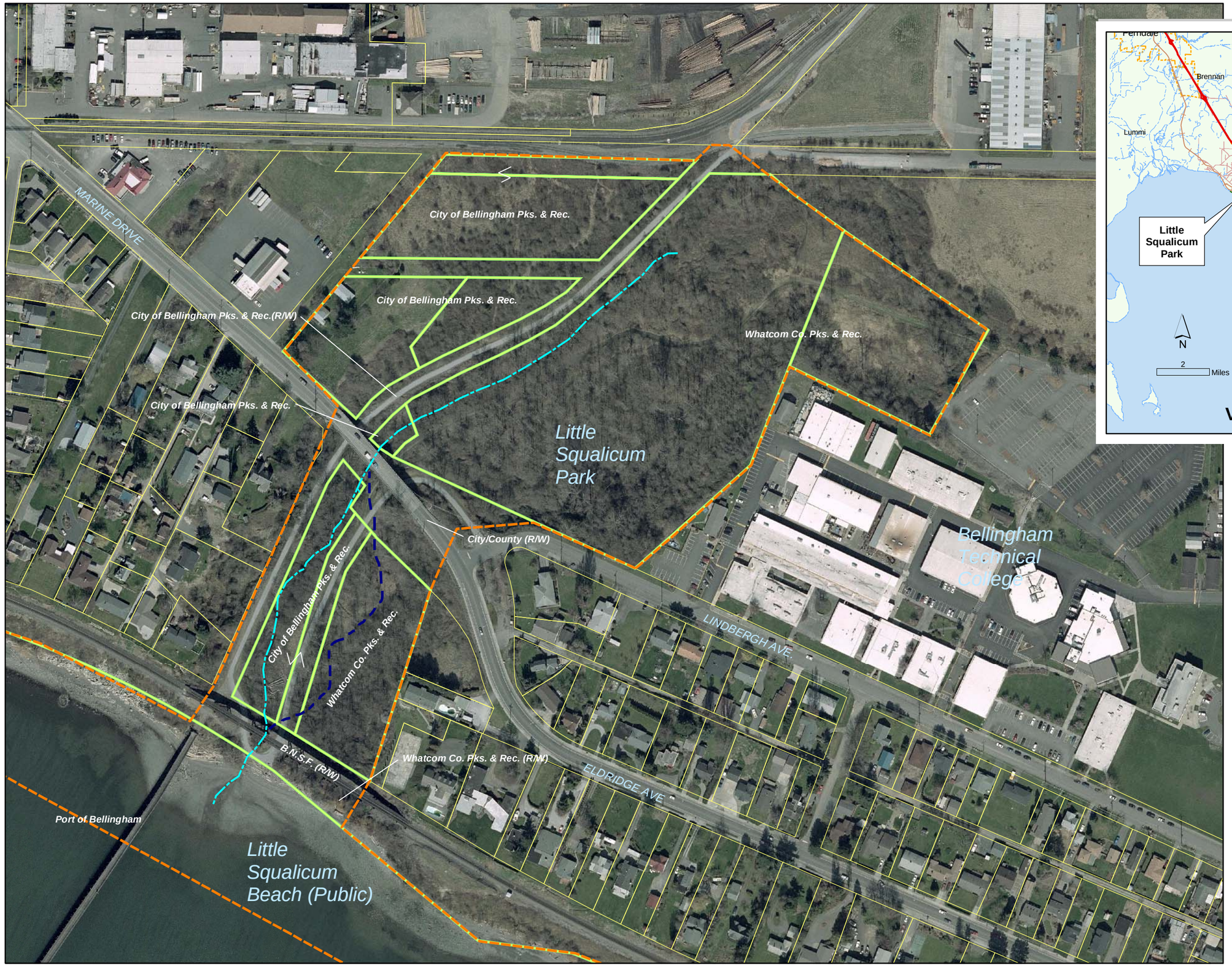
- Provide critical data necessary to understand the nature and magnitude of environmental problems at the site, to determine if cleanup actions are required, and to determine how these actions may be accomplished along with specific wildlife enhancement and park development actions
- Provide pre-remedial design data, evaluate these data, develop and evaluate potential remediation alternatives, and generate final design/cleanup recommendations
- Provide a preferred remedial alternative in which the area can be cleaned up and, potentially, site redevelopment objectives can be achieved
- Inform the landowners (BNSF Railway and Whatcom County), stakeholders, and the public of the results of assessment work and solicit comments regarding the remediation of environmental problems and redevelopment of the area
- Provide information for decision-making by the City, landowners, stakeholders, and the public as a framework to future decision-making for anticipated upgrades to park facilities and trail construction
- Support the City's cost-recovery efforts including the identification of any additional potentially responsible parties (PLPs) in order to facilitate their participation in the process.

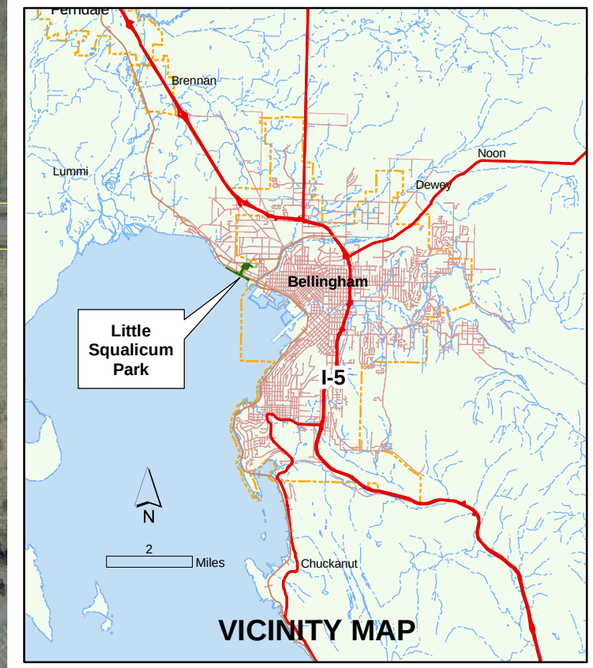
The questions under study are three-fold. First is the nature and extent of contamination. Second is whether the contamination presents a threat to human health and/or the environment. Third is how it might be remediated so that humans and wildlife can use the park safely. It is possible that some media (e.g., surface water and sediments) might pose a threat while other media (e.g., soils and groundwater) do not. The threat might be to humans, ecological receptors, or both.

The nature and location of the threat would indicate the appropriate response action(s). For example, if contaminant concentrations in sediments in the Creek posed a threat to aquatic receptors in the creek, but contaminant concentrations in soils south of the creek did not, the creek could be rerouted along a more southern route (refer to Figure 1-1). If

contaminant concentrations in the old creek bed posed a threat to human health or the terrestrial environment, the old sediments could be removed or covered to control exposures. Therefore, the RI/FS will include the collection and analysis of data adequate to evaluate these and other possible remedial alternatives within the Park.

Details on specific data quality objectives (DQOs) for the RI/FS of the Park are presented in the accompanying QAPP.





N

0 100 200 Feet

1" = 200'

Parcels

Park Area Ownership

Little Squalicum Park Boundary

Feature Sources:
Topological features: City of Bellingham web site, source:1998 drawings.
Park area, Brownfield area, Area Trails: Transferred from copy - Site Location Map
2002 Aerial Image: City of Bellingham and ADI.

integral consulting inc

DRAFT

Current route of creek (approximate)

Possible future re-route of creek

Figure 1-1. Park Area Ownership and Vicinity Map

Map Document: (C:\GIS\Projects\LittleSqualicum\Sample_Locations_Photo_w_Ownship_fix.mxd)
10/21/2004 -- 9:00:59 AM

3 PROJECT MANAGEMENT STRATEGY

Characterization of environmental conditions in the soils, groundwater, surface water, and sediments is required for the Creek and the ravine before redevelopment begins in the Park. The RI/FS must examine current and future risks to workers, the general public, and the environment. A brief description of each of the proposed tasks under this work plan, followed by the proposed project schedule to complete these tasks, is provided below.

3.1 RI/FS TASKS

The following task and subtask descriptions are planned for the Park RI/FS. These tasks will be completed as required by the *Agreed Order* and SOW negotiated between the City and Ecology on March 22, 2005 (Attachment A) and the *Cooperative Agreement* with the EPA Brownfields Program dated September 16, 2003 (Attachment B).[2]

3.1.1 Task 1 – Project Planning and Management

Activities under this task include administration and management of the project, including establishment and maintenance of necessary files and records required under the *Agreed Order* with Ecology and the *Cooperative Agreement* with EPA; performance of administration functions; support of activities necessary to perform the project in accordance with this work plan and all required statutes, circulars, terms & conditions; and attendance at necessary project meetings. City staff will submit bi-monthly and final reports, manage the consultant contract, and coordinate with cooperative partners (Ecology and EPA), stakeholders, the public, and with other City departments. City staff will also provide outreach to area stakeholders in coordination with Ecology as outlined in the Public Participation Plan (Exhibit C to the *Agreed Order*). As per the *Agreed Order*, Ecology maintains the responsibility for public participation at the site.

The project management approach will ensure timely submission of high-quality documents by adhering to the schedule discussed in Section 3.3 and by using rigorous document quality control procedures. Regular contacts within the project team will ensure that the schedule is maintained and that, if unforeseen conditions necessitate changes to the schedule, the project team is apprised so it can respond accordingly. The draft Work Plans and RI/FS document will undergo internal quality control review by the consultant as well as public and stakeholder review. Responses to public and stakeholder comments will be provided in a responsiveness summary to be included in a stand-alone

[2] This revised Work Plan meets the requirements of both the *Agreed Order* with Ecology and the *Cooperative Agreement* with EPA Brownfields program (City of Bellingham 2004). Task numbers and titles have been unified for consistency purposes.

document. A responsiveness summary is a summary of oral and/or written public comments received by Ecology during a comment period on key documents, and Ecology's responses to those comments (refer to the PPP in Attachment A for details).

The following two key subtasks will be completed as part of this task:

Subtask 1a – Project Management. The Integral project manager will support the City project manager in completing project progress reports and other administrative functions required under the *Agreed Order* and the *Cooperative Agreement* during Integral's period of performance.

Subtask 1b – Public Participation. Planning documents and investigation reports will be made available to the public for review and comment. The draft *Agreed Order* and public participation plan were made available for public review and comment in January/February 2005. Two public information meetings are scheduled during the RI/FS (refer to Section 3.3). The first public information meeting will be held to present the draft final Work Plans for the site, including the Work Plan, SAP, QAPP, and HASP. A draft RI/FS will be presented at the second public information meeting. The draft documents will be made available for review prior to and after the meetings. The meetings will be conducted in a manner to encourage substantive discussion and meaningful public input. Verbal and written comments on the documents will be accepted from the public, and responses will be incorporated into a responsiveness summary. In the event that significant changes are made to either document as a result of the public comments, the draft document could be reissued for another round of review and comments prior to finalization.

3.1.2 Task 2 – Work Plan

This document fulfills the requirements of Task 2, including an overall description and schedule of RI/FS activities, a description of project management strategy, and explanation of responsibility and authority of organizations and key personnel (see requirements of the *Agreed Order* in Attachment A).

3.1.3 Task 3 – Sampling and Analysis Plan (SAP)

The SAP provides specific guidance for field methodology and quality assurance procedures. A QAPP and HASP will also be submitted as companion documents to the SAP. Details of these plans are provided below.

The SAP has been prepared in accordance with WAC 173-340-820, WAC 173-204-600, and the Sediment Sampling and Analysis Appendix, as updated (Ecology 2003). The purpose of the SAP is to provide an overview of the RI sampling program that will obtain information needed to meet the data needs for the RI. The SAP describes the sampling

objectives and the rationale for the sampling approach. A detailed description of sampling tasks is provided, including specifications for sample identifiers; the type, number, and location of samples to be collected; the analyses to be performed; descriptions of sampling equipment and collection methods to be used; description of sample documentation; sample containers, collection, preservation and handling. The SAP also describes sample custody and handling procedures, decontamination procedures, and the handling of investigative-derived wastes. Sampling methodology and QA requirements have been developed in accordance with Ecology guidance and the requirements of the Puget Sound Estuary Program (PSEP 1986, 1997a, b, c).

The QAPP identifies and describes laboratory methods and the QA/QC measures that will be implemented during the performance of all sampling and analysis tasks to ensure the fulfillment of project DQOs. Laboratory methodology and QA/QC requirements have been developed in accordance with Ecology and EPA guidance, and the requirements of the Ecology Laboratory Accreditation Program and PSEP (1986, 1997a, b, c).

A HASP has been prepared in accordance with WAC 173-340-810. The HASP is consistent with the requirements of WISHA of 1973, RCW 49.17. The HASP identifies specific monitoring and management responsibilities and activities to ensure the protection of human health activities associated with the RI.[3]

3.1.4 Task 4 – Remedial Investigation

The City will conduct an RI to delineate the area requiring cleanup and to identify sources that may need to be eliminated or reduced as part of the cleanup. Key components of the RI are as follows:

- Determination of nature and extent of contamination exceeding MTCA and the SMS standards
- Assessment of potential human health and ecological health concerns
- Characterization of natural resources
- Evaluation of source control and recontamination.

Three key subtasks will be completed under this task:

Subtask 4a – Field Work. This subtask encompasses all the labor, equipment, and supplies to complete all field work in support of the RI. Field work will include sampling groundwater, soil, and surface water and sediments in the Creek. A detailed description

[3] The HASP is not subject to Ecology or EPA approval.

of the field tasks is presented in the project SAP. Workers in the field will follow health and safety procedures documented in the project HASP.

Subtask 4b – Testing. This subtask includes chemical, biological, and physical testing of samples collected in support of the RI. A detailed description of laboratory methodology and QA/QC procedures is presented in the project QAPP.

Subtask 4c – RI Report. The RI report is outlined in Section 3.2.

3.1.5 Task 5 – Feasibility Study

The City will use the information obtained in the RI to conduct an FS. The FS will include the following components:

- Determination of cleanup standards and applicable laws
- Identification and screening of cleanup technologies
- Basis for assembly of cleanup action alternatives
- Description of cleanup alternatives
- Comparative evaluation of cleanup alternatives.

3.2 RI/FS REPORT OUTLINE

A draft RI document will be completed (refer to project schedule in Section 3.3). After an initial review by Ecology and EPA, the RI will be combined with the draft FS into a draft final RI/FS document for stakeholder and public review before the completion of the final RI/FS. A draft outline for the RI/FS document is presented below (from Ecology 2003, 1991).

Section 1.0 **Site Description** (includes operational and regulatory history, contaminants of concern, location, and detailed site maps)

Section 2.0 **Physical Characteristics** (hydrology and geology of surface water, groundwater, sediment, and upland areas associated with the site, including hydrogeologic cross-sections and water table contour maps)

Section 3.0 **Chemical and Biological Characteristics** (an evaluation and analysis of all contaminant data from previous studies and the RI, including sampling and testing methods, concentration contour maps [vertical and horizontal], biological effects data, discussion of historical and ongoing sources, potential for contaminant migration, potential for natural recovery, and other pertinent data for environmental media at the site)

Section 4.0 **Conceptual Site Model** (includes sources, transport pathways, potential receptors, and exposure pathways)
Section 5.0 **Development of Proposed Cleanup Standards** (cleanup levels [including ARARs and background levels], Indicator Hazardous Substances, points of compliance for each medium)
Section 6.0 **Recommended Remedial Action Objectives**
Section 7.0 **Development and Screening of Cleanup Alternatives** (description of technologies that were reviewed as part of the development of cleanup action alternatives)
Section 8.0 **Identification of Preferred Cleanup Action Option(s)**
Section 9.0 **References**
Appendix A **Field Logs and Information** (includes all sampling logs, photographic record, etc.)
Appendix B **Chemical, Biological and Physical Testing Results** (includes QA/QC data reviews, discussion and recommendations)
Appendix C **Data Screening Backup**
Appendix D **Screening of Technology Data**

In addition to a written RI/FS report, all chemical, biological, and physical data will be submitted to Ecology in electronic SEDQUAL and Environmental Information Management (EIM) formats.

3.3 PROJECT SCHEDULE

The schedule for all tasks described in Section 3.1, including major milestones, is summarized in Table 3-1. The project milestones are linked to the project objectives and measures of success as described below. As previously stated, the City and Ecology entered into an *Agreed Order* on March 22, 2005, which represents the first major milestone for the project (Task 1b). A basic schedule for the project is outlined in the *Agreed Order* Exhibit B (Scope of Work) and includes the following:

RI/FS Actions	Completion Time
Draft RI/FS Work Plan, SAP, QAPP, and HASP	60 days from effective date of Agreed Order
Draft Final RI/FS, Work Plan, SAP, QAPP, and HASP	30 days from receipt of Ecology comments on Draft RI/FS Work Plan, SAP, and QAPP
Public Review of Draft Final Work Plan, SAP, QAPP, and HASP	30 days minimum
Final Work Plan, SAP, QAPP, and HASP	30 days from the close of public comment period
Draft RI Report	210 days from Ecology approval of Final Work Plan, SAP, and QAPP
Draft FS Report	120 days from submission of Draft RI Report

RI/FS Actions	Completion Time
Draft Final RI/FS Report	30 days from receipt of Ecology comments on the draft RI/FS
Public Review of Draft Final RI/FS Report	30 days minimum
Final RI/FS Report	60 days from the close of public comment period

The project coordinators (for both the City and Ecology) will be responsible for overseeing implementation of the *Agreed Order*, including the development of the RI/FS.

Once the *Agreed Order* was signed and a public participation plan was drafted by Ecology, a review of existing studies was initiated to identify data gaps. This information shaped the development of the project Work Plan and SAP (Tasks 2 and 3).

An interim draft Work Plan was prepared by the City in December 2004 to fulfill EPA Brownfields requirements. The draft Work Plan had a limited scope in that it dealt only with portions of the Park not owned by the City. In addition, as the *Agreed Order* had not yet been signed, the draft document did not receive full review and final approval by Ecology.

Once the *Agreed Order* was finalized, the City drafted revised Work Plans in April 2005 (expanding on the pre-existing 2004 EPA Brownfields document). As specified in the *Agreed Order*, they were submitted to Ecology for review and comment. The completion of the draft final Work Plans after incorporation of EPA and Ecology comments represents the second major milestone for the project. The draft final Work Plans (this document) will be available for review by the public during a public information meeting tentatively scheduled for August 2005. Agency approval of the final Work Plans represents the third major milestone for the project.

The RI/FS report (Tasks 4 and 5) will be produced following completion of the sampling and testing outlined in the SAP, including the receipt and review of the analytical results. The RI/FS report will include the critical environmental evaluation (including evaluation of cleanup levels) for project decision-making and selection of a preferred cleanup action for the site. The draft final RI/FS report represents the fourth major milestone in the project. Upon completion of the draft final RI/FS, there will be a public comment period and information meeting coordinated with EPA and Ecology to present the results of the RI/FS of the Park. Verbal and written comments on the documents will be accepted by the public and responses will be incorporated into the final RI/FS. The final RI/FS represents the fifth major milestone in the project. The final RI/FS is tentatively scheduled for completion in October 2006.

Table 3-1. Estimated Project Schedule.

RI/FS Task	Estimated Completion Date	Milestone
Agreed Order Signed	March 22, 2005	◆
Issue Revised Draft Work Plans	Spring 2005	
Issue Draft Final Work Plans	Summer 2005	◆
Public Comments and Information Meeting	Summer 2005	
Issue Final Work Plans	Fall 2005	
Agency Approval of Final Work Plans	Fall 2005	◆
Sampling and Testing	Winter/Spring 2006	
Draft RI Report	Spring 2006	
Draft FS Report	Summer 2006	
Draft Final RI/FS Report	Fall 2006	◆
Public Comments and Information Meeting	Fall 2006	
Final RI/FS Report	Fall/Winter 2006	◆

4 PROJECT TEAM AND RESPONSIBILITIES

The Park RI/FS will be implemented by the City's Parks & Recreation Department. Figure 4-1 shows the team and organization for the RI/FS; the roles of the team members are discussed below.

City of Bellingham, Park & Recreation Department. The project coordinators (for both the City and Ecology) will be responsible for overseeing implementation of the *Agreed Order*, including the development of the RI/FS. The Parks & Recreation Department will be responsible for overall project management for the City. Tim Wahl, Greenway Program Coordinator, is the designated City project manager and will coordinate all activities under this assessment grant with the EPA Project Officer and Ecology Project Manager. Sheila Hardy, Special Projects Manager with the Office of Neighborhoods & Community Development will assist with the project as appropriate and as possible. Mr. Wahl will be responsible for contracting with and directly supervising the environmental consultant(s) that will conduct the field, lab, analysis, and reporting tasks for the assessment. He will direct the consultant on a day-to-day basis and provide primary review of all reports and other work products. Mr. Wahl will also coordinate with Ecology through the *Agreed Order* for the assessment and cleanup of the site.

Washington State Department of Ecology. The City and Ecology, through its Toxics Cleanup Program, have entered into an *Agreed Order* to complete the RI/FS of the Park site area. Mary O'Herron is the designated project coordinator for Ecology and will be responsible for overseeing implementation of the *Agreed Order*, including the development of the RI/FS. Ecology will provide technical review of work plans and reports, and, through periodic meetings, provide input on the significance of results and modifications to the RI/FS program. Ecology scientists will also provide technical input into the project design, work plans, data interpretation, and reporting. Ecology will make the final determination regarding the satisfaction of all requirements called for in the *Agreed Order*.

EPA Region 10 Project Officer. EPA will manage a *Cooperative Agreement* for the assessment work in coordination with the City. The designated EPA Project Officer, Ravi Sanga, will be the contact for all activities under this agreement. Mr. Sanga will approve the scope of work, schedule, and reporting activities required for the EPA Brownfields program. EPA scientists will also provide technical input into the assessment design, and they will review work plans, data interpretation, and reporting.

Property Owners and Stakeholders. Residents of the Birchwood, Columbia, and Alderwood neighborhoods, the Port of Bellingham, public agency partners of the CMT, BNSF Railway, Washington State Department of Health, Whatcom County Health Department, and the general public will be apprised of the progress made by the City on

the RI/FS of the Park. Planning documents and investigation reports will be made available to the public and to all other stakeholders for review and comment. Public information meetings will be scheduled after completion of the draft final Work Plans and once the draft final RI/FS document is complete.

Integral Consulting Inc. Integral was selected by the City to conduct the RI/FS of the Park and is responsible for writing the Work Plans and implementing the field program, including field sampling, laboratory analysis, data analysis, and reporting.

Mark Herrenkohl, a Licensed Engineering Geologist in Washington State, will be the Integral project manager for the Park investigation. He will be responsible for implementing and executing the technical, QA, and administrative aspects of the investigation, including the overall management of the project team. Mr. Herrenkohl is accountable for ensuring that the investigation is conducted in accordance with applicable plans and guidelines, including the Work Plan, SAP, QAPP, and HASP. He will communicate all technical, QA, and administrative matters to the City Project Manager. He will ensure that any deviations from the approved work plans are documented in field change record (FCR) forms, communicated to the City, and approved before implementation. Mr. Herrenkohl will ensure the quality and timeliness of Integral documents.

The overall management of the project-specific QA activities is the responsibility of the QA manager, Ms. Maja Tritt. Ms. Tritt, or her designee, is responsible for implementation of site-specific QA activities, including field and laboratory quality control. In addition, the QA manager or her designee will coordinate with the Integral project manager and other project staff, as applicable, during the reduction, review and reporting of analytical data.

The Integral Health and Safety Manager, Eron Dodak, is responsible for the implementation of the site-specific HASP. Mr. Dodak, through the cross-trained field manager, will advise the project staff on health and safety issues, conduct health and safety training sessions, and monitor the effectiveness of the health and safety program conducted in the field.

Ms. Priscilla Zieber will lead the risk assessment for the Park and assist the City and the Integral project manager with public participation throughout this program.

The field operations manager, Mr. Dodak or Ms. Susan Fitzgerald, will be responsible for managing and supervising the field investigation program and providing consultation and decision-making on day-to-day issues relating to the sampling activities. The field manager will monitor the sampling to ensure that operations are consistent with plans and procedures and that the data acquired meet the analytical and data quality needs. When necessary, the field manager will document any deviations from the plans and

procedures for approval. The field operations manager will be assisted in the field by Ms. Deborah Rudnick, Ms. Sacha Maxwell, and other technical personnel to be determined.

The project engineer, Mr. Reid Carscadden, P.E., will assist the project manager with the FS activities of the project, including an evaluation of remediation alternatives for the site.

The services of several subcontractors (e.g., drilling contractor, land surveyors, laboratory services) will be necessary for the performance of the field investigation and implementation of project objectives. The project manager, with assistance from the field manager, as necessary and appropriate, will be the primary liaison between Integral, the City Project Manager, and each of the subcontractors. Subcontractors are responsible for performing work according to the requirements in these Work Plans.

Analytical Resources, Inc. (ARI) of Tukwila, Washington, will perform the chemical and physical analyses of water, soil, and sediment samples collected for this project. Northwest Aquatics Services, Inc. (NAS) of Newport, Oregon, will analyze the bioassay samples. The analytical laboratory for dioxin/furan analysis of samples will be Severn Trent Laboratories (STL), located in Sacramento, California. STL will be subcontracted by ARI. The drilling contractor will be Boretec Drilling Inc. of Valleyford, Washington. Surveying required on the site will be accomplished by David Evans & Associates, Inc., Bellingham, Washington. GeoEngineers, Inc. of Bellingham, Washington will provide geotechnical, fluvial geomorphology, and creek realignment/enhancement support for the redevelopment of the Park. The project manager for each subcontractor will be responsible for coordination with Integral, SAP implementation, and analytical data quality.

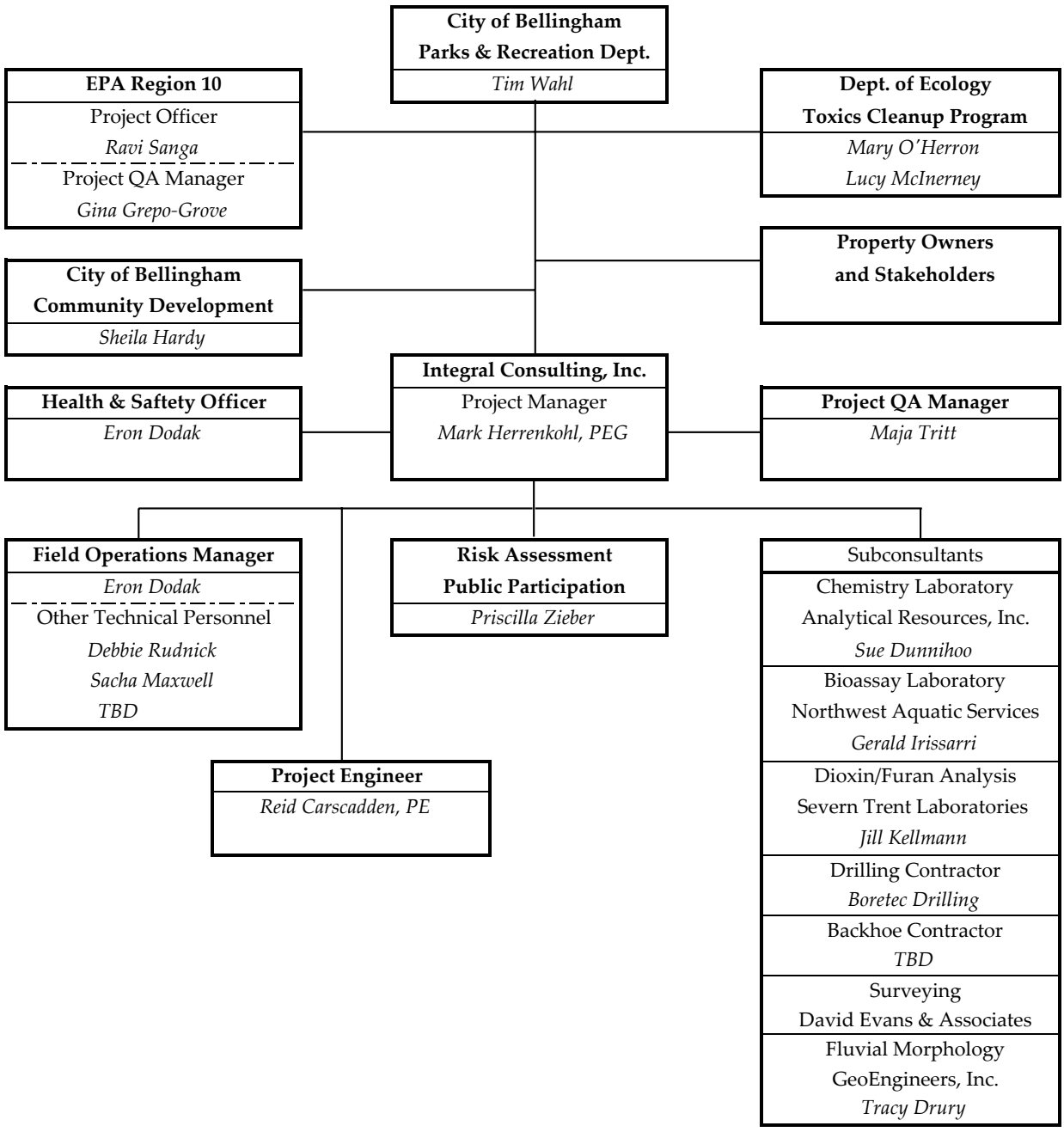


Figure 4-1. Program Organization Structure

5 REFERENCES

Bellingham, City of. 2004. Work plan for the Brownfields assessment, Little Squalicum Park, Bellingham, Washington. Prepared for: U.S. Environmental Protection Agency Region 10, Seattle, Washington. Prepared by: The City of Bellingham, Departments of Parks & Recreation, Planning, and Community Development, Bellingham, WA.

Bellingham, City of. 2005. Remedial grant application for matching funding to conduct an RI/FS of Little Squalicum Park, Bellingham, Washington. Prepared for the Washington State Department of Ecology, Toxics Cleanup Program, Olympia, Washington. City of Bellingham, Departments of Parks & Recreation, Planning, and Community Development, Bellingham, WA.

Ecology. 1991. Sediment cleanup standards user manual. Prepared by Washington State Department of Ecology. Olympia, WA.

Ecology. 1995. Sediment management standards. Chapter 173-204 WAC. Washington State Department of Ecology. Olympia, WA.

Ecology. 2001a. Model Toxics Control Act (MTCA) Cleanup Regulation Chapter 173-340 WAC. Washington State Department of Ecology. Publication No. 94-06. Olympia, WA.

Ecology. 2001b. Cleanup levels and risk calculations under the Model Toxics Control Act Cleanup Regulation CLARC Version 3.1. Washington State Department of Ecology. Publication No. 94-145. Olympia, WA.

Ecology. 2003. Sediment sampling and analysis plan appendix. Guidance on the development of sediment sampling and analysis plans meeting the requirements of the sediment management standards (Chapter 173-204 WAC). Prepared by Washington State Department of Ecology, Olympia, WA.

Ecology. 2004. Little Squalicum Creek screening level assessment. Washington State Department of Ecology. Publication No. 04-03-014. Olympia, WA.

E&E. 2002a. The OESER Company Superfund site feasibility study report Bellingham, Washington. Ecology and Environment, Inc., Seattle, WA.

E&E. 2002b. The OESER Company Superfund site remedial investigation report Bellingham, Washington. Ecology and Environment, Inc., Seattle, WA.

PSEP. 1986. Puget Sound Estuary Program: Recommended protocols for measuring conventional sediment variables in Puget Sound. Final report. Prepared for U.S. EPA, Region 10, Office of Puget Sound, Seattle, WA and the U.S. Army Corps of Engineers, Seattle District, Seattle, WA. Tetra Tech, Inc., Bellevue, WA.

PSEP. 1997a. Puget Sound Estuary Program: Recommended guidelines for sampling marine sediment, water column, and tissue in Puget Sound. Final report. Prepared for U.S. EPA, Region 10, Seattle WA and Puget Sound Water Quality Action Team, Olympia,

WA. King County Water Pollution Control Division Environmental Laboratory, Seattle, WA.

PSEP. 1997b. Puget Sound Estuary Program: Recommended guidelines for measuring metals in Puget Sound sediment and tissue samples. Final Report. Prepared for U.S. EPA, Region 10, Seattle WA and Puget Sound Water Quality Action Team, Olympia, WA. King County Water Pollution Control Division Environmental Laboratory, Seattle, WA.

PSEP. 1997c. Puget Sound Estuary Program: Recommended guidelines for measuring organic compounds in Puget Sound sediment and tissue samples. Final report. Prepared for U.S. EPA, Region 10, Seattle WA and Puget Sound Water Quality Action Team, Olympia, WA. King County Water Pollution Control Division Environmental Laboratory, Seattle, WA.

USEPA. 1990. Guidance on remedial actions for Superfund sites with PCB contamination. Superfund Management Review: Recommendation 23. OSWER Directive No. 9355.4-01. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

Attachments A and B of the Work Plan are included in the hard copies.