

Technical Memorandum

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cc: Chris Myers, PCC Structural, Inc.
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FROM: Colette Gaona and Della Fawcett, RG

DATE: June 7, 2017

RE: **Johnson Creek Incremental Sampling Methodology
Field Reconnaissance
PCC Structural, Inc.
Large Parts Campus
Portland, Oregon
Project No. 883002.040.044**

Introduction

This technical memorandum (memorandum) has been prepared by Landau Associates, Inc. (LAI) on behalf of PCC Structural, Inc. (PCC) to describe the planned Johnson Creek (creek) field reconnaissance to further assess the implementation of an incremental sampling methodology (ISM) approach. The sampling will be conducted in the vicinity of the Large Parts Campus (LPC) located at 4600 SE Harney Drive in Portland, Oregon (site; Figure 1). The proposed ISM approach will evaluate the current sediment conditions in the creek based on the contaminant concentrations detected in sediment as required by the Oregon Department of Environmental Quality (ODEQ). The Johnson Creek field reconnaissance is planned to determine the current physical condition of the creek and to confirm viability of the planned ISM approach, including the proposed decision units (DU) and number of incremental samples to be collected from each DU, as described in this memorandum. The proposed analytical methods for the planned sediment sampling are also described below.

Background

Sediment investigation activities have consisted of collecting sediment samples from the creek in the vicinity of the storm drain pipe outfall. The outfall discharges into a diverted stream oxbow, not the main channel of the creek (Figure 2). Previous sampling methodology included collecting samples from up to 10 transects located upstream and downstream of the outfall.

Reconnaissance Procedures

The field reconnaissance will be conducted to gather additional information to assess the implementation of and ISM approach for sampling sediment in the creek. Currently, three DUs have been selected based on aerial photographs of the creek taken during the low water season. The DUs

are approximately 150 feet long by 40 feet wide. One DU is proposed upstream of the outfall and two are proposed downstream of the outfall. The field reconnaissance will be conducted to determine the level of effort required to effectively collect incremental samples from each DU, the number of incremental samples that may be collected from each DU, how accurately the incremental sample locations can be documented, and if the currently proposed size of the DUs is conducive to the overall goals of the ISM approach. An additional DU may be added downstream, or the length and area of the DU's may be adjusted, based on information gathered during the field reconnaissance and additional feedback from ODEQ on the proposed approach.

Access to all the currently proposed DUs is from the outfall located on the corner of SE Umatilla Street and SE 44th Avenue. There are no additional locations to enter the creek to observe the currently proposed DUs. Equipment needed for the field reconnaissance will include a hand-held GPS unit, a 300-foot tape measure, and stakes.

Step 1

Prior to entering the creek, field staff will do a visual survey of the creek for signs of flooding or other environmental hazards that could compromise the safety of the staff. Once it is determined that entering the creek is safe, staff will begin the field reconnaissance of DU1 (Figure 3). Beginning at the outfall, staff will measure approximately 150 and 200 feet upstream using the tape measure and stake the four corners of DU1.

Step 2

Staff will then complete a visual assessment of DU1 to determine the approximate percentage of fine sediments in the unit. Observations of the streambed made during previous sampling activities have determined that the surface of the streambed contains a relatively higher percentage of washed gravel and cobbles near the center of the channel and a relatively higher percentage of fine-grained material near the edges of the stream channel. Field staff will walk the perimeter of DU1 to take visual observations of the stream bed surface. Depending on the results of the visual survey, staff may determine that extending DU1 to 200 feet long by 40 feet wide will aid in increasing the number of incremental sediment samples collected in the unit.

Step 3

Additionally, field staff will make efforts to use the hand-held GPS to locate the four staked corners of DU1. The GPS points collected during the field reconnaissance will be uploaded to a current map of the area to determine the accuracy of the GPS unit. Historically, GPS accuracy has been significantly reduced in the vicinity of the creek due to the overhead vegetation, which may affect the accuracy of documenting ISM sample locations within the creek. If the GPS points indicate an acceptable level of accuracy, the ISM sampling locations may be selected prior to the field work and located using the GPS during sampling.

Steps 1-3 will be repeated on DU2 and DU3.

Reporting of Results

Upon completion of the field reconnaissance, PCC and LAI will contact ODEQ to discuss the outcomes of the field reconnaissance. The discussion will include the proposed sampling date(s), size of the DUs, and the number of incremental samples. Following concurrence with ODEQ, LAI will draft a formal work plan for the ISM approach to be delivered to ODEQ within 4 weeks of the reconnaissance.

Proposed Analytical Methods

As part of planning for the ISM approach, the proposed analytical methods for the sediment samples were reviewed with ODEQ during a phone conversation on May 10, 2017. Upon review of the known constituents of interest historically used at the LPC, as well as analytical results from previous sediment sampling efforts, PCC is proposing the following analytes for inclusion in the ISM approach:

- Priority Pollutant Metals (suite of 13 metals) plus cobalt by U.S. Environmental Protection Agency (EPA) Method 6010B and 7471A (for mercury)
- Polychlorinated biphenyl (PCB) Aroclors¹ by EPA Method 8082.

Based on the extensive work performed by PCC to determine the PCB source areas at the LPC, PCC has established which PCB Aroclors are associated with historical site operations. Therefore, PCC plans to analyze PCB Aroclors in sediment by EPA Method 8082, consistent with previous sediment sampling activities. Anticipated reporting limits and method detection limits for the analytical methods referenced above will be provided in the formal work plan for the ISM approach.

Limitations

This memorandum has been prepared for the exclusive use of PCC Structural, Inc. and regulatory agencies providing oversight on the work. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates, Inc. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, Inc., shall be at the user's sole risk. Landau Associates, Inc. warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

¹ Including Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, and Aroclor 1260

This document has been prepared under the supervision and direction of the following key staff.

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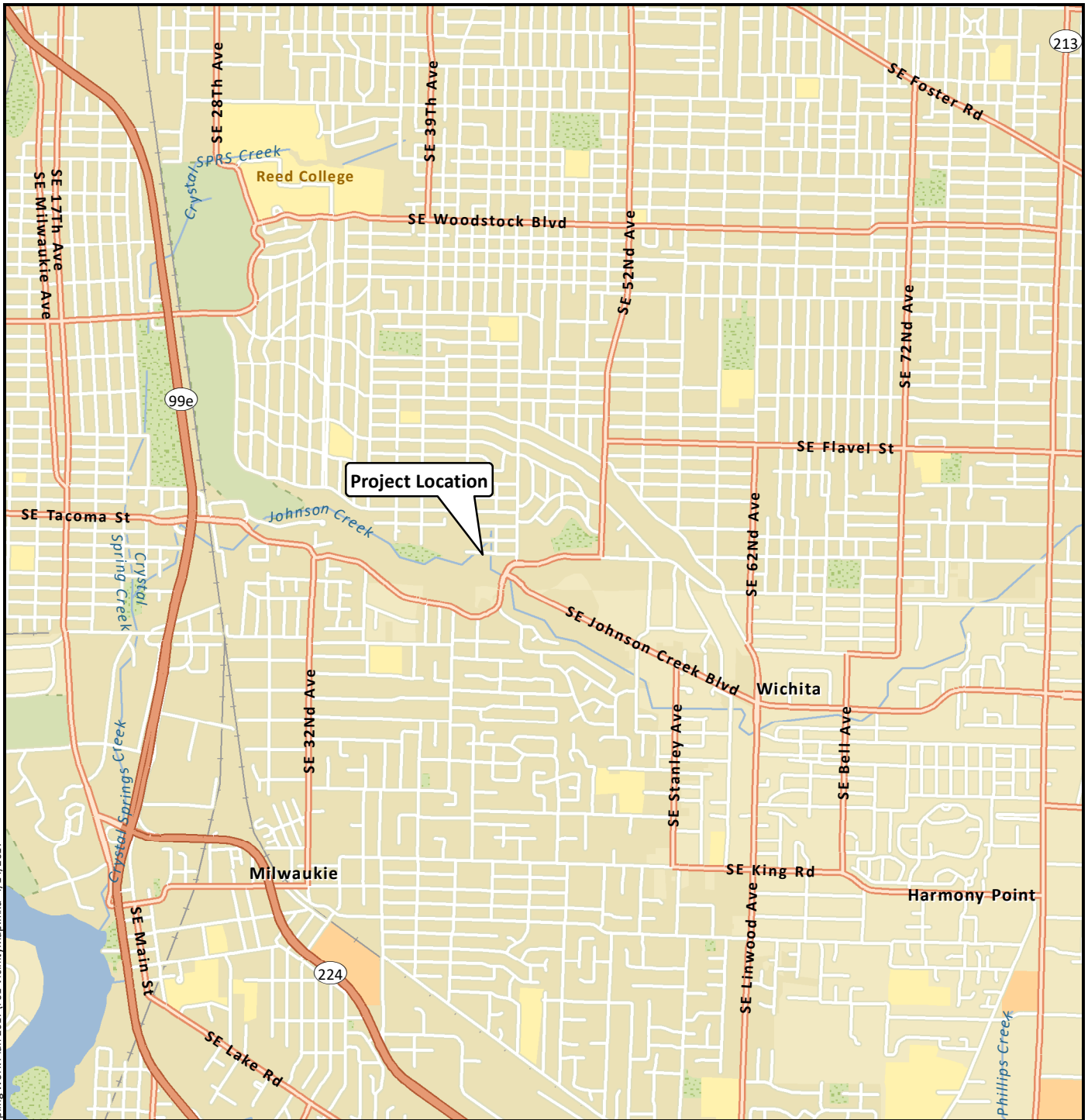
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Attachments:

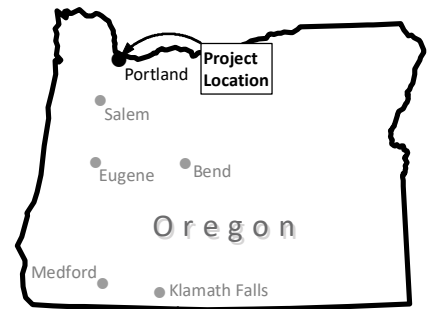
Figure 1 – Vicinity Map

Figure 2 – Creek Map

Figure 3 – Proposed Decision Units for Incremental Sampling Methodology



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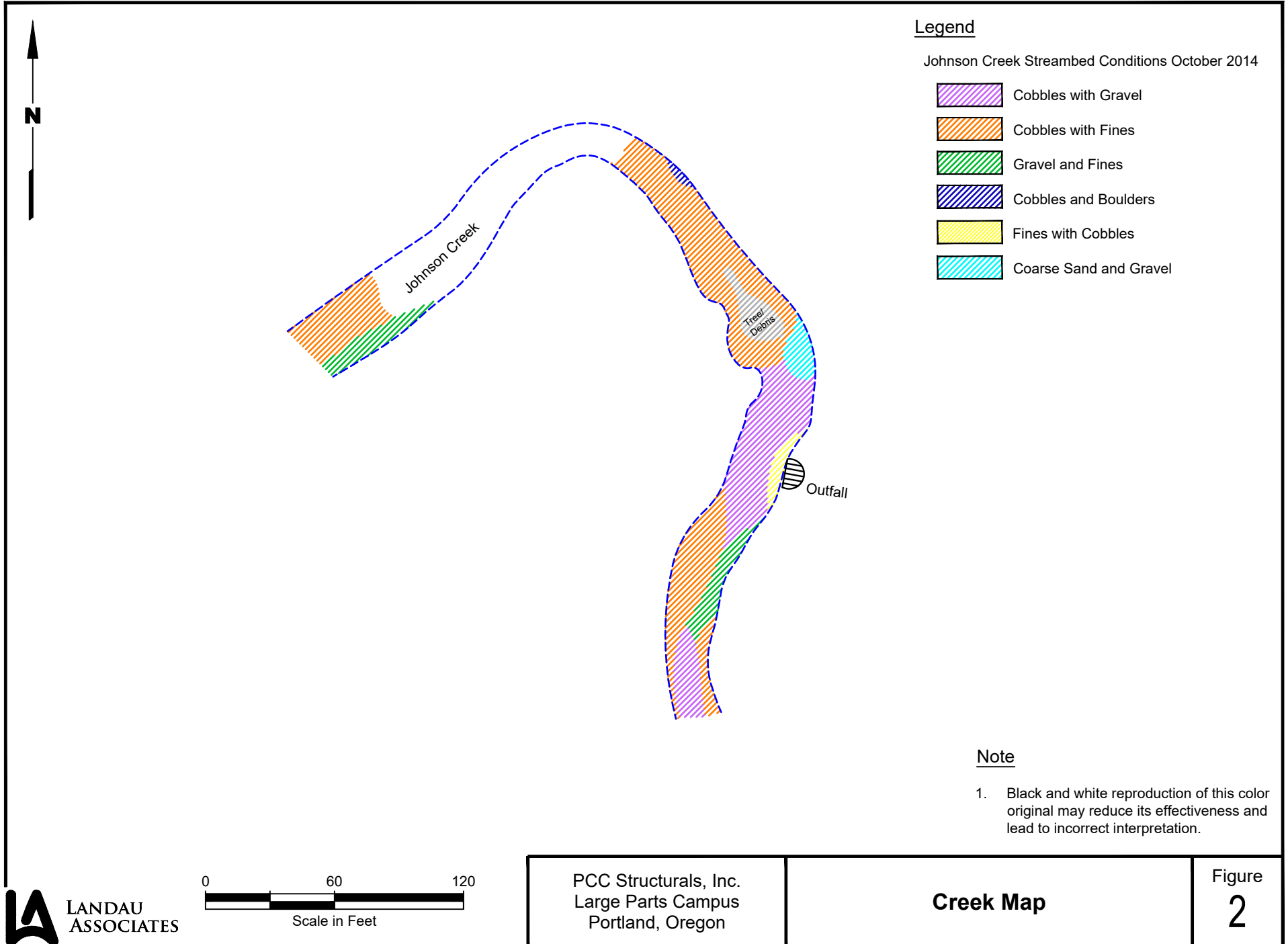
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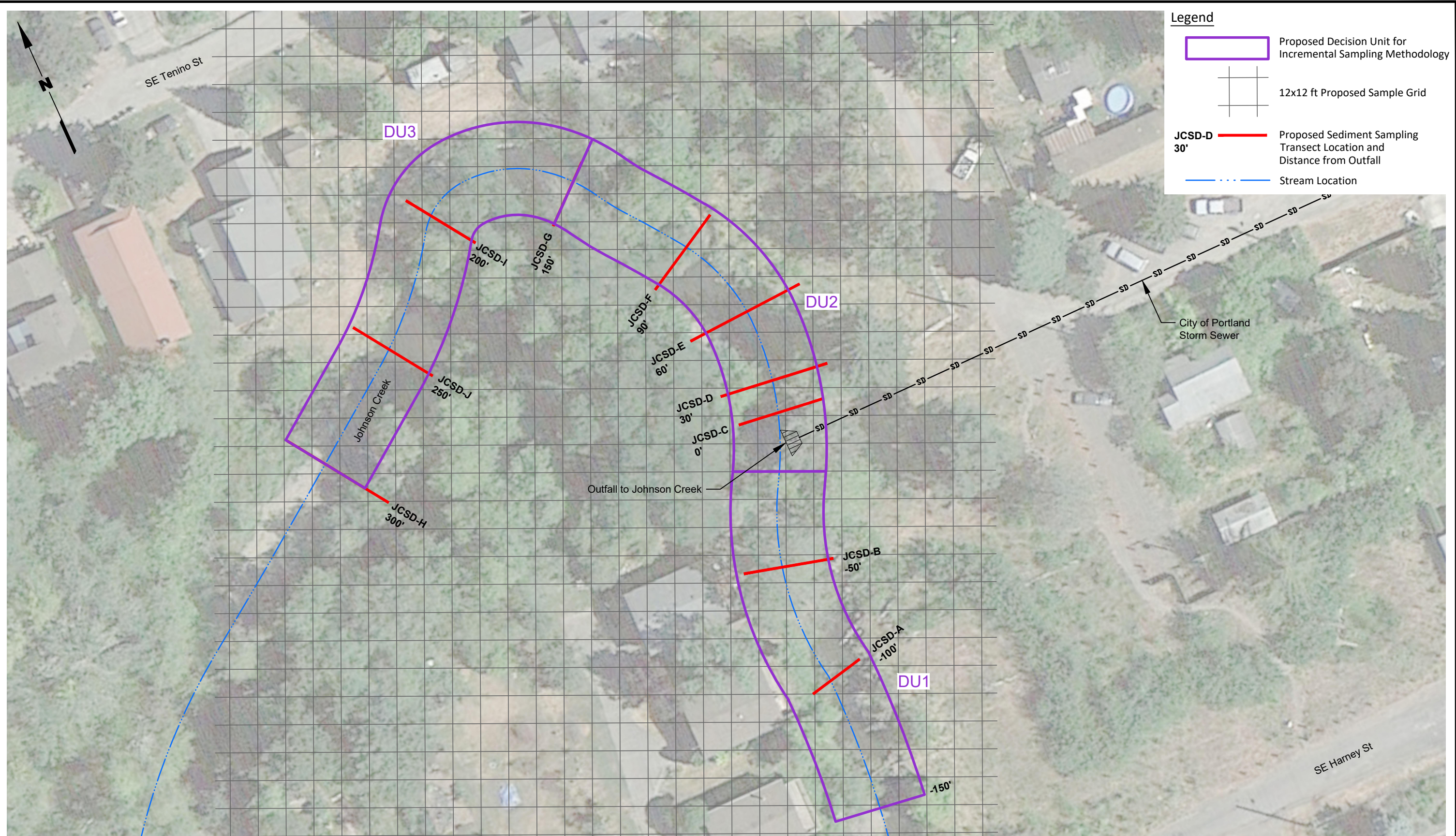


PCC Structural's, Inc.
Large Parts Campus
Portland, Oregon

Vicinity Map

Figure
1



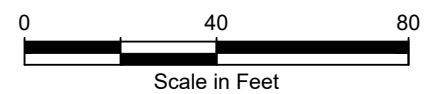


Legend

- Proposed Decision Unit for Incremental Sampling Methodology
- 12x12 ft Proposed Sample Grid
- JCSD-D 30' Proposed Sediment Sampling Transect Location and Distance from Outfall
- Stream Location

Note:

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



Base map source: Aerial Photo Provided by Google 2012, Base Drawing from PCC 1989