City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Agenda

City Commission

Doug Neeley, Mayor
Kathy Roth, Commission President
Betty Mumm, Carol Pauli, Rocky Smith, Jr.

Wednesday, March 6, 2013 | **7:00 PM** | **Commission Chambers**

Revised Agenda

6:30 pm - EXECUTIVE SESSION OF THE CITY COMMISSION

6:30 p.m. :

a. Pursuant to ORS 192.660(2)(h):To consult with counsel concerning the legal rights and duties of a public body with regard to current litigation or litigation likely to be filed.

Executive Session to immediately follow the regular meeting of the City Commission:

a. Pursuant to ORS 192.660(2)(a): To consider the employment of a public officer, employee, staff member or individual agent.

b. Pursuant to ORS 192.660(2)(e): To conduct deliberations with persons designated by the governing body to negotiate real property transactions.

1. Convene Regular Meeting and take Roll Call

2. Flag Salute

3. Ceremonies, Proclamations, Presentations

3a. 13-156 Vocal Presentation by the St. Patrick's Day Duet from Willamette Falls Symphony Orchestra

3b. 13-137 Oath of Office - Oregon City Police Department
Reserve Officer Caleb Woodrow

Attachments: Oath of Office

4. Citizen Comments

Citizens are allowed up to 3 minutes to present information relevant to the City but not listed as an item on the agenda. The City Commission does not generally engage in discussion with those making comments. Prior to speaking, citizens should read the brochure "Speaking at a City Commission Meeting" (located at the back of the Chambers) and complete a Comment Form and deliver it to the City Recorder.

5. Adoption of the Agenda

6. General Business

6a. RES 13-04 Resolution No. 13-04, Granting a Renewal of the Franchise Agreement of Portland General Elecric Company to Provide Electric Light and Power Service Within the City

Staff: City Recorder Nancy Ide

Attachments: Staff Report
Resolution No. 13-04
Exhibit A, Franchise Agreement

6b. 13-157 Collaborative Planning Agreement between the City of Oregon City and Peter McKittrick, Trustee of the Blue Heron Paper Company, U.S. Bankruptcy Court for the District of Oregon

Staff: Community Development Director Tony Konkol

Attachments: Staff Report
Willamette Falls RFP
Willamette Falls Legacy Project Site Stabilization and Building Assessment Rep
Willamette Falls Legacy Project Habitat and Water Resources Opportunities
Phase II Environmental Site Assessment Results
Boundary Survey
2002 Willamette Falls Industrial Area, Request For Determination Of Eligibility
2002 Willamette Falls Industrial Area, Request For Determination Of Eligibility _
Historic Site SHPO Database -survey printout
Sanborn Maps
September 2012 updated Determination of Eligibility Letter
Sample photos from Blue Heron Photo Collection
Catalytic Value of the Willamette Falls Project
WillFalls Funding Strategy Final
McKittick Agreement

6c. ORD 13-1005 Second Reading, Ordinance No. 13-1005: Legislative File 12-01: Proposed Amendments to the Land Use Appeal Process

Staff: Community Development Director Tony Konkol

Attachments: Staff Report
Ordinance No. 13-1005
Exhibit 1: OCMC 17.50 Text Amendments
1/28/13 Planning Commission Staff Report

6d. 13-160 Resolution No. 13-07, Agreement with Clackamas County for Use of City Rights of Way

Staff: City Recorder Nancy Ide

Attachments: Staff Report
Resolution No. 13-07
Agreement

6e. RES 13-06 Resolution No. 13-06, Submitting a Measure Authorizing the Urban Renewal Commission to Issue Ten Million Dollars in Bonds for the Development of Property at Clackamette Cove

Staff: Economic Development Manager Eric Underwood

Attachments: Staff Report
Resolution No. 13-06
Explanatory Statement

7. Consent Agenda

This section allows the City Commission to consider routine items that require no discussion and can be approved in one comprehensive motion. An item may only be discussed if it is pulled from the consent agenda.

7a. 13-158 Resolution No. 13-05, Adjustments to Fiscal Year 2012-13 Budget

Staff: Finance Director Wyatt Parno

Attachments: Staff Report
Resolution No. 13-05
Request for Budget Adjustments

7b. 13-138 Public Improvement Contract with S-2 Contractors Inc. for the Pearl Street Widening and Rehabilitation Project

Staff: Public Works Director John Lewis

Attachments: Staff Report
Contract
Site Map
Bid Results

7c. 13-159 Minutes of the February 12, 2013 Work Session Meeting

Staff: City Recorder Nancy Ide

Attachments: Minutes

8. Communications

a. City Manager

b. Mayor

c. Commission

9. Adjournment

Citizen Comments: The following guidelines are given for citizens presenting information or raising issues relevant to the City but not listed on the agenda.
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**When the Mayor calls your name, proceed to the speaker table and state your name and city of residence into the microphone.*
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**As a general practice, the City Commission does not engage in discussion with those making comments.*

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Staff Report

File Number: 13-156

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 3a.

From:

File Type: Presentation

SUBJECT:
Vocal Presentation by the St. Patrick's Day Duet from Willamette Falls Symphony Orchestra

RECOMMENDED ACTION (Motion):

BACKGROUND:

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-137

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 3b.

From:

File Type: Ceremony

SUBJECT:
Oath of Office - Oregon City Police Department
Reserve Officer Caleb Woodrow

OATH OF OFFICE

Sworn Reserve Police Officer
Oregon City Police Department

I, ***Caleb Woodrow****, do solemnly swear that I will uphold the law, and support the Constitution of the United States and the State of Oregon. I will abide by the Law Enforcement Code of Ethics, and the department's rules and regulations, while faithfully performing my duties as a Reserve Police Officer for Oregon City, Oregon.*

GIVEN THIS 6TH DAY OF MARCH, 2013

_____

_____
Doug Neeley Mayor

SUBSCRIBED AND SWORN to before me this 6th day of March 2013.

_____
Notary Public
State of Oregon
My commission expires: _____

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: RES 13-04

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6a.

From: City Recorder Nancy Ide

File Type: Resolution

SUBJECT:
Resolution No. 13-04, Granting a Renewal of the Franchise Agreement of Portland General Elecric Company to Provide Electric Light and Power Service Within the City

RECOMMENDED ACTION (Motion):
Staff recommends approval of Resolution No. 13-04, granting a franchise renewal to Portland General Electric Company.

BACKGROUND:
On February 17, 1993, the City Commission adopted Ordinance No. 93-1001 granting a 20-year non-exclusive franchise to Portland General Electric Company to erect, construct, maintain, and operate an electric light and power system within the corporate limits of the City. In anticipation of a December 31, 2012 franchise expiration, the City entered into negotiations with Portland General Electric Company (PGE) early in 2012 to renew the franchise agreement. The parties met throughout 2012 and resolved many issues; however, an extension of the franchise was required and obtained through Ordinance No. 13-1001 on January 2, 2013. The parties continued negotiations and came to agreement on all remaining concerns.

Notable changes to the franchise include the following:

1. Section 1(C). Nature and Term of the Franchise: The franchise is for a period of ten years; both parties can agree to an additional ten-year term, but are not required to do so. This will allow the parties to keep pace with changes in the community and in utility regulation over time, and that ten years is a more typical modern franchise agreement term.

2. Section 8(A) and (C). Permanent Relocation Required by City and Undergrounding: The City shall have the right to require PGE to change the location of its systems located in the public ROW when it is necessary in the public interest. Based on direction from the Commission, this agreement will maintain the current relocation language in the prior 20-year franchise agreement. As discussed with the Commission, this provision has worked well during the past 20 years and maintains needed flexibility for the City as several areas redevelop in the next few years.

3. Section 8(B). Notice. The City will endeavor to provide as much notice prior to requiring PGE to relocate its facilities as possible. Public Works has indicated that the City will add PGE to its regular development review notice process to help address this in a systematic way.

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EXHIBIT A

FRANCHISE AGREEMENT

This Franchise Agreement grants Portland General Electric Company ("Grantee") a non-exclusive franchise for ten years to erect, construct, maintain, repair, update and operate an electric light and power system within the City of Oregon City ("City"), sets the terms and conditions of the franchise and provides an effective date.

WHEREAS, Grantee has been providing electric light and power service within the City; and

WHEREAS, Grantee is duly authorized by the Oregon Public Utility Commission ("OPUC") to supply electric light and power within the City; and

WHEREAS, the City has the authority to regulate the use of the Public ROW (as defined below) within the City and to receive compensation for the use of the Public ROW; and

WHEREAS, the City and Grantee both desire Grantee to continue to be able to provide electrical service within the City and to establish the terms by which Grantee shall use and occupy the Public ROW;

NOW THEREFORE, THE PARTIES AGREE AS FOLLOWS:

SECTION 1. NATURE OF FRANCHISE.

(A) The City hereby grants to Grantee and its successors and assigns, subject to the terms and conditions in this Franchise, a nonexclusive franchise to erect, construct, repair, maintain, upgrade and operate an Electric Light and Power System (as defined below) within the City as it now exists or may be extended in the future, including related Grantee Facilities (as defined below). This Franchise includes the privilege to install, repair, maintain, upgrade and operate Grantee Facilities necessary for the operation of Grantee's Electric Light and Power System upon, over, along, and across the surface of and the space above and below the streets, alleys, roads, highways, sidewalks, bridges and other public ways over which the City has jurisdiction (collectively, "Public ROW"), as well as Public Utility Easements ("PUEs") on third party property on which a preliminary subdivision plat has been approved by the City, and which will be managed by the City thereafter, for the provision of public utility services within the City as Grantee's Electric Light and Power System now exists or is extended or upgraded in the future. Nothing in this Franchise limits the City from granting others the right to carry on activities

similar to, or different from the ones described in this Franchise. The rights granted herein do not include the right to build or site electric generating facilities in the Public ROW.

(B) All Grantee Facilities in possession of Grantee currently or during the Term (as defined in Section 2(A) that are located within the Public ROW are covered by this Franchise and the location and placement thereof are hereby approved for the purposes of this Franchise, subject to Grantee's acknowledgement that the City has not inventoried or evaluated Grantee Facilities to ensure their compliance with applicable local, state and federal laws, regulations and orders and Grantee's Franchise. The City may require relocation of Grantee Facilities as further specified in Section 8.

(C) This Franchise also includes the privilege to repair, maintain, upgrade and operate Grantee Facilities located in City park property that are existing as of the effective date of this Franchise. Grantee's right to install Grantee Facilities in City park property on or after the effective date of this Franchise, and to repair, maintain upgrade and operate such after-installed Grantee Facilities, shall be subject to the City's separate written approval. With respect to Grantee Facilities located in City park property existing as of the effective date of this Franchise and such after-installed Grantee Facilities installed pursuant to the City's permitting process, City park property shall be treated the same as the Public ROW for purposes of Sections 4, 6, 7, 10, 12, 14, 16, 18, 19 and 21.

SECTION 2. TERM AND EFFECTIVE DATE.

(A) Effective Date. The effective date of this Franchise shall be April 1, 2013 ("Effective Date"). Upon becoming effective, this Franchise shall supersede and replace any and all other franchise agreements that may be or have been in place between Grantee and the City as of or prior to the Effective Date.

(B) Duration of Franchise. The term of this Franchise ("Term") shall commence on the Effective Date and all rights and obligations pertaining thereto shall expire 10 years after the Effective Date, unless renegotiated or terminated as provided herein. The Term may be extended for ten (10) years upon mutual consent of the City and Grantee. Either party may provide the other party written notice of its desire to extend the Term prior to the expiration of the Term and the other party shall respond to the notice within thirty (30) days after receiving the notice.

(C) Charter and General Ordinances to Apply. To the extent authorized by law, this Franchise is subject to the Charter of the City of Oregon City and general ordinance provisions

passed pursuant thereto, including the applicable provisions of Chapter 13 and 16 requiring underground utilities in subdivisions or partitions, and state statutes and regulations existing during the Term. Nothing in this Franchise shall be deemed to waive the requirements of the various codes and ordinances of the City regarding permits, fees to be paid that are generally applicable to other similar businesses operating within the City, or the manner of construction.

SECTION 3. DEFINITIONS.

(A) Captions. Throughout this Franchise, captions to sections are intended solely to facilitate reading and to reference the provisions of this Franchise. The captions shall not affect the meaning and interpretation of this Franchise.

(B) Definitions. For purposes of this Franchise, the following terms, phrases, and their derivations shall have the meanings given below unless the context indicates otherwise. When not inconsistent with the context, words used in the present tense include the future tense, words in the plural number include the singular number, and words in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

(1) "City" means the City of Oregon City, Oregon, a municipal corporation, and all of the territory within its corporate boundaries, as such may change from time to time.

(2) "City Commission" means the Commission of the City.

(3) "City Engineer" means the City Engineer of the City.

(4) "City Manager" means the City Manager of the City.

(5) "City Recorder" means the Recorder of the City.

(6) "Director of Finance" means the Director of Finance of the City.

(7) "Emergency" means a situation involving (a) an unscheduled outage affecting one or more customers, or (b) danger to public safety. Emergency also includes situations where the failure of Grantee to act would result in (a) or (b) within 24 hours.

(8) "Franchise" means this Franchise Agreement as fully executed by the City and Grantee and adopted by the City Commission pursuant to Resolution No. 13-04.

(9) "Grantee" means Portland General Electric Company, an Oregon corporation.

(10) "Grantee Facility" means any tangible component of Grantee's Electric Light and Power System, including but not limited to any poles, guy wires, anchors, wire, fixtures, equipment, conduit, circuits, vaults, switch cabinets, transformers, secondary junction cabinets, antennas,

communication equipment and other property necessary or convenient to supply electric light and power by Grantee within the City.

(11) "Grantee's Electric Light and Power System" means all Grantee Facilities used by Grantee in the transmission and distribution of its services that are located inside the boundaries of the City.

(12) "Gross Revenues" shall be deemed to include any and all revenues derived by Grantee within the City from Grantee's Electric Light and Power System, and includes, but is not limited to, the sale of and use of electricity and electric service, and the use, rental, or lease of Grantee Facilities, after adjustment for the net write-off of uncollectible accounts. Gross Revenues do not include proceeds from the sale of bonds, mortgages or other evidence of indebtedness, securities or stocks, or sales at wholesale by one public utility to another of electrical energy when the utility purchasing such electrical energy is not the ultimate consumer. Gross Revenues also do not include revenue from joint pole use. For purposes of this Franchise, revenue from joint pole use includes any revenue collected by Grantee from other franchisees, permittees, or licensees of the City for the right to attach wires, cable or other facilities or equipment to Grantee's poles or place them in Grantee's conduits.

(12) "NESC" means the National Electrical Safety Code.

(13) "OPUC" means the Oregon Public Utility Commission.

(14) "Person" means any individual, sole proprietorship, partnership, association, corporation, cooperative, People's Utility District, or other form of organization authorized to do business in the State of Oregon, and includes any natural person.

(15) "Public ROW" shall have the meaning described in Section 1(A).

(16) "Published" means written documentation that is readily accessible by the public during normal business hours.

(17) "PUE" shall have the meaning described in Section 1(A).

(18) "Term" shall have the meaning described in Section 2(B).

(19) "Year," "annual," or "annually" means the period consisting of a full calendar year, beginning January 1 and ending December 31, unless otherwise provided in this Franchise.

SECTION 4. CONSTRUCTION

(A) Construction. Grantee's Electric Light and Power System shall be constructed and maintained in accordance with the NESC and in such manner as not to interfere with sewers,

water pipes, or any other property of the City, or with any other pipes, wires, conduits or other facilities that may have been laid in the Public ROW by or under the City's authority. Grantee shall comply with all applicable City permitting requirements prior to commencing any construction in the Public ROW. Assuming there is sufficient space in the Public ROW that meets the Grantee's construction standards as provided to the OPUC, NESC requirements and generally applicable published City standards, all poles shall be placed between the sidewalk and the edge of the Public ROW unless another location is approved by the City Engineer. For any land use development in the City requiring Grantee's services, the City shall notify Grantee of such pending land use development and Grantee shall notify the City of Grantee's construction standards that are provided to the OPUC and NESC requirements that are applicable to the pending land use development. To the extent the City has authority to do so, the City shall impose a condition on its land use development approval that the developer either (i) provide a sufficient location in the Public ROW located in the land use development for Grantee Facilities that meet the applicable Grantee construction standards and NESC requirements, or (ii) provide or obtain an easement for Grantee Facilities that meet the applicable Grantee construction standards and NESC requirements.

(B) Acquisition. Subsequent to the Effective Date, upon Grantee's acquisition of additional Grantee Facilities in the Public ROW, or upon any addition or annexation to the City of any area in which Grantee retains Grantee Facilities in the Public ROW of such addition or annexation, Grantee shall submit to the City a statement describing all Grantee Facilities involved, whether authorized by a franchise agreement or upon any other form of prior right, together with a map, as described in Section 5, specifying the location of all such Grantee Facilities. Such Grantee Facilities shall immediately be subject to the terms of this Franchise.

(C) Emergency Repairs. In the event Emergency repairs to Grantee Facilities are necessary, Grantee shall as soon as reasonably possible notify the City of the need for such repairs. Grantee may immediately initiate such Emergency repairs and, if permits are required by City, apply for appropriate permits the next business day or as soon as reasonably possible following discovery of the Emergency. In the event excavation is necessary in conjunction with the repairs, Section 6 shall also apply.

(D) Reasonable Care. All work completed by Grantee within the Public ROW shall be conducted with reasonable care and with the goal of minimizing the risk to those using the Public

ROW and to minimize the risk of damage to public and third party property. All work shall be performed in accordance with all applicable laws and regulations, including but not limited to the NESC, the conditions contained in the City work permit, and generally applicable published City standards. Any work completed by Grantee within the Public ROW may be inspected by the City to determine whether it in compliance with this Franchise and the Grantee's permit issued by the City. If any work has been completed by Grantee in the Public ROW and the City determines such work was not completed in a City approved location or as required in the permit, the City shall notify Grantee and provide Grantee with sixty (60) days to reperform the work in a City approved location or as required in the permit.

(E) Cooperation between Grantee and City. In accordance with state and local law, rules and regulations, for purposes of this Franchise, including but not limited to Sections 4, 8, and 10, Grantee and City shall work together during any design process affecting the Public ROW to establish suitable locations for Grantee's Facilities and cooperate to minimize the economic impact to Grantee and the City associated with any relocation of Grantee Facilities. The Grantee and City shall meet at least annually to forecast potential construction, relocation and other activities which may be subject to this Franchise.

SECTION 5. SUPPLYING MAPS. Grantee shall maintain maps and data pertaining to the location of Grantee Facilities on file at its corporate offices or at an office in Oregon. After providing Grantee with twenty-four (24) hours prior notice, the City may inspect the maps and data (excluding Grantee proprietary information) at any time during Grantee's business hours. Upon request of the City and without charge, Grantee shall furnish current maps and data to the City by electronic data in read-only format showing the general location of Grantee Facilities, excluding Grantee confidential or proprietary information. Unless required by law, the City will not sell or provide Grantee prepared maps or data to third parties without written permission from Grantee. Upon request of Grantee, the City will make available to Grantee any relevant current City prepared maps or data showing the location of City-owned facilities at no charge to Grantee by electronic data in read-only format showing the general location of City-owned facilities, excluding City confidential or proprietary information. Unless required by law, Grantee will not sell or provide City prepared maps or data to third parties without written permission from the City.

SECTION 6. EXCAVATION. Subject to Sections 4 and 7, and after obtaining any permits required by the City, as well as complying with ORS 757.542 et seq. (Oregon Utility Notification Center) as they may be amended from time to time, Grantee may make all necessary excavations within the Public ROW for the purpose of installing, repairing, upgrading or maintaining Grantee Facilities, except that in the case of an Emergency, no permit shall be required prior to excavation. Should there be a direct conflict between any terms or conditions stated in a permit granted by the City and the terms of this Franchise, the terms of this Franchise shall control. All excavations made by Grantee in the Public ROW shall be properly safeguarded for the prevention of accidents. All of Grantee's work under this Section shall be completed in strict compliance with all applicable rules, regulations and ordinances of the City. Should a customer of Grantee be required, pursuant to Grantee's tariff on file with the OPUC, to make excavations that are located in the Public ROW, the City agrees that Grantee shall not be responsible or liable for any failure by such customer to comply with any applicable rules, regulations, ordinances of the City and/or with City standards.

SECTION 7. RESTORATION AFTER EXCAVATION. Except as otherwise provided for in this Section, Grantee shall restore the surface of the Public ROW in the area disturbed by any excavation by Grantee in accordance with generally applicable published City standards and the permit issued by the City; provided, however, Grantee shall not be required, at Grantee's expense, to pave a gravel street that was gravel prior to the excavation, install sidewalk panels or curbs that did not exist prior to the excavation, or construct additional improvements in the Public ROW that did not exist prior to the excavation. If Grantee fails to restore the Public ROW in accordance with generally applicable published City standards and the permit issued by the City, the City shall give Grantee written notice and provide Grantee a reasonable period of time, not to exceed thirty (30) days, to restore the Public ROW. If the work of Grantee creates a public safety hazard as determined by the City Engineer, Grantee may be required to repair or restore the Public ROW within twenty-four (24) hours notice from the City, or such time as agreed between the City Engineer and Grantee, taking into consideration weather and other relevant factors. Should Grantee fail to make such repairs or restorations within the aforementioned time frames, the City may, after providing notice to Grantee and a reasonable opportunity to cure, refill or repave (as applicable) any opening made by Grantee in the Public ROW and the expense thereof shall be paid by Grantee. The City reserves the right, after

providing notice to Grantee, to remove or repair any work completed by Grantee, which, in the determination of the City Engineer is inadequate, using a qualified contractor in accordance with applicable state and federal safety laws and regulations, and Grantee's construction standards as provided to the OPUC. The cost thereof, including the cost of inspection and supervision, shall be paid by Grantee. In the event that Grantee's work is coordinated with other construction work in the Public ROW, the City Engineer may excuse Grantee from restoring the surface of the Public ROW, providing that as part of the coordinated work, the Public ROW is restored to good order and condition.

SECTION 8. RELOCATION.

(A) Permanent Relocation Required by City – This subsection (A) covers permanent relocation of overhead Grantee Facilities that will remain overhead, and underground Grantee Facilities that will remain underground. The City shall have the right to require, in the public interest, the removal or relocation of transmission and distribution facilities maintained by the Grantee in any Public ROW, property or place of the City, and the Grantee shall remove and relocate such facilities forthwith following notice to do so from the City. Prior to any such relocation the City agrees to provide for suitable location for such relocated facilities sufficient to maintain service. The cost of such removal or relocation of its facilities in the public interest shall be paid by the Grantee. Should Grantee fail to remove or relocate any such Grantee Facilities within ninety (90) days after the date established by the City, which, except in the event of a public Emergency, shall not occur sooner than ninety (90) days after the City provides written notice to remove/relocate to Grantee, the City may cause or effect such removal or relocation, performed by a qualified contractor in accordance with applicable state and federal safety laws and regulations, and the Grantee's construction standards as provided to the OPUC, and the expense thereof shall be paid by Grantee. However, when the City requests a subsequent relocation of all or part of the same Grantee Facilities less than two years after the initial relocation that is necessary or convenient for a public project, and not at the request of or to accommodate a third party, the subsequent relocation shall be at the expense of the City, unless the subsequent relocation request is the result of an Emergency.

(B) Notice and Cooperation. The City will endeavor to provide as much notice prior to requiring Grantee to relocate Grantee Facilities as possible. The notice shall specify the date by which the existing Grantee Facilities must be removed or relocated. Nothing in this Section 8

shall prevent the City and Grantee from agreeing, either before or after notice is provided, to a mutually acceptable schedule for relocation. Grantee and City shall diligently work together in good faith during the design process for any project necessitating the relocation of Grantee's Facilities to establish a suitable location for Grantee's Facilities in the Public ROW, or PUE, that meet Grantee's construction standards as provided to the OPUC, the NESC and generally applicable published City standards in order for Grantee to maintain sufficient service and to minimize the economic impact to Grantee and the City associated with such relocation of Grantee's Facilities.

(C) Permanent Relocation - Undergrounding. This subsection (C) applies to conversions of Grantee Facilities from overhead to underground regardless of whether or not such conversion is made in conjunction with a public project. As permitted by, and in accordance with City ordinance and any applicable law, administrative rule, or regulation the City may require Grantee to convert any overhead Grantee Facilities to underground Grantee Facilities at the same or different locations, subject to the NESC and Grantee's engineering and safety standards. This subsection shall not apply to Grantee Facilities used for or in connection with the transmission of electric energy at nominal voltages in excess of 35,000 volts or to pedestals, cabinets or other above-ground equipment. Any such underground relocation shall be consistent with applicable development plans of the City or another public entity that are adopted through a public process. The expense of such a conversion shall be paid by Grantee, and Grantee may recover its costs from its customers in accordance with state law, administrative rule, or regulation. Nothing in this subsection prevents the City and Grantee from agreeing to a different form of cost recovery on a case-by-case basis consistent with applicable statutes, administrative rules, or regulations.

(D) Temporary Relocation at Request of City. This subsection (D) covers temporary relocation of overhead Grantee Facilities that will remain overhead, as well as underground Grantee Facilities that will remain underground. The City may require Grantee to temporarily remove and relocate Grantee Facilities by giving sixty (60) days notice to Grantee. Prior to such relocation, the City agrees to make a good faith effort to provide a suitable location in the Public ROW, as mutually agreed, or a temporary construction easement that meets the Grantee's construction standards as provided to the OPUC, NESC requirements, and generally applicable published City standards that allows the Grantee to place its Facilities on the easement in order to maintain sufficient service until such time as the Grantee moves its Facilities to their permanent

location. The cost of temporary removal or relocation of Grantee Facilities that is necessary or convenient for public projects and public improvements, as well as cost of replacing Grantee Facilities in their permanent location, shall be paid by Grantee. However, when the City requests a subsequent relocation of all or part of the same Grantee Facilities less than two years after the initial relocation, that is necessary or convenient for a public project and not at the request of or to accommodate a third party, the subsequent relocation shall be at the expense of the City.

(E) Relocation at Request of or to Accommodate Third Party. In the event that any relocation of Grantee Facilities is requested by or is to accommodate a third party, Grantee may seek reimbursement from the third party consistent with the Grantee's tariff on file with the OPUC and shall not seek reimbursement from the City. Such relocation shall be consistent with any applicable development plans of the City. If the relocation of Grantee Facilities is caused or required by the conditions placed by the City on approval for projects of third parties, such relocation shall in no event fall under the provisions of subsections (A), (C) or (D) of this Section 8.

(F) Temporary Relocation at Request of Third Parties. Whenever it is necessary to temporarily relocate or rearrange any Grantee Facility in order to permit the passage of any building, machinery or other object, Grantee shall perform the work after receiving sixty (60) business days written notice from the persons desiring to move the building, machinery or other object. The notice shall: (1) demonstrate that the third party has acquired at its expense all necessary permits from the City; (2) detail the route of movement of the building, machinery, or other object; (3) provide that the person requesting the temporary relocation shall be responsible for Grantee's costs; (4) provide that the requestor shall indemnify and hold harmless the City and Grantee from any and all damages or claims resulting either from the moving of the building, machinery or other object or from the temporary relocation of Grantee Facilities; and (5) be accompanied by a cash deposit or other security acceptable to Grantee for the costs of relocation. Grantee in its sole discretion may waive the security obligation. The cash deposit or other security shall be in an amount reasonably calculated by Grantee to cover Grantee's costs of temporary relocation and restoration. All temporary relocations under this subsection shall comply with ORS 757.805.

SECTION 9. PUBLIC ROW VACATION. If all or a portion of the Public ROW used by Grantee is vacated by the City during the Term, and if reasonably possible, the City shall either

condition the approval of the vacation on the reservation of an easement for Grantee Facilities in their then-current location that prohibits any use of the vacated property that interferes with Grantee's full enjoyment and use of its easement, or permit Grantee Facilities to remain in a PUE. If neither of these options is reasonably possible, Grantee shall, after notice from the City and without expense to the City, remove Grantee Facilities from such vacated Public ROW, restore, repair or reconstruct the Public ROW where such removal has occurred in accordance with Section 7. In the event of failure, neglect or refusal of Grantee, after providing Grantee with ninety (90) days prior written notice, to repair, restore, or reconstruct such Public ROW, the City may complete such work or cause it to be completed by a qualified contractor in accordance with applicable state and federal safety laws and regulations, and the cost thereof shall be borne by the Grantee. Upon request, the City will use reasonable efforts to cooperate with Grantee to identify alternative locations within the Public ROW for Grantee Facilities if they are not permitted to remain in the vacated area.

SECTION 10. CITY PUBLIC WORKS AND IMPROVEMENTS. Nothing in this Franchise shall be construed in any way to prevent the City from excavating, grading, paving, planking, repairing, widening, altering, constructing, maintaining or completing any work that may be needed or convenient in the Public ROW. The City shall coordinate any such work with Grantee to avoid, to the extent reasonably foreseeable, any obstruction, injury or restrictions on the use by Grantee of any Grantee Facilities, and the City shall be responsible for the costs to repair any damage to Grantee Facilities arising out of such work. Nothing in this section relieves either party from its obligations set forth in Sections 4(E) and 8. .

SECTION 11. USE OF GRANTEE FACILITIES. The City shall maintain attachment agreements and permits to string wires on Grantee's poles or run wires in Grantee's trenches and/or available conduit for municipal purposes and to attach fire and police alarm and communication equipment to Grantee's poles, provided that such wires and equipment: a) do not unreasonably interfere with Grantee operations; b) conform to the NESC; and c) the City's excess capacity on such wires and equipment is not leased to, sold to or otherwise used by non-governmental third parties. Grantee shall not charge the City for such attachments to its poles or in its conduits; however, the City shall be responsible to pay for any make-ready and inspections Grantee must perform in order to provide access to Grantee Facilities for City wires and equipment in accordance with the NESC. Should any of the City's attachments to Grantee

Facilities violate the NESC, the City shall work with Grantee to address and correct such violations in an agreed-upon period of time. The City shall indemnify and hold Grantee harmless from loss or damage resulting from the presence of City's wires and equipment on or in Grantee Facilities, except to the extent such loss or damage is caused by the negligence or willful misconduct of Grantee, its agents or contractors. For purposes of this Franchise, "make-ready" shall mean engineering or construction activities necessary to make a pole, conduit, or other support equipment available for a new attachment, attachment modifications, or additional facilities. For purposes of this Section 11, "inspection" means work performed to verify and ensure the construction of the attachment complies with the permit, attachment agreement and NESC and Grantee's construction standards filed with the OPUC.

SECTION 12. PAYMENT FOR USE OF PUBLIC ROW.

(A) Use of Public ROW. In consideration for its use of the Public ROW in accordance with the terms of this Franchise, Grantee agrees to pay the City an amount equal to 3 1/2 percent of Gross Revenue. The current year's franchise payment shall be based on the Gross Revenue collected by Grantee during the previous calendar year and shall be paid on an annual basis. To the extent permissible under state law and regulation, the payment imposed by this subsection shall be considered an operating expense of Grantee and shall not be itemized or billed separately to consumers within the City.

(B) Property Tax Limitations Do Not Apply. The payment described in this Section 12 is not subject to the property tax limitations of Article XI, Sections 11(b) and 11(19) of the Oregon Constitution and is not a fee imposed on property or property owners by fact of ownership.

(C) Privilege Tax. The City shall retain the right, as permitted by Oregon law, to charge a privilege tax based on a percentage of Gross Revenue in addition to the payment amounts set forth in subsection (A). The City shall provide Grantee at least ninety (90) days notice prior to any privilege tax or increase in privilege tax becoming effective. Grantee shall follow state regulations regarding the inclusion of such privilege tax as an itemized charge on the electricity bills of its customers within the City.

(D) Remittance of Annual Payment. Grantee shall remit-to the Director of Finance on or before the first (1st) day of April of each year, the annual franchise fee payment, as well as payment of any additional privilege tax, to be made in such year. Payment must be made in

immediately available federal funds. No later than the date of the annual payment, Grantee shall provide the City a statement, under oath, showing the Gross Revenue for the preceding year.

(E) Acceptance of Payment. Acceptance by the City of any payment due under this Section shall not be a waiver by the City of any breach of this Franchise occurring prior to the acceptance, nor shall the acceptance by the City preclude the City from later establishing that a larger amount was actually due, or from collecting the balance due to the City.

(F) Late Payments. Interest on late payments shall accrue at PGE's cost of debt approved by the OPUC plus 100 basis points as of the due date, from the due date , and shall be computed based on the actual number of days elapsed from the due date until payment. Interest shall accrue without regard to whether the City has provided notice of delinquency.

(G) No Exemption from Other Fees or Taxes. Payment of the amounts described in this Section 12 shall not exempt Grantee from the payment of any other license fee, tax or charge on the business, occupation, property or income of Grantee that may be lawfully imposed by the City or any other taxing authority, except as may otherwise be provided in the ordinance or laws imposing such other license fee, tax or charge.

(H) Direct Access and Volumetric Methodologies. The City may, consistent with state law, direct that the payments made under this Section 12 be based on volume-based methodologies as specifically described in ORS 221.655 instead of the formula set out in subsections 12 (A) and (C). Notice must be given to Grantee in writing for the subsequent payments to be made using volume-based methodology. The volumetric calculation shall apply to payments made in one calendar year (based on January 1 to December 31 billings from the previous calendar year). The choice to use volumetric methodology must be renewed annually by the City. No notice is necessary if the City chooses to remain on the revenue-based calculation.

(I) Payment Obligation Survives Franchise. If prior to the expiration of this Franchise the parties do not finish negotiation of a new franchise agreement, the obligation to make the payments imposed by this Section 12 shall survive expiration of this Franchise until a new franchise agreement becomes effective and supersedes this Franchise. In the event this Franchise is terminated before expiration, Grantee shall make the remaining payments owed, if any, within ninety (90) days of the termination date.

SECTION 13. AUDIT.

(A) Audit Notice and Record Access. The City may audit Grantee's calculation of Gross Revenues. Within ten (10) business days after receiving a written request from the City, or such other time frame as agreed by both parties, Grantee shall furnish the City and any auditor retained by the City: (1) information sufficient to demonstrate that Grantee is in compliance with this Franchise; and (2) access to all books, records, maps and other documents maintained by Grantee with respect to Grantee Facilities that are necessary for the City to perform such audit. Grantee shall provide access to such information to City within the City, or the Portland, Oregon metropolitan area, during regular Grantee business hours.

(B) Audit Payment. If the City's audit shows that the amounts due to the City are higher than those based on the Grantee's calculation of Gross Revenue, then Grantee shall make a payment for the difference within sixty (60) days after the delivery to Grantee of the audit results. In addition to paying any underpayment, Grantee shall pay interest at PGE's cost of debt approved by the OPUC plus 100 basis points, but not penalties, as specified in this Franchise, from the original due date. In the event the City's audit shows that Grantee's calculation of Gross Revenue resulted in an overpayment to the City by five percent (5%) or more in any one year, the Grantee may deduct such overpayment from the next annual franchise fee payment. If the City's audit shows that the amounts due to the City based on the Grantee's calculation of Gross Revenue deviated by five percent (5%) or more in any one year from the City's calculation during the audit, Grantee shall reimburse the City for the incremental cost associated with the audit, not to exceed one percent (1%) of the total annual franchise fee payment for the applicable audit period.

SECTION 14. TERMINATION AND REMEDIES.

(A) By City for Cause. If Grantee ceases to maintain Grantee Facilities in accordance with the maintenance commitments outlined in the Service Quality Measures Review filed with the OPUC, and this causes an increase in the risk to the public of personal injury or property damage, the City shall notify Grantee and Grantee shall have thirty (30) days after the date of the notice to eliminate such risk or, if such risk cannot be eliminated within thirty (30) days, such reasonable time period as is required to eliminate such risk and Grantee shall bear all costs related to remedying the risk. If Grantee does not eliminate the risk in accordance with the preceding sentence, the City may then terminate this Franchise by providing Grantee written notice of termination.

(B) By City if City Will Provide Service. The City may terminate this Franchise upon one year's written notice to Grantee in the event that the City decides to engage in public ownership of the electric facilities located in the Public ROW and the public distribution of electric energy to customers throughout the City in accordance with ORS 758.470.

(C) City Reserves Right to Terminate. In addition to any other rights provided for in this Franchise, the City reserves the right, subject to subsections 14 (E) and (F), to terminate this Franchise in the event that:

(1) The Grantee materially violates any material provision of this Franchise;

(2) The Grantee is found by a court of competent jurisdiction to have practiced any material fraud or deceit upon the City;

(3) There is a final determination that Grantee has failed, refused, neglected or is otherwise unable to obtain or maintain Grantee's service territory designation required by any federal or state regulatory body regarding Grantee's operation of Grantee's Electric Light and Power System; or

(4) Grantee becomes unable or unwilling to pay its debts, or is adjudged bankrupt.

(D) Material Provisions. For purposes of this Section 14, the following are material provisions of this Franchise, allowing the City to exercise its rights under this Section 14 or as set forth elsewhere in this Franchise:

(1) The invalidation, failure to pay or any suspension of Grantee's payments of franchise fees or privilege taxes to the City for use of the Public ROW under this Franchise;

(2) Any failure by Grantee to submit timely reports as may be requested by the City, regarding the calculation of its franchise fees or privilege taxes paid or to be paid to the City;

(3) Any failure by Grantee to maintain the liability insurance or self insurance required under this Franchise;

(4) Any failure by Grantee to provide copies of requested information as provided under Sections 4, 5, and 13 above; and

(5) Any failure by Grantee to otherwise substantially comply with the requirements of Section 4 through Section 20 of this Franchise, unless otherwise agreed.

(E) Notice and Opportunity to Cure. The City shall provide Grantee thirty (30) days prior written notice of its intent to exercise its rights under this Section 14, stating the reasons for such action. If Grantee cures the basis for termination or if Grantee initiates efforts satisfactory to the

City to remedy the basis for termination and the efforts continue in good faith within the thirty (30) day notice period, the City shall not exercise its remedy rights. If Grantee fails to cure the basis for termination or if Grantee does not undertake and/or maintain efforts satisfactory to the City to remedy the basis for termination within the thirty (30) day notice period, then the City Commission may impose any or all of the remedies available under this Section 14.

(F) Remedies. In determining which remedy or remedies are appropriate, the City shall consider the nature of the violation, the person or persons burdened by the violation, the nature of the remedy required in order to prevent further such violations, and any other matters the City deems appropriate.

(G) Financial Penalty. In addition to any rights set out elsewhere in this Franchise, as well as its rights under the City Code or other law, the City reserves the right at its sole option to impose a financial penalty of up to $500.00 per day per material violation of a material provision of this Franchise when the opportunity to cure has passed.

SECTION 15. ASSIGNMENT OF FRANCHISE. Grantee may not sell, assign, transfer, or convey this Franchise to a third party without the City Commission giving its consent in a duly passed ordinance or resolution. Upon obtaining such consent, this Franchise shall inure to and bind such third party. Grantee shall not sell or assign this Franchise to an entity that is not authorized by the OPUC to provide electric service to retail consumers in the City or is not otherwise authorized to provide electric service to retail consumers under Oregon law. Prior to any proposed transfer, Grantee shall be in full compliance with this Franchise and the proposed transferee shall agree in writing to be bound by this Franchise. In the event Grantee is purchased by or merged into another entity and Grantee survives such purchase or merger as a public utility, Grantee shall provide notice to the City of such purchase or merger, but shall have no obligation under this Franchise to obtain the consent of the City Commission for such purchase or merger.

SECTION 16. REMOVAL OF FACILITIES. If this Franchise is terminated or expires on its own terms and is not replaced by a new franchise agreement or similar authorization, the City may determine whether Grantee Facilities are to be removed from the Public ROW or remain in place. The City shall provide written notice of any requirement to remove Grantee Facilities and shall provide Grantee sixty (60) days to comment on such requirement to move Grantee

Facilities. Following consideration of any such comments, the City Manager may issue an order requiring removal of Grantee Facilities within nine (9) months after such order is declared.

SECTION 17. NONDISCRIMINATION. Grantee shall provide service to electric light and power consumers in the City without undue discrimination or undue preference or disadvantage, in accordance with Oregon law.

SECTION 18. INDEMNIFICATION. To the fullest extent permitted by law, each party shall defend, indemnify and hold harmless the other party, its elected and appointed officials, officers, directors, employees and agents against any and all claims, damages, costs and expenses, including attorney's fees and costs, to which the indemnified party may be subjected as a result of any negligence, gross negligence, or willful misconduct of the indemnifying party, or its affiliates, officers, employees, agents, contractors or subcontractors, except to the extent that such claims, damages, costs and expenses are caused by the negligence, gross negligence, or willful misconduct of the indemnifying party. The obligations imposed by this Section shall survive termination of this Franchise.

SECTION 19. INSURANCE. Grantee shall obtain and maintain in full force and effect, for the entire Term, the following insurance covering risks associated with Grantee's ownership and use of Grantee Facilities and the Public ROW:

(A) Commercial General Liability insurance covering all operations by or on behalf of Grantee for Bodily Injury and Property Damage, including Completed Operations and Contractors Liability coverage, in an amount not less than Two Million Dollars ($2,000,000.00) per occurrence and in the aggregate.

(B) Business Automobile Liability insurance to cover any vehicles used in connection with its activities under this Franchise, with a combined single limit not less than One Million Dollars ($1,000,000.00) per accident.

(C) Workers' Compensation coverage as required by law and Employer's Liability Insurance with limits of $1,000,000. With the exception of Workers' Compensation and Employers Liability coverage, Grantee shall name the City as an additional insured on all applicable policies. All insurance policies shall provide that they shall not be canceled or modified unless thirty (30) days prior written notice is provided to the City. Grantee shall provide the City with a certificate of insurance evidencing such coverage as a condition of this Franchise and shall provide updated certificates upon request.

(D) In Lieu of Insurance. In lieu of the insurance policies required by this Section 19, Grantee shall have the right to self-insure any and all of the coverage outlined hereunder. If Grantee elects to self-insure, it shall do so in an amount at least equal to the coverage requirements of this Section 19 in a form acceptable to the City. Grantee shall provide proof of self-insurance to the City before this Franchise takes effect and thereafter upon request by the City.

SECTION 20. LIMITATION ON PRIVILEGES. All rights and authority granted to Grantee by the City under this Franchise are conditioned on the understanding and agreement that the privileges in the Public ROW shall not be an enhancement of Grantee's properties or an asset or item of ownership of Grantee.

SECTION 21. FRANCHISE NOT EXCLUSIVE. This Franchise is not exclusive and shall not be construed to limit the City from granting rights, privileges and authority to other persons similar to or different from those set forth in this Franchise.

SECTION 22. REMEDIES AND PENALTIES NOT EXCLUSIVE. All remedies and penalties under this Franchise, including termination, are cumulative and not exclusive, and the recovery or enforcement by one available remedy or imposition of a penalty is not a bar to recovery or enforcement by any other remedy or imposition of any other penalty. The City reserves the right to enforce the penal provisions of any City ordinance or resolution and to avail itself to any and all remedies available at law or in equity. Failure to enforce any term, condition or obligation of this Franchise shall not be construed as a waiver of a breach of any term, condition or obligation of this Franchise. A specific waiver of a particular breach of any term, condition or obligation of this Franchise shall not be a waiver of any other, subsequent or future breach of the same or any other term, condition or obligation of this Franchise.

SECTION 23. SEVERABILITY CLAUSE. If any section, subsection, sentence, clause, phrase, or other portion of this Franchise is, for any reason, held to be invalid or unconstitutional by a court of competent jurisdiction, all portions of this Franchise that are not held to be invalid or unconstitutional shall remain in effect until this Franchise is terminated or expired. After any declaration of invalidity or unconstitutionality of a portion of this Franchise, either party may demand that the other party meet to discuss amending the terms of this Franchise to conform to the original intent of the parties. If

the parties are unable to agree on a revised franchise agreement within ninety (90) days after a portion of this Franchise is found to be invalid or unconstitutional, either party may terminate this Franchise by delivering one hundred and eighty (180) days notice to the other party.

SECTION 24. NOTICE. Any notice provided for under this Franchise shall be sufficient if in writing and (1) delivered personally to the following addressee, (2) deposited in the United States mail, postage prepaid, certified mail, return receipt requested, (3) sent by overnight or commercial air courier (such as Federal Express or UPS), or (4) sent by facsimile transmission with verification of receipt, addressed as follows, or to such other address as the receiving party hereafter shall specify in writing:

If to the City:
City Manager
City of Oregon City
625 Center Street
Oregon City, Oregon 97045
FAX # (503) 657-7026

With a copy to:
Edward J. Sullivan
City Attorney for Oregon City
121 SW Morrison Street, 11th Floor
Portland, OR 97204
FAX # (503) 226-0259

If to the Grantee:
Portland General Electric Company
Attn: Government Affairs
121 SW Salmon St
Portland, Oregon 97204
FAX: (503)464-2354

With a copy to:
Portland General Electric Company

Attn: General Counsel

One World Trade Center, 17th Floor

121 SW Salmon Street

Portland, Oregon 97204

FAX: (503) 464-2200

Any such notice, communication or delivery shall be deemed effective and delivered upon the earliest to occur of actual delivery, three (3) business days after depositing in the United States mail, one (1) business day after shipment by commercial air courier or the same day as confirmed facsimile transmission (or the first business day thereafter if faxed on a Saturday, Sunday or legal holiday).

IN WITNESS WHEREOF, the parties, through their duly authorized representatives, have executed this Franchise as of the dates indicated below.

PORTLAND GENERAL ELECTRIC COMPANY	OREGON CITY
By: _____	By: _____
Name: _____	Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-157

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6b.

From: Community Development Director Tony Konkol

File Type: Contract

SUBJECT:
Collaborative Planning Agreement between the City of Oregon City and Peter McKittrick, Trustee of the Blue Heron Paper Company, U.S. Bankruptcy Court for the District of Oregon

RECOMMENDED ACTION (Motion):
Staff recommends that the City Commission approve the Collaborative Planning Agreement between Mr. McKittrick, Trustee of the Blue Heron Paper Company and the City of Oregon City.

BACKGROUND:
The Commission considered this agreement at the February 20, 2013 meeting and tabled the item to allow staff additional time to incorporate all of the attachments associated with the request for proposal which was referenced in the attachment to the previous agreement. Staff has included as Exhibit A to the agreement, the complete request for proposal and background information.

Mr. McKittrick, the Bankruptcy Trustee for the Blue Heron property, and the City agree that the land use regulations that affect the property should be revised to reflect the fact that the property is unlikely to be used in the future for industrial use. Given the size and complexity of the property and the structures located on the property, the parties agree that the adoption of a simplified general development master plan through a robust public process would serve the objectives of both parties. The attached agreement between Mr. McKittrick and the City is intended to set forth the respective planning process, monetary commitments and property maintenance obligations of the Trustee and the City in order to work together to develop a master plan for the Blue Heron property.

The following is a summary, rather than complete description of the proposed agreement, which is attached. The City will take responsibility for the development of a master planning and entitlement process for the property. The Trustee agrees to not file a motion to abandon the property with the court prior to April 1, 2014 once the City enters into a contract with the lead consultant for the master planning process. At any time during this process the Trustee could sell the property or be directed by the Court to abandon the property and terminate this agreement. The City agrees to provide a minimum of $400,000 to fund the master planning process. The City is anticipating these funds to come from multiple sources, including Clackamas County and a Metro Construction Excise Tax grant. If the City is unable to secure adequate funds, then either party may terminate this agreement at any time up to the execution of a contract with the lead consultant. The Trustee agrees to provide a minimum of $50,000 for the master planning process, with $25,000 due upon the City entering into a contract with the lead consultant and the remaining $25,000 due upon completion of the master plan.

BUDGET IMPACT:
Amount:
FY(s):
Funding Source:

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-157

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6b.

From: Community Development Director Tony Konkol

File Type: Contract

SUBJECT:
Collaborative Planning Agreement between the City of Oregon City and Peter McKittrick, Trustee of the Blue Heron Paper Company, U.S. Bankruptcy Court for the District of Oregon

RECOMMENDED ACTION (Motion):
Staff recommends that the City Commission approve the Collaborative Planning Agreement between Mr. McKittrick, Trustee of the Blue Heron Paper Company and the City of Oregon City.

BACKGROUND:
The Commission considered this agreement at the February 20, 2013 meeting and tabled the item to allow staff additional time to incorporate all of the attachments associated with the request for proposal which was referenced in the attachment to the previous agreement. Staff has included as Exhibit A to the agreement, the complete request for proposal and background information.

Mr. McKittrick, the Bankruptcy Trustee for the Blue Heron property, and the City agree that the land use regulations that affect the property should be revised to reflect the fact that the property is unlikely to be used in the future for industrial use. Given the size and complexity of the property and the structures located on the property, the parties agree that the adoption of a simplified general development master plan through a robust public process would serve the objectives of both parties. The attached agreement between Mr. McKittrick and the City is intended to set forth the respective planning process, monetary commitments and property maintenance obligations of the Trustee and the City in order to work together to develop a master plan for the Blue Heron property.

The following is a summary, rather than complete description of the proposed agreement, which is attached. The City will take responsibility for the development of a master planning and entitlement process for the property. The Trustee agrees to not file a motion to abandon the property with the court prior to April 1, 2014 once the City enters into a contract with the lead consultant for the master planning process. At any time during this process the Trustee could sell the property or be directed by the Court to abandon the property and terminate this agreement. The City agrees to provide a minimum of $400,000 to fund the master planning process. The City is anticipating these funds to come from multiple sources, including Clackamas County and a Metro Construction Excise Tax grant. If the City is unable to secure adequate funds, then either party may terminate this agreement at any time up to the execution of a contract with the lead consultant. The Trustee agrees to provide a minimum of $50,000 for the master planning process, with $25,000 due upon the City entering into a contract with the lead consultant and the remaining $25,000 due upon completion of the master plan.

BUDGET IMPACT:
Amount:
FY(s):
Funding Source:

KEY

TILE 12" BRICK 12" PYROBAR 12" — Fire proof construction. (OR FIRE RESISTIVE CONSTN)

ADOBE — Adobe building.

HEIGHT OF BUILDING IN FEET FROM GROUND TO ROOF LINE — Stone building.

(C.BR.) — Concrete, lime, cinder or cement brick

(C.B.) — Hollow concrete or cement block constn

(CONC.) — Concrete or reinforced concrete constn

(TILE) — Tile building.

NUMBER OF STORIES 4 — Brick building with frame cornice.

TWO STORIES AND BSMT 2S COMPOSITION ROOF — " " " stone front.

SHINGLE ROOF — " " " frame side. (DIVIDED BY FRAME PARTITION)

(VEN'D) — Brick veneered building.

BRICK 1ST — " and frame building.

FRAME, BRICK LINED — Frame building, brick lined.

F=FLAT S=STORE — " " metal clad.

D=DWELLING — Frame building.

A IRON B AUTO IN BSMT — Iron building.

LOFT — Tenant building occupied by various manufacturing or occupancies

(ASB. CL.) — Frame building covered with asbestos

NON COMBUSTIBLE ROOF COVERING OF METAL, SLATE, TILE OR ASBESTOS SHINGLES — Brick building with brick or metal cornice.

SKYLIGHT LIGHTING TOP STORY ONLY — Fire wall 6 inches above roof.

3 SKYLIGHT LIGHTING THREE STORIES — " " 12 " " "

WG WIRED GLASS SKYLIGHT — " " 18 " " "

FIRE WALL 48 INCHES ABOVE ROOF — " " 36 " " "

4 6 — Figures 8,12,16 indicate thickness of wall in inches.

2 3 4 5 ALL — Wall without opening and size in inches.

Wall with openings on floors as designated.

Opening with single iron or tin clad door.

" " double iron " " " doors.

" " standard fire doors.

WT WATER TANK — Openings with wired glass doors.

BRICK 12" — Drive or passage way.

Stable.

A. — Auto House or private garage.

(C. B.) (C.B.& BR.) — Solid brick with interior walls of C.B. or C.B. and brick mixed.

(C.B.& BR. CONSTN) — Mixed construction of C.B. and brick with one wall of solid brick.

(C.B.& BR. CONSTN) (BR FACED) — Mixed construction of C.B. and brick with one wall faced with 4" brick.

(C.B.& BR. CONSTN) — Mixed construction of C.B. and brick throughout.

MANSARD ROOF DOTS REPRESENT OPENINGS, STEMS INDICATE STORIES, COUNTING FROM LEFT TO RIGHT, LOOKING TOWARD BUILDING.

Window opening in first story.

Window openings in second and third stories.

Window openings in second and fourth stories.

Windows with wired glass.

Windows with iron or tin clad shutters.

10 7 D 22 — Window openings tenth to twenty-second stories.

BLOCK — 50 — CURB LINE — CURB LINE — LINES

Width of street (BETWEEN BLOCK LINES, NOT CURB LINES)

E Open elevator.

FE Frame enclosed elevator.

ET " " " with traps.

ESC " " " " self closing traps.

CBET Concrete block enclosed elevator with traps.

TESC Tile enclosed elevator with self closing traps.

BE Brick enclosed elev. with wired glass door.

I.R.C. Iron chimney

" " (WITH SPARK ARRESTOR) I.R.C.S.A.

Brick chimney.

15 Ground elevation.

5 Block number.

V.B. Vertical steam boiler.

G.T. Gasoline tank.

V.P. Vertical pipe or stand pipe.

(O.U.) Open under.

AFA Automatic fire alarm.

IEP Independent electric plant.

Siamese fire dept. connection

AS Automatic sprinklers.

Single fire dept. connection

ACS Automatic chemical sprinklers.

AS 1ST ONLY — Automatic sprinklers in part of building only. (NOTE UNDER SYMBOL INDICATES PROTECTED PORTION OF BUILDING)

NS Not sprinklered.

24 Reference to adjoining page.

Outside vertical pipe on fire escape.

Fire engine house, as shown on key map.

FA Fire alarm box.

Fire pump.

Single hydrant.

D.H. Double "

(36) Under page number refers to corresponding page of previous edition.

T.H. Triple "

Q.H. Quadruple hydrant of the "High Pressure Fire Service".

H.P.F.S. FA Fire alarm box of the "High Pressure Fire Service"

H.P.F.S. 20"W.PIPE(HPFS) 12" Water pipes of the "High Pressure Fire Service" and hydrants of the "High Pressure Fire Service" as shown on key map.

6"W.PIPE Water pipes and size in inches.

6"W.PIPE (PRIVATE) Water pipes of private supply

2 D 4½ 5 6 — House numbers shown nearest to buildings are official or actually up on buildings. Old house numbers shown furthest from buildings.

CODING OF STRUCTURAL UNITS FOR FIREPROOF AND NON-COMBUSTIBLE BUILDINGS

FRAMING

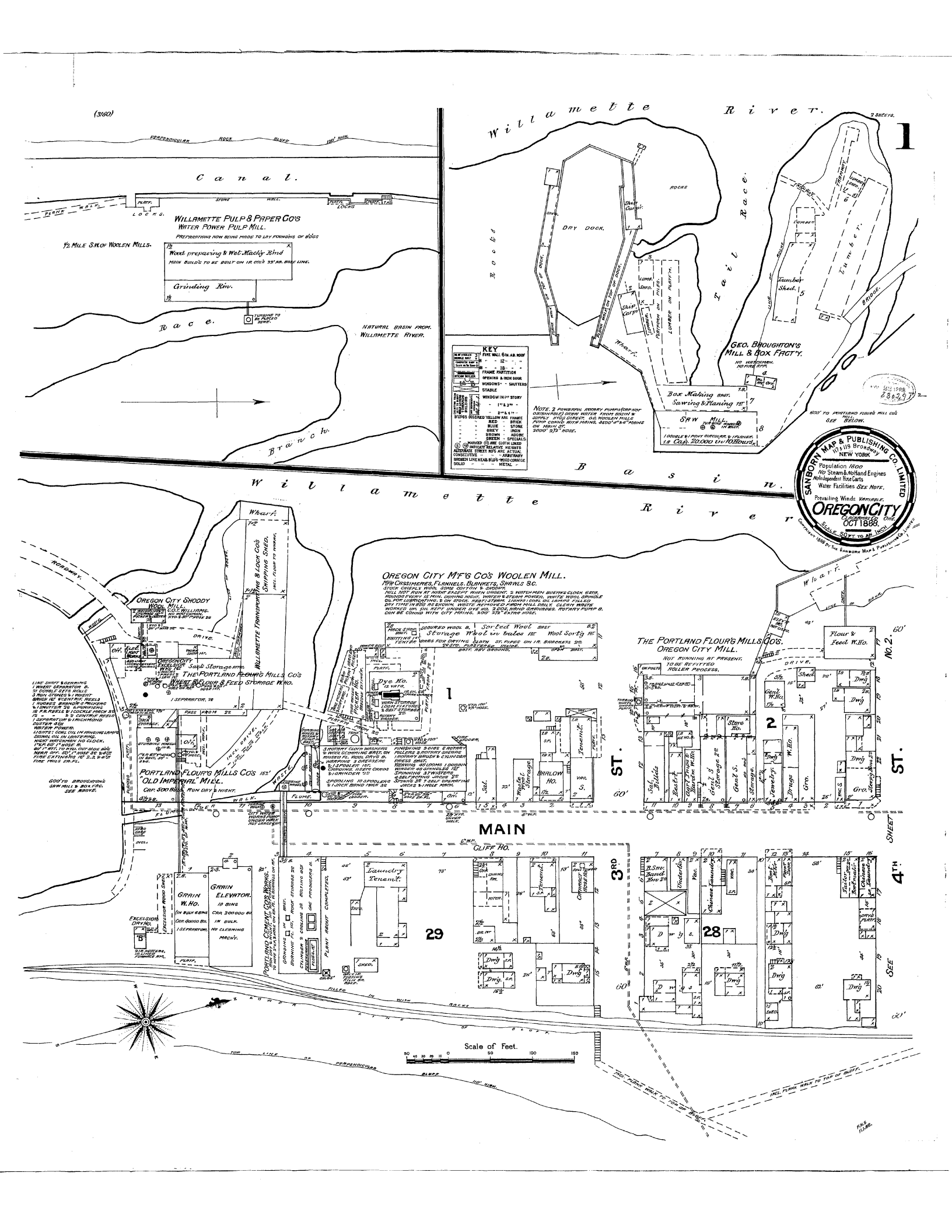
CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected

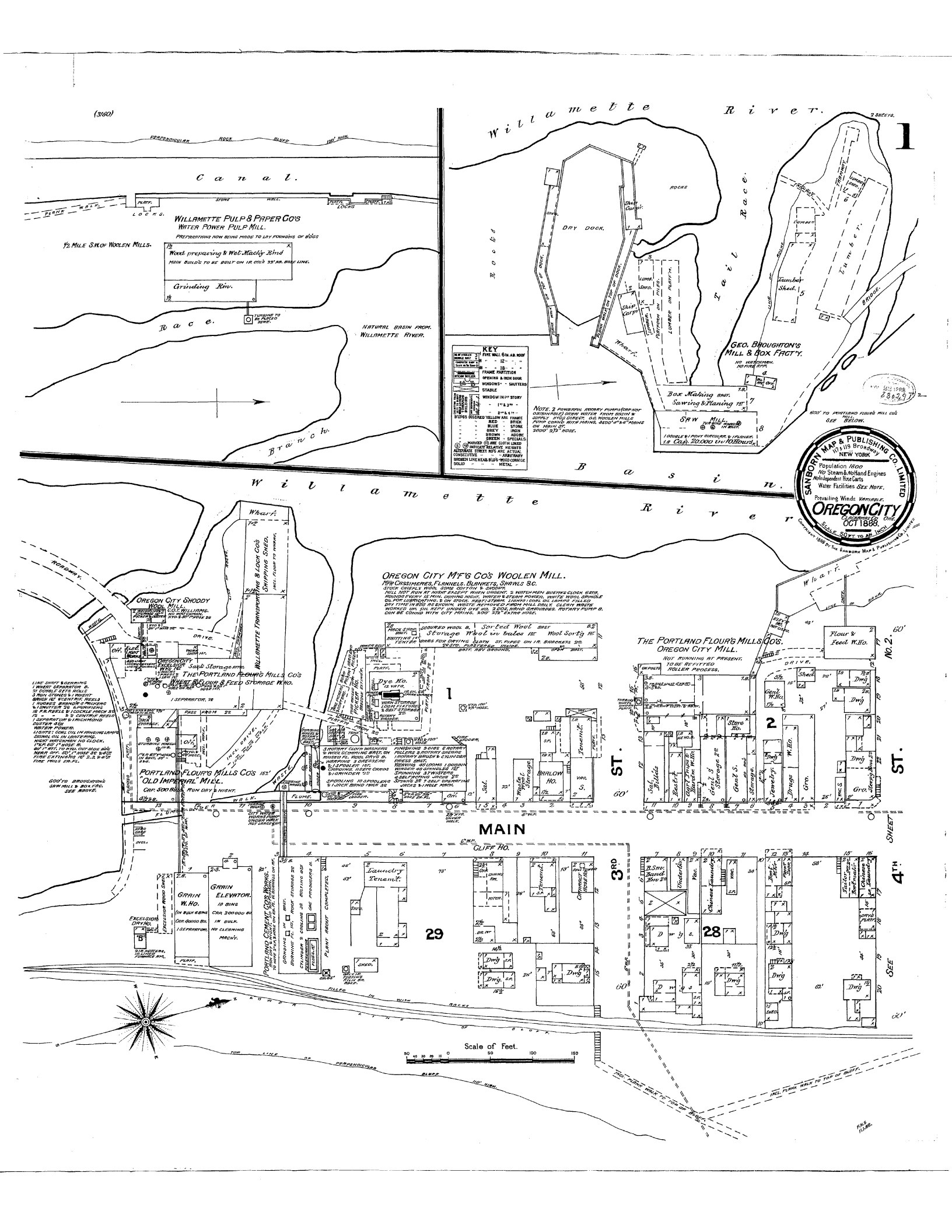
FLOORS

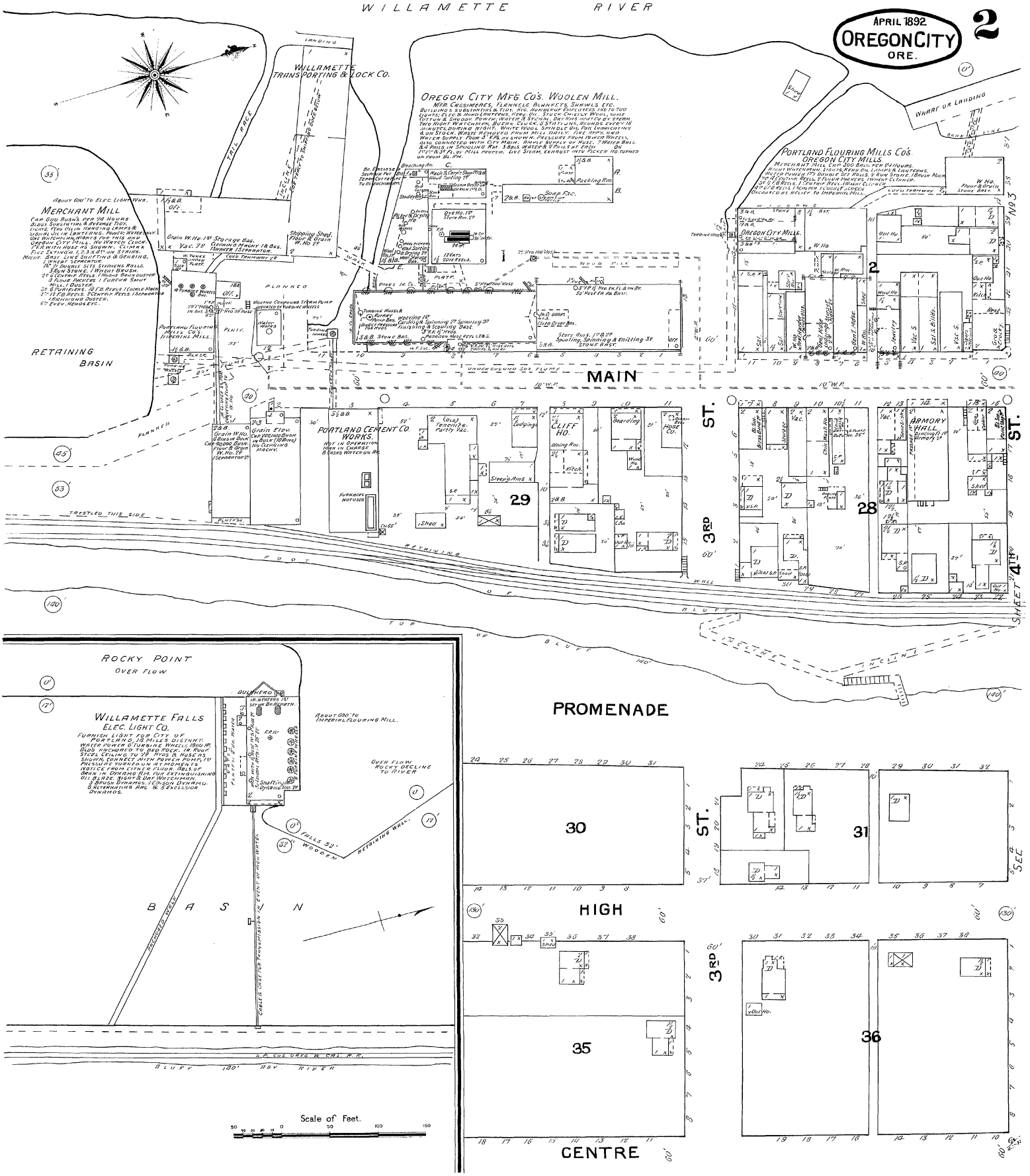
CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre-cast Concrete or Gypsum Slabs or Planks.
2.	Concrete on Metal Lath, Incombustible Form Boards, Paper-backed Wire Fabric, Steel Deck.

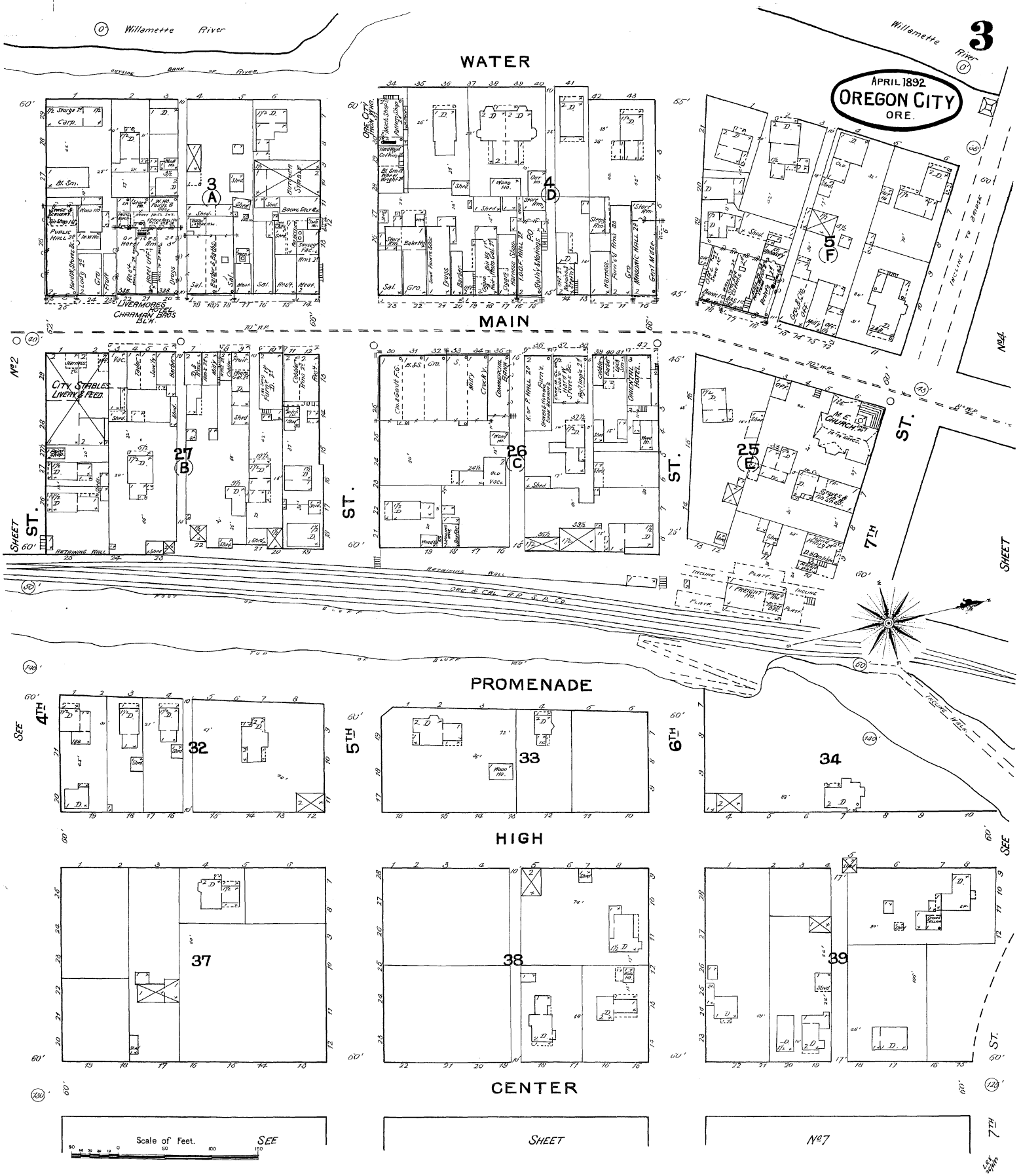
ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre-cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper-backed

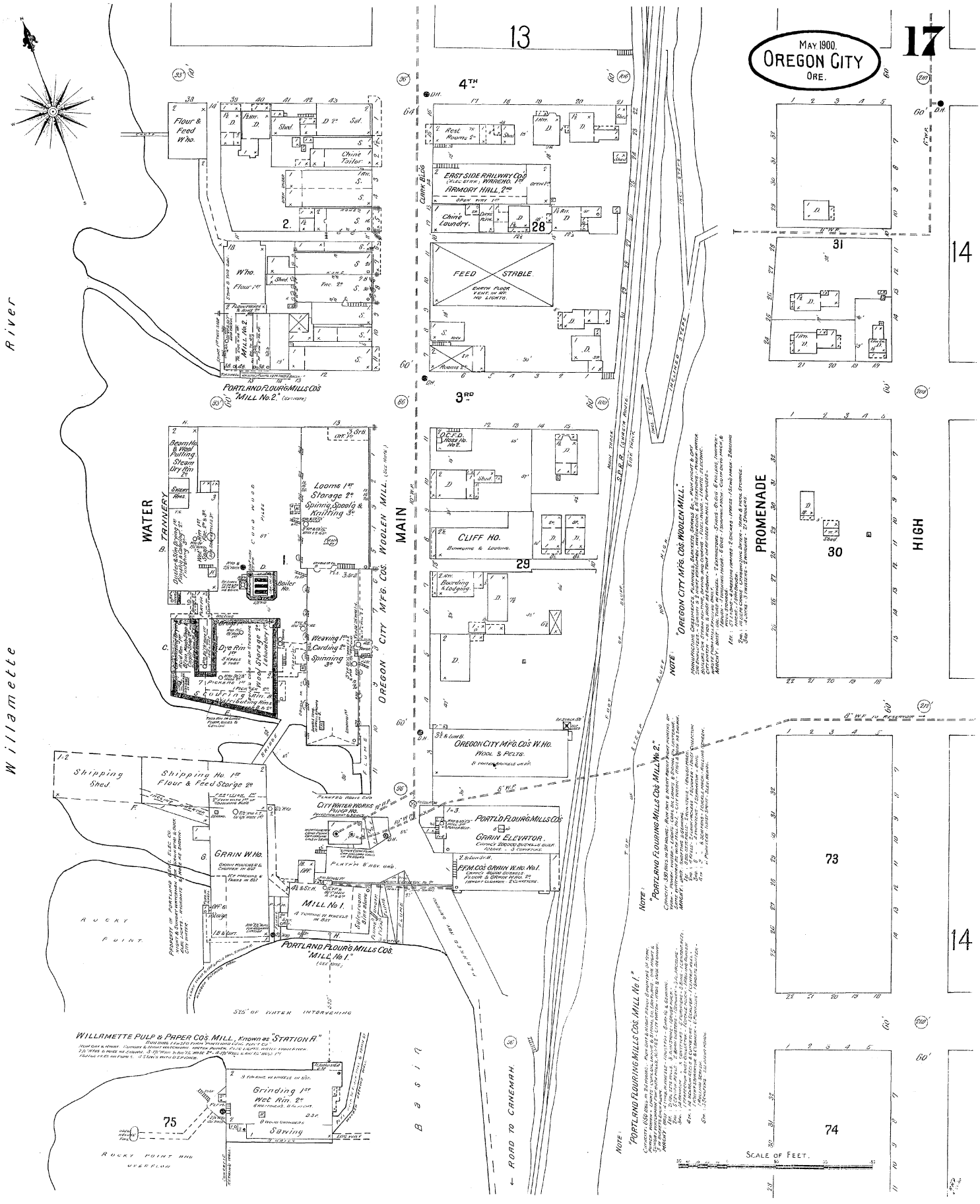

(3/60)
2 SHEETS.
1
Willamette River.
Canal.
PERPENDICULAR ROCK BLUFF 120' HIGH.
PLANK WALK.
LOCKS.
STONE WALL.
WILLAMETTE PULP & PAPER CO'S
WATER POWER PULP MILL.
PREPARATIONS NOW BEING MADE TO LAY FOUNDNS OF BLDGS
½ MILE S.W. OF WOOLEN MILLS.
Wood preparing & Wet Machy Rmd
MAIN BUILD'G TO BE BUILT ON I.R. COL'S 22' AB. BASE LINE.
Grinding Rm.
TURBINE TO BE PLACED HERE.
Race.
NATURAL BASIN FROM WILLAMETTE RIVER.
Branch.
Rocks
DRY DOCK.
Ship Carp'r.
Lumber on Platform.
Lumber on Piles.
Lumber on Platform.
Wharf.
Tail Race.
Timber.
Lumber Shed.
Bridge.
GEO. BROUGHTON'S
MILL & BOX FACT'Y.
NO WATCHMAN. NO FIRE PUMP.
Box Making &c.
Sawing & Planing 1 Ex.
SAW MILL.
1 Double & 1 Pony Circular, & 1 Planer.
1 R. Cap. 20,000 in 10 Hours.
600' TO PORTLAND FLOUR'G MILL CO'S
SEE "BELOW."
KEY
FIRE WALL 61in. AB. ROOF
12"
18"
FRAME PARTITION
OPENING & IRON DOOR
WINDOWS - SHUTTERED
STABLE
WINDOW IN 1ST STORY
1ST & 3RD
2ND & 4TH
BLDGS COLORED YELLOW ARE FRAME
RED - BRICK
BLUE - STONE
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MARKED (R) ARE CLOTH LINED
INDICATE RELATIVE HEIGHTS
ALTERNATE STREET NO'S ARE ACTUAL
CONSECUTIVE - ARBITRARY
BROKEN LINE HEAD BLD'G - WOOD CORNICE
SOLID - METAL
NOTE. 3 POWERFUL ROTARY PUMPS (ORP NOT ORDINARILY) DRAW WATER FROM BASIN IN SUPPLY. 4 YDS DIRECT. O.C. WOOLEN MILLS PUMP CONNS WITH MAINS. 3400' 4" & 6" MAINS ON MAIN ST. 3/100' 2.9" HOSE.
Basin.
SANBORN MAP & PUBLISHING CO. LIMITED
10 & 119 Broadway
NEW YORK
Population 1800
No Steam & Holland Engines
No Independent Hose Carts
Water Facilities SEE NOTE.
Prevailing Winds VARIABLE.
OREGON CITY
CLACKAMAS CO. ORE.
OCT 1888.
SCALE 50 FT. TO AN INCH.
Wharf.
Willamette River.
ROSEMARY.
OREGON CITY WOOLEN MILL.
Mfr'r CASSIMERES, FLANNELS, BLANKETS, SHAWLS &C.
STOCK CARDED, WOOL SCOURED & DRIED.
MILL NOT RUN AT NIGHT EXCEPT WHEN URGENT; 2 WITCH MEN, SWEEPS CLOCK 6 STS.
ROUNDS OF MILL DURING NIGHT; WATER & STEAM POWER, WHITE WOOL SPINDLE OILS FROM CAMPHOR, RED & OIL FROM CASTOR; LIGHTS: GAS, OIL LAMPS FILLED DAILY, ARE IN USE NO KNOWN. WASTE REMOVED FROM MILL DAILY. CLEAR WASTE WORKED ON 3/4. NEAR INDEPENDENT DYE HO. 3,200 GAL. HAND EXTINGUISHERS. ROTARY PUMP & CHIN BE CONND WITH CITY MAINS. 300' 3/4" EXTRA HOSE.
OREGON CITY SHODDY WOOL MILL.
C.O.T. WILLIAMS.
2 WATERWHEELS & 1 TURBINE DRIVING MACHY. NO WATCHMAN. NO FIRE PUMP.
Dye Ho.
12 VATS.
Scoured Wool &c.
Sorted Wool &c.
Storage Wool in bales 1E
Wool Sort'g 1E
Knitting 1A
Looms for Drying Cloth
Dry Ground.
Storage Wool in bales.
OREGON CITY EXCELSIOR WOOL CO.
Sack Storage.
THE PORTLAND FLOUR'G MILLS CO'S
WHEAT & FLOUR & FEED STORAGE W. HO.
1 SEPARATOR, 2E
WILLAMETTE TRANSPORTATION & LOCK CO'S SHIPPING SHED.
INCL. FLOOR TO WHARF.
LINE SHAFT & GEARING
1 WHEAT SEPARATOR &
2 DOUBLE 8 STS ROLLS
3 RUN STONES & 1 WHEAT BRUSH 1E
1 CENTRIFUGAL REELS
1 HUNGERFORD & PROCTOR
& SMITTEN 2E & PURIFIERS
16 P.R. REELS & 1 COCKLE MACH 3E
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Sal.
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Drive
Walk
Main
Cliff Ho.
Laundry Tenant
Grain W. Ho.
In Bulk 68 Bins
Car 30000 Bu.
1 Separator.
Grain Elevator.
10 Bins
Car 200 000 Bu.
In Bulk.
No Cleaning Mach'y.
Excelsior Dry Ho.
Excelsior Wood Shed
Portland Cement Co's Works
Plant About Completed.
Shed.
Filled in with Rocks
Lower Line of Bluff.
Top Line of Perpendicular Bluff 110' High.
Scale of Feet.
50 40 30 20 10 0 50 100 150
THE PORTLAND FLOUR'G MILLS CO'S.
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NOT RUNNING AT PRESENT.
TO BE REFITTED ROLLER PROCESS.
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No. 2.
Store Ho.
Sal. Bldg.
Gent's Furn. W. Ho.
Gent's Storage 2E
Gent's S.
Jewelry
Dwg's
Gro.
W. S.
Main St.
1
2
29
28
3RD
4TH
SHEET
SEE
Incl. Plank Walk to Top of Bluff.
110' High.

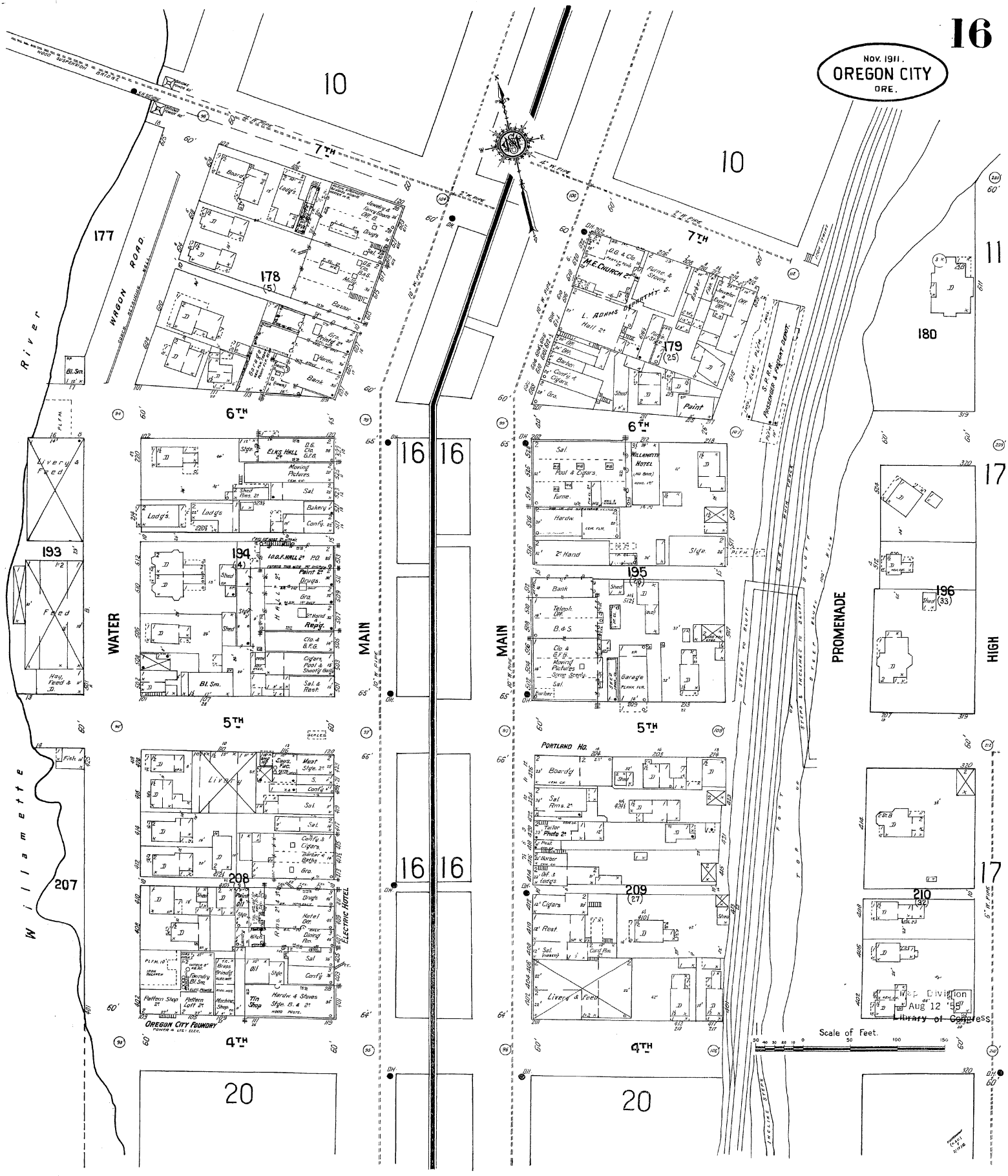

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Flume
Waste
Wheel
Pipes
Drive
Walk
Main
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Laundry Tenant
Grain W. Ho.
In Bulk 68 Bins
Car 30000 Bu.
1 Separator.
Grain Elevator.
10 Bins
Car 200 000 Bu.
In Bulk.
No Cleaning Mach'y.
Excelsior Dry Ho.
Excelsior Wood Shed
Portland Cement Co's Works
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Shed.
Filled in with Rocks
Lower Line of Bluff.
Top Line of Perpendicular Bluff 110' High.
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Incl. Plank Walk to Top of Bluff.
110' High.

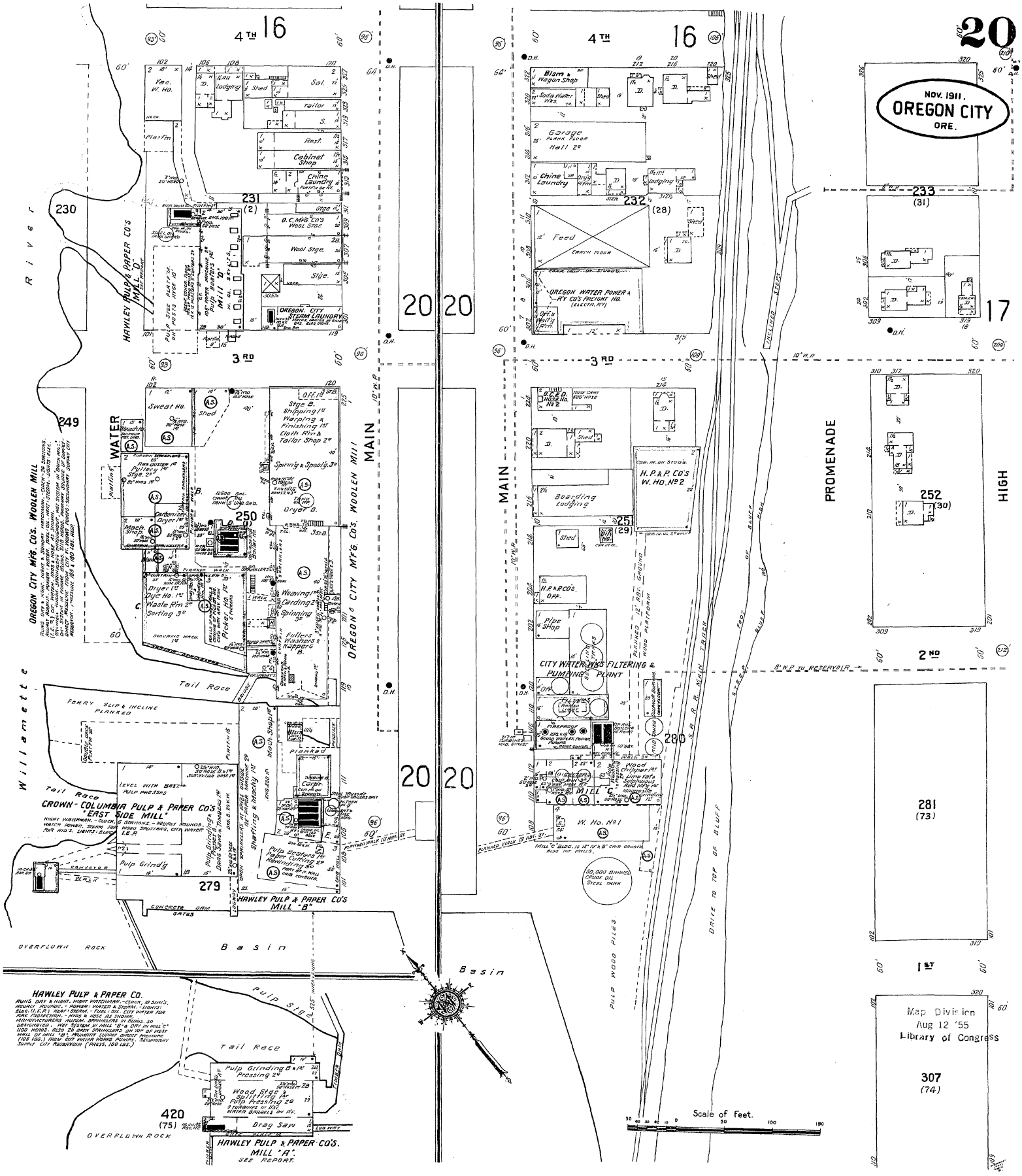

WILLAMETTE RIVER
APRIL 1892
OREGON CITY
ORE.
2
WILLAMETTE TRANSPORTING & LOCK CO.
OREGON CITY MFG CO'S. WOOLEN MILL.
MERCHANT MILL
PORTLAND FLOURING MILLS CO'S. OREGON CITY MILLS.
RETAINING BASIN
MAIN
PORTLAND CEMENT CO. WORKS.
CLIFF HO.
ARMORY HALL
3RD ST.
4TH ST.
PROMENADE
HIGH
CENTRE
ROCKY POINT
OVER FLOW
WILLAMETTE FALLS ELEC. LIGHT CO.
BASIN
Scale of Feet.

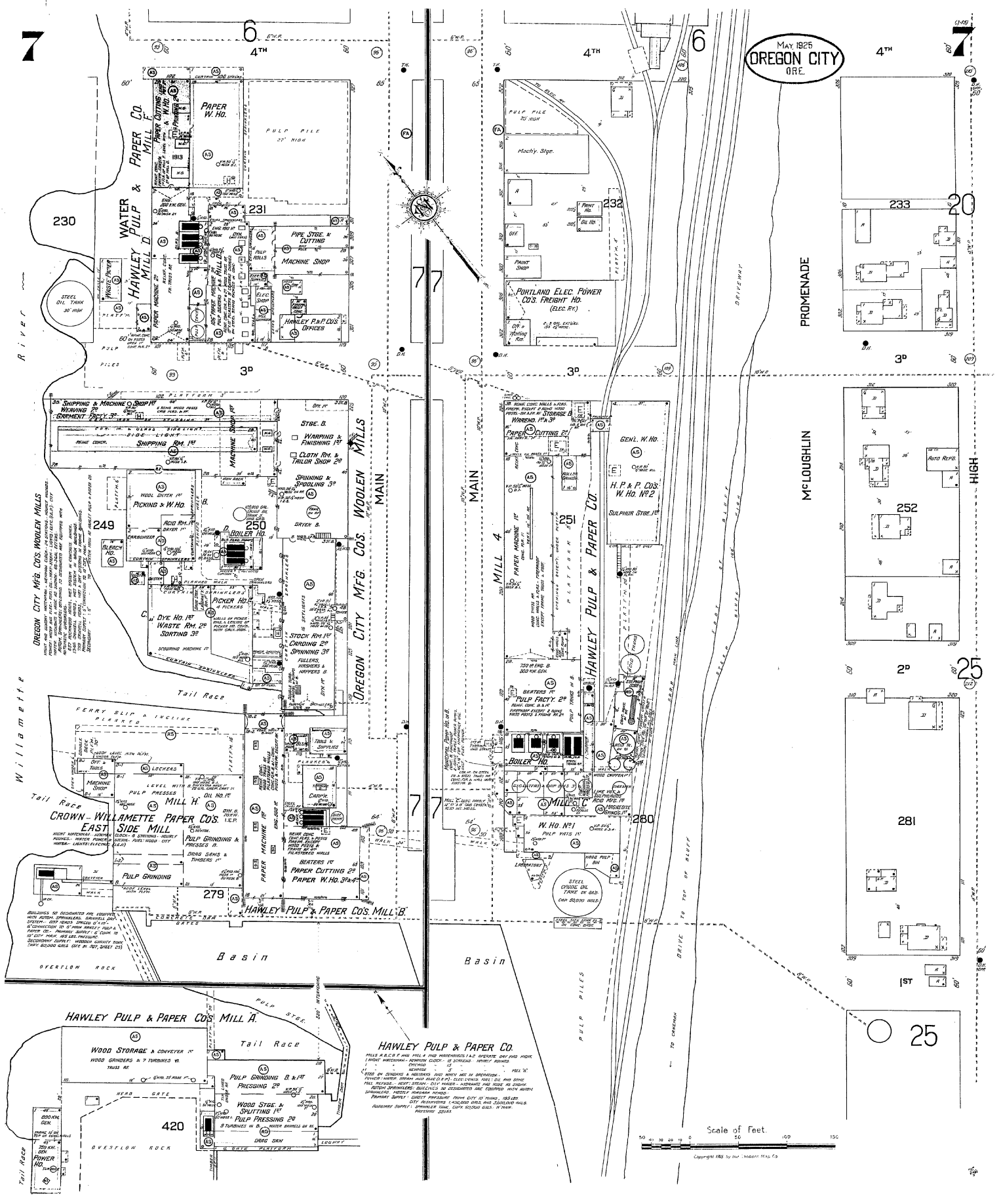

3
APRIL 1892
OREGON CITY
ORE.
Willamette River
WATER
MAIN
PROMENADE
HIGH
CENTER
ST.
7TH
4TH
5TH
6TH
SEE SHEET
CITY STABLES
LIVERY & FEED
LIVERMORE'S HOTEL
CHARMAN BROS
BLK.
M.E. CHURCH
ORE. & CAL. R.R.
INCLINE
TO BRIDGE
Scale of Feet.
SEE SHEET No 7

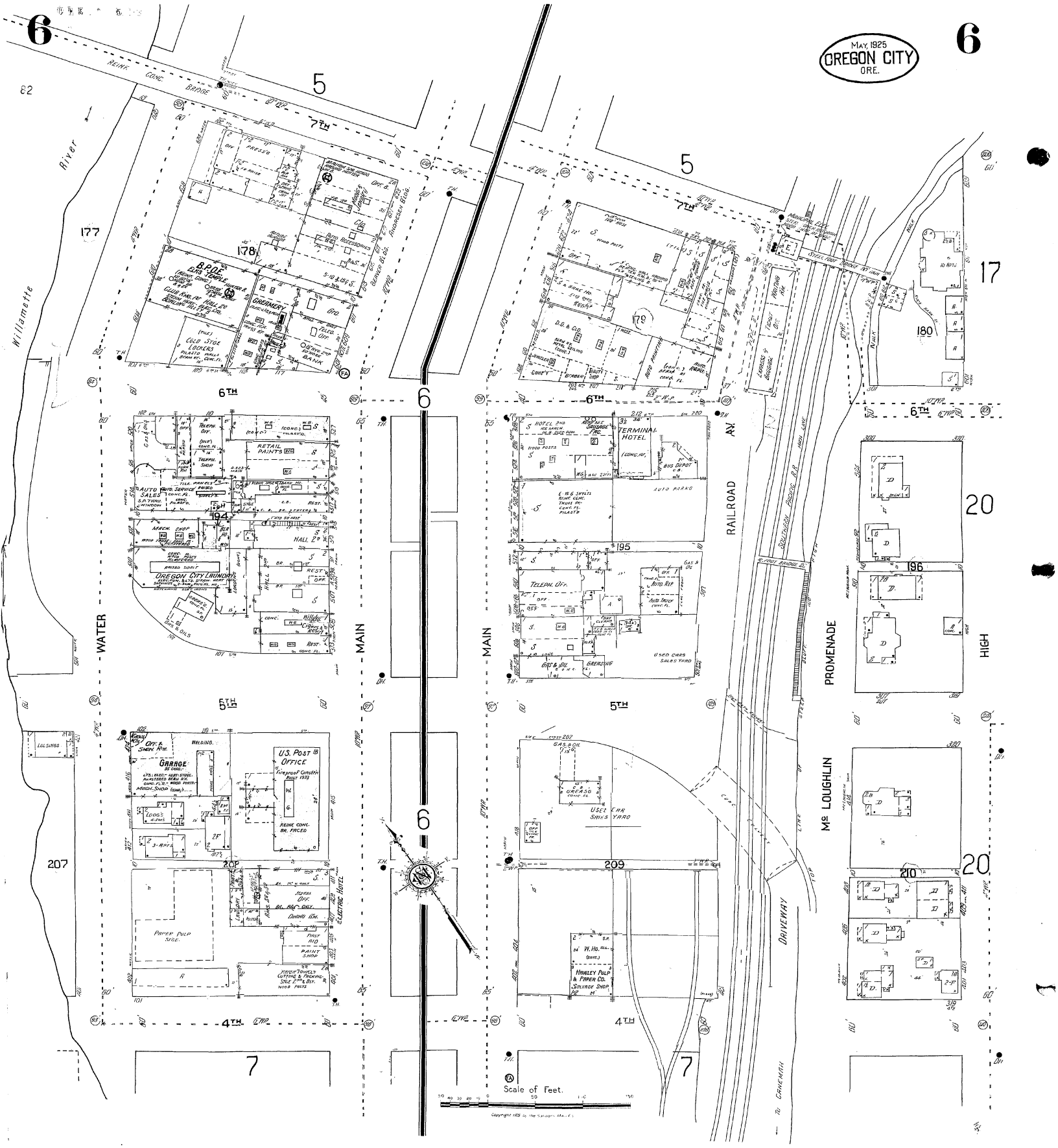

MAY 1900.
OREGON CITY
ORE.
13
9
5
7TH
M.E. CHURCH
25
6TH
WILHELM TELL HO.
Saloon
Stuyvesant House
26
1st BANK
Hardware & Stoves
Boots & Shoes
D.G. Clo. & G.F.G.
Stat'y & Cigars & P.O.
G.F.G. & Bazaar
Storage
5TH
PORTLAND HO.
Boarding & Rms.
Dressmkr. & Rooms
Rooms
Cigars Photo.
Lodgings
27
Rest.
Bicycle Repairing
W. H. YOUNG'S
LIVERY & FEED.
4TH
17
SCALE OF FEET.
4
3
MASONIC HALL 2d
Lodgings
Jewelry & Bicycles
I.O.O.F. HALL 2d
Drugs
Cycle Shop & Wall Paper
Bakery
Groc.
Saloon
Billiards & Cigars
Barber & Baths
Dining Rm.
Boarding
Foundry & Blksm.
Pattern Shop
Machine Shop
Hardw. & Stoves
Storage
Plumb.
OREGON CITY IRON WKS
ELECTRIC HOTEL
32
33
WATER
MAIN
(60' wide)
(St. widened)
PROMENADE
HIGH
THE WILLAMETTE
River
S.P.R.R. (SURVEY LINE)
S.P.R.R. DEPOT
Locust
Water
Steep
Main
Willamette
Western Transportation Co.
Ground Floor
Office
Out Ho.
Chimney
Engine & Boiler
Printing
Telephone
Express & Freight
Ticket Office
Waiting Room
Baggage & Freight
Express Office
Ticket Office & Waiting Room
Express Office & Freight Room
Ladies Waiting Room
Gents Waiting Room
Express & Freight Office
Freight Office
Freight Room
Express Office & Waiting Room
Ticket Office &

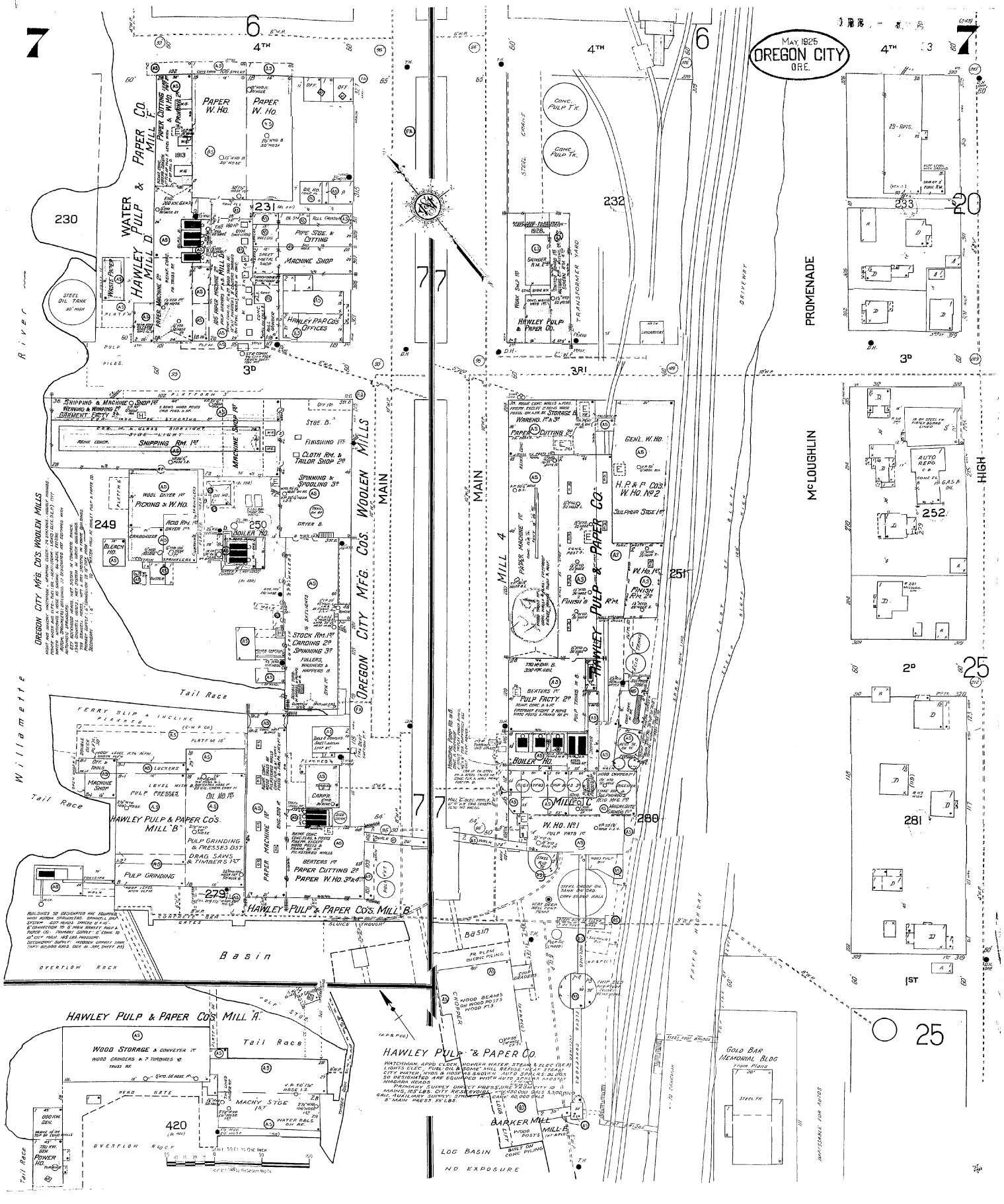

MAY 1900.
OREGON CITY
ORE.
17
13
14
Willamette River
4TH
3RD
MAIN
HIGH
WATER
PROMENADE
CLARK BLDG
EAST SIDE RAILWAY CO'S
ARMORY HALL, 2ND
Chine Laundry.
FEED STABLE.
C.L.IFF HO.
Boarding & Lodging.
O.F.D. Hose Ho. No 2.
OREGON CITY MFG. CO'S. WOOLEN MILL.
OREGON CITY MFG. CO'S. W. HO.
WOOL & PELTS.
PORTLD. FLOURG. MILLS CO'S
GRAIN ELEVATOR.
F.F.M. CO'S GRAIN W. HO. No. 1.
PORTLAND FLOURG. MILLS CO'S. MILL No. 2.
PORTLAND FLOURG. MILLS CO'S. MILL No. 1.
CITY WATER WORKS PUMP HO.
Flour & Feed Who.
Shipping Shed.
Shipping Ho. 1st Flour & Feed Storge 2d
GRAIN W. HO.
Looms 1st Storage 2d Spining, Spooly & Knitting 3d
Dye Rm 1st
Weaving 1st Carding 2d Spinning 3d
Wool Storage 2d Laboratory 1st
Beam Ho & Wool Pulling Steam Dry Rm
Boiler No.
Mill No. 1
Grinding 1st Wet Rin. 2d
Sawing
WILLAMETTE PULP & PAPER CO'S. MILL, Known as "STATION A."
PORTLAND FLOURING MILLS CO'S. MILL No. 1.
PORTLAND FLOURING MILLS CO'S. MILL No. 2.
OREGON CITY MFG. CO'S. WOOLEN MILL.
ROCKY POINT.
ROCKY POINT HIGH WATER FLOW.
375' OF WATER INTERVENING
ROAD TO CANEMAH.
BASIN
Scale of Feet.
0 50 100


16
NOV. 1911.
OREGON CITY
ORE.
10
10
7TH
6TH
5TH
4TH
WAGON ROAD.
WATER
MAIN
MAIN
PROMENADE
HIGH
River
Willamette
177
178
(5)
179
(25)
180
11
193
194
(4)
195
(29)
196
(33)
17
207
208
209
(27)
210
(32)
20
16
16
16
16
M.E. CHURCH 2.
L. ADAMS
Hall 2.
S.P.R.R.
Passenger & Freight Depot.
ELKS HALL
I.O.O.F. HALL 2.
WILLAMETTE HOTEL
(No Bar.)
PORTLAND HO.
ELECTRIC HOTEL
OREGON CITY FOUNDRY
Livery & Feed
Feed
Hay, Feed & Coal
Bl. Sm.
Fish
Bank
Hardw.
Furne.
Bakery
Lodgs.
Meat Mkt.
Grocs.
Drugs
Paint
Tailor
Boardg.
Garage
Laundry
Pattern Shop
Machine Shop
Tin Shop
Scale of Feet.
0 50 100 150
Aug 12 '57
Library of Congress


20
Nov. 1911.
OREGON CITY
ORE.
4TH 16
3RD
2ND
1ST
MAIN
WATER
PROMENADE
HIGH
RIVER
Willamette
Basin
Tail Race
Pulp Sluice
Scale of Feet.
Map Division
Aug 12 '55
Library of Congress
OREGON CITY MFG. CO'S. WOOLEN MILL
HAWLEY PULP & PAPER CO'S MILL "D"
CROWN-COLUMBIA PULP & PAPER CO'S "EAST SIDE MILL"
HAWLEY PULP & PAPER CO'S MILL "B"
HAWLEY PULP & PAPER CO'S. MILL "A". SEE REPORT.
CITY WATER WKS FILTERING & PUMPING PLANT
H.P.&P.CO'S W. HO. No 2
H.P.&P.CO'S W. HO. No 1
O.C.M.CO'S WOOL STGE.
OREGON CITY STEAM LAUNDRY
OREGON WATER POWER & RY CO'S FREIGHT HO.
Blsm & Wagon Shop
Garage
Chine Laundry
Feed
Boarding Lodging
Pipe Shop
Wood Chipper 1st
Wood Chipper 2nd
Pulp Grind'g
Pulp Dealers Air Sorting
Wood Stge & Splitting
Drag Saw
Sweat Ho.
Pottery
Mach. Shop
Dryer
Wearing 1st
Carding 2nd
Spinning
Fullers Washers & Wrapers
Sorting
Shafting & Mach'y
Pulp Grinding & Pressing
Pulp Wood Piles
Drive to Top of Bluff
Overflown Rock
231
232
233
(31)
(28)
249
250
25
(29)
252
(30)
280
281
(73)
279
420
(75)
307
(74)


7
6
4TH
MAY 1925
OREGON CITY
ORE.
PAPER W. HO.
PULP PILE
72' HIGH
WATER
PULP &
PAPER CO.
HAWLEY
MILL D
231
230
STEEL OIL TANK 30' HIGH
PIPE STGE. & CUTTING
MACHINE SHOP
HAWLEY P. & P. CO'S. OFFICES
3D
Machy. Stge.
232
PAINT SHOP
PORTLAND ELEC. POWER CO'S. FREIGHT HO. (ELEC. RY.)
233
PROMENADE
DRIVEWAY
20
3D
SHIPPING & MACHINE SHOP 1ST
WEAVING 2D
GARMENT DRY'G. 3D
STGE. B.
WARPING & FINISHING 1ST
CLOTH. RM. & TAILOR SHOP 2D
SPINNING & SPOOLING 3D
SHIPPING RM. 1ST
MACHINE SHOP 1ST
WOOL DRYER 1ST
PICKING & W. HO.
ACID RM. 1ST
DRYER 1ST
BOILER HO.
249
250
BLEACH HO.
DYE HO. 1ST
WASTE RM. 2D
SORTING 3D
PICKER HO.
STOCK RM. 1ST
CARDING 2D
SPINNING 3D
FULLERS, WASHERS & WHIPPERS 2D
OREGON CITY MFG. CO'S. WOOLEN MILLS
OREGON CITY MFG. CO'S. WOOLEN MILLS
MAIN
MAIN
MILL 4
HAWLEY PULP & PAPER CO.
PAPER CUTTING 2D
STORAGE B.
WAREHD. 1ST & 3D
GEN'L. W. HO.
H. P. & P. CO'S. W. HO. NO. 2
SULPHUR STGE. 1ST
251
PAPER MACHINE 4TH
BEATERS 1ST
PULP FACTY. 2D
BOILER HO.
MILL C
W. HO. NO. 1
PULP VATS 1ST
280
LABORATORY
STEEL CRUDE OIL TANK OR GALV. CAP. 50,000 GALS.
McLOUGHLIN
HIGH
AUTO REPR.
252
2D
25
281
1ST
Tail Race
FERRY SLIP & INCLINE PLANKED
Willamette River
CROWN-WILLAMETTE PAPER CO'S. EAST SIDE MILL
MACHINE SHOP
OFF'S & TOOLS
LOCKERS
PULP PRESSES
MILL H.
OIL HO. 1ST
PULP GRINDING & PRESSES 2D
DRAG SAWS & TIMBERS 1ST
PULP GRINDING
PAPER MACHINE 1ST
BEATERS 1ST
PAPER CUTTING 2D
PAPER W. HO. 3FL. 4
279
HAWLEY PULP & PAPER CO'S. MILL B.
TOOLS & SUPPLIES
CARPT. SHOP
WOOD CHIPPER
ACID HSE. 1ST
CHROMESITE BRICK 1ST
LIME VOL. & SULPHURIC ACID HSE. 1ST
MILL C
W. HO. NO. 1
PULP VATS 1ST
280
HEAD PULP BIN
Basin
Basin
OVERFLOW ROCK
PULP PILES
DRIVE TO TOP OF BLUFF
TO CANEMAH
HAWLEY PULP & PAPER CO'S. MILL A.
Tail Race
WOOD STORAGE & CONVEYER 1ST
WOOD GRINDERS & 7 TURBINES 1ST
PULP GRINDING B. & 1ST PRESSING 2D
WOOD STGE. & SPLITTING 1ST
PULP PRESSING 2D
8 TURBINES IN B.
DRAG SAW
HEAD GATE
TAIL GATE
PLATFORM
420
POWER HO.
OVERFLOW ROCK
Tail Race
HAWLEY PULP & PAPER CO.
MILLS A, B, C & F HAVE MILL A PIPE WAREHOUSES 1 & 2 OPERATE DAY AND NIGHT.
NIGHT WATCHMAN - ADAMSON CLOCK - 15 STATIONS - HOURLY ROUNDS.
OFFICES " 13 " "
WAREHOUSE " 3 " "
MILL "A"
BOSS ON DUTIES & HELPERS AND NIGHT HOE IN OPERATION.
POWER: WATER, STEAM AND ELEC. (H.P.) ELEC. LIGHTS. FUEL: OIL AND SOME COAL REFUSE. HEAT: STEAM. OILY WASTE - ASHPANS AND HOSE AS SHOWN.
AUTOM. SPRINKLERS: BUILDINGS NO DESIGNATED ARE EQUIPPED WITH AUTOM. SPRINKLERS. MOSTLY ADAMSON HOSE.
PRIMARY SUPPLY: GRAVITY PRESSURE FROM CITY OF TIGARD, 185,000 CITY RESERVOIRS 1 440,000 GALS. AND 2 GROUND HOLDS.
AUXILIARY SUPPLY: SPRINKLER TANK, COPR. 50,000 GALS. IN TRAM. PRESSURE 120 LBS.
STEEL PIER UPPER CL. ON CONC. BASE
Scale of Feet.
50 40 30 20 10 0 50 100 150
Copyright 1925 by the Sanborn Map Co.


6
MAY, 1925
OREGON CITY
ORE.
6
82
River
Willamette
5
7TH
REINE CONC. BRIDGE
177
178
179
180
17
20
196
195
194
207
209
210
6TH
5TH
4TH
WATER
MAIN
RAILROAD
PROMENADE
HIGH
Mc LOUGHLIN
DRIVEWAY
B.P.O.E.
DREAMERY
OREGON CITY LAUNDRY
AUTO SALES
RETAIL PAINTS
HALL 2ND
TERMINAL HOTEL
GARAGE
U.S. POST OFFICE
Fireproof Construction 1913
ELECTRIC HOTEL
PAPER PULP STOR.
HAWLEY PULP & PAPER CO.
SALVAGE SHOP
USED CAR SALES YARD
TELEPH. OFF.
AUTO PARK
BILL DEPOT
BREAKING
To CANEMAH
Scale of Feet.
50 40 30 20 10 0 50 100 150


MAY, 1925
OREGON CITY
ORE.
4TH
PROMENADE
McLOUGHLIN
HIGH
MAIN
RIVER
Willamette
Tail Race
Basin
OVERFLOW ROCK
LOG BASIN
NO EXPOSURE
HAWLEY PULP & PAPER CO.
HAWLEY PULP & PAPER CO'S MILL 'A'
HAWLEY PULP & PAPER CO'S MILL 'B'
OREGON CITY MFG. COS. WOOLEN MILLS
PAPER W. HO.
PAPER CUTTING
MACHINE SHOP
PULP GRINDING
PAPER MACHINE
BOILER HO.
GEN'L. W. HO.
AUTO REPO
GOLD BAR MEMORIAL BLDG
PARKER MILL
230
231
232
233
249
250
251
252
279
280
281
420

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
(503) 986-0671
Fax (503) 986-0793
www.oregonheritage.org

September 20, 2012

Ms. Christina Robertson-Gardiner
City of Oregon City Planning
PO Box 3040
Oregon City, OR 97045-0304

RE: SHPO Case No. 12-0225
Blue Heron Mill Site
Updated Determination of Eligibility
Oregon City, Clackamas County

Dear Christina,

Thank you for submitting the updated survey data for the buildings at the former Blue Heron Paper Mill site at Willamette Falls in Oregon City. Our comments are detailed below:

Overall, it appears there is no eligible historic district at the site. While a district approach to eligibility would normally make the most sense for a property like this, it is difficult for the site to convey the historic paper-making processes because there have been so many additions and alterations over time to accommodate modern products and technologies. For this reason, we assessed each building and structure for individual eligibility, and based our concurrences on the information received by your office in February 2012.

All properties are located at 419 Main Street, Oregon City. National Register status codes are as follows:

Eligible/Significant = ES
Not Eligible/Non-Contributing = NC
Not Eligible/Out of Period = NP
Undetermined/Lack of Info = UN

- No. 4 Paper Machine Building - ES
- Mill "H" - NP
- Mill "D" Warehouse - ES
- Blue Heron Paper Office Building - UN
- Security/First Aid Building - NP
- Butler Building - NC
- No. 3 Paper Machine Building – ES

- Mill "O" – ES
- Carpentry Shop - ES
- Pipe Shop - NC
- Millwright Shop - NC
- Auto Shop - NC
- Woolen Mill Foundation - ES
- Water Filtration Plant - ES
- Mill "G" Boilers - ES
- No. 1 Paper Machine Building - ES
- Mill #1 Finishing Room - ES
- Mill "E" - NC
- Sulphite Plant - ES
- No. 4 Paper Machine Warehouse - ES
- Digesters - ES
- North Substation - NC
- South Substation - NC
- Mill "B " – ES
- De-ink ONP Repulper – NC
- Clarifier – NP
- Willamette Falls Dam – ES
- No. 2 Paper Machine Site – ES

Future investigations may reveal additional information about the properties listed above. If that happens we can always adjust the concurrences if necessary. For now, though, this is our assessment of the structures on the Blue Heron site, which matches up pretty well with your findings, with a few exceptions. Please give me a call if you have any questions or comments. Otherwise, I'm sure we will be in touch as we move toward a treatment plan or agreement document.

All best,

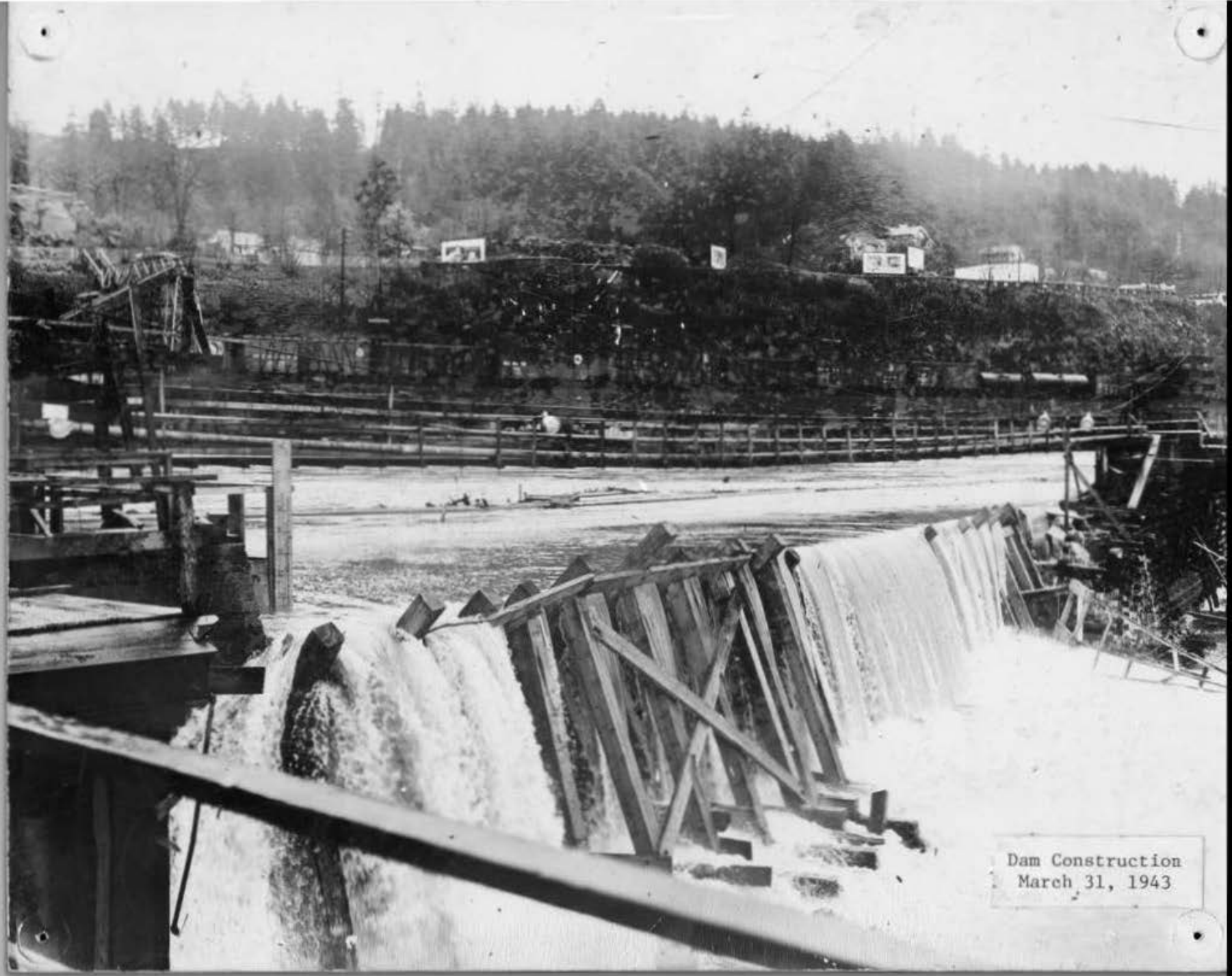
Chrissy Curran
Associate Deputy SHPO
(503) 986-0684
chrissy.curran@state.or.us

Willamette Falls Industrial Area Historic Photos

Blue Heron Photo Collection

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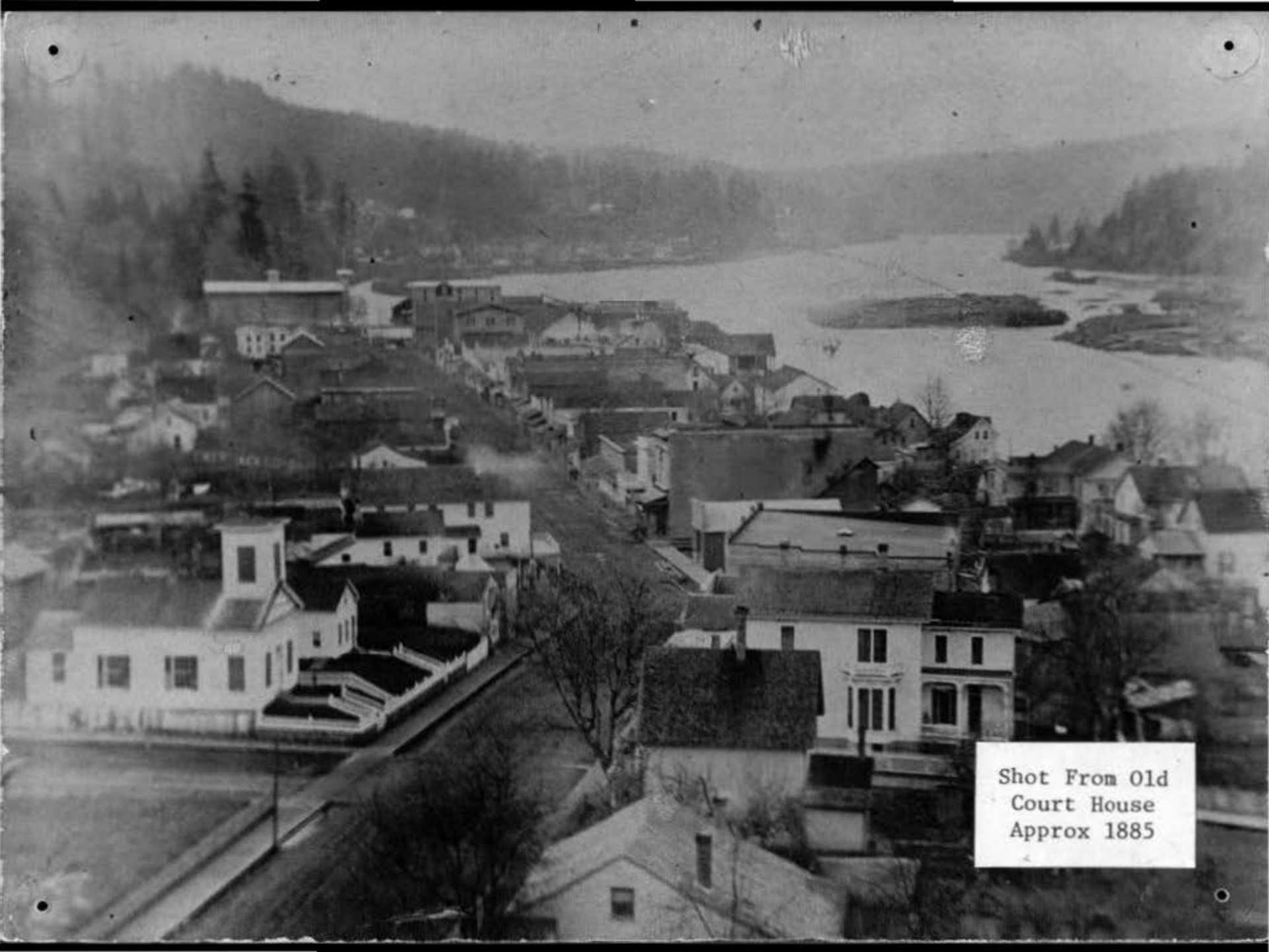

Approx 1890



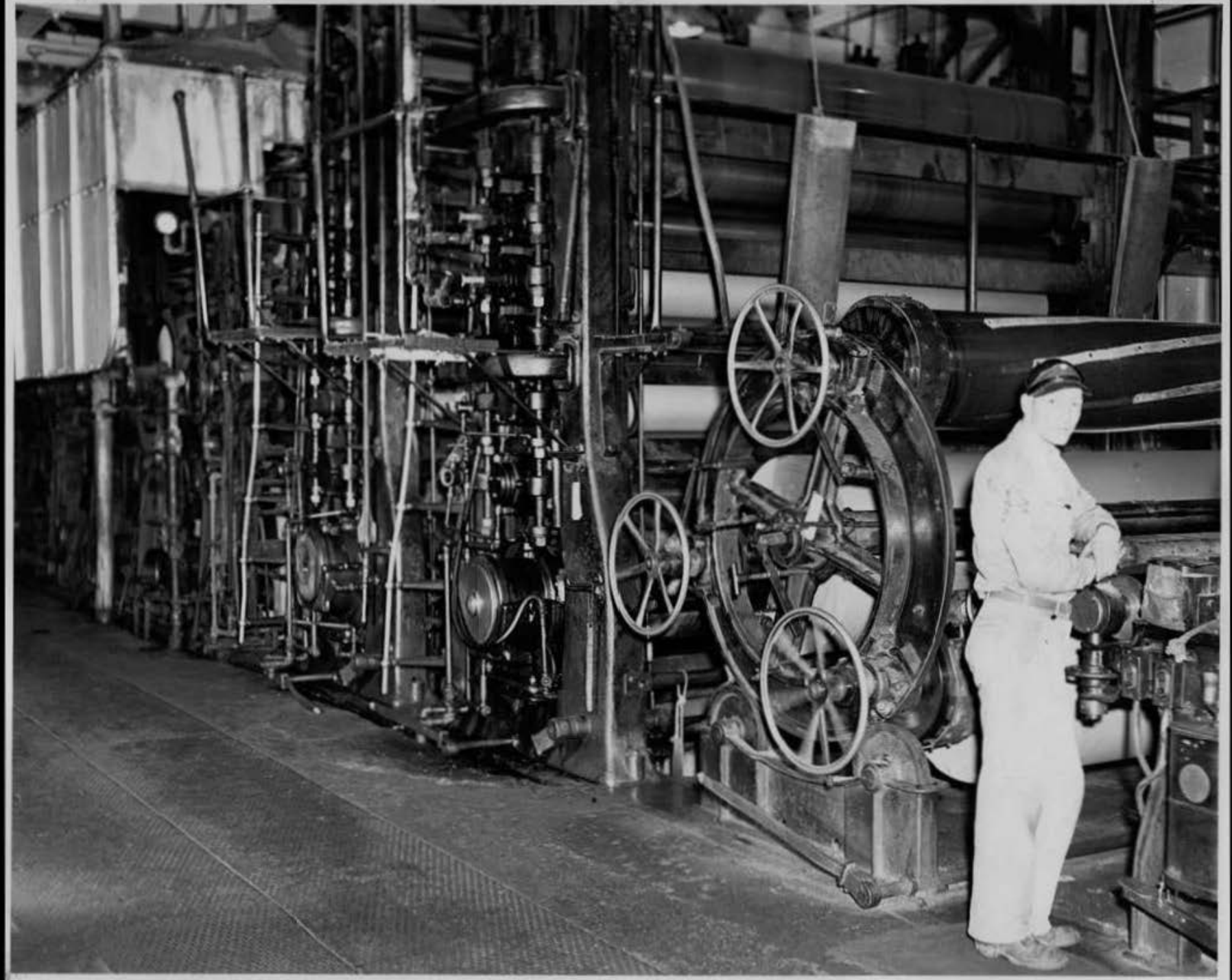
Dam Construction
March 31, 1943






Shot From Old
Court House
Approx 1885



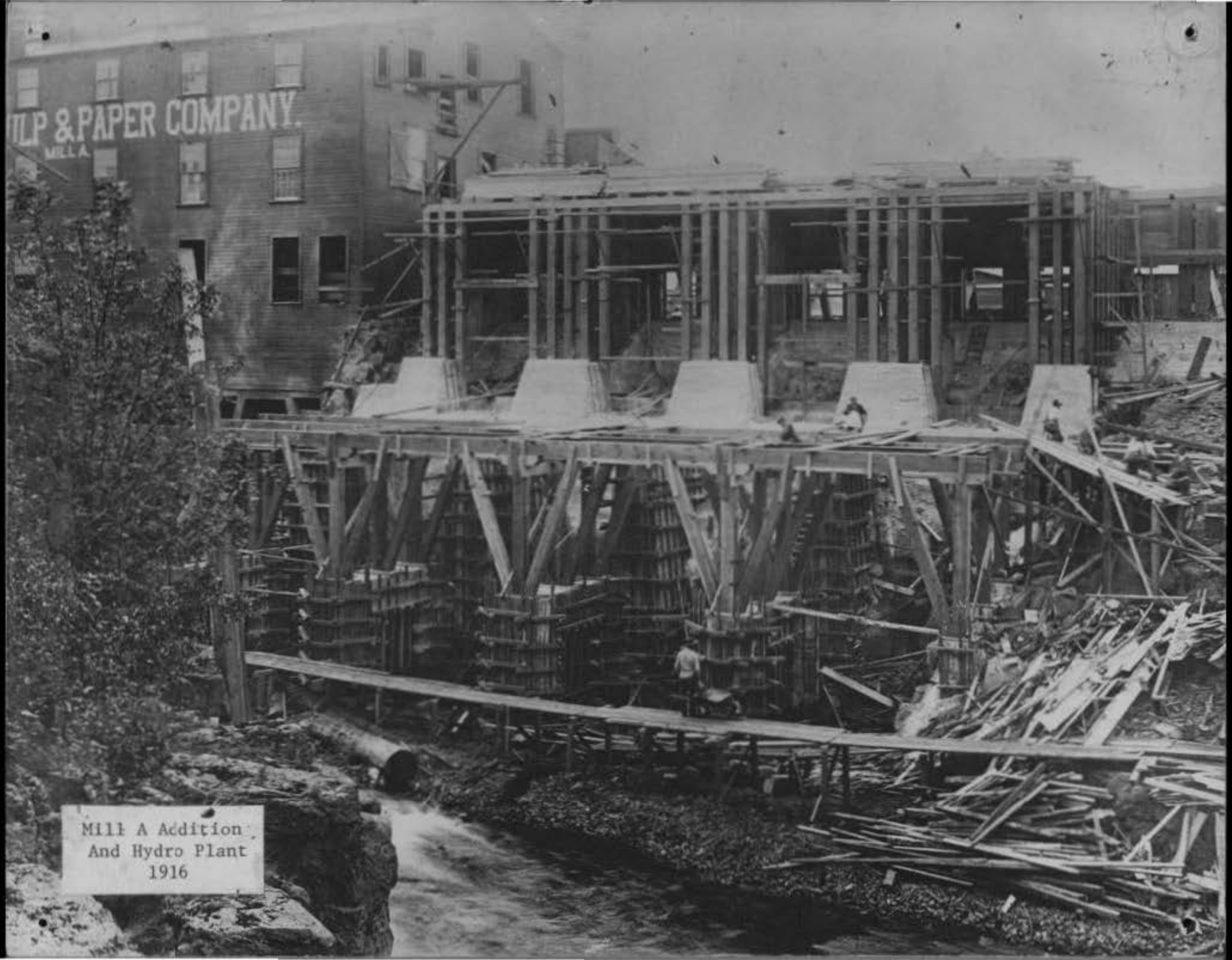



1904



Mill A Addition
And Hydro Plant
-Pouring Concrete-
1916





Mill A Addition
And Hydro Plant
1916


1943 FLOOD
HIGH WATER ON
WALK TO CANEMAH
JANUARY 1, 1943



LOGGER ON RAFT
MARCH 25, 1943



LOAD OF FRESH
CUT FARM WOOD
MAY 20,' 1943



LOG HAUL
MARCH 24, 1943


Coffer Dam
March 25, 1943



Dam Construction
March 31, 1943


HAWLEY PULP AND PAPER CO.
IS A
CAREFUL WORKER
ARE A COSTLY WASTE TO ALL OF US
BUT THEY COST YOU THE MOST
SAFETY FIRST
SAFETY ALWAYS
DEPARTMENT
SUPERVISOR
DAYS LOST TIME
ACCIDENTS
NO. 1 MACHINE
NICKELS
C. HELSBY
L. SMITH
ATTENTION!
MILL PAYROLL
17%+
TISSUE & TOWEL WOMEN
1943



Dam Construction
October 4, 1943

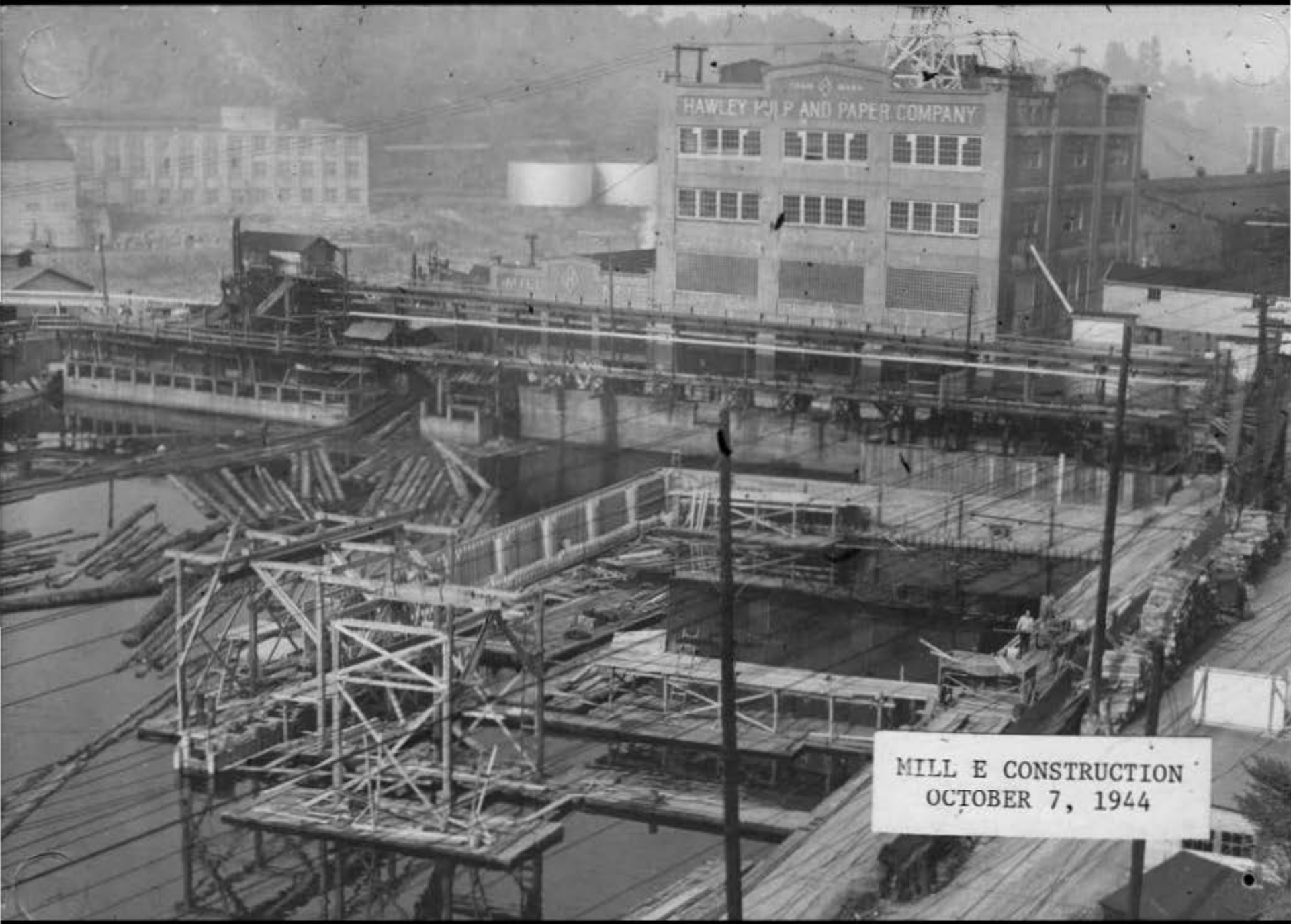


Dam From Bluff
December 15, 1943



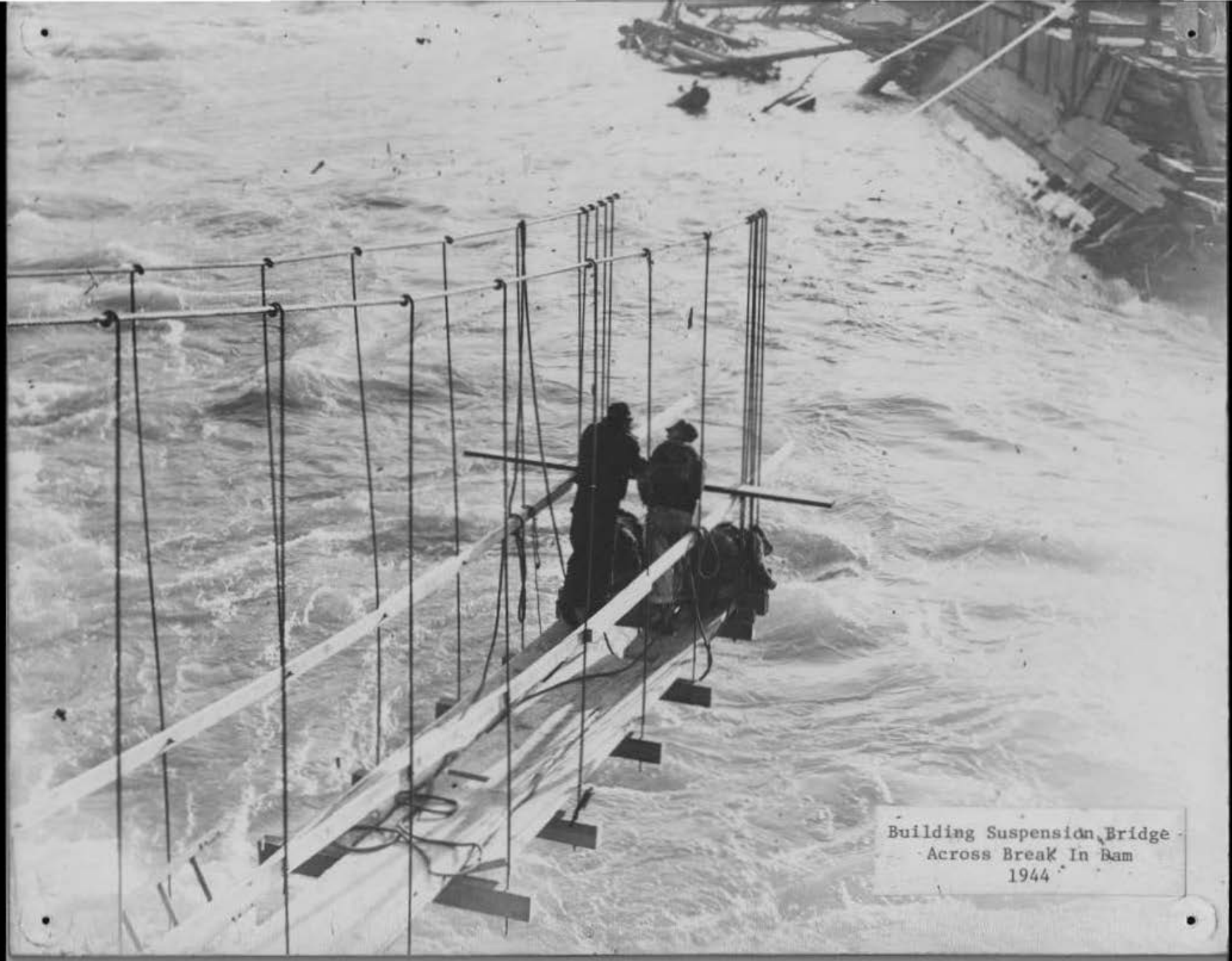
Water Over New Dam
January 2, 1944


MILL E CONSTRUCTION
OCTOBER 2, 1944


HAWLEY PULP AND PAPER COMPANY
MILL E CONSTRUCTION
OCTOBER 7, 1944

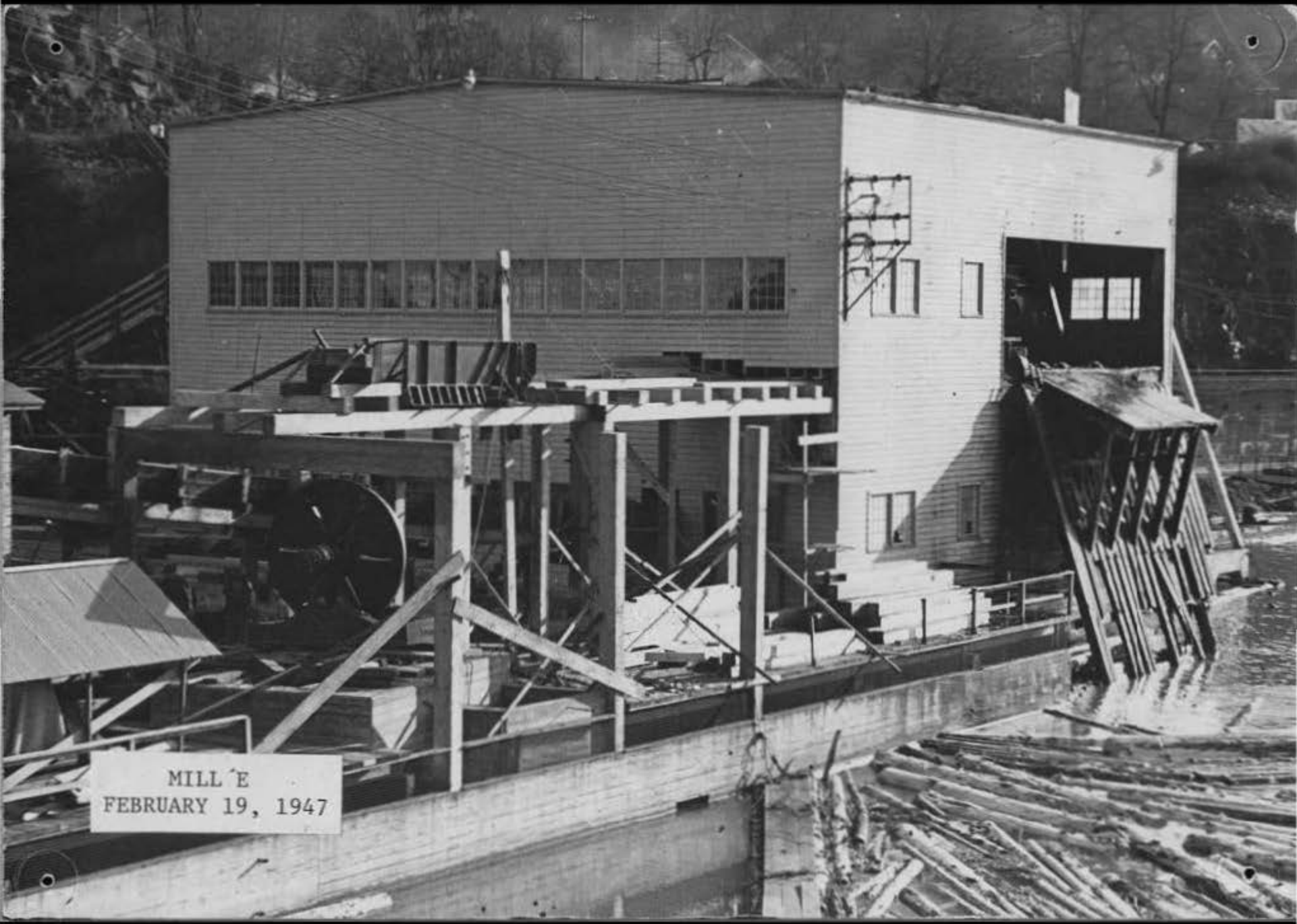


CARLOAD OF WOOD
AT HAWLEY'S
NOVEMBER 5, 1945



Building Suspension Bridge
Across Break In Bam
1944


MILL E ,
SEPTEMBER 12, -1947


MILL 'E
FEBRUARY 19, 1947


TISSUE & TOWEL DEPT.
1947


THIRD STREET
1945


MILL E,
SEPTEMBER 12, 1947


Third Street
1979



FINISHED ROLL OF NEWSPRINT
FOR LOS ANGELES TIMES
APRIL 20, 1948


ST. JOHNS
MOTOR EXPRESS
UN 3661
3270
6-26-51

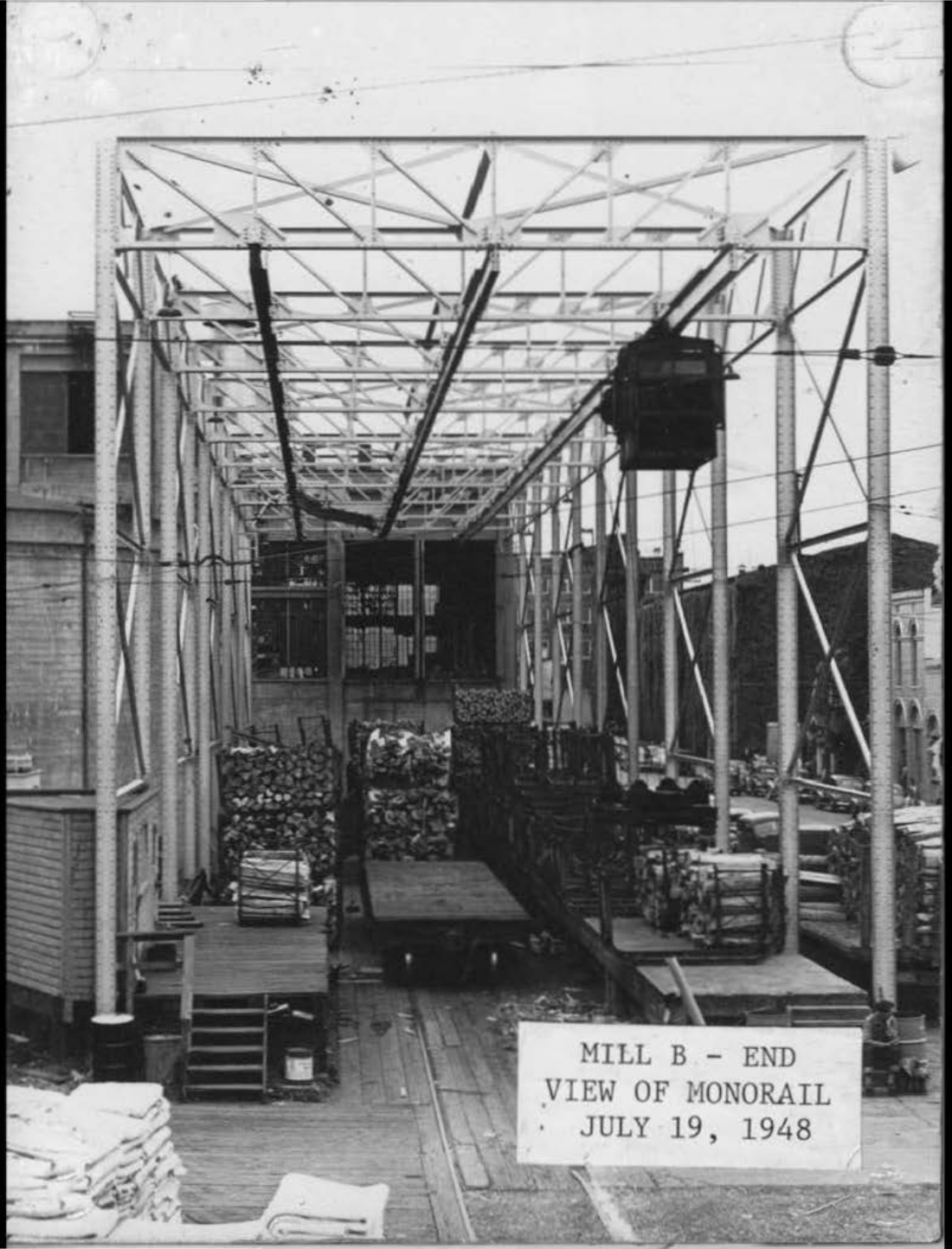




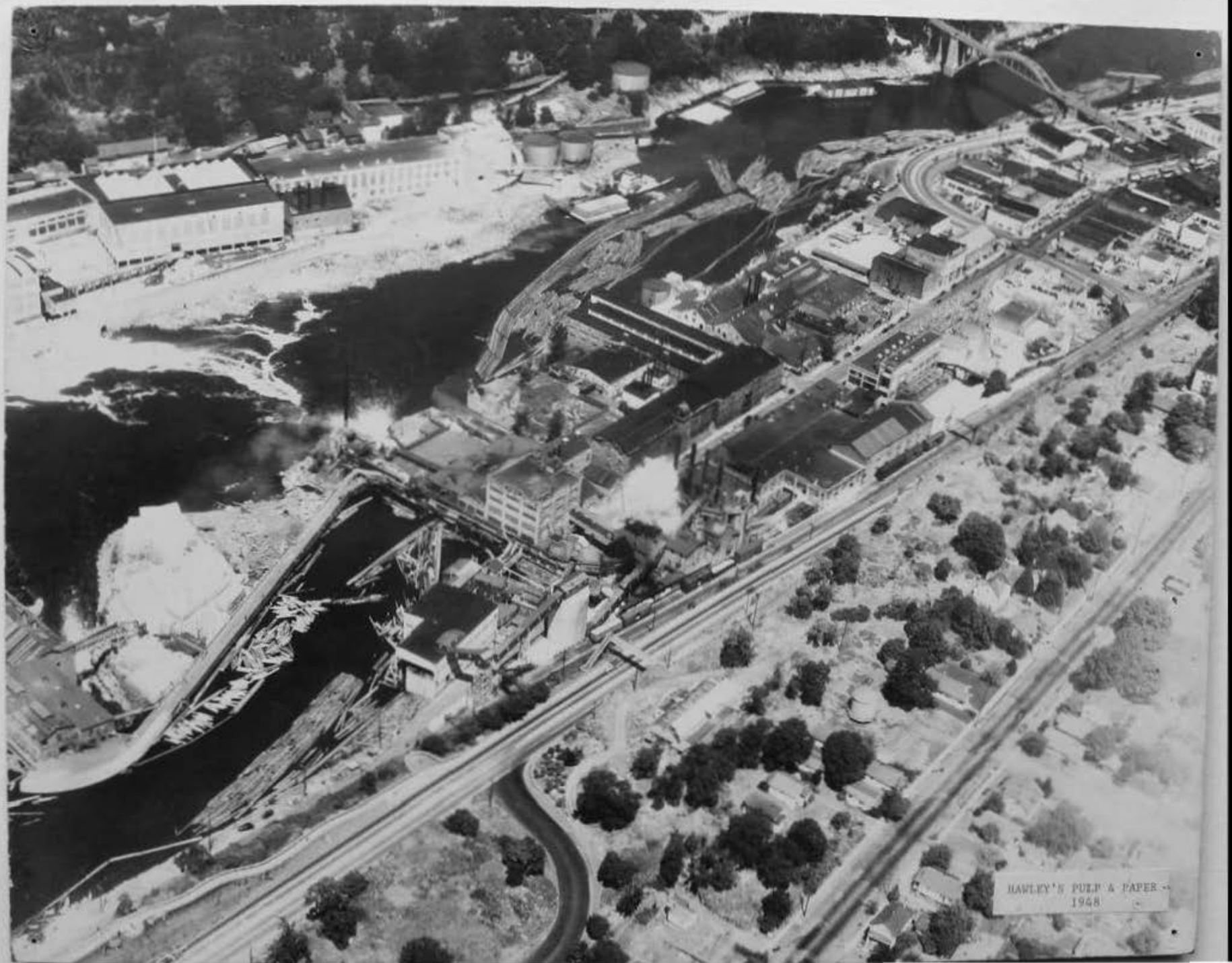




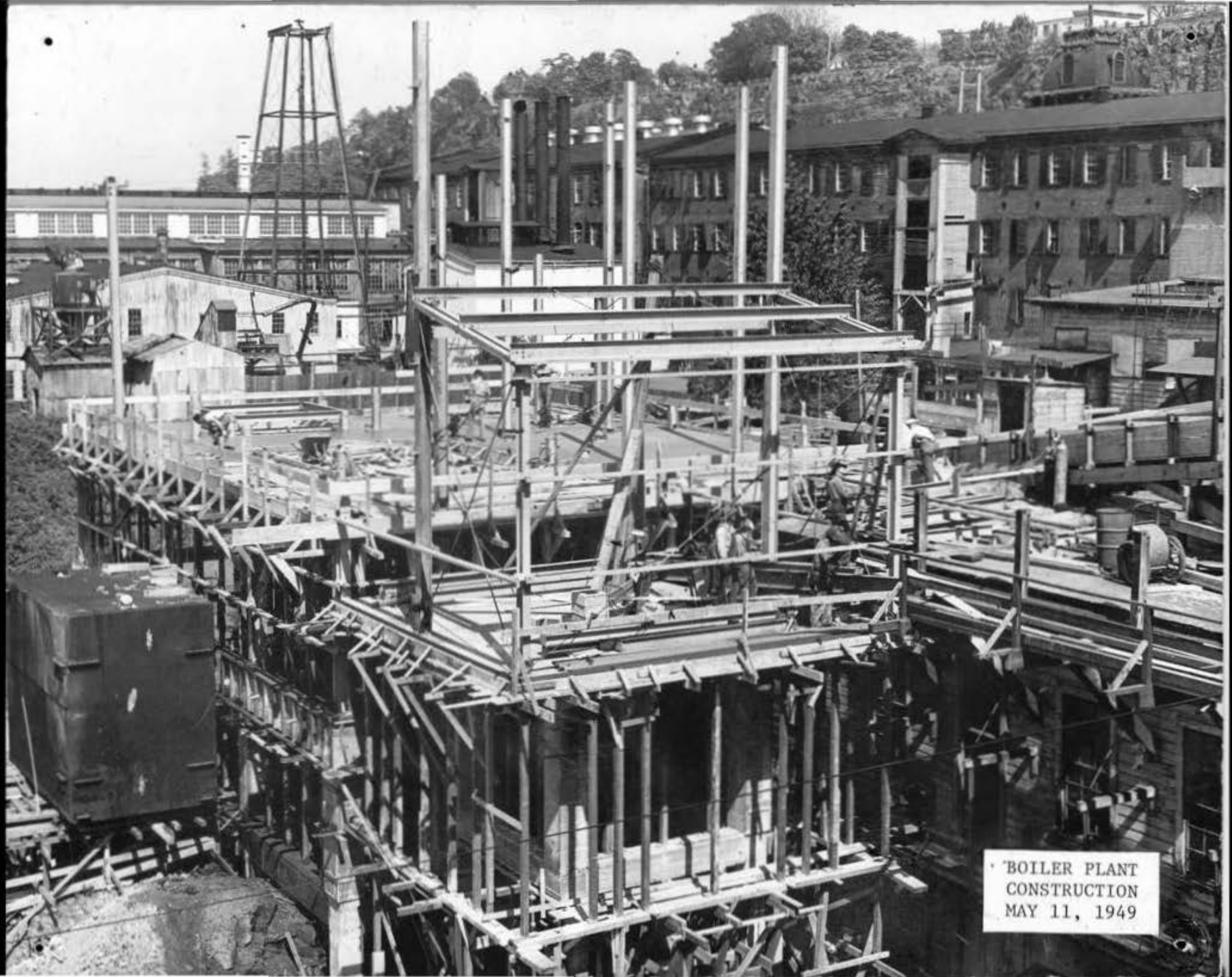

TOWEL INTERFOLDER
MAY 5, 1948


MILL B - END
VIEW OF MONORAIL
JULY 19, 1948


HAWLEY PULP AND PAPER CO.
AVERAGE LOG
AT HAWLEY'S
JUNE 7, 1948


HAWLEY'S PULP & PAPER --
1948


MILL E SAWMILL
"LOOKING NORTH
FROM CANEMAH WALK",
AUGUST 7, 1950


BOILER PLANT
CONSTRUCTION
MAY 11, 1949

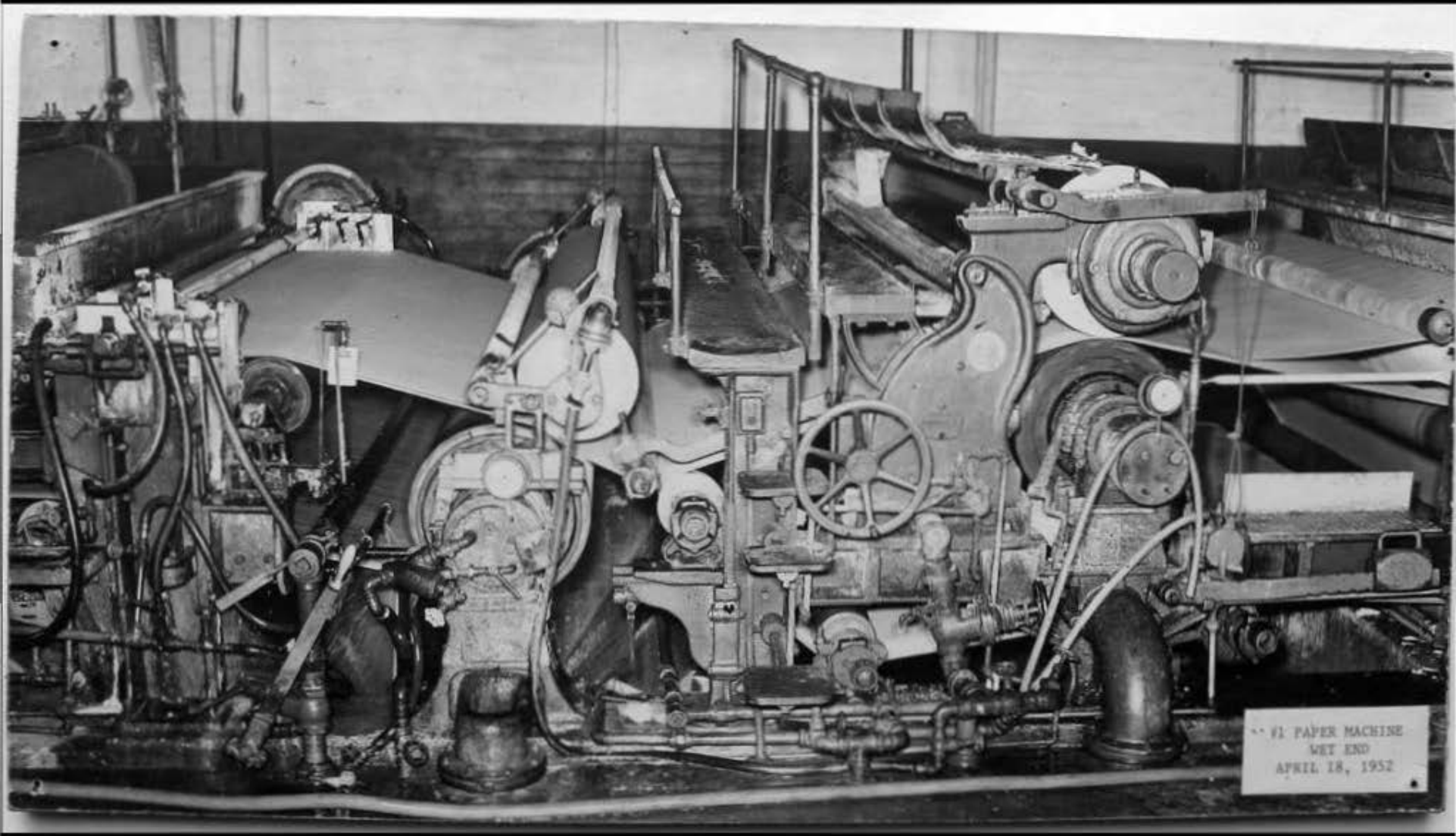


MILL E 8' LOGLIFT
FEBRUARY 23, 1951

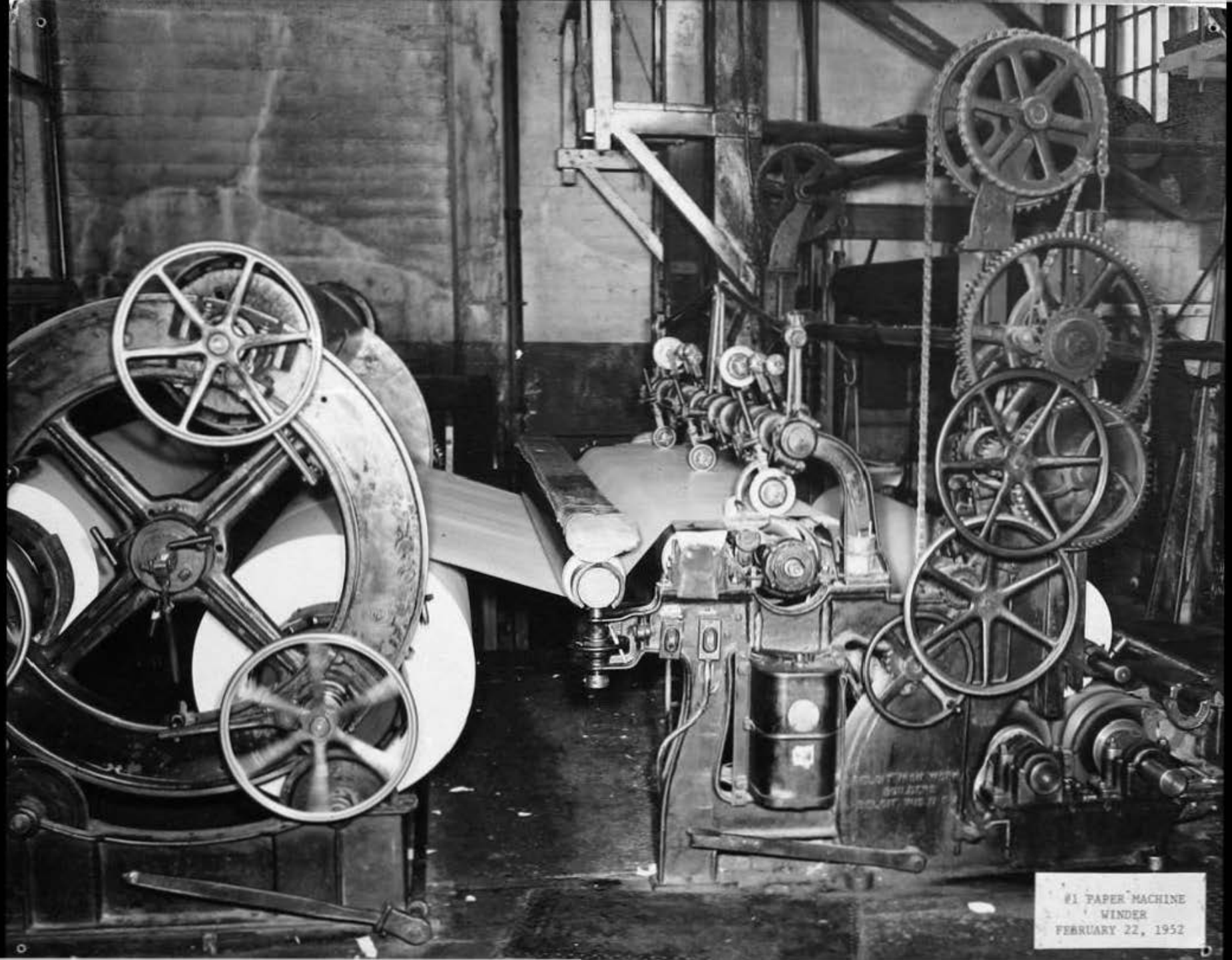


TRUCK DISCHARGING LIQUOR
IN PIT AT WILLAMETTE
APRIL 6, 1951


NO
SMOKING
NO
ADMITTANCE
KEEP
OUT
#1 PAPER MACHINE
CONSTRUCTION
APRIL 26, 1951


#1 PAPER MACHINE
WET END
APRIL 18, 1952

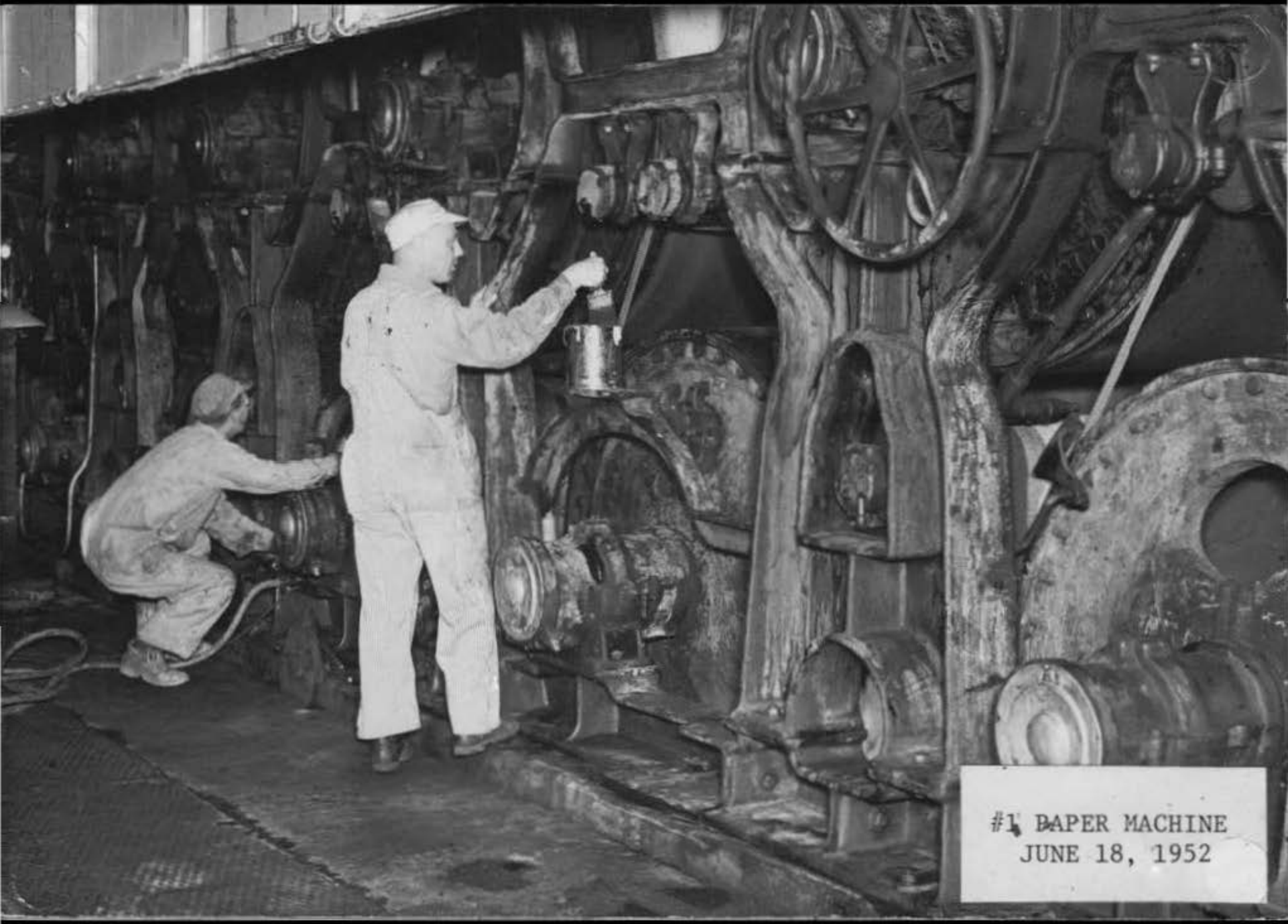

Bleach Plant Operation
March 13, 1952



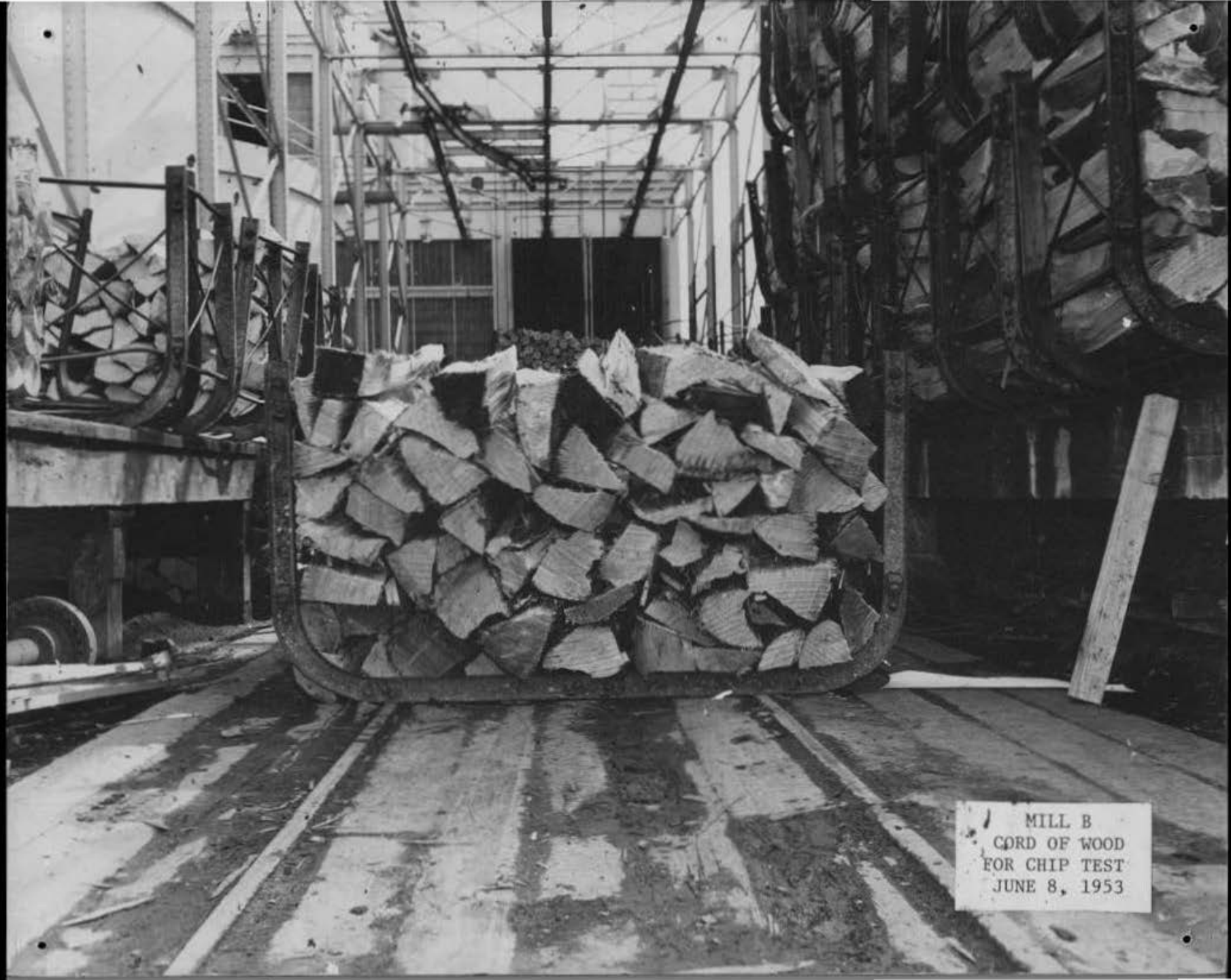
#1 PAPER MACHINE
WINDER
FEBRUARY 22, 1952



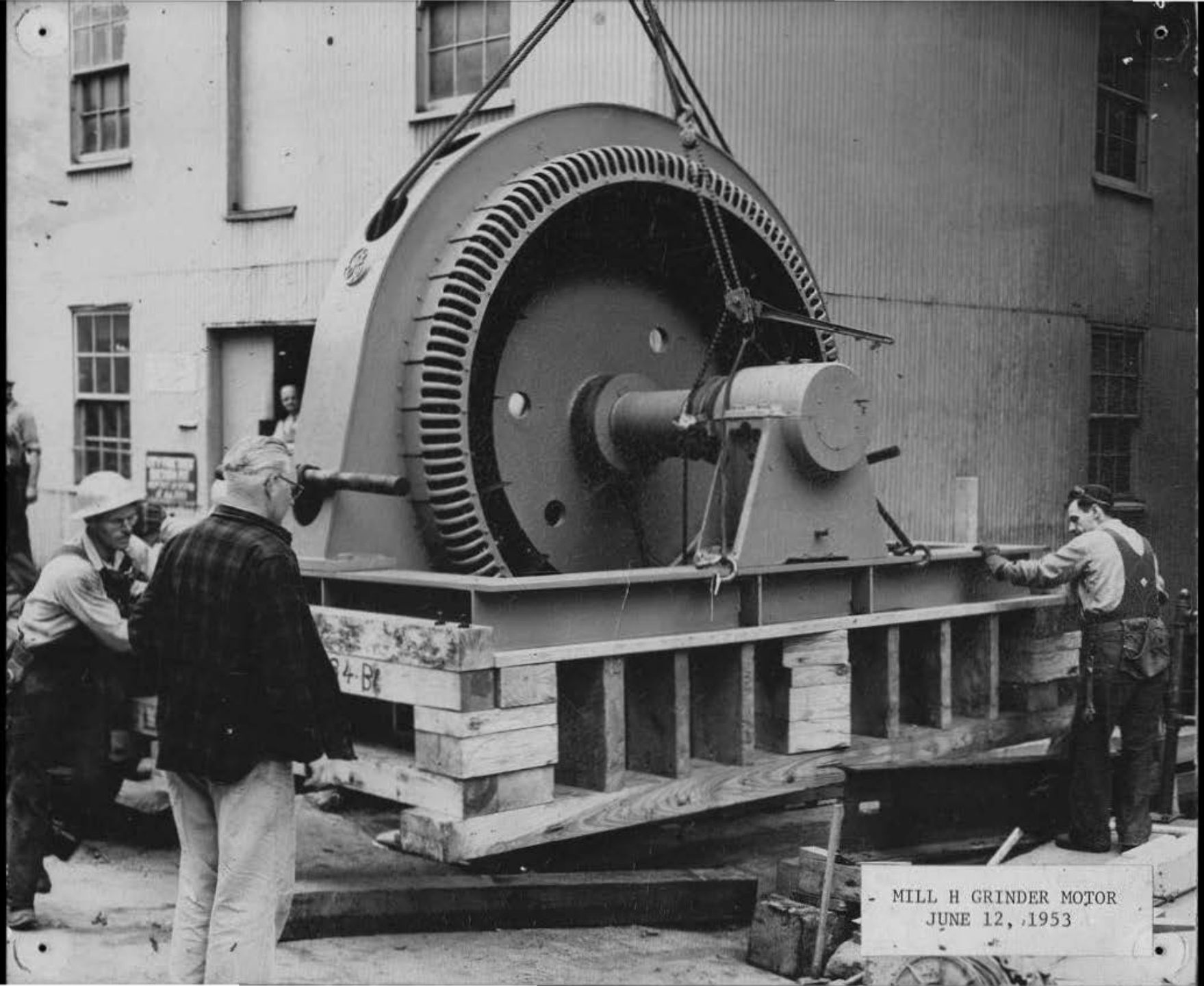
TISSUE & TOWEL DEPT.
OCTOBER 30, 1952


#1 PAPER MACHINE
JUNE 18, 1952


Bleach Plant Operation
March 23, 1953


MILL B
CORD OF WOOD
FOR CHIP TEST
JUNE 8, 1953


FILTER PLANT
START OF PROJECT
SEPTEMBER 17, 1953



- MILL H GRINDER MOTOR
JUNE 12, 1953


Bleach Plant Operation
March 23, 1953


MILL H GRINDER
OCTOBER 1, 1953



BUNDLING AND SORTING
LOGS AT CANBY DUMP
SEPTEMBER 18, 1953


FILTER PLANT SITE
AUGUST 3, 1953


FILTER PLANT - IN USE
AS VIEWED FROM MILL D ROOF
OCTOBER 12, 1954

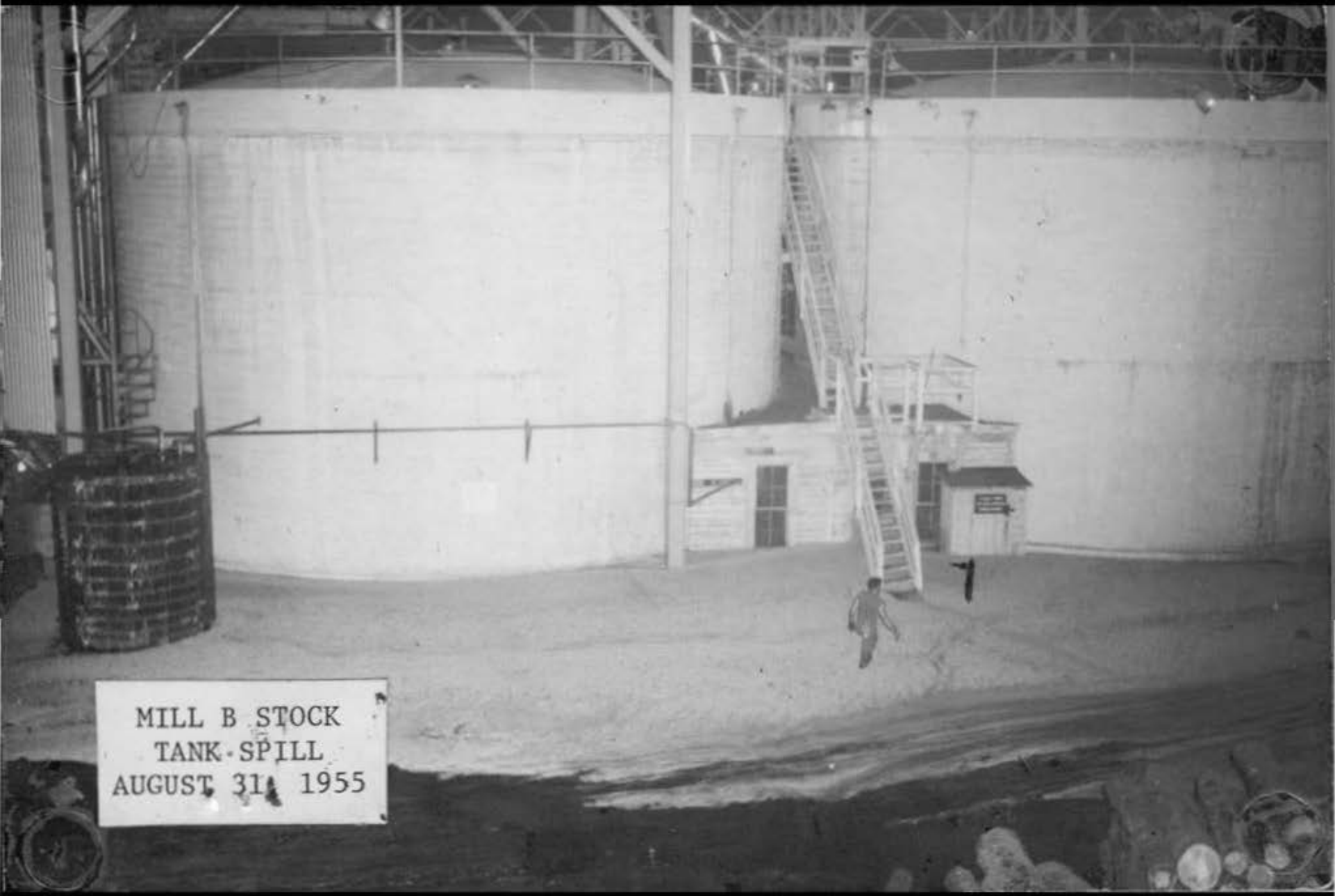

MAIN STREET
DECEMBER 17, 1953


FILTER PLANT
CONSTRUCTION
JANUARY 16, 1954



UNLOADING LARGE DWYER
TRUCK AT NEW CHIP BLOWER
OCTOBER 22, 1955


PUBLISHERS PAPER CO
1936


MILL B STOCK
TANK SPILL
AUGUST 31, 1955



MILL B STOCK
TANK SPILL
NOVEMBER, 1977

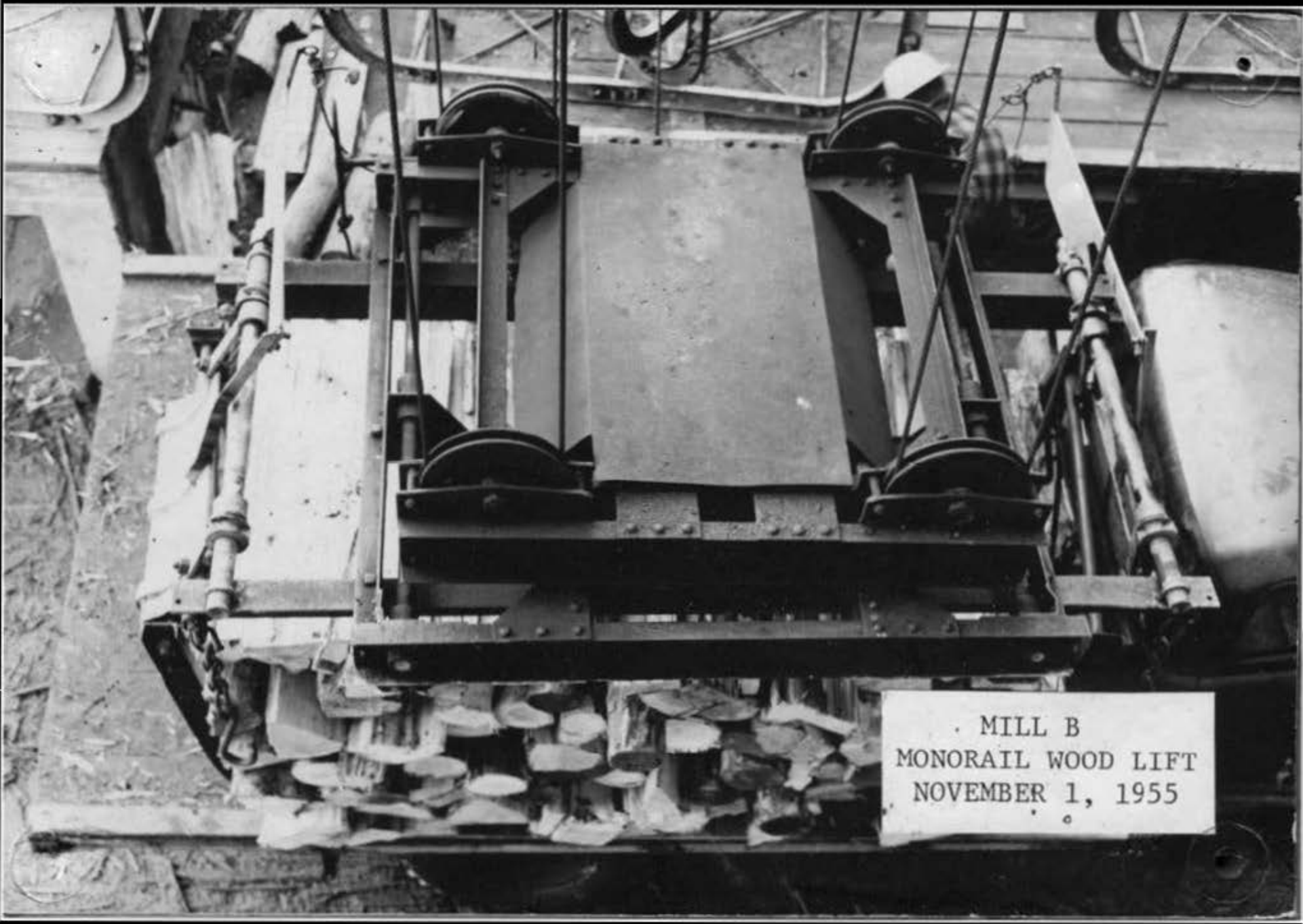


CHIP CONVEYOR SYSTEM
SEPTEMBER 22, 1955


MILL E "WOODLOADING"
OCTOBER 18, 1955

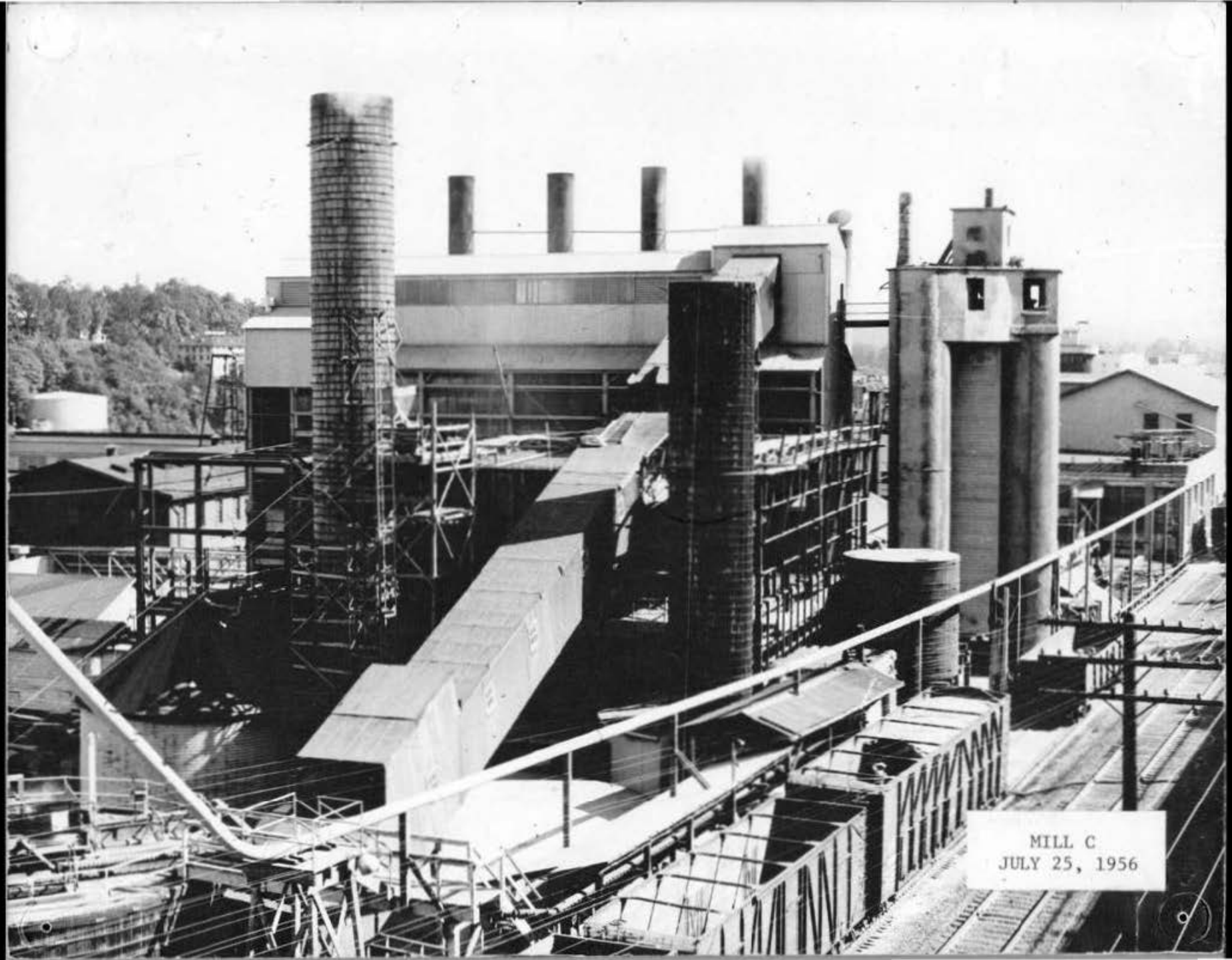


FIRST TRUCK LOAD OF
CHIPS TO NEW SYSTEM
NOVEMBER 8, 1955

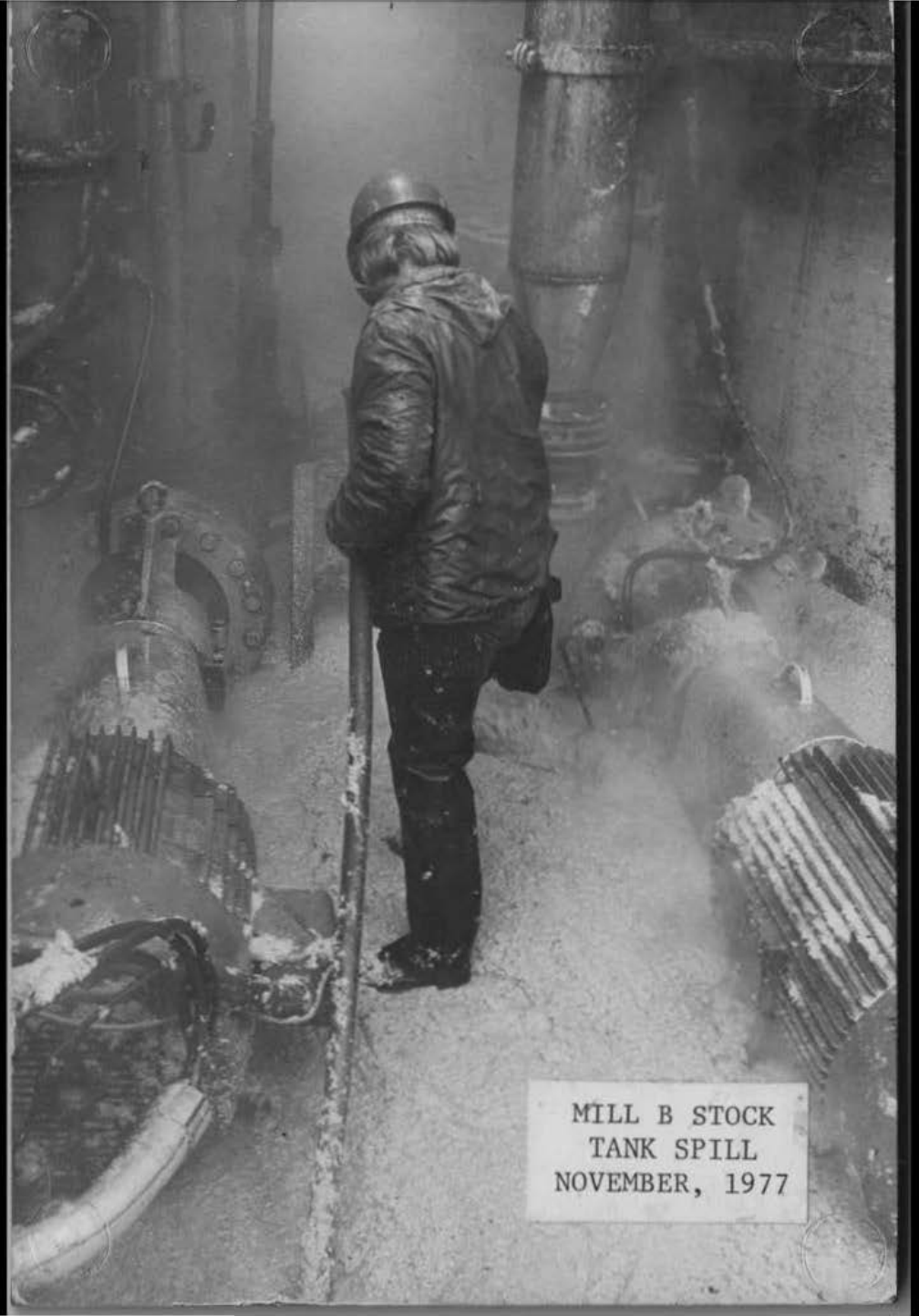

MILL B
MONORAIL WOOD LIFT
NOVEMBER 1, 1955


MILL C-
CONSTRUCTION
JUNE 22, 1956


Publishers' Paper Co.
MILL TOURS - MON. thru FRI. 10 a.m. & 2 p.m.
INSURANCE
DEAD END
MAIN STREET
MAY 10, 1966


MILL C
JULY 25, 1956


"NEW" MILL H GRINDER
OCTOBER 19, 1956


MILL B STOCK
TANK SPILL
NOVEMBER, 1977


MILL B STOCK
TANK SPILL
NOVEMBER, 1977


MILL C
CONSTRUCTION
AUGUST 10, 1956



OLD OREGON CITY
POST OFFICE
MAY 10, 1966



Toweling Personnel
1979


Interfolders
1979



Main Office
1979



Main Entrance
1979

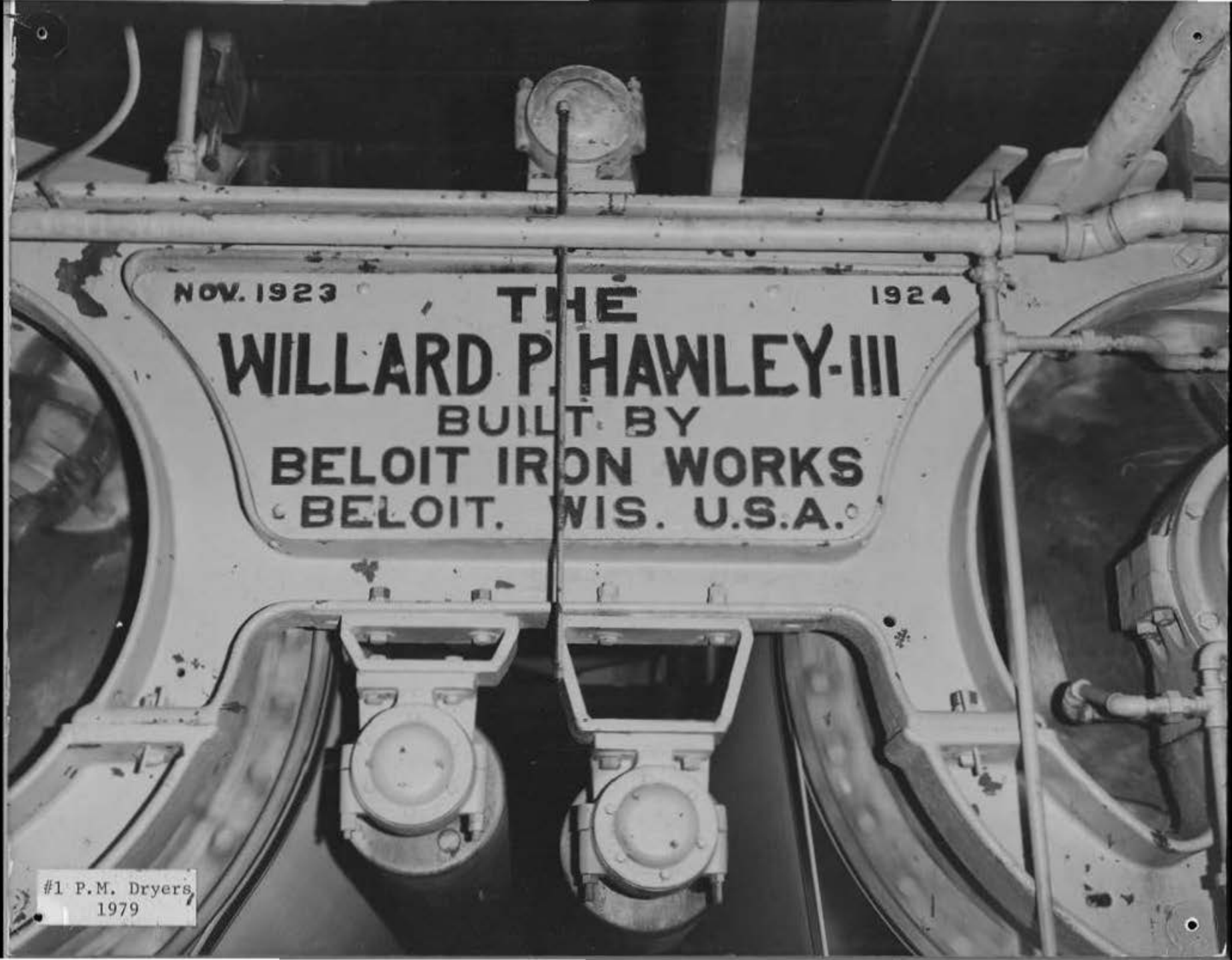


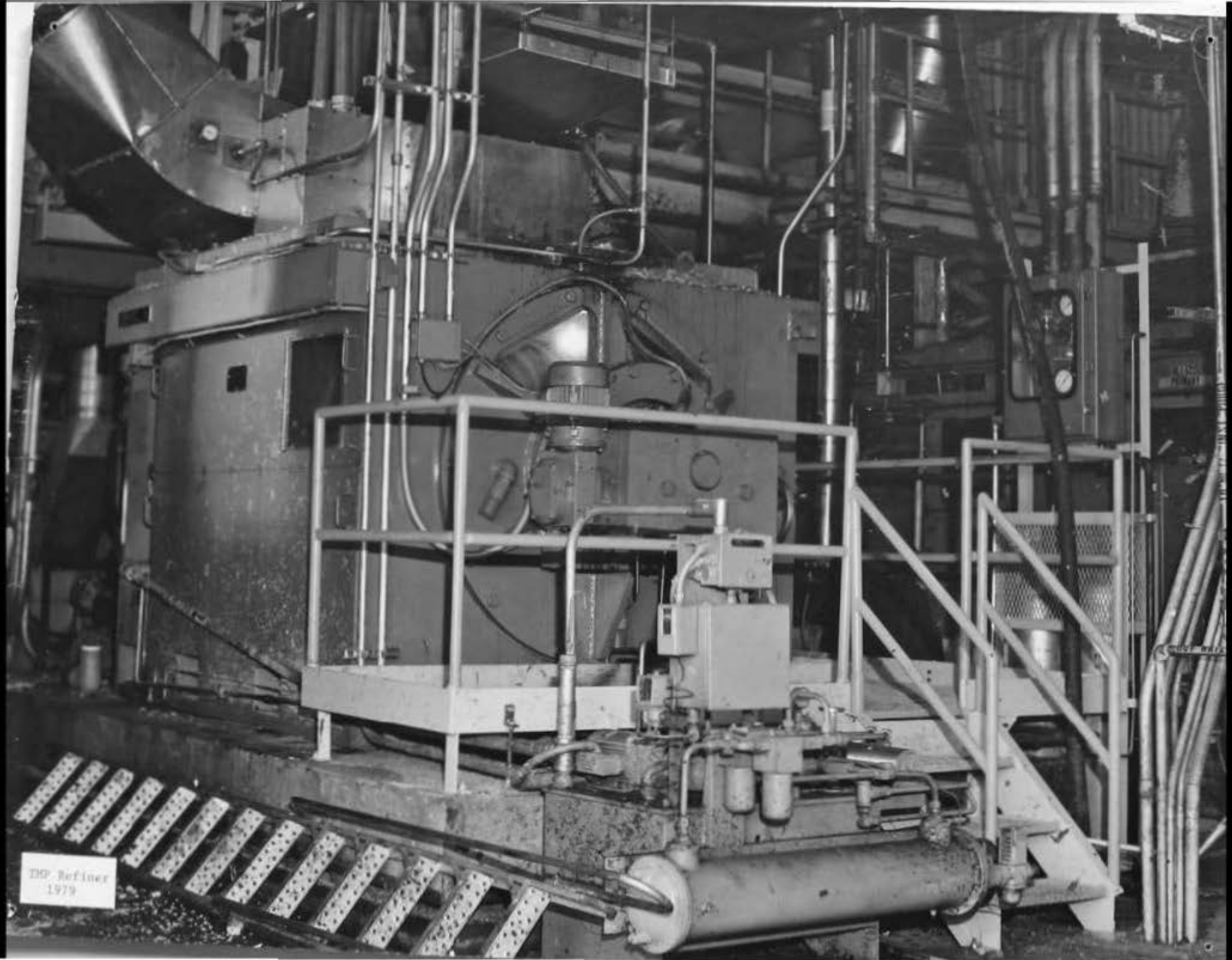
Chip Unloading Area
1979

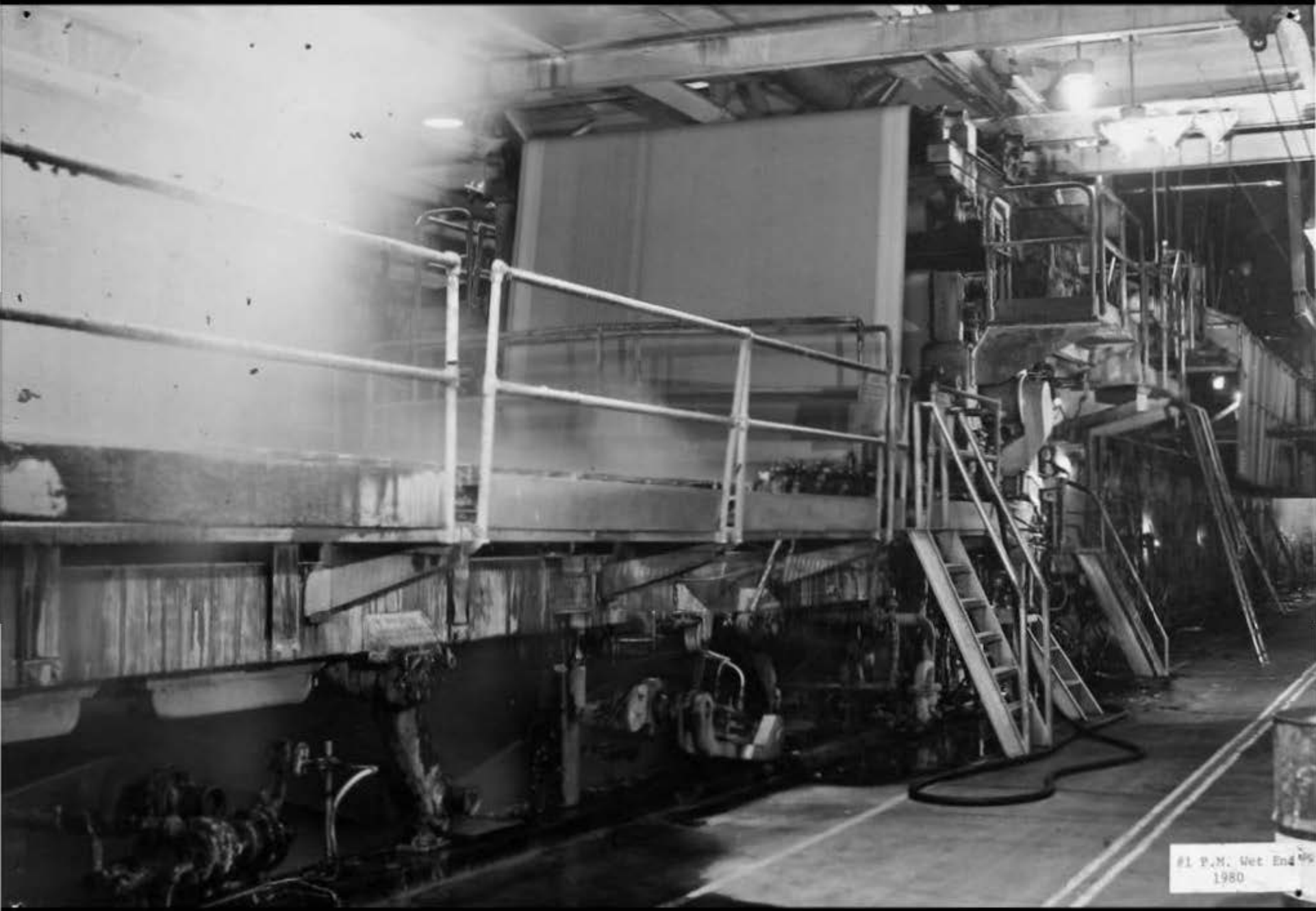

SOUTHERN
PACIFIC
Chip Storage
1979

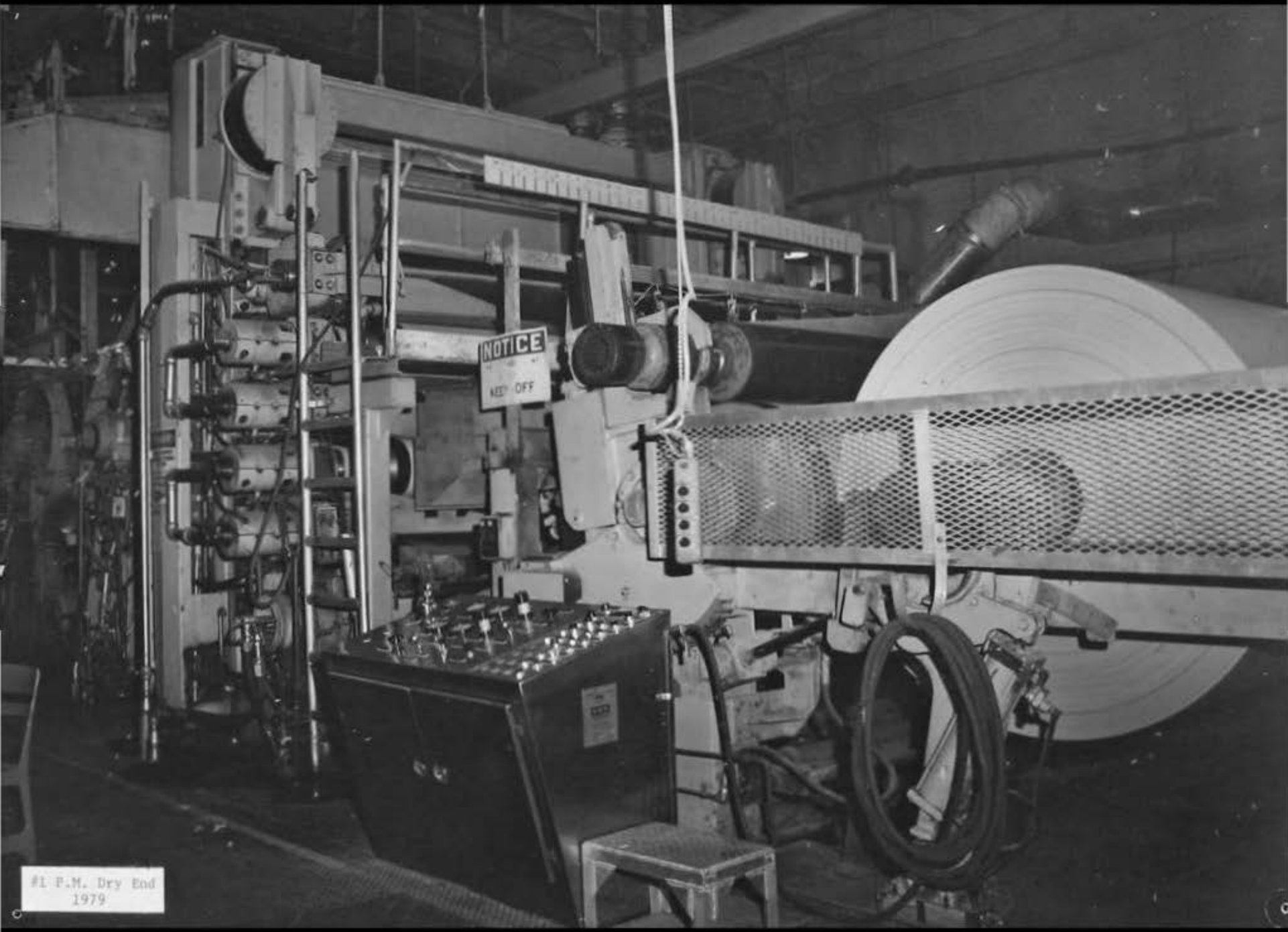

Oregon City Mill
1979


Mill G, Recovery
1979


NOV. 1923
THE
1924
WILLARD P. HAWLEY-III
BUILT BY
BELOIT IRON WORKS
BELOIT. WIS. U.S.A.
#1 P.M. Dryers
1979


TMP Refiner
1979


#1 P.M. Wet End
1980



#1 P.M. Dry End
1979



Newsroll being Loaded - 1979





Dam From Bluff
December 15, 1943



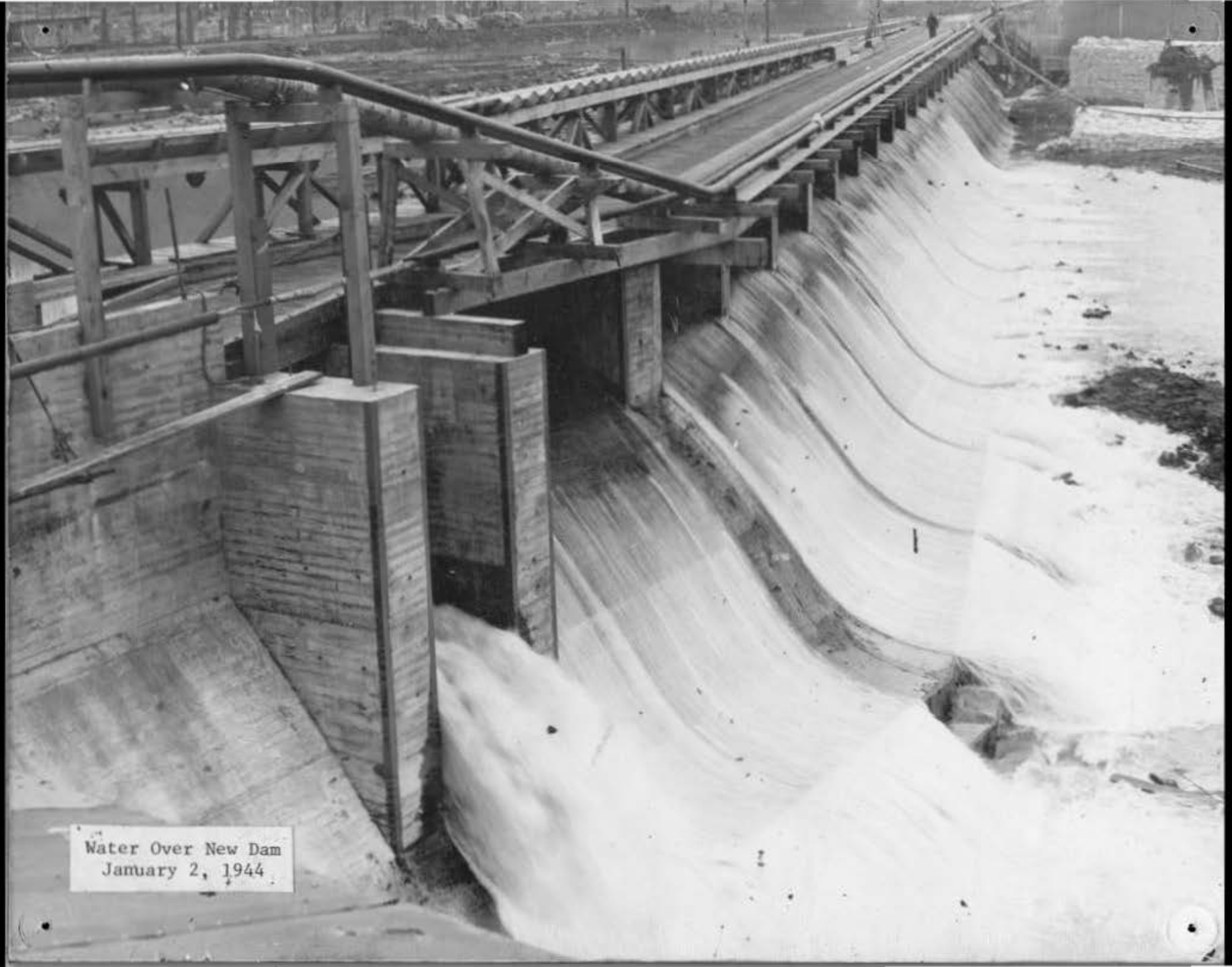
1-21-53 1:30 p.m. 5043



1-21-53 1:30 p.m. 5044







Water Over New Dam
January 2, 1944

Catalytic Value of the Willamette Falls Project

A report on the impact of transformation of Oregon City's former Blue Heron Mill site

September 2012



Metro | *Making a great place*

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EXECUTIVE SUMMARY

A partnership between Metro, Oregon City, Clackamas County, and the State of Oregon is currently investigating the purchase of the former Blue Heron Paper Mill in Oregon City, a project called the Willamette Falls Legacy Project. The 22-acre site is situated along the Willamette River adjacent to Willamette Falls, offering a rare opportunity for the acquisition of a scenic and historically significant site.

PURPOSE

The purpose of the Willamette Falls Catalytic Value report is to provide the partnership with an initial analysis of the value of redeveloping the site. Specifically, the report defines the spillover benefits that transformation of the site could bring to Oregon City, Clackamas County, the Metro region, and the State of Oregon.

Redevelopment of the site will be based on four agreed-upon values of the partnership:

1. Public access to the Falls
2. Cultural and historical interpretation
3. Environmental restoration
4. Economic development

While there are many possibilities for the future of the site, the four values point toward a site that is a community asset and destination due to the presence of Willamette Falls and its historical and cultural significance. As environmental restoration and public access are two of the four values, open space is expected to be included in any site plan. Also, the location of the site directly adjacent to historic downtown Oregon City makes it possible to extend the downtown grid onto the site. Private development with a mix of uses, including retail, office, and residential, would supplement the economic development value of the site.

PUBLIC BENEFITS

A fully transformed site will give residents and visitors the opportunity to enjoy the site's beauty and historical significance. It will increase property values in the City, contributing to the wealth of the community. It will spur the creation of new businesses in the City and County, from hotels and restaurants to retail stores and recreational businesses. It will house jobs that contribute to regional economic development and the growth of the Oregon City regional center. It will improve the environment through habitat protection. It will make Oregon City and the region a more attractive place to live, work, and do business.

Public benefits of redevelopment of the site discussed in this report include:

1. Job Creation
2. Tourism Potential
3. Property Value Increases
4. Downtown Revitalization
5. User Benefits
6. Environmental Benefits

7. Immeasurable Intrinsic Value

1. The site can contribute to the regional economy through job creation

Although due diligence has not been completed and actual site capacity remains unknown, preliminary analysis using several assumptions (described in the full report) shows the site could house up to 926,000 square feet of mixed use space, representing an investment of $194 million. The temporary and permanent jobs created through this development include:

- 560 to 1110 Construction jobs
- 550 to 1090 office and retail jobs
- 228 to 489 residential units - which support 10 to 20 jobs
- 1120 to 2220 indirect and induced jobs from the multiplier effect of jobs on site

2. The site can become a nationally significant tourist destination

Heritage tourism contributes more than $192 billion annually to the US economy. Analysis shows that the site could attract 1,000,000 visitors annually, creating up to 931 jobs. The site could also be an iconic location for festivals and other events, attracting even more visitors and economic activity.

Potential Annual Impacts of Low, Medium and High Overnight Visitor Levels

Visitor Level	Low	Medium	High
Total Visitors	331,000	658,000	1,000,000
Total Visitor Spending	$24,219,000	$ 48,242,000	$73,000,000
Jobs Supported by Visitor Spending	309	615	931

Source: Dean Runyan Associates.

3. Redevelopment will increase property values in Oregon City

The site currently has a negative $2 million impact on property values, demonstrated by regression analyses. Assuming a conservative 5% increase in property value from development of open space and public access, redevelopment of the site will generate at least $7.5 million in off-site property value increases and increased property tax revenue. Historic preservation has also been shown to increase property values in neighborhoods.

4. The site will take revitalization of downtown Oregon City to the next level

Site redevelopment will create impetus for new development in downtown Oregon City, including residential, mixed use, and hotels. Currently, 23% of the land surrounding the site has high or very high redevelopment potential. Transformation of the site will make Oregon City more attractive to potential residents and businesses.

5. Recreational amenities are highly valued by the public

Surveys have been conducted in several cities to determine residents' willingness to pay for parks and other amenities. In each city surveyed, residents valued general use visits at about $2.00 each. In Philadelphia, the value per visit to a historic site was $3.13.

If the Willamette Falls site receives the same number of annual visitors as the Crown Point Vista House (one million), the site would be worth $2 million to $3 million annually in user benefits. Special uses like gardens and festivals would be expected to result in an even greater total benefit.

6. Redevelopment of the site will protect and improve natural habitat and contribute to regional climate change efforts

Currently, stormwater from the site does not undergo treatment using best practices and is likely to contain harmful compounds that enter the Willamette River. The site has the capacity to naturally treat stormwater from the site and from other parts of Oregon City. Treatment could be accomplished using sustainable and innovative methods, providing educational value as well as environmental value.

Redevelopment of industrial land and historic preservation are effective in reducing development pressure on valuable farm and forest land near the urban growth boundary. Research shows that one acre of redeveloped urban brownfield land results in the preservation of multiple acres of outlying green space.[1] Historic preservation also conserves resources when compared to new construction.

7. The site has immeasurable intrinsic value

Perhaps the most important benefit to some members of the community, redevelopment of the Blue Heron site has cultural and other intrinsic value that cannot truly be measured. Willamette Falls is an iconic, beautiful vista that for over 150 years has been blocked from the public by an imposing paper mill. This project will allow the regional community to reclaim the Falls and bequeath this priceless asset to future generations.

Redevelopment of the Willamette Falls site will be a catalyst for positive change in Oregon City and beyond. Transformation of the site into a mixed use extension of downtown Oregon City, with a historic destination and open space, will bring multiple benefits to the greater community.

INTRODUCTION AND PURPOSE

A partnership between Metro, Oregon City, Clackamas County, and the State of Oregon is currently investigating the purchase of the former Blue Heron paper mill in Oregon City, a project called the Willamette Falls Legacy Project. The 22-acre site is situated along the Willamette River adjacent to Willamette Falls, and offers a rare opportunity for the acquisition of a scenic and historically significant site for public use.

The purpose of the Willamette Falls Catalytic Value report is to provide the partnership with an initial analysis of the value of redeveloping the site. Specifically, the report defines the benefits that transformation of the site could bring to Oregon City, Clackamas County, the Metro region, and the State of Oregon.

There are several assumptions this report makes about the property, specifically that the partnership will purchase the site, remove all or most structures, and prepare the site for development (with or without private partnership) – including environmental clean-up and infrastructure upgrades. Also, it is assumed that the site will be developed in a way that represents the four values of the Willamette Falls partnership:

Willamette Falls Partnership Values

1. Public access to the falls
2. Cultural and historical interpretation
3. Environmental restoration
4. Economic development

These four values are synergistic and complementary in that they work together to create multiple benefits for the region. For example, environmental restoration, public access to the falls, and cultural and historical interpretation all contribute to a livable, amenity-filled downtown Oregon City, which will attract new residents, businesses, and tourists. This new activity in turn supports economic development, the fourth value.

Private development is also assumed, but the type and intensity of redevelopment is uncertain as no market feasibility has been completed for the site and no visioning or master planning has occurred. Thus, several assumptions regarding private development are used in this report. These assumptions are optimistic and are based on a long-term complete transformation of the site and successful achievement of the four values.

The report begins with a description of the site, a summary of opportunities and constraints, and a description of plans and efforts that will impact the development of the site. It then discusses the value of transforming the site in terms of job creation, tourism potential, property value increases, downtown revitalization impacts, user benefits, environmental benefits, and intangible benefits.

ABOUT THE SITE

HISTORY

Willamette Falls is a historically rich area that has served as a crossroads and energy source for several cultures. Geological records tell us that Willamette Falls was created by a large lava deposit that prevents the river's water from carving any deeper in the earth. The Willamette River possibly got its name from the native Wal-lamt tribe, which may translate to 'spill water'.[2]



Looking south, The Blue Heron site is shown in the foreground, with the Falls in the distance and the West Linn Paper Company on the west side of the River.

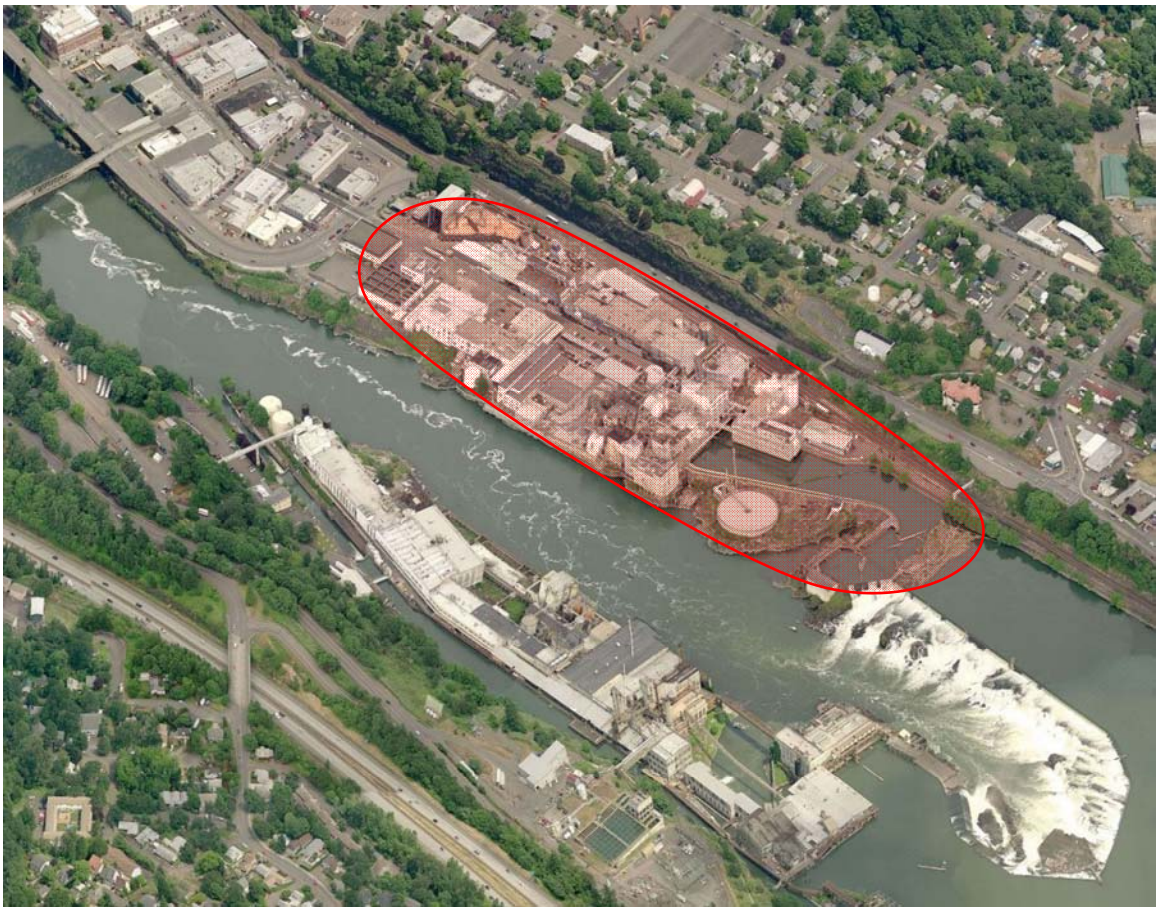
Willamette Falls was an important fishing, gathering, and trading site for indigenous groups from all over the Pacific Northwest. As many as 11 villages were reported by Lewis and Clark living in the area in 1805. Tribes knew the Falls as "Hyas Tyee Tumwater" (Great Chief Waterfall) or "tumtum" for short.[3]

The Falls also marks the end of the Historic Oregon Trail, a 2,000-mile journey taken by thousands of pioneers in the 1800s. Because the rock formation of the Falls made further passage downriver impossible, early settlements of Oregon City and West Linn developed in the area. Ever since, people have harnessed the incredible power of the falls for industrial uses of production milling and electricity generation.

The 22-acre Blue Heron property, directly adjacent to the Falls, has served as an industrial centerpiece to Oregon City's historic downtown area for many years. The site was home to Dr. John McLoughlin's original mill, as well as the original first five blocks of historic Oregon City, which were slowly overtaken by mill development throughout the years. The former woolen mill foundation is one of the oldest surviving structures on site, and many other historic structures and elements remain intact. The paper mill, opened in 1908, operated under several owners over the years; it was most recently employee-owned and operated. In February 2011, the company announced closure of the facility.

CHARACTERISTICS

The site fronts the Willamette River, overlooking Willamette Falls. With a height of 42 feet and a crest of nearly 1700 feet, Willamette Falls is the second largest waterfall by span in the United States (Niagara Falls being the largest at 3,950 feet). The flow over the falls averages approximately 20,000 cubic feet of water per second (cfs); however with most of that water diverted for hydroelectricity through the Portland General Electric dam surrounding the Falls, the actual amount is more likely an average of 5,000 cfs.[4]



The site, shown with a red overlay, sits across the Willamette River from the West Linn Paper Company in West Linn. Downtown Oregon City is shown in the upper left hand corner, and Willamette Falls is in the lower right corner. The bluff that separates the site from other Oregon City neighborhoods is also visible along 99E on the east side of the site.

Site investigations are underway to answer questions about environmental issues such as stormwater management and contamination. A portion of the site is located in the 100-year floodplain. New development in the floodplain is challenging, but potential re-use of existing structures and foundations could present possibilities. The floodplain may therefore be a desirable area for development of trails and open space, along with environmental restoration and daylighting of water outfalls. Further due diligence will provide more definitive answers to these questions.

While there is likely little contamination on the site, minimal clean-up may be required. The site is not a superfund or officially-designated brownfield according to the State of Oregon, but as a former industrial site it is considered a brownfield by other definitions.

VISIBILITY AND ACCESSIBILITY

The Blue Heron site is currently accessible only via the intersection of Main Street and 99E/McLoughlin Blvd. Its placement along the Willamette River makes it highly visible to anyone visiting or driving past downtown Oregon City. It is less than a mile from Interstate 205 and a 25 minute drive (about 13 miles) from downtown Portland. The Portland International Airport is also less than a 30 minute drive from the site. There is an operating freight railroad line along the eastern edge of the site, with a spur onto the site.

McLoughlin Blvd. along the edge of downtown had average daily traffic of 23,400 vehicles in 2010. Tenth Street in downtown Oregon City saw an average of 8,757 daily vehicles in 2010. Average daily traffic on Interstate 205 in Oregon City in 2010 was approximately 114,000 vehicles.[5]

Although the site is in close proximity to I-205 and McLoughlin Blvd, direct vehicular access to the site is greatly constrained by its relationship to McLoughlin Blvd. The geography of the area further limits options for new transportation infrastructure. McLoughlin Blvd. poses a significant barrier for pedestrians and bicyclists crossing from downtown. The Oregon City transit center offers bus service six blocks north of the site, and long range plans for the region call for light rail service to Oregon City.

CONTRIBUTION TO THE REGION

The Blue Heron Paper Mill supported about 175 industrial jobs at the time of its closing in 2011, representing a great loss to the Oregon City economy. It was especially unfortunate because wages in manufacturing tend to be higher than other blue collar jobs or jobs in the service industry. In addition to providing living wage jobs in Oregon City, the company paid $28,008 in property taxes to the County, City, and other public agencies last Fiscal Year[6] and contributed to the downtown economy for many years.

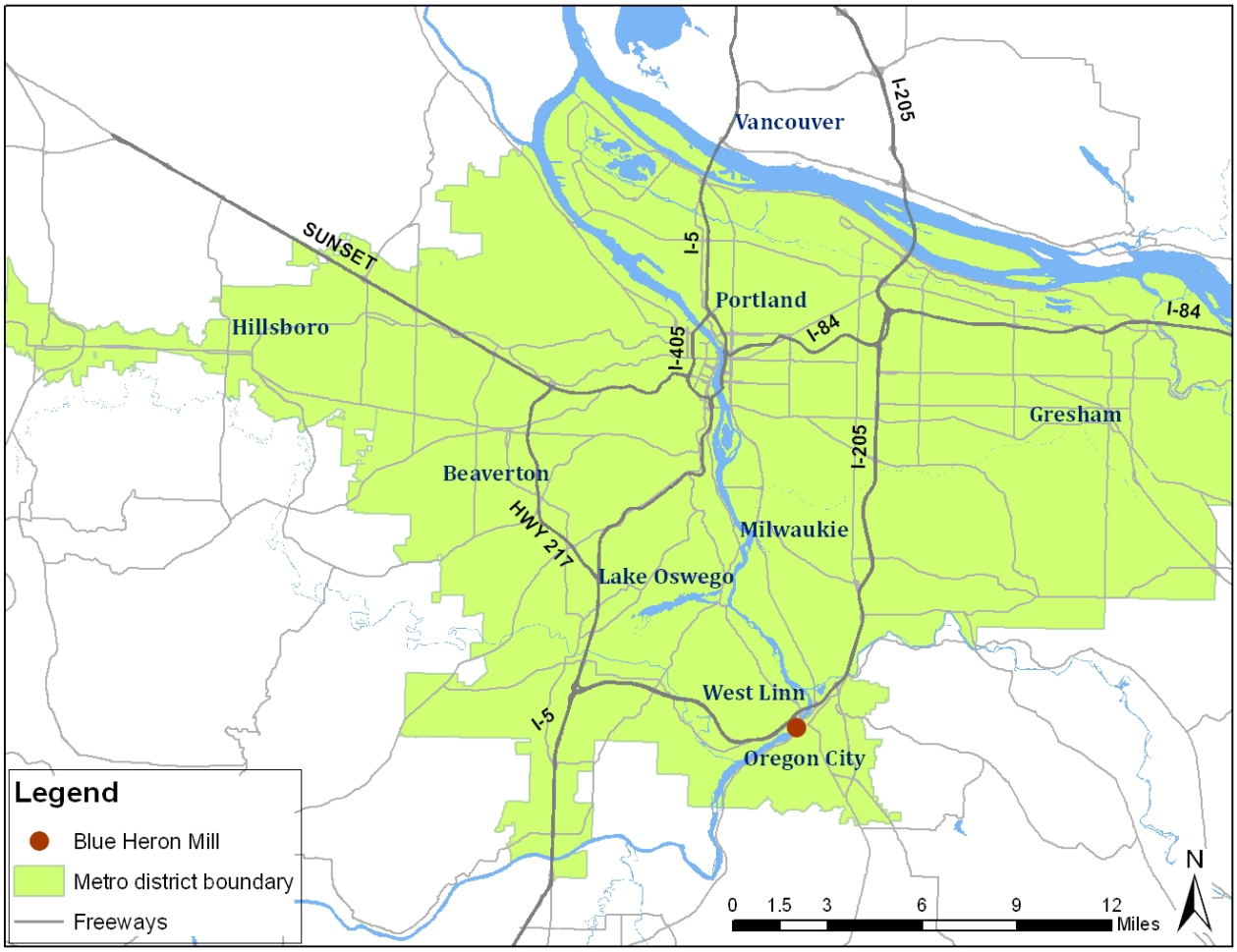
According to water usage records from the City, an average of 45.36 million gallons per year was used from 2005 through 2010.[7] The annual payment made to Oregon City for that water usage was approximately $130,000 per year. For wastewater services, the Blue Heron Paper Company paid the City $42,675 per year, and for stormwater services, $16,892 per year.[8]

LOCATION

The site is located adjacent to downtown Oregon City, which is sits at the confluence of the Clackamas River and Willamette River just 13 miles south of Portland. Oregon City is bordered by the City of West Linn to the west, Gladstone to the north, and rural areas to the south and east. The site is directly adjacent to historic downtown Oregon City, which has a thriving Main Street program that has helped establish over 40 new businesses in downtown in the past few years.

Oregon City's population was estimated at about 32,000 in 2011. It has doubled in the past 20 years, growing at a higher rate than the County and nearby cities of Gladstone, Lake Oswego, Milwaukie, and West Linn. Projections show the population continuing to grow, reaching almost 50,000 by 2040.[9] Oregon City is striving to achieve more economic activity and greater development intensity as a Regional Center for its surrounding cities. As a Regional Center, Oregon City will ultimately serve more than 150,000 people.

Figure 1. Site Location within the Region



EXISTING PLANS

This section includes a brief description of policies and plans affecting the Blue Heron site.

METRO 2040 GROWTH CONCEPT

The 2040 Growth Concept is a long-range plan for the future, intended to guide growth and development over 50 years. It is based on a set of shared values: thriving neighborhoods and communities, abundant economic opportunity, clean air and water, protecting streams and rivers, preserving farms and forestland, access to nature, and a sense of place. The 2040 growth concept established ten urban design types as the "building blocks" of the regional strategy for managing growth. Oregon City is designated as a Regional Center, where two- to four-story compact employment and housing development served by high-quality transit is envisioned.

WILLAMETTE RIVER GREENWAY

The Willamette River Greenway was originally established by the 1967 Oregon Legislature as a grant program for land acquisition to State Parks along the Willamette River from Eugene through Portland. Goals for the state program are to protect, conserve, restore, enhance and maintain the ecological, natural, scenic, historical, agricultural, economic, cultural and recreational qualities and resources along the Willamette River.

CLACKAMAS COUNTY ECONOMIC LANDSCAPE, 2012

Clackamas County's Economic Landscape is a guide to achieving the County's economic goals, which include increasing the jobs-housing ratio, increasing averages wages, and ensuring that land and infrastructure is being put to its highest and best use to balance economic opportunity with quality of life. The Landscape identifies key industry clusters, which include:

- Nurseries and Greenhouses
- Transportation and Distribution
- Wood Product Manufacturing
- Professional Business Services
- Wholesale Trade
- Advanced Manufacturing – metals and machinery
- Advanced Technology - high tech
- Health Care
- Food and Beverage Processing
- Agriculture and Food Production
- Film and Media Production

OREGON CITY FUTURES ECONOMIC DEVELOPMENT STRATEGY, 2004

This strategy developed a mission and vision for Oregon City as a Regional Center:

Mission: To build a sustainable community that promotes public health and safety, economic growth, diversification, parks and recreation, library services, efficient utilities, appropriate and fair land use administration, and protects the livability, environment and uniqueness in this historic place.

Vision: To re-establish Oregon City's historic role as a regional hub for business, commerce, transportation, innovation, tourism, and livability.

The strategy specifically mentions potential redevelopment of the Blue Heron site as the south anchor of downtown. It outlines the following desires for the site:

- Retain historic character and flavor of original mill
- High density loft and condominium housing on the water
- Mixed-use housing and retail
- Capitalize on views of falls and river
- Specialty and local serving retail
- Connection to Waterfront
- Link to Historic Old Town

OREGON CITY COMPREHENSIVE PLAN, 2004

Oregon City's Comprehensive Plan has numerous goals relating to historic preservation, open space, scenic views, and natural resources. In addition, it lays out the following guiding principles that relate to future development in the City:

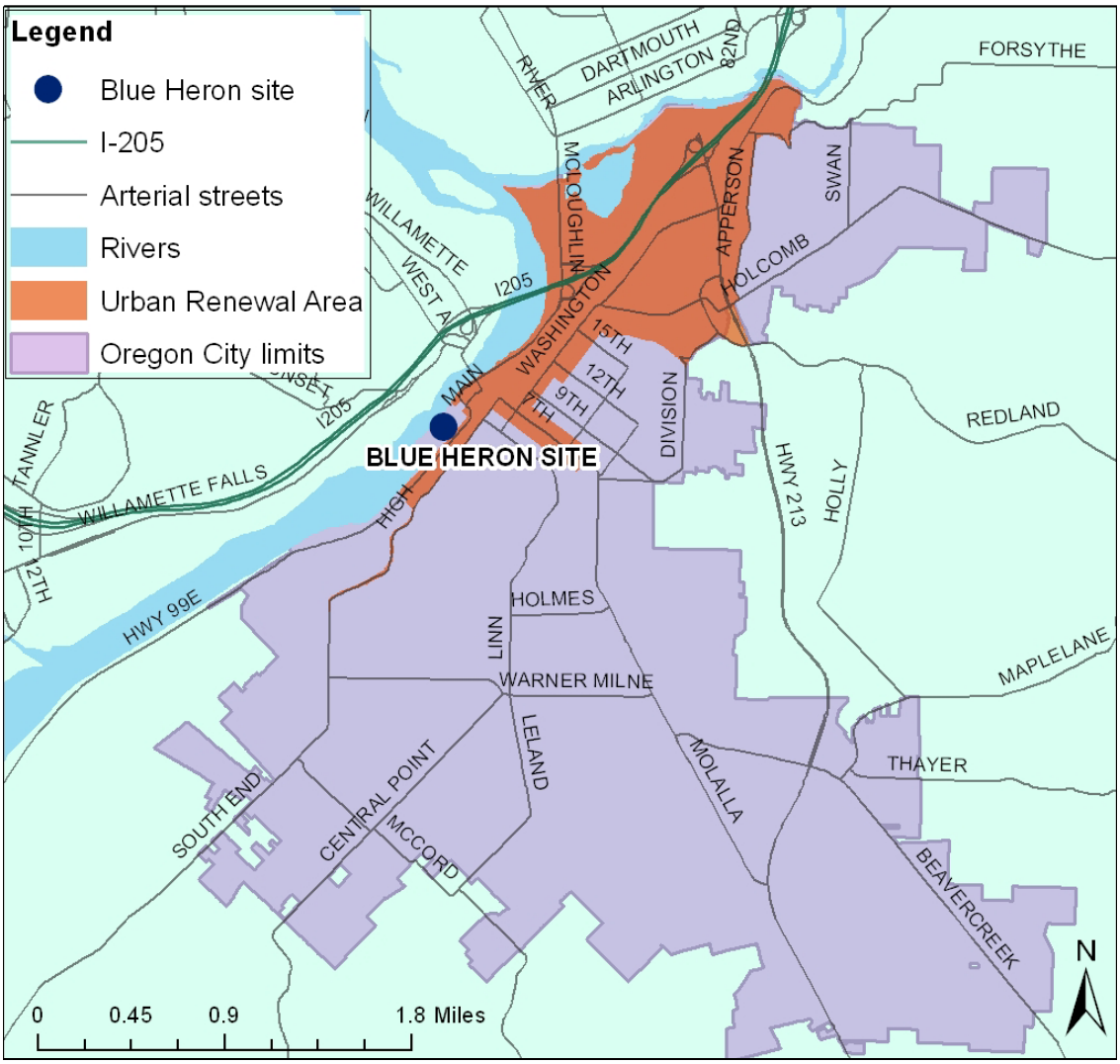
- Promote sustainability and sustainable development
- Contain urban development
- Promote redevelopment
- Protect natural resources
- Foster economic vitality
- Provide efficient and cost-effective services
- Ensure a sense of history and place

OREGON CITY URBAN RENEWAL PLAN FOR DOWNTOWN, 2007

The Urban Renewal Area (URA) in Oregon City encompasses all of historic downtown, properties to the north of downtown near Clackamette Cove, and properties on the Bluff above the downtown and the mill site. Two of four separate parcels that make up the Blue Heron site, consisting of less than acre of the site, are part of the downtown Urban Renewal Area. Extending the Urban Renewal Area onto the entire mill site is a possibility in the future. Whether or not the site is added, it will have a large impact on the Urban Renewal Area. Any improvements made to the site will increase the value of surrounding properties, contributing tax increment to the URA, and any spinoff development that occurs will likely be located in the URA. The goals of the URA align closely to the four values of the Willamette

Falls partnership, including historic preservation, economic development, and public access to the river.

Figure 2. Oregon City's Urban Renewal Area



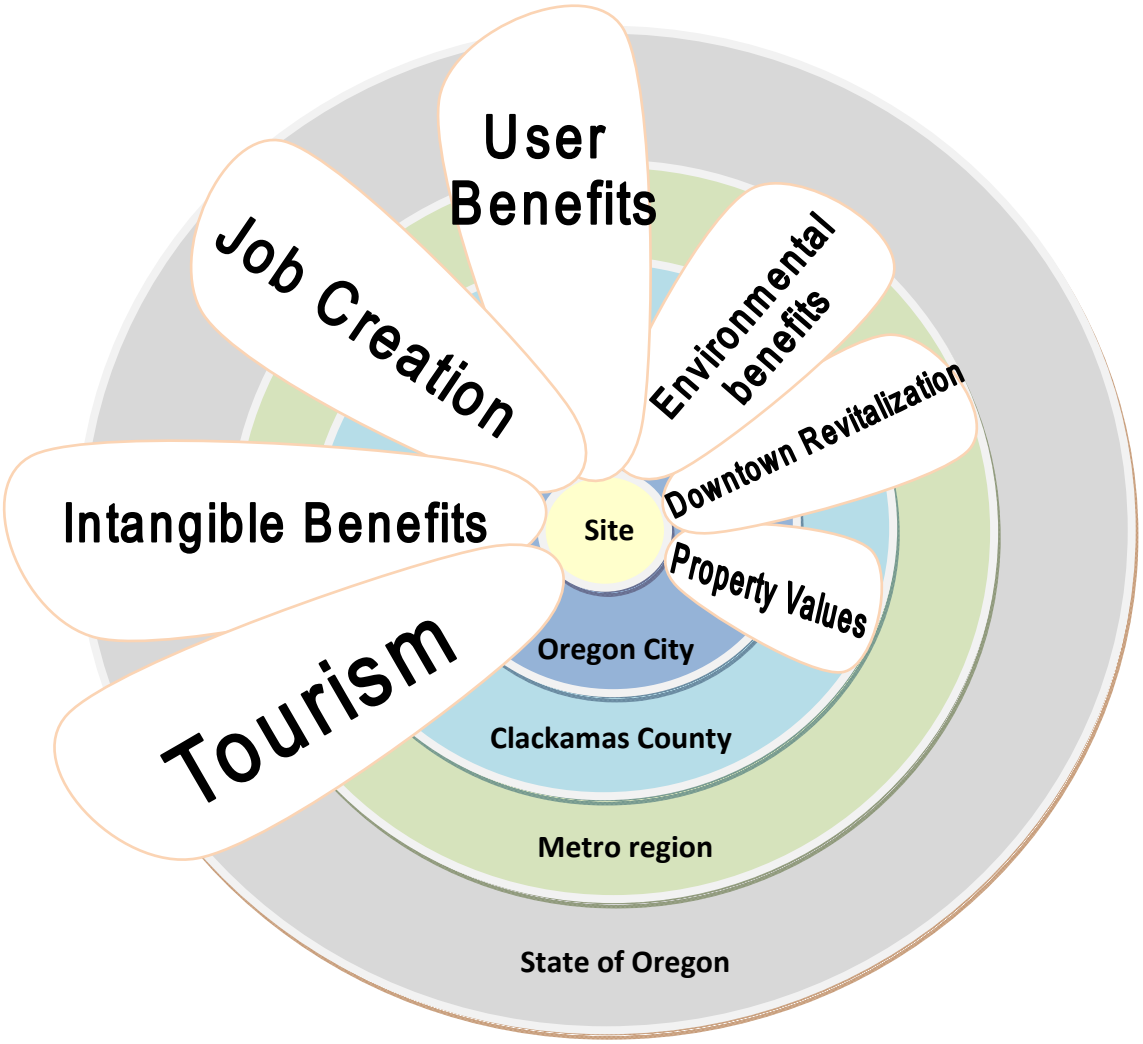
OREGON CITY WATERFRONT MASTER PLAN, 2002

This plan calls for the reconnection of the City to the waterfronts of the Willamette and Clackamas Rivers. It proposes an enhanced pedestrian walkway from 5th Street to Clackamette Park. It also highlights the need for a safer and more comfortable pedestrian experience along McLoughlin Boulevard, calling for wider sidewalks, street trees, and traffic calming.

PUBLIC BENEFIT ANALYSIS

Transformation of the Blue Heron site will result in numerous public benefits. The site represents 22 acres of potentially job-producing and revenue-generating land, in addition to the amenities that could be made available to residents of the region. The unique location of the site on the riverfront and adjacent to Willamette Falls means that redevelopment will contribute to the environmental, economic, and social health of the region. As this is a long-term project with a horizon of ten or more years, the timeframe for realizing these benefits varies, with some being realized shortly after acquisition and clean-up and others much later.

Figure 3. Public Benefits of the Willamette Falls Project



While not considered a benefit on its own, the value of historic preservation is reflected in many of these benefits, including tourism, job creation, and property value increases. Likewise, fiscal value is reflected throughout the various benefits as well – including tax revenue from property value increases, new jobs and incomes, and hotel room taxes.

THE COST OF DOING NOTHING

The former Blue Heron Mill site is of great significance to Oregon City and to the region. The site is historic downtown Oregon City's immediate neighbor, and if left vacant, would have a large negative impact on the City. To date, the private sector has not made an offer to purchase the site as is. Without an investment from the public sector, it is almost certain that the site will sit vacant – gutted of its valuable equipment and left with the shells of the 52 separate structures on site. If left in this state, the property will be a drag on the redevelopment of downtown Oregon City and may hurt the overall reputation of the City. The positive momentum that has been fostered in recent years could be lost.

It is also possible that the current owner of the property could abandon the site due to the cost of securing and maintaining the site. Vacant and abandoned industrial sites pose a threat to public health and safety. These types of building can attract squatting and illicit drug use, illegal dumping, and other trespassers.

The property, in fact, already has a negative impact on surrounding property values. An analysis of residential and commercial properties within 0.4 miles of the site shows a negative impact of $2,000,000 overall (see page 42 for a complete analysis of property values). Each property owner will continue to see depressed values if the site remains as is or continues to deteriorate.

"The costs (of doing nothing) include financial losses in terms of jobs, tax revenue and economic growth, stigmatization of the area, possible exacerbation of the environmental impact …"

The National Brownfield Association, Site Technical Assistance for a Municipal Project, 2007

JOB CREATION

Job creation is extremely important for the state of Oregon and the region. Goals of the State, region and County include retaining companies and the jobs they provide, expanding existing firms for job growth, and developing and maintaining an inventory of shovel-ready land and to create jobs and attract new employers.[10]

Redevelopment of the site will support job creation on and off the site. Many of these jobs will be in Oregon City, and others will be elsewhere in the County, region, or state. The following activities will contribute to job creation:

- Site Maintenance, Development and Construction
- Historic Preservation
- Commercial Offices
- Retail
- Tourism-related Services
- Residential Property Management
- Public Park Management

An economic input-output model called IMPLAN was used for job creation estimation in this report. More information about the program and input-output models in general is found in Appendix A. This section of the report includes economic data about Oregon City and the region and then examines potential job creation through each of the activities listed above.

Direct jobs are those in the construction industry. These industries purchase services, supplies and materials in the local economy, which constitutes the **indirect impact** of construction or repair spending. Lastly, employees in all of these industries receive wages and spend those wages in the local economy, creating an **"induced" effect**. The total jobs created are the sum of direct, indirect, and induced jobs.

Current Employment in Oregon City

In 2010, about 13,000 people worked in Oregon City, not including self-employed individuals.[11] About 85% of those workers lived outside of the Oregon City limit. Likewise, about 85% of people who reside in Oregon City work outside of the City.[12] Table 8 shows the top five industries in Oregon City. Public administration, education, and healthcare are the top industries, employing nearly half of all workers, reflecting the City's major employers: Clackamas County Government, Clackamas Community College, and Willamette Falls Hospital.

Table 8. Top Five Industries in Oregon City by Employment, 2010

Industry	Percent of total employment
Public Administration	18.2%
Educational Services	16.1%
Health Care and Social Assistance	14.3%
Retail Trade	11.6%
Accommodation and Food Services	9.2%

Source: U.S. Census Bureau OnTheMap Application, Longitudinal-Employer Household Dynamics Program.

Jobs located in Oregon City pay less than jobs in the overall Metropolitan Statistical Area (MSA). Table 9 below shows the percentage of jobs that pay less than $1,250 per month ($15,000 per year) is higher in Oregon City, and the share of jobs that pay more than $3,333 per month ($40,000 per year) is lower in Oregon City.

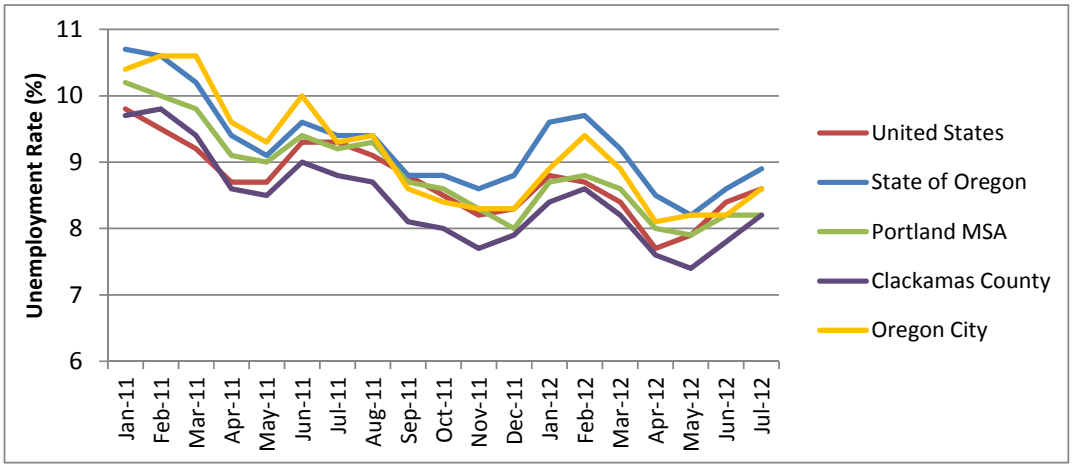
Table 9. Earnings in Oregon City and the Portland MSA, 2010

Percent of Jobs by Earnings	Oregon City	Portland MSA
$1,250 per month or less	26.4%	22.7%
$1,251 to $3,333 per month	36.4%	36.5%
More than $3,333 per month	37.1%	40.8%

Source: U.S. Census Bureau OnTheMap Application, Longitudinal-Employer Household Dynamics Program.

The unemployment rate in Oregon City, 8.6% in July of 2012, was lower than the state of Oregon, at 8.9%,[13] but higher than Portland metropolitan area and Clackamas County unemployment rates. Figure 5 shows unemployment rates for the last year and a half. Income and educational attainment in Oregon City is less than the regional average. Median household income is $51,499 (2008-2010 estimates) compared to $55,618 for the region, and 21.9% of adults over age 25 have a Bachelors degree or higher compared to 33.6% for the region.[14]

Figure 5. Unemployment Rates, 2011-2012



Source: Bureau of Labor Statistics and Oregon Employment Department. Unemployment Rates shown are not seasonally adjusted.

Job Creation Assumptions

Investigations regarding the land available for development on the site are ongoing. In order to provide estimates of jobs creation, several assumptions had to be made. Three separate scenarios for intensity of development on the site are tested – one using an average of four to one Floor Area Ratio (FAR), another using three to one FAR, and a third using two to one FAR. Floor Area Ratio is the ratio of the square footage of building to the square footage of land. While these ratios are considered high for Oregon City at this time, they are possible with a fully transformed site in the future. Assumptions regarding private development on the site are as follows. See Appendix B for greater detail and explanation.

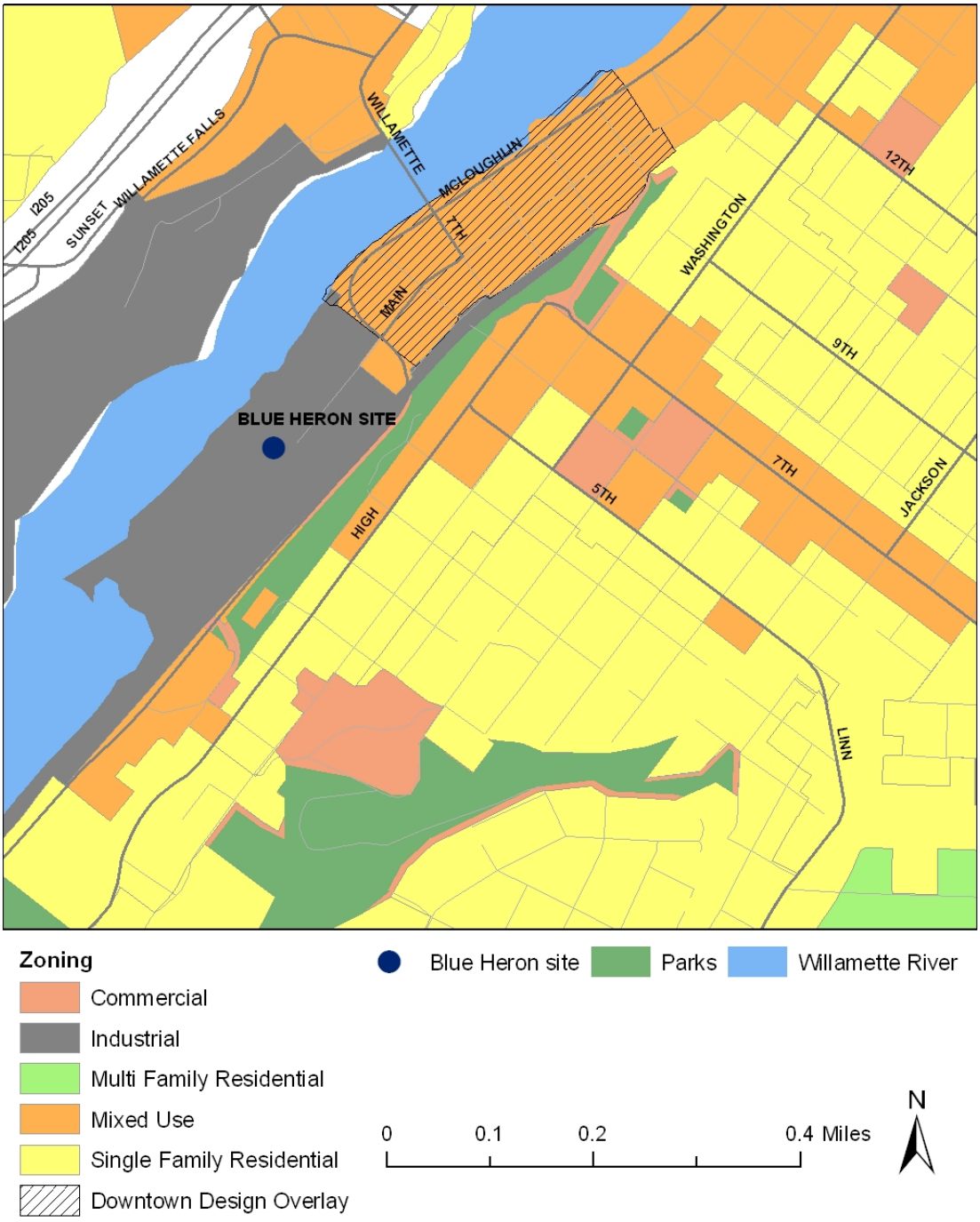
- 11 acres of developable land
- 30% of land area used for public right of way (3.3 acres), leaving 7.7 acres for development
- Mixed Use Development: 9-13% retail, 28-30% office, 28-30% residential, and 30-31% structured parking
- Construction costs of $160 per square foot for offices, and $195 per square foot for residential and retail (high estimate), and $20,000 per parking space. [15]

These assumptions result in 670,000 to 1.34 million square feet of total building space, including parking structures, with a construction cost of about $98 million to $194 million.

Site Maintenance, Development and Construction

Although the current zoning on the site is industrial, the City of Oregon City has indicated that the Mixed Use Downtown (MUD) zoning district is an appropriate designation for the Blue Heron site. The mixed-use downtown (MUD) district is designed to apply within the traditional downtown core along Main Street and includes the "north-end" area, generally between 5th Street and Abernethy Street, and some of the area bordering McLoughlin Boulevard. The character of the zone is intended to be high-volume establishments constructed at the human scale such as retail, service, office, multi-family residential, lodging or similar uses. A mix of high-density residential, office and retail uses are encouraged in this district, with retail and service uses on the ground floor and office and residential uses on the upper floors. The emphasis is on those uses that encourage pedestrian and transit use. There is no maximum Floor Area Ratio in the MUD zone; however, maximum heights range from 45 feet to 75 feet depending upon location within the downtown area. Minimum FAR is 0.3 in the MUD zone and 0.5 in the Design overlay area.

Figure 6. Current Zoning Surrounding the Blue Heron site



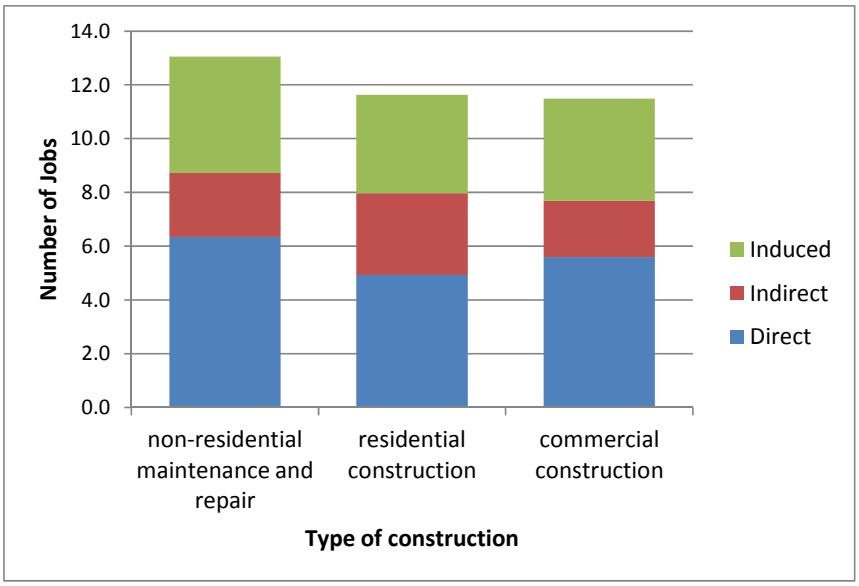
This analysis assumes about half of the site, or 11 acres, could be utilized for private mixed use development. Several historic structures on the site could serve as building shells for commercial, office or residential uses, and the remainder of the site could be developed as an extension of the downtown grid, with Main Street extending into the site as the focal point. Redevelopment of the site will require demolition, renovation, and maintenance, in addition to new construction.

Table 10. Jobs created per $1 million in spending in the Metro region

Activity	Direct Jobs	Average Income per job	Total Jobs
Maintenance and Repair*	6.3	$ 62,374	13.1
Residential Construction**	4.9	$ 58,498	11.6
Commercial Construction**	5.6	$ 61,198	11.5

Source: IMPLAN. *For spending occurring in 2014. **For spending occurring in 2016. Demolition is not a separate industry in IMPLAN. Average income per job includes only direct jobs.

Figure 7. Direct, Indirect, and Induced Jobs created from $1 million of construction spending in the Metro Region



Source: IMPLAN

Using the assumptions mentioned earlier, construction job creation for each scenario is shown in Table 11. These estimates do not include the jobs associated with demolition, maintenance, or building rehabilitation. In IMPLAN impacts are defined as the value of production occurring a single calendar year. Therefore, multi-year construction projects must be examined as annual expenditures. This analysis places all spending within one single year.

Table 11. Total Construction Jobs created from Site build-out

Scenario	2 to 1	3 to 1	4 to 1
Total square footage	671,526	1,007,307	1,343,020
Total construction cost	$ 97,728,028	$147,773,188	$ 193,878,045
Direct jobs created	563	848	1,112
Total jobs created	947	1431	1,876

Source: IMPLAN. For spending occurring in 2016.

Historic Preservation

There are currently no locally designated historic structures located on the property, and the Blue Heron site is not currently located within a local or national Historic District. However, a report by George Kramer of Heritage Research Associates indicates that some of the buildings located on-site are contributing historic structures, which means they possess historic elements and may be eligible for the national register and accompanying historic preservation tax credits.[16]



Photo Credit: Clackamas County Historical Society

Because structural evaluations are currently underway and visioning for the site has yet to occur, it is too early to predict the number or size of buildings that may be preserved on site. Any historic preservation that occurs will contribute to job creation associated with the site.

Due to the labor intensity of rehabilitation and because construction jobs are generally well paid, the local economic impact of historic preservation is significantly greater per amount of output than most other sectors of economic activity.[17] The employment multiplier for Maintenance and Repair in the Portland region is 1.99, meaning that for every construction maintenance or repair job, another 0.99 jobs are created indirectly or induced through spending in the local economy. As shown in Figure 7, the jobs created through spending in maintenance and repair were greater than jobs created through new construction – 6.3 per million dollars versus 5.6. The wages for those repair jobs are higher than for new construction jobs as well.

Commercial Offices

Office development on the site, assuming it is 30% of total square footage, would amount to about 200,000 to 400,000 square feet. The Energy Information Administration periodically surveys buildings operators to determine their energy use, among other data. The most recent survey shows that offices held an average of one worker for every 434 square feet.[18] Using this figure, the number of office jobs that could exist in 200,000 to 400,000 square feet of commercial office space is 433 to 927.

Table 12. Estimated Office Employment

Scenario	2 to 1	3 to 1	4 to 1
Office Space (sf)	187,831	301,871	402,494
Employees (one per 434 sf)	433	696	927

Source: Energy Information Administration

The type of industry or company that locates offices on the site will determine the total economic impact of those jobs. Multiplier effects in the Metro region (Clackamas, Multnomah, and Washington Counties) range from 1.19 to 2.82, meaning that the total impact (direct, indirect, and induced jobs) is 1.19 to 2.82 times the number of direct jobs.[19] Table 13 shows the multipliers of various industries that could potentially locate on the site.

Table 13. Job Multipliers of Various Industries in the Metro region (2010)

Industry	Type I Multiplier	Type II Multiplier	Average Income per Job*
Data processing, hosting, ISP, web search portals and related services	1.19	1.54	$ 90,144
Motion picture and video industries	1.29	1.75	$ 32,669
Software publishers	1.44	1.88	$ 101,670
Management of companies and enterprises	1.40	2.10	$ 97,296
Management, scientific, and technical consulting services	1.33	2.12	$ 50,966
Environmental and other technical consulting services	1.32	2.16	$ 49,133

Source: IMPLAN. Type I multipliers include direct and indirect jobs; Type II multipliers include direct, indirect and induced jobs. *Income per job applies to direct jobs only.

Many of the industries in Table 13 represent target clusters determined by Clackamas County, meaning they are sectors in which the County aims to foster growth through firm expansion and attraction. Some of the target clusters, listed on page 8, are not appropriate for the Blue Heron site – such as wood product manufacturing and greenhouses and nurseries. Others, however, could be a good fit for the site's downtown location and size. For example, creative firms in the film and media production or business services industries could be attracted by the site's location next to Willamette Falls and Oregon City's historic downtown.

Retail

Retail will likely include retail stores, restaurants, and personal services businesses. According to the Energy Information Administration, the average retailer has one worker for every 1246 square feet, and food services establishments have one worker per 528 square feet.[20] Assuming that 87,000 to 121,000 square feet of overall retail space is split evenly between these two uses, 118 to 163 direct retail jobs will be created.

Tourism-related Services

Jobs related to tourism could be located on and off the site. Table 14 shows some industries that are part of the tourism sector, their multipliers, and average income levels. If the site attracts between 330,000 to one million visitors, the impact of their spending will create between 300 to 900 jobs in these industries.

Table 14. Job Multipliers of Tourism-sector Industries in the Metro region

Industry	Type I Multiplier	Type II Multiplier	Average Income per Job*
Retail Stores - Clothing and clothing accessories	1.45	2.02	$ 22,860
Retail Stores - Sporting goods, hobby, book and music	1.35	1.94	$ 20,698
Retail Stores - Miscellaneous	1.36	1.94	$ 15,918
Museums, historical sites, zoos, and parks	1.43	1.92	$ 36,426
Hotels and motels, including casino hotels	1.48	1.96	$ 24,156
Food services and drinking places	1.41	1.90	$ 19,017

Source: IMPLAN. Type I multipliers include indirect jobs; Type II multipliers include indirect and induced jobs. *Income per job applies to direct jobs only.

Residential Property Management

With 188,000 to 400,000 square feet of residential space, 228 to 489 units can be constructed. A study conducted for Metro regarding residential development in downtown Hillsboro estimated that four jobs would be created for a 71-unit building, including leasing agents and property management occupations.[21] To be more conservative, this report assumes four employees for every 100 units. Therefore 10 to 20 direct jobs would be created, depending on the development intensity.

Public Park Management

Maintenance of open space will be required for any public parkland on the site. If public facilities are built, such as a museum, historical center, or park offices, additional jobs will be created to staff these services.

It has not yet been determined which public agency would be responsible for managing the property should it be acquired and developed into open space. However, Oregon City's Parks and Recreation Department can be useful in estimating the cost of management. Oregon City's Budget shows that there were 5.8 Full-Time Equivalent (FTE) employees in parks maintenance in 2011-2012, responsible for 300 acres of parks, amounting to about 52 acres per FTE staff. Open space on the Blue Heron site will most likely be no more than 11 acres, because half the site is assumed to be private development. Thus, the maintenance

staff required would be less than one full-time job. Staff for programming and administration will also be required, but it is too early in the development process to make estimates.

Caveats and Limitations

The IMPLAN input-output model results include both part and full time jobs. The jobs figures reported from IMPLAN are not considered Full-Time Equivalent jobs.

Estimates of office and retail job creation may not actually reflect "new" jobs – many times firms relocate offices and simply move jobs from one place to another. While there is still a local benefit, jobs moved from another part of the country, region, or state to the Blue Heron site would not constitute an overall societal benefit. Many local economic development agencies recruit firms from other locations even though more overall value is gained through true creation of jobs. The Willamette Falls partnership can attempt to make jobs on the site new jobs rather than relocated jobs by seeking out tenants that are expanding or growing their business.

Estimating the impact of tourism on jobs is controversial in some respects. Especially for large events that draw tourists, some economists criticize the use of multipliers. Large events can include workers from outside the area earning some of the money, and inflated hotel rates can become profits for out-of-state corporations, not part of the local economy. Victor A. Matheson, an economist at the College of the Holy Cross, was quoted in another study saying "Unless you have local owners, there is no reason to expect that money to be spent in the local economy."[22] This sentiment is also highlighted in a report by Civic Economics on retailers in Austin, Texas. Civic Economics examined the impacts of a national chain bookstore and locally-owned, independent bookstores. It found that three times more money stays in the local economy for the locally-owned bookstore.[23] The IMPLAN model assumes that industry purchases (purchases of supplies and materials by businesses that lead to indirect job creation) are made locally when possible. Increasing the number of locally owned businesses is certain to increase the multiplier effect.

Large events can also detract from everyday public use of the site. The events at Tom McCall Waterfront Park in Portland, while contributing greatly to the economy, close off parts of the park for many weeks during the summer. Thus the spending of local residents, who may avoid the area during large events, will be reduced.

Impact Summary

Table 15 summarizes total direct jobs created from site development and operations, which ranges from 1,124 to 2,222 depending on development intensity. Employment multipliers from IMPLAN show that the direct jobs could lead to just as many indirect and induced jobs as there are direct jobs, effectively doubling the impact. An increase of 1,124 jobs in Oregon City represents an eight percent increase in the number of jobs, and an increase of 2,222 would increase jobs by about 17%. Direct and induced jobs would be spread throughout the region.

Table 15. Direct Job creation summary

Scenario	2 to 1 FAR	3 to 1 FAR	4 to 1 FAR
Construction Jobs	563	848	1,112
Office Jobs	433	696	927
Retail Jobs	118	136	163
Property Management Jobs	10	15	20
Total direct jobs	1124	1695	2222

Source: IMPLAN and EIA.

Fiscal Impact

Using the estimates for jobs in construction, office, retail, and residential property management, over 2200 direct jobs could be created through this project, generating $4.6 to $9.1 million in income taxes per year. This does not include any tourism related jobs on or off the site, or the indirect or induced jobs that will be created.

Table 16. State Income Tax Revenue resulting from direct jobs on site

Scenario	2 to 1 FAR	3 to 1 FAR	4 to 1 FAR	Estimated Income per job
Construction income	$34,465,287	$51,922,716	$68,053,296	$61,198
Office income	$18,826,351	$30,256,635	$40,342,181	$43,500
Retail income	$3,009,980	$3,473,053	$4,167,664	$25,600
Property Management income	$59,000	$88,500	$118,000	$5,900
Total income	$56,360,617	$85,740,905	$112,681,141	
Income tax revenue*	$4,576,482	$6,962,162	$9,149,709	

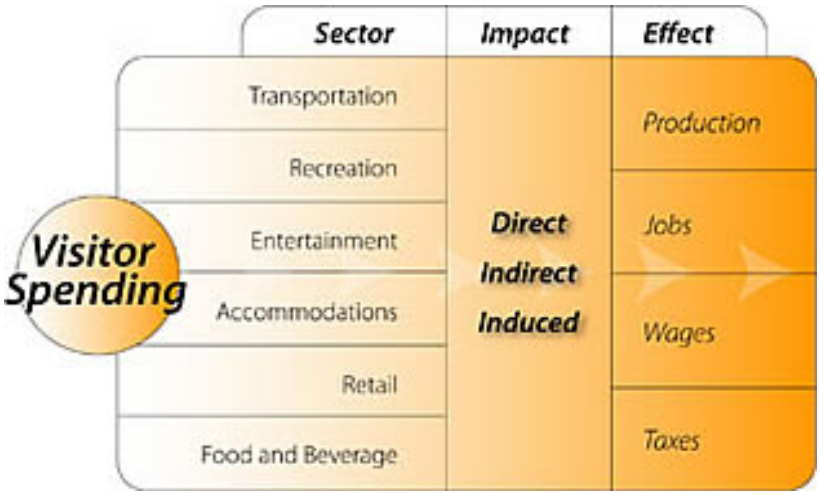
Source: IMPLAN. *Income tax rate of 8.12%

While income taxes will be generated from indirect and induced jobs too, without wage levels it is difficult to determine the overall income tax revenue impact. However, multipliers show that the direct jobs could lead to just as many indirect and induced jobs as there are direct jobs. If incomes for these jobs are similar to incomes for direct jobs, one can assume that total income tax revenue from direct, indirect, and induced jobs would be twice as much as shown in Table 16.

TOURISM POTENTIAL

The Willamette Falls site has the potential to be a significant tourist destination in Oregon. Because of its historical and cultural significance, natural beauty, and the recreational potential of the site, the opportunities for tourism development are abundant. Developing the site as a destination will have a significant positive impact on Oregon City and Clackamas County businesses and residents. The following pages contain statistical support for this claim.

Tourism produces economic benefits for communities in the form of jobs, income, and property taxes. Tourism directly supports businesses in service industries like restaurants and bars, hotels and motels, recreation and entertainment, transportation, and retail. In turn, these industries purchase services, supplies and materials in the local economy, which constitutes the indirect impact of tourist spending. Lastly, employees in all of these industries receive wages and spend those wages in the local economy, creating an "induced" effect. The direct, indirect, and induced effect of spending in the tourism industry is a significant part of the economy in the greater Portland region.



Source: Tourism Economics (www.tourismeconomics.com)

Currently, the tourism industry accounts for close to two percent of GDP in the state of Oregon, supporting 92,400 direct jobs (134,500 total jobs). Table 1 shows a summary of the impact of tourism for the state, the region, and the County.

Table 1. Annual Tourism Industry Impacts

Place	Overnight Visitors	Total Tourist Spending*	Direct Jobs	Estimated Total Jobs
Clackamas County	2.36 million	$399 million	5,250	6,646
Greater Portland Region	7.3 million	$2.7 billion	26,970	39,087
State of Oregon	24.6 million	$7.8 billion	92,400	134,500

Source: Travel Oregon, Travel Portland, Dean Runyan Associates. Figures are for most recent available year. *Total spending of all visitors, both overnight and daytrippers. Does not include airfare or travel to/from destination.

Cultural and Heritage Tourism

The National Endowment for the Arts defines cultural and heritage tourism as "travel directed toward experiencing the arts, heritage, and special character of a place."[24] As an historic and culturally significant site, the Willamette Falls project is likely to attract heritage tourists from Oregon, the rest of the United States, and even other nations. Oregon City and its surroundings are home to many historically significant sites, stories, and traditions. For the last several years, a broad group of stakeholders called the Willamette Heritage Area Coalition has been working to obtain official designation from the federal government as a National Heritage Area. This status would literally put Oregon City on the map and increase heritage tourism to the area. Historical and cultural aspects of the site that could appeal to a wide audience include:

- Oregon City is considered the End of the Oregon Trail
- Oregon City was the first incorporated city west of the Rocky Mountains
- The Willamette River is a designated Heritage River
- Willamette Falls was the site of the first long distance commercial electric power transmission (to Portland) in 1889
- Willamette Falls was a tribal gathering place for several native tribes



A 2009 national study revealed that 78% of all U.S. leisure travelers participate in cultural and/or heritage activities while traveling, including visiting historical sites, art museums, galleries, state or national parks, attending art fairs and festivals, dance performances, and

historical reenactments, and exploring urban neighborhoods.[25] The study also found that cultural and heritage travelers spend an average of $994 per trip, contributing more than $192 billion annually to the U.S. economy. A separate 2003 study found that cultural tourists spend more money than other travelers, have longer-duration trips, and are more likely to stay in a hotel or motel.[26]

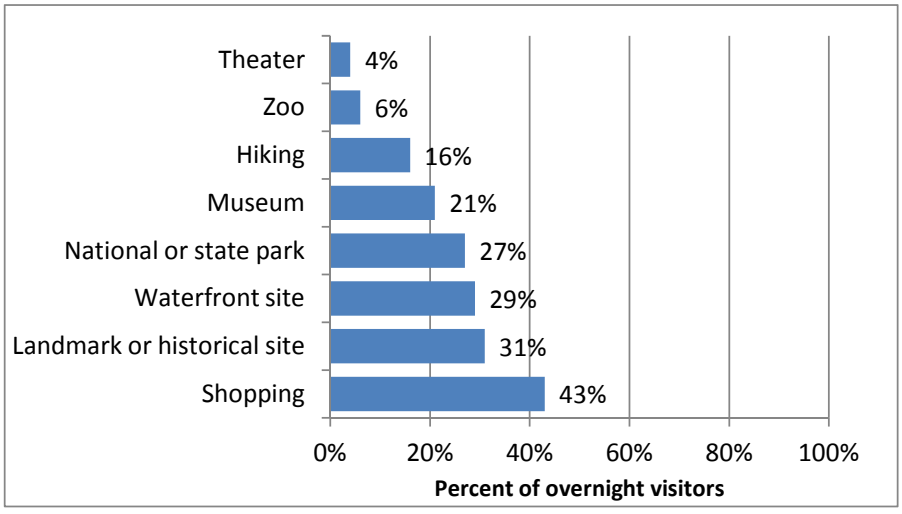
> "The vast majority of (cultural and heritage) travelers (65%) say that they seek travel experiences where the 'destination, its buildings and surroundings have retained their historic character.'"
>
> -The Cultural and Heritage Tourism Study, 2009

Tourism in the Portland Metro Region

The Portland Metro, defined as the three-county Metro region for the purposes of this analysis, relies on tourism for 2.6% of total jobs.[27] About 60% of the tourism industry jobs in the Metro region are in the food service or accommodations industries. The ratio of overnight visitors to resident population is 5:1.[28]

A 2009 survey showed that 31% of overnight visitors on leisure trips visited a landmark or historical site, 29% visited a waterfront site, 27% visited a national or state park, and 21% visited a museum while they were in the Portland area. These were the four most common activities after shopping, which was the top activity for tourists in the Portland region. Figure 4 shows more of the various activities enjoyed by overnight visitors.

Figure 4. Activities of Overnight Visitors to the Portland region, 2009



Source: Longwoods International, 2009. Many activities are omitted from this graphic, including fine dining, boating, gambling, etc.

Visitors to the Metro region spent $202 million on arts, entertainment and recreation in 2011. This spending supported 3,000 jobs with earnings of $68 million. Slightly more than one-half of this visitor spending ($107 million) was on cultural tourism, including theater, music, and art and science exhibits. Other recreational activities ($95 million) include cruises, tours, biking, hikes and sporting events.[29]

Tourism in Clackamas County

In Clackamas County, tourism consists of mostly outdoor activities at Mt. Hood and other natural areas in the county. Of all overnight visitors to Clackamas County in 2011, 593,000, or 25%, stayed in a hotel or motel, while the remainder stayed in the home of a family or friend or at a campground.[30]

Clackamas County Tourism by the Numbers

Amount of visitor spending that supports one job	$78,390
Employee earnings generated by $100 in visitor spending	$28
Local & State tax revenues from $100 in visitor spending	$4.80
Ratio of overnight visitors to resident population	6:1
Tourism industry jobs as a percentage of total jobs	2.4%
Average overnight trip spending, per person	$129
Average length of trip for overnight visitors	2.9 nights

Source: Dean Runyan Associates, 2011

Table 2. Visitor Spending in Clackamas County, 2011

Commodity	Total Annual Spending	Percent of Total
Accommodation	$ 60,600,000	15%
Food/drinks	$ 153,000,000	38%
Transportation	$ 55,300,000	14%
Recreation and Entertainment	$ 45,300,000	11%
Retail goods	$ 84,400,000	21%
TOTAL	$ 398,600,000	100%

Source: Dean Runyan Associates

Because only 25% of overnight visitors in Clackamas County stay in hotels and motels, spending on accommodations is just 15% of total visitor spending, as shown in Table 2. The majority of spending is on food and drinks, both from stores and restaurants.

Tourism in Oregon City

The Willamette Falls site creates an opportunity to weave together multiple destinations in the Oregon City area. These various sites are connected through their history.


Source: IgoUgo.com



Source: americaslibrary.gov Photo credit: Gary Poush


Source: nps.gov


Source: 52perfectdays.com.
Photo credit: Tamara Muldoon

Frequented Oregon City attractions and destinations include the Municipal elevator (upper left), which received 184,700 rides in 2011[31], the now-closed End of the Oregon Trail Interpretive Center (upper right), which attracted over 30,000 visitors in 2008[32], the McLoughlin House (lower left), which had over 7,000 visitors in 2008[33], and the McLoughlin Promenade, (lower right).

Other destinations in the City include:

- Museum of the Oregon Territory
- Ermatinger House
- Clackamette Park
- Rose Farm Museum
- Stevens Crawford Heritage House



RVs at Clackamette Park. Source: Oregon City

Clackamette Park, another riverfront park located at the confluence of the Willamette and Clackamas Rivers, is a popular site for fishermen, picnicking, camping, and everyday recreational activities. Clackamette Park is relevant to the Willamette Falls project due to its location just over one mile from the north end of the Blue Heron site, presenting the opportunity to physically connect the two sites on land or through water trails. In the past year the park received about 2,850 overnight recreational vehicle visits.[34] Last August, which is the peak month for park usage, there were 25 picnic shelter reservations for the park's two shelters, according to the Oregon City Parks and Recreation Department. The park is adjacent to Sportcraft Landing Moorages, a marina that offers boat storage and canoe and kayak rentals.

The US Secretary of the Interior recently named the Willamette River a National Water Trail. This designation increases the visibility and publicity of the River. Having the federal designation could also make it easier to secure funding to improve or increase access points to the river and to foster river tourism.

Tourism at the Site

Any new tourist activity at Willamette Falls could incorporate historical, recreational, or educational aspects of the site. In addition to the Oregon Trail theme, cultural and educational aspects of the site could center around the fact that the Confederated Tribes of the Grand Ronde, Siletz, Umatilla, Warm Springs, and Yakama Indian Nation recognize Willamette Falls as a sacred gathering place of high cultural significance. Boaters who paddle near the Falls can see Native American carvings in the rock face surrounding the falls.

There is also opportunity to put a spotlight on the Portland General Electric dam at the Falls, which uses innovative environmentally friendly technology to protect wildlife.



The Falls area is also a popular place for natural recreation, including boating, kayaking, and fishing. The scenic view of the Falls from various areas of the site offers opportunity for the development of viewpoints, and visitors could be taken closer to the Falls by boat.

There is also great opportunity to hold events and festivals on the site, especially if there will be a considerable amount of open space.[35] One festival already part of Oregon City is the Willamette Falls Festival, a three day event planned for October 2012. Events in Oregon City already attract thousands – 3,500 at the 2012 First City Celebration and over 1,000 at the last Lock Fest in 2010.

> Tom McCall Waterfront Park in Portland holds several large festivals each year, attracting **1.5 to 2 million people** in total for the five largest summer festivals. Many of the attendees are from out of town, and the economic impact of the events is estimated at **$65 to $105 million** annually.
>
> - Jillian Daley, The Oregonian, 2012

Economic Impacts of Tourism at the site

The number of visitors the site attracts will depend on the attractions and activities that are offered. The estimates in this report assume the presence of public access to Willamette Falls along with historical and cultural interpretation of some kind. The following table shows annual visitor counts for similar or nearby destinations. The average number of annual visitors for these 12 destinations is 658,476. The Crown Point Vista House in the Columbia River Gorge offers an especially good comparison for the Blue Heron site. It has historical significance, scenic views, free entry, and is located about 30 minutes from downtown Portland. The Vista House receives an estimated 775,000 to 1,290,000 visitors annually, the midpoint of which is about one million.[36]

Table 3. Visitor Statistics for Similar Tourist Destinations in Oregon.

Destination	Location	Number of Annual Visitors
Oregon Historical Society	Portland, OR	40,000
Oregon Trail Interpretive Center	Baker City, OR	59,105
Oxbow Park	Clackamas County, OR	215,265
Portland Japanese Garden	Portland, OR	223,000
Lewis and Clark State Park	Astoria, OR	225,846
Evergreen Aviation and Space Museum	McMinnville, OR	331,000
Oregon Aquarium	Newport, OR	457,500
Portland Saturday Market	Portland, OR	750,000
Crown Point Vista House	Columbia River Gorge	1,000,000
Bonneville Fish Hatchery	Columbia River Gorge	1,000,000
Timberline Lodge (excluding skiers)	Mt. Hood	1,600,000
Multnomah Falls	Columbia River Gorge	2,000,000
AVERAGE	-	658,476

Source: Each destination's management organization provided the most recent year's data, which in most cases is 2011.

To estimate visitor spending impacts, figures in Table 3 are used for low, medium, and high scenarios for the Willamette Falls site. The Vista House visitor level is considered "high," the average for all 12 destinations is "medium," and the Evergreen Aviation and Space Museum is considered "low." Visitors to Willamette Falls will be comprised of both local residents and tourists. While many visitors will be people already visiting the region who add this attraction to their itinerary, some will be people who would not have visited the area if not for the Willamette Falls attraction.

Assumptions and estimates must be used in order to predict economic impacts of a theoretical tourist destination. The average overnight visitor proportion for all National Parks in the United States is 30%.[37] Using this figure, it can be reasonably assumed that as an established destination, the site has the potential to attract between 100,000 and 300,000 overnight visitors. Impacts of differing visitor levels are shown in Table 4.

Table 4. Potential Annual Impacts of Low, Medium and High Overnight Visitor Levels

Visitor Level	Low	Medium	High
Total Visitors	331,000	658,000	1,000,000
Number of Visitors on Day Trips (70% of total)	231,000	458,000	700,000
Number of Visitors on Overnight Trips (30% of total)	100,000	200,000	300,000
Total Visitor Spending($129 per overnight trip, $49 per day trip)	$24,219,000	$ 48,242,000	$73,000,000
Visitor Spending that Supports One Job	$ 78,390	$ 78,390	$ 78,390
Jobs Supported by Visitor Spending	309	615	931

Source: Dean Runyan Associates.

While day trippers do not spend as much as overnight visitors – the statewide average was about $49 per person in 2009[38] - the impact on retail, restaurants, and entertainment and recreation venues is significant. Table 5 shows the number of people living within reasonable driving times of the site.

Table 5. Demographics of local market

Driving Time from site	Population	Annual population growth rate	Median income
30 minutes	1,632,626	1.07%	$ 53,224
60 minutes	2,509,070	1.05%	$ 53,583
90 minutes	2,940,558	1.03%	$ 52,861

Source: ESRI Business Analyst

Over 1.6 million people live within just a half hour drive of the site, and almost three million people live within a 90 minute drive. On average, each household in the market area spends more than $3,000 per year on recreation and entertainment and almost $2,000 on travel,[39] totaling over $2 billion on travel and $3 billion on entertainment and recreation. As a tourist destination, the site would capture a portion of this spending. In fact, studies show that an increase in local outdoor recreational resources can spur local residents to switch from other activities or from recreational activities outside the local area, which leads to net new spending on recreation and related retail and entertainment.[40]

When more information is known about the vision and master plan for the site, an analysis similar to Metro's study of the Oregon Convention Center (OCC) can be completed. This will show a more accurate picture of the economic impact of tourism at the site. For example, the OCC study, published in January of 2012, examined the operating expenses, attendee spending, and spending by sponsors and exhibitors for each event. This information was then used to determine the number of direct jobs created and their indirect and induced impacts to a much higher degree of accuracy than is currently possible for the Blue Heron site.

Fiscal Impacts of Tourism

Oregon does not collect sales tax, so most fiscal benefits will come from hotel room taxes and income taxes.

Hotel Room Tax. The hotel room tax, known as the Transient Occupancy Tax, applied to each hotel and motel room in the state. In Oregon City the total tax applied is 11% - one percent goes to the state of Oregon, 6% goes to Clackamas County, and 4% goes to Oregon City, with revenues generally used for tourism development. In Oregon City, the Oregon City Civic Improvement Trust awards funding to the Trolley, the Antique Fair, and the summer concert series, among other programs. In Clackamas County, the Tourism Development Council uses room tax revenues to advertise events and attractions in the County, including distributing brochures and building promotional websites.

In Fiscal Year 2010-2011, Oregon City received $51,559 from the two in-town accommodations - Best Western Rivershore Hotel and Clackamette RV Park. Clackamas County received $2,683,940 in the 2010-2011 Fiscal Year. The State of Oregon collected over $11 million from room tax receipts in the same year.

Overnight tourists that come to Clackamas County to visit the Willamette Falls site could be a large source of revenue. Travel surveys show 25% of overnight stays in Clackamas County are hotel and motel stays.[41] Therefore 100,000 overnight visitors will mean about 25,000 new overnight trips. At 2.9 nights per trip, that comes out to 72,500 stays, and if one assumes two people per room that becomes 36,250 room-nights. Depending on the room rate, that brings the following revenue:

Table 6. Revenue from Hotel Room Taxes, based on 100,000 overnight visitors

Room Rate	$80 per night	$100 per night
County Revenue (6%)	$174,000	$217,500
State Revenue (1%)	$29,000	$36,250
Oregon City Revenue (predicted)*	$3,306	$ 4,133
Total	$206,306	$257,883

*Due to the existence of only two accommodation businesses in Oregon City, most of the stays will occur outside of the City limits. Oregon City typically receives about 1.9% of what Clackamas County receives each year.

The predicted tax revenue for Oregon City is 1.9% of the total County revenue, a conservative estimate – visitors will likely want to stay closer to the Falls in the City. Therefore more of them will stay in Oregon City if rooms are available, so the revenue is likely to be higher than predicted. If more hotels or motels are opened in Oregon City, the revenue will also increase.

Income Tax. Income taxes from income from jobs in the tourism industry will provide revenue for the State. Table 7 shows the taxes collected from the low, medium, and high overnight visitor scenarios.

Table 7. Income tax revenues from overnight visitor spending

Number of Overnight Visitors	100,000	200,000	300,000
Income Generated	$4,239,000	$8,478,000	$12,717,000
Estimated State Income Tax*	$344,207	$688,414	$1,032,621

*Based on effective rate of 8.12% (2011-2012 effective rate on income of $26,000)

PROPERTY VALUE IMPACTS

Property value impacts include both on-site and off-site impacts. The current assessed value of the site, zones industrial, is about $1.6 million, resulting in about $28,000 in annual property tax. Using the assumptions for private development in the Job Creation section in this report and assuming no change in land value of the site, the property could have an assessed value of $44 million to $89 million (based on 2:1 to 4:1 FAR scenarios) in the future. These figures are based on building assessed value per square foot as Class A office

properties in Lake Oswego and mixed-use residential properties in southeast Portland. Under these assumptions, property tax revenue generated from the site would be $800,000 to $1.6 million per year at current tax rates, depending on the Floor Area Ratio.

Properties surrounding the mill are impacted by what happens on the site. Property values can increase or decrease depending on the condition of nearby properties. Residential property values in particular are higher in areas with more parks, amenities, and fewer nuisances like noisy or vacant industrial sites. Property value increases in the case of the mill site will come from the removal of the unused industrial structures, the creation of new amenities and open space, significant view enhancements to adjacent properties along the bluff, and improved waterfront access and connection to downtown.

Disamenity value of the site

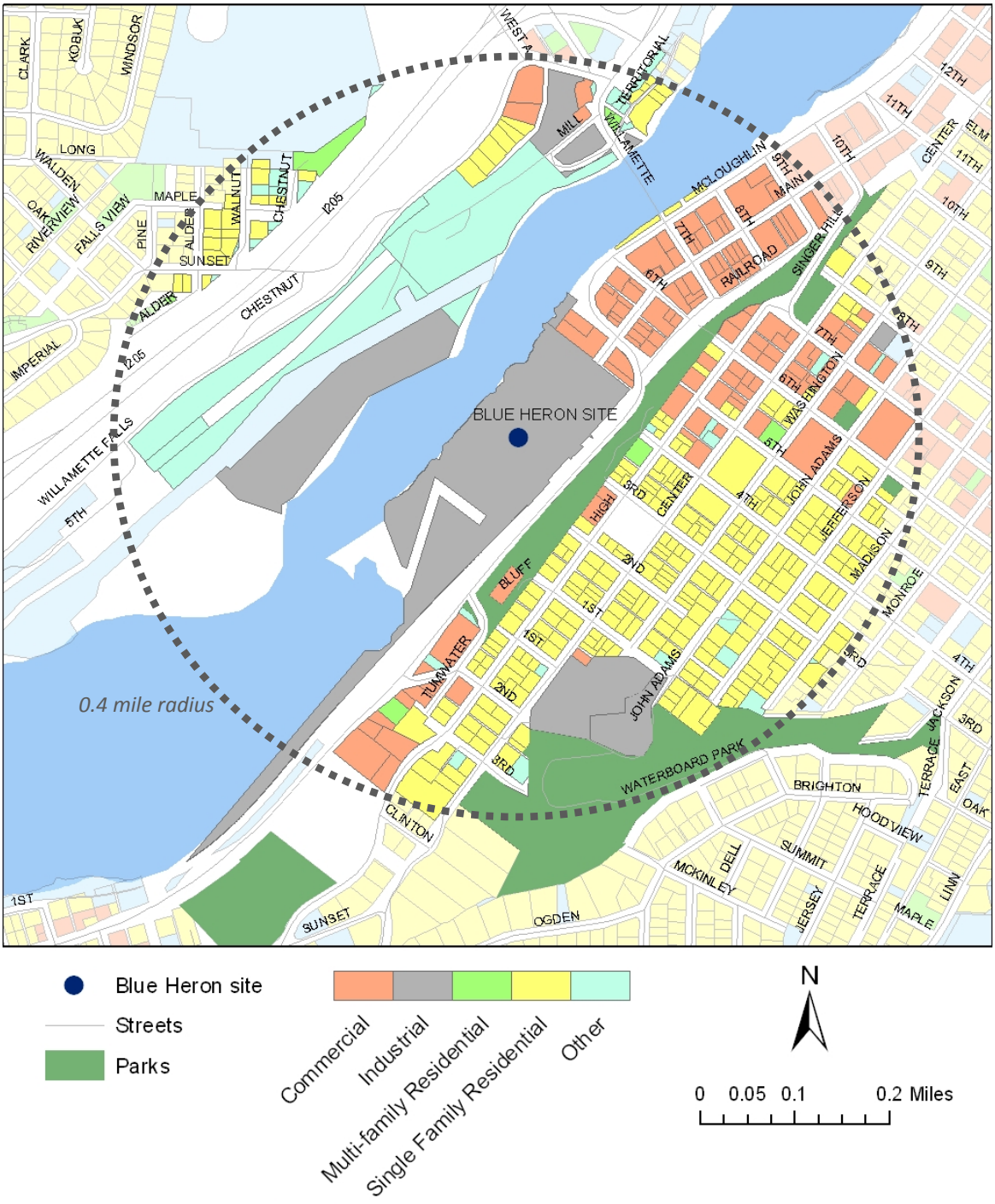
Disamenity is defined by the Oxford dictionary as "the unpleasant quality or character of something." It reflects the disadvantage conferred on a location due to some negative characteristic. Former industrial sites, vacant buildings, and derelict structures are disamenities that can have negative impacts on property values in their neighborhoods, especially for the properties within view. Removing these "eyesores" from the mill property will likely reverse the disamenity value currently felt in Oregon City and neighboring West Linn. The Environmental Protection Agency has documented property value improvements of two to three percent within a one-mile radius of a cleaned up brownfield, even without putting the land into a new use.[42]

A study conducted by the National Association of Homebuilders shows that single family homes near abandoned buildings sell at nearly **11% less** than the average home. Even the existence of industrial uses has an impact – the same study found a **7% reduction** in price for homes near industrial uses.

- "On the Waterfront: Still the Most Valuable Location." 2006.

An analysis of property values around the former mill site was conducted for this report. It is uncertain how close to the site a property has to be to be impacted, but past studies have examined properties within ¼ to ½ miles of a selected area. For the purposes of this analysis, 0.4 miles from the center point of the site was used, in order to include enough properties to obtain statistically significant results. This includes 520 separate properties on 274 acres. Figure 6 on the following page shows the existing land uses of those properties.

Figure 6. Land Use of Properties within 0.4 miles of Blue Heron site



A regression, or hedonic, analysis of these properties in Oregon City and West Linn shows that close proximity to the site (being within 1000 feet), all else equal, reduces home values by an average of 7.7%. For residences between 1000 and 1500 feet of the site, the mill reduces value by 0.9%. Commercial properties are also affected – see Table 17 for details and Appendix C for complete regression results and methods.

Table 17. Property Value impacts of proximity to the former mill site

	Negative Impact per property	Number of properties	Total negative value
Within 1000 feet	$ (15,647.70)	47	$ (735,440)
1000 to 1500 feet	$ (2,623.19)	95	$ (249,203)
Commercial within 1000 feet	$ (11,736.00)	92	$ (1,079,712)
Total			*$ (2,064,355)*
Property Taxes Lost per year			*$ ($36,952)*

Source: Regional Land Inventory System, Metro.

Reduced property values not only hurt property owners but also result in reduced property tax revenues for Oregon City, Clackamas County, and numerous other taxing districts. Last year, an estimated $36,952 was lost in property tax revenue due to the presence of the former mill site.

Recent home sale prices show similar results. In the last 9 months, properties within about 0.5 miles of the site sold for an average of $176,000 ($166,000 median).[43] Properties between 0.5 and one mile of the site sold for an average of $240,000 ($188,000 median). While there are many reasons for the price differences, this demonstrates that higher-value properties are more prevalent farther away from the site.

Potential amenity value impacts of the site

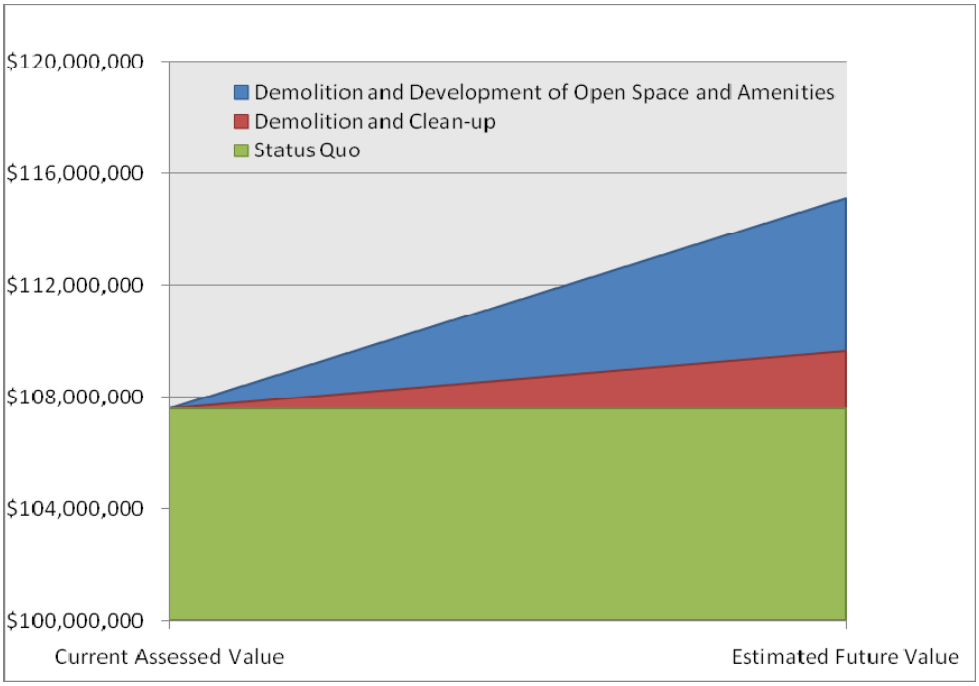
The current total assessed value of the taxable properties within 0.4 miles on the site is $107,586,009.[44] These properties paid $1,946,228 in property taxes in 2011. Research demonstrates that proximity to amenities like services, parks, and open spaces can increase property values by 3 to 20%.[45] For example, a study in The City of Portland found that being within 400 feet of open space increased a home's sale price by $2,700 to $3,500.[46] In a Philadelphia study, there was a 7.2% increase in the first year in property values within a quarter mile of an abandoned property that was converted to open space, and a 5.2% annual increase in property values thereafter. There was even an "announcement effect," of 0.7%, whereby properties appreciated when news of conversion was made public.[47]

Another example of this phenomenon is found in downtown Seattle, where studies predict a 5 to15% increase in surrounding property values resulting from removal of the Alaskan Way Viaduct.[48] The Viaduct is a highway along Puget Sound that limits waterfront access and views. The highway is slated to be replaced with trails and open space along the waterfront.

If a conservative estimate of 5% average increase in property values is predicted for surrounding mill site properties, taxable value will increase by about $5,500,000. While this represents almost $100,000 in property taxes, Measure 50 limits on assessed value increases will reduce the fiscal benefit considerably. Figure 7 summarizes the property value impacts for demolition only and for demolition and development of open space on the site, using the 5% estimate. Demolition results in $2,000,000 in value gained, then open

space results in another $5,500,000 increase. These estimates are further supported by other research. For example, one study projected that cleaning a brownfield in Kenosha, Wisconsin, would result in a 1.7 to 6.2 percent rise in property values, and cleaning it *and* turning it into a park would boost home values by 3.4 percent to 10 percent.[49]

Figure 7. Potential Change in Property Value of Surrounding Properties



Source: Future values are based on the regression analysis results of $2,064,355 in negative value regained and 5% estimated increase for properties within 0.4 miles of the site.

The size, type, and location of open space determines the impact it can have on property values. Increases are maximized for residential and office properties, while industrial and retail uses are affected little by proximity to parks. Parks with athletic fields or other intensive uses can have a negative impact - but those with passive recreation uses such as trails, landscaping, and playgrounds are positive. In the areas studied, most of the positive impact on values occurred within an average 600 feet of the park.[50]

Programming has also been found to be important for parks to have a positive impact on property values. Programming keeps eyes on the park and high levels of activity, which ensures the park does not become a disamenity by attracting crime or other undesirable uses. Anecdotal and empirical evidence shows that homes and condo units with direct park access or views sell faster than others. Many developers are more attracted to locations with existing park amenities.[51]

Historic Preservation and Property Values

It is widely established that individual properties with a historic designation and properties within a historic district experience increased property values.[52] In Florida, at least 15 of 18 cases studied showed property in the historic district appreciating more than the non-historic comparison neighborhoods. [53] Researchers found no instances where historic designation depressed property values. There is evidence that shows adjacent properties benefit from historic preservation as well. In Cleveland, Ohio, loans made by the Cleveland Restoration Society to rehabilitate historic homes had a positive impact not just on the houses that received the loans, but also on property values of their neighborhoods. In the neighborhoods studied, the houses that received loans had higher rates of appreciation than properties not near a rehabilitation project.[54]

It can be expected that preservation of historic buildings or other structures on the site will add to the positive impacts on Oregon City, increasing nearby property values. New construction on the site could be more attractive and valuable due to its location among historic buildings.



1927 image of Paper Mill No. 4, which still stands on the site. Photo credit: Clackamas County Historical Society

DOWNTOWN REVITALIZATION IN OREGON CITY

While it has made great strides in recent years, downtown Oregon City is not a true 18-hour, live-work urban downtown. Over 1,000 people work downtown, according to Main Street Oregon City. The thriving Main Street program has helped establish over 40 new businesses in downtown in the past few years. Façade improvements and streetscaping work are also underway. Desirable features of downtown include the riverfront setting, numerous restaurants and an attractive historical background. While all this contributes to a vibrant downtown, progress is limited because no residential uses exist in the historic downtown area**. A recent development opportunity study by Urban Land Economics and Vallaster Corl Architects concluded that market rents in Oregon City are not yet high enough to support the costs of urban housing development.**[55] There is also not a major employer located downtown such as Clackamas Community College or a hospital to attract future residents.



Source: Hasson Realty

Accordingly, there are many efforts underway to attract and incentivize new development, especially residential development, downtown. Through Urban Renewal, Oregon City hopes to leverage investment. Two vacant sites downtown are currently being marketed by the City as potential mixed use office or multi-family residential development projects. Oregon City Main Street, through its efforts to increase downtown's attractiveness and draw entrepreneurs, hopes to contribute to an environment in which residential development is financially feasible. The Willamette Falls Funding Strategy report also identifies potential sources of gap financing for development on the site.

Looking further ahead, the regional plan for High Capacity Transit calls for the extension of a light rail line to downtown Oregon City.[56] The extension is identified as a "next phase regional priority corridor" but is not yet funded or scheduled, and likely will not occur for many years. Light rail or other types of high capacity transit in Oregon City will make any new development there more favorable.

The role of the Blue Heron site

The Blue Heron site has the potential to spark redevelopment of other nearby sites in Oregon City by providing a downtown destination. The introduction of additional urban amenities will make the broader downtown area a more interesting and attractive place to live and work; research indicates a stronger mix of urban living amenities will increase achievable rents, and thereby make future projects more economically feasible.

The fact that there are currently no residences in downtown Oregon City makes it difficult for developers to predict the viability of residential development. If developed with mixed use residential units, the Willamette Falls project could establish new market comparables for mixed use development in the downtown area.



Development of the site as a scenic and recreational amenity will make downtown more attractive to both employees and employers. Companies are increasingly sensitive to quality of life aspects of a location.[57] In addition to retaining the existing creative businesses that have recently located in downtown Oregon City, the Blue Heron site could also attract entrepreneurs, knowledge workers, and other companies who place a high value on sense of place and amenities.

> "Knowledge workers prefer places with a diverse range of outdoor recreational activities (e.g., rowing, sailing, cycling, rock climbing) and associated lifestyle amenities. Access to water and water-based recreation is of particular importance to these workers. Knowledge workers prefer regions where amenities and activities are easy to get to and available on a "just-in-time" basis."
>
> - Richard Florida, 2000. Quality of Place and the New Economy

Real Estate Market

Residential. In the Oregon City area, average residential rent per square foot is $0.84; for one bedroom units, $0.91 per square foot.[58] For comparison purposes, average rents in downtown Portland are $1.68 per square foot ($1.77 for one bedroom units), and $0.98 in Lake Oswego ($1.08 for one bedroom units).[59] For new construction or renovation, rents are typically higher. A 2012 study by Civilis Consultants estimated that rent for new units near downtown Oregon City could be $1.25 per square foot.[60]

Table 18. Multifamily residential rents per square foot in selected metro submarkets, 2012

Submarket	One Bedroom	Two Bedroom	Three bedroom	Four bedroom	Average
Downtown Portland	$1.77	$1.39	$1.83	$1.74	$1.68
Lake Oswego/ West Linn	$1.08	$0.96	$0.96	$0.92	$0.98
Hillsboro	$0.99	$0.84	$0.86	$0.85	$0.89
Clackamas/Oregon City	$0.91	$0.83	$0.81	$0.79	$0.84

Source: Norris Beggs and Simpson 2012 Second Quarter Multifamily Report

Residential vacancy rates in Oregon City and throughout the region are extremely low - between two and three percent.[61] Although the low vacancy rate is attractive to lenders, the low rents and lack of comparable properties in the area represent a challenge to developing mixed use residential downtown.

Commercial. Average retail rent for the Portland metro area is $15.77 per square foot per year, and office rent is $20.88. These rates are lower in Oregon City, however - average rent for commercial space in the Oregon City Area is $12 to $17 per square foot.[62],[63]

Table 19. Commercial office rents per square foot in Portland Metro sub-markets , 2012

Market	Average rent	Vacancy
Downtown	$21.68	11%
Lake Oswego/Kruse Way	$24.81	24.2%
Wilsonville	$22.71	30.7%
Milwaukie/Oregon City	$17.08	20.4%

Source: Cushman Wakefield Second Quarter Marketbeat Report.

Class A office space is uncommon in the Oregon City area. Class B office space tends to rent for about $5 less per square foot than Class A space. However, real estate advising company Grubb Ellis predicts that Portland-area demand will remain strong for creative and unique spaces, with some Class B and historic spaces commanding higher rents than run-of-the-mill Class A buildings.[64]

Development Potential

In general, the outlook for real estate in the Portland Metro area is good. Several real estate advising firms, including Cushman Wakefield, cite positive expectations for future development in the Portland area, predicting an increase in development and rents in the next year.[65]

> "Several indicators are suggesting that economic conditions are improving in Oregon. The Portland metro area added 20,000 jobs over the last year increasing the number of jobs by 2.1% according to the U.S Bureau of Labor Statistics. Unemployment in Portland dropped three tenths of a percentage point in second quarter 2012 to 7.9%."
>
> -Cushman Wakefield Marketbeat Report

Favorable Factors

There are several factors at play that will contribute to the potential for development on and around the site and the revitalization of downtown.

Contiguous Acreage. Assembling land is often one of the biggest obstacles to redevelopment. The Blue Heron site is contiguous and under one owner, which makes the redevelopment process easier than situations in which parcels must be acquired from multiple owners.

Waterfront Location. The location of the site of the waterfront creates greater development potential. The National Association of Home Builders (NAHB) estimated that waterfront properties in Western suburban cities command prices 34% higher than the average home, and those near but not on the waterfront command prices 1% higher on average. Access to waterfront on the site could help properties achieve higher rents needed for construction to occur.

Retail Demand. A market analysis of downtown by Marketek, Inc. from 2009 reports that the market area for downtown Oregon City will be home to over 120,000 people by 2014. It also finds a leakage of retail dollars outside of the market area due to limited retail space. Marketek predicts that downtown could capture up to 15% of current and future retail demand in the area, translating to 96,000 square feet of retail space.[66]

Population growth. Regional population is projected to grow to over two million in the next few decades, and Oregon City is expected to increase 56% to 50,000 by 2040. New development will be needed for the additional residents to live, work, shop, and play.

Table 20. Population Growth, 2010 to 2040

Place	2010	2040 projected	Percent Change
Oregon City	32,000	50,000	56%
Clackamas County	380,000	620,000	63%
Portland Region	1,645,000	2,380,000	45%

Source: Oregon Office of Economic Analysis, Metro.

Proximity to Airport. The PDX International Airport is less than a 30 minute drive from the site, making it attractive to both firms and residents.

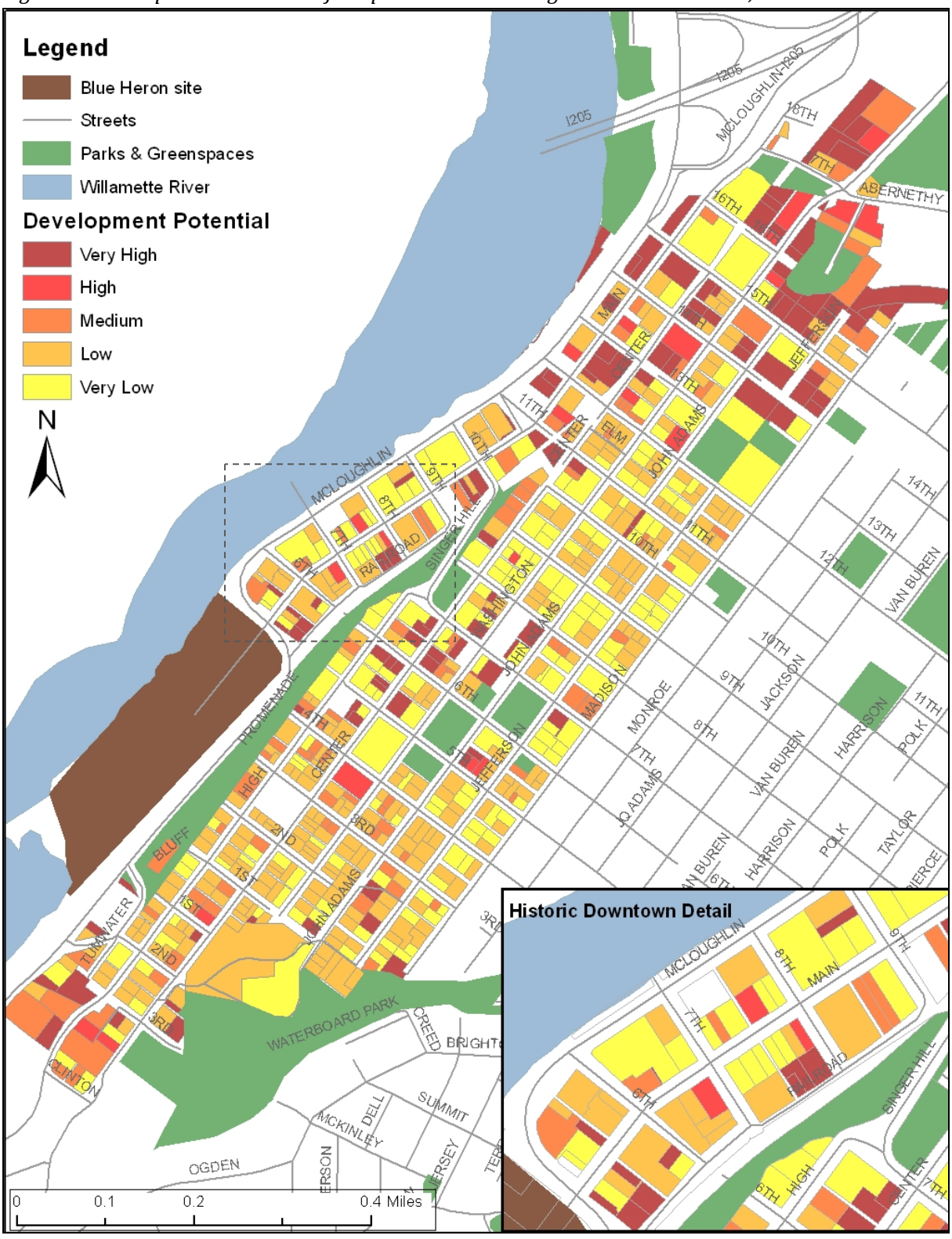
Popularity of urban living. Demand for housing in urban locations is rising, especially among baby boomers and retirees. The site's proximity to downtown is highly advantageous. A recent development in downtown Milwaukie, just up the road from Oregon City, demonstrated that demand for residential units in walkable, urban areas is strong even in untested markets. A development opportunity study by Urban Land Economics/Vallaster Corl Architects states that residential target markets should include both single and two-person working households, along with senior housing. It also suggests that studio apartments have a strong potential market because of their lower price point. One limitation in downtown Oregon city is the existence of the railroad, which reduces potential for residential development along or near Railroad Avenue due to the noise and frequency of trains.

> "Among property sectors, everybody wants apartments. Living smaller, closer to work, and preferably near mass transit holds increasingly appeal as more people look to manage expenses wisely. Interest cools on offices, especially suburban office parks: more companies concentrate in urban districts where sought-after generation-Y talent wants to locate in 24-hour environments."
>
> - 2012 ULI Emerging Trends in Real Estate

Development Potential of Surrounding Properties

One basic method for determining development potential is to calculate the ratio of site improvements to land value.[67] A recent evaluation by the City of Portland considered properties with a building value, or "improvement" value to land value ratio of 50% or less to be possibly redevelopable.[68] Parcels with this ratio are considered underutilized and more likely to redevelop than parcels with a higher ratio. In the map shown on the next page, high development potential is defined as a 50% ratio, and very high potential is defined as a ratio of 25%. The properties shown on the map encompass 147 acres, excluding publicly-owned sites. Out of these 147 acres, 34.5 acres, or 23%, have high or very high development potential.

Figure 8. Development Potential of Properties surrounding the Blue Heron Site, 2012



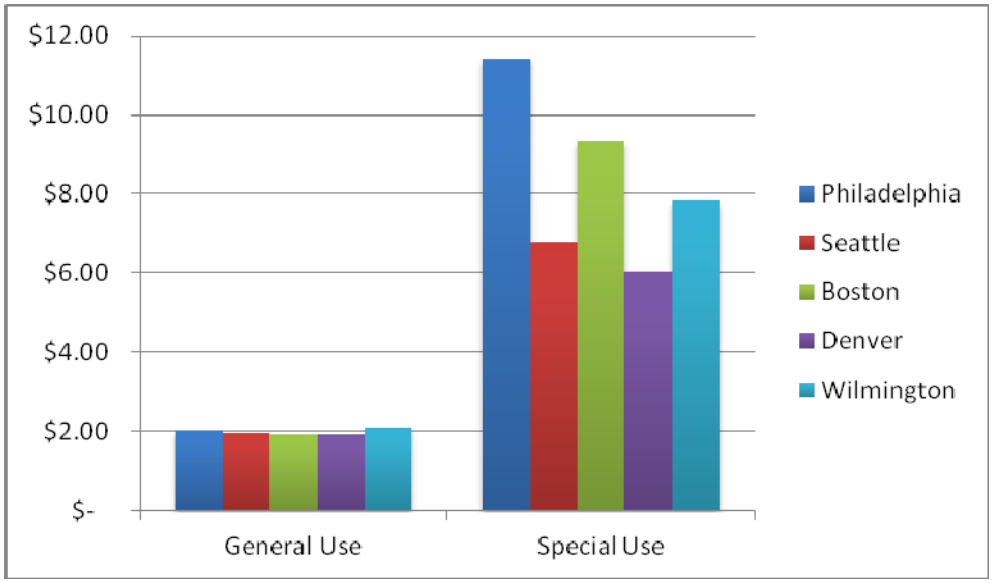
Source: Metro Regional Land Inventory System (RLIS)

USER BENEFITS

Redevelopment of the site will provide scenic views of the Falls, opportunity for recreational activity, and access to open space on the riverfront. Residents of Oregon City and surrounding areas will benefit from the use of the site. Little or no money exchanges hands when a person uses a park, trail, or other public site, but there is still significant gain to that person, which economists call "consumer utility." This can be quantified in the form of "willingness to pay," in which park users name a price for a recreational activity that reflects the physical and emotional gain they derive from the activity. More intensive uses usually have higher "willingness to pay" values, reflecting the more significant physical and emotional gain that is enjoyed by engaging in them.[69] Trail use and other recreational activities also offers health benefits, which can contribute to higher quality of life and healthcare savings for individuals, communities, and private companies.

In a few cities, surveys have been conducted to determine residents' willingness to pay for parks and other amenities. For example, in Seattle, surveys showed general park use is worth $1.95 per use to residents.[70] In Philadelphia, the value per visit to a historic site is $3.13. Figure 9 shows values for other cities. In each city surveyed, residents valued general use visits at about $2.00 each, and special use visits between $6 and $12 each on average. Special use values include golf courses, gardens, festivals and concerts, and historic sites.

Figure 9. Per Visit Value of Park Visits in Selected Cities



Source: The Trust for Public Land. General uses include picknicking, walking, using playgrounds, and dog walking. Special uses include festivals and concerts, golf courses, gardens, and historic sites.

There has not been a study of this kind for any municipality within the Portland metropolitan area. However, because the cities studied showed very similar results despite differences in size and location within the country, it is reasonable to assume the results for Oregon City and the Portland Metro area would not be much different.

If the Willamette Falls site receives the same number of visitors as the Crown Point Vista House in the Columbia River Gorge (one million) and visits are valued at about $2.00 each, the site would be worth $2,000,000 annually in user benefits. Using the historic site use value for Philadelphia of $3.13, the site would provide $3,130,000 in direct use benefits annually. Special uses like gardens and festivals would be expected to result in an even greater total benefit.

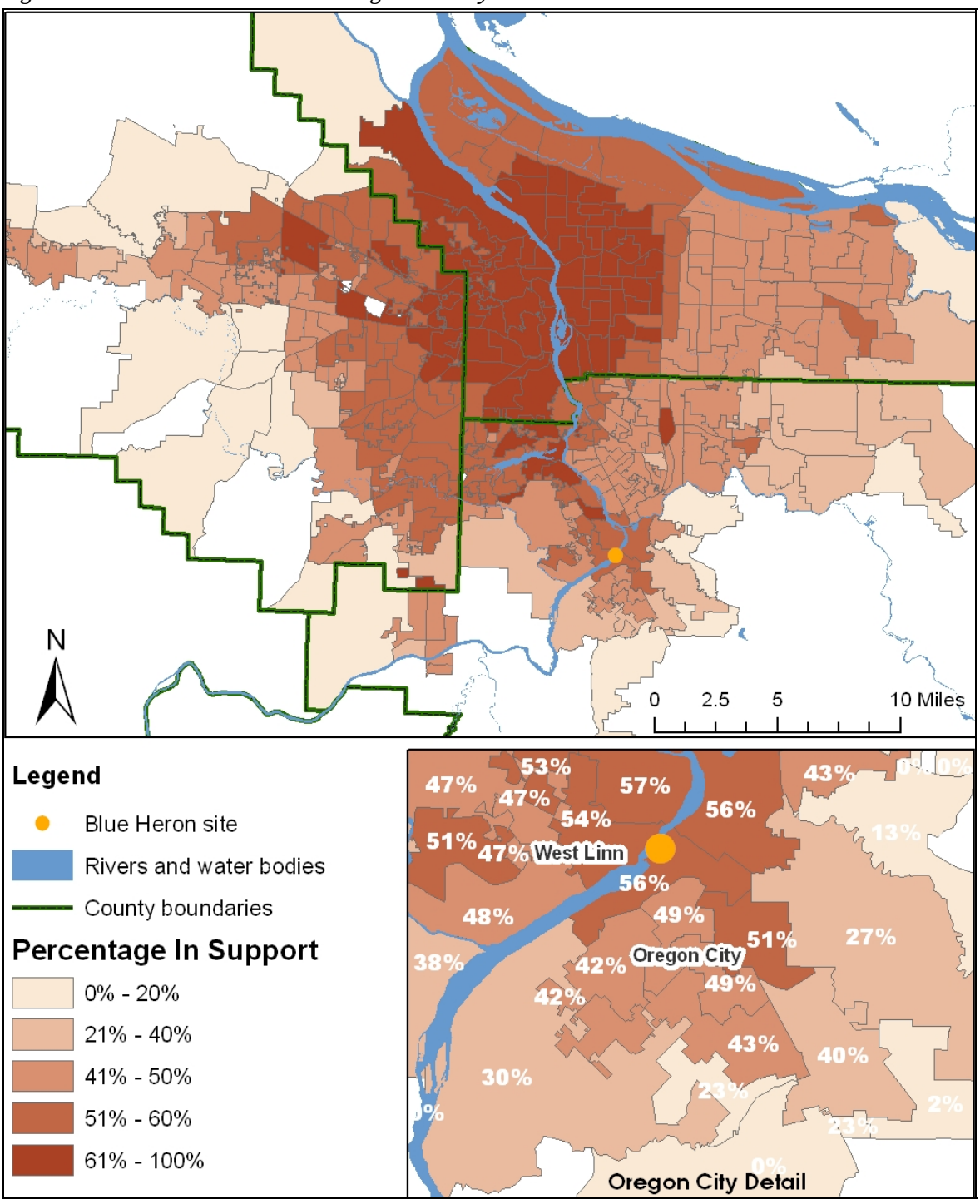
Development of the site also offers the opportunity for new connections to the regional trails system. The site could lead to the interconnection of 50 miles of continuous trail as a result of a newly-developed section. There is an opportunity to interconnect the trails on site north to the I-205 Trail (170,000 users per year), Trolley Trail (about 42,000 users per year), and Springwater Corridor (1 million users per year)[71], south to the Willamette River Greenway, and west over the Arch Bridge to the Willamette River Greenway in West Linn. New trails will also leverage Oregon City's existing network of public stairways, promenades, and municipal outdoor elevator to link the entire community to Willamette Falls.



Arch Bridge and Willamette Falls.

Another source available for determining the user benefits of parks and open space to Portland-area residents is Metro's bond measure for natural area acquisitions. In 1995 and in 2006, voters in the region approved bond measures for Metro to purchase and protect natural areas. The full bond measure language is found in Appendix D. The average homeowner in the region pays $2.50 to $2.92 per month. Figure 10 shows the voting results by precinct. In Oregon City, there was majority support for the measure in the three precincts closest to downtown Oregon City, where population is most concentrated. While not stronger than Portland, the support in this area is significantly stronger than many other parts of Clackamas County. The fact that the majority of voters voted in favor of the measure reflects their willingness to pay for the existence and use of new natural areas.

Figure 10. 2006 Bond Measure Voting Results by Precinct



Source: Metro.

ENVIRONMENTAL BENEFITS

Re-greening of the site will contribute to human enjoyment, downtown revitalization, and property value increases, as demonstrated previously in this report. In addition, ecological restoration offers benefits in the form of ecosystem services, habitat protection, and climate change resiliency. Lastly, improving ecological conditions on the site will help the partnership leverage support for other work on the site.

Ecosystem Services

Natural ecosystems and the plants and animals within them provide us with services that would be very difficult or expensive to duplicate with technology. A few examples of ecosystem services are flood risk mitigation and prevention, pollination, and ground water recharge. Though these services are often difficult to value monetarily because they are provided for "free", ecosystem services have tremendous economic value and are critical for our quality of life and economy. Scientists estimate that the global value of ecosystem services is many trillions of dollars per year.[72]

Improving water quality through stormwater management and other restoration is a valuable ecological service. The Blue Heron site has the capacity to naturally treat stormwater from the site, from McLoughlin Blvd., and other parts of Oregon City. Treatment could be accomplished using sustainable and innovative methods, providing educational value as well as environmental value. The infrastructure typically required to convey stormwater is costly to build and maintain over time. One method of determining the value of ecosystem services is the Replacement Cost method, in which the cost of humanmade systems to provide the same service is considered the monetary value of an ecosystem service.[73] If portions of the site are restored to a more natural ecological state, they can provide services that would eliminate the need to use costly manmade systems.

A report by ESA on the stormwater system on the site states that stormwater runoff collected on-site currently flows through the clarifier tank and then directly to the Willamette River.[74] Other than the clarifier tank, the site does not currently utilize any stormwater management treatment best management practices.

The report concludes that runoff is still likely a source of metals, sediments and other pollutants associated with urban land-uses as well as any residual contaminants that remain on the site. Under current regulations, all the stormwater from the site needs to be treated prior to discharge. Based on ESA's analysis, a total volume of approximately 66,000 cubic feet of stormwater runoff is generated on the site.

There are also five nearby stormwater outfalls off-site that could be routed to the site for treatment, increasing the volume of stormwater treated on site and leading to higher value.

Habitat Restoration and Health

Acquisition of the site will offer the opportunity to restore approximately 16 acres of habitat at or near the Willamette Falls site. The area surrounding Willamette Falls is an important habitat for Endangered Species Act-listed salmonids, including Coho and Steelhead. The site's fringe areas include oak and prairie habitats that are unique to the Willamette Valley and promote rare and unique native plant and wildlife species.



There is also potential to remove some of the structures along the riverbank and daylight some of the outfalls into the Willamette River. Daylighting is the redirection of a stream from a pipe or culvert into an above-ground channel, with the goal of restoring a stream of water to a more natural state. This will create new habitat for wildlife in the Willamette River.

Stormwater treatment using innovative best practices will also improve water quality in the Willamette River, further enhancing habitat health.

Climate Change Resiliency

Preserving more of our region's and earth's resources will help limit climate change impacts and make our region more resilient to them. Redevelopment and reuse of the site and its infrastructure will conserve land, materials, and energy.

Redevelopment of industrial land is one way to reduce development pressure on valuable farm and forest land near the urban growth boundary. A 2001 study by researchers at the EPA and George Washington University found that, on average, for each acre of urban brownfield land redeveloped, 4.5 acres of outlying green space are preserved. [75]

Historic preservation also conserves resources when compared to new construction. The National Trust for Historic Preservation found that "Building reuse almost always offers environmental savings over demolition and new construction. Moreover, it can take between 10 and 80 years for a new, energy-efficient building to overcome, through more efficient operations, the negative climate change impacts that were created during the construction process."[76]

Leveraging Support

There are a multitude of private and public grants and funding opportunities available for habitat protection and environmental cleanup. Performing this type of work on the site will generate more funding to accomplish all four values of the Willamette Falls partnership.

IMMEASURABLE INTRINSIC VALUE

"There are here three falls on a line of rocks extending across the river, which forms the bed of the upper channel. The water is precipitated through deep abrazed gorges, and falls perhaps forty feet at an angle of about twenty degrees. It was a beautiful sight when viewed from a distance, but it became grand and almost sublime as we approached it nearer. I mounted the rocks and stood over the highest fall, and although the roar of the cataract was almost deafening, and the rays of the bright sun reflected from the white and glittering foam threatened to deprive me of sight, yet I became so absorbed in the contemplation of the scene, and the reflections which were involuntarily excited, as to forget every thing else for the time, and was only aroused by Captain W[yeth] tapping me on the shoulder, and telling me that every thing was arranged for our return."

- John Townsend, scientist, 1834. From http://

www.usgennet.org/alhnorus/a

Redevelopment of the Blue Heron site has cultural and other intrinsic value that cannot be measured. Willamette Falls is considered by some to be the most compelling natural feature in the Portland Metro area. For over 150 years, it has been blocked from public view and access. The Willamette Falls partnership could be the means for Willamette Falls to finally reveal itself to the world.

Some of the intrinsic benefits of the site can be explained by non-use value, which are the benefits that a site provides which do not involve using the site in any way.[77] There are three types on non-use values: existence value, option value, and bequest value. Researchers attempt to measure non-use values through contingent valuation, or "willingness to pay" surveys. Studies have shown that the non-use value for a natural resource can be two to nine times greater than the recreation value.[78]

Existence Value

Existence value is the value that people derive from the knowledge that the site exists, even if they never plan to visit it.

Option Value

Option value is the value obtained from maintaining the option of taking advantage of a site's use value at a later date.

Bequest Value

Bequest value is derived from the wish to bequeath the site, or asset, to future generations.[79]

Another intrinsic benefit is the cultural significance of the site to the Confederated Tribes of Oregon. **Spiritual meaning**, impossible to quantify, is an important aspect of the site and must not be overlooked. There is even a tribal legend about the formation of the Falls. One version tells the story of Coyote and Meadowlark:

> *"'Let's make a waterfall across the river,' said Meadowlark to Coyote. So they made a rope by twisting together young hazel shoots. Holding one end Meadowlark went to one side of the river. Coyote stayed on the other side. Carrying the rope between them they went down the river to a place near where Salem is today. They stopped and Meadowlark said, 'Let's make it here.'*
>
> *But Meadowlark spoke in the Clackamus language and Coyote only knew the Kalapuya language. He did not understand what she said. Instead of making waterfalls, he turned some animals into rock.*
>
> *Meadowlark and Coyote walked on down the river to where Oregon City its today. 'Let's make the waterfall here,' said Meadowlark. This time she used sign language and Coyote understood.*
>
> *So they stretched the rope tight. Coyote pulled hard. Meadowlark pulled with all her might and pressed her feet hard against the rock she was standing on. Then Coyote called on his great powers and turned the rope into rock. The river poured over the rock."*[80]

Other intangible benefits include the **sense of community pride** that will come from successful reuse of the site, and the boost it will provide to the reputation of Oregon City and Clackamas County. Additionally, the site will provide Oregon City with a stronger **sense of place** - a heightened connection of people to the land.

LESSONS LEARNED FROM CASE STUDIES

There are numerous projects around the country with similarities to the Willamette Falls project, including former mills or other industrial uses that have been transformed into parks, tourist destinations, mixed use centers, and museums. These cases offer evidence that catalytic projects like Willamette Falls are feasible, do attract private investment and do increase quality of life. However, many of these projects occurred in larger cities or were missing a key aspect of the Willamette Falls project. As a small City on the edge of a metropolitan area, Oregon City poses major differences that limit the applicability of these projects, but there are still lessons that can be learned from previous experiences. Appendix E lists 19 projects that feature similarities to this one. Below are a few highlights from limited research into these cases.

> "A couple of years ago we adopted a redevelopment plan for an industrial area adjacent to downtown. We started asking ourselves what kind of develop
>
> ment might go there, housing or mixed-use? We figured out quickly that we were asking the wrong questions. We had no idea what the market could bear at that time or any time in the future, but we knew we wanted to create an extension of our downtown. So, we did exactly what New York did when they made their plan so many years ago - we kept it simple. The City Commission adopted a plan that laid out streets and blocks, small ones. And that's it."
>
> -Anthony Lyons, former Director of the Gainesville, FL Community Redevelopment Agency in an interview with Fast Company. www.fastcodesign.com

Mill Ruins Park – Minneapolis, MN

Mill Ruins Park at the Mississippi River is considered to be the centerpiece of the revitalization of Minneapolis' historic West Side Milling District. The park interprets the history of flour milling in Minneapolis and shows the ruins of several historic flour mills. The park also has a bridge to take in the views of St. Anthony Falls, the only waterfall on the entire Mississippi River. Development in the Mill District surrounding the park is bolstered by the park's role as a destination. About 4,650 new housing units in the area have been completed or are in construction and over a thousand more have been planned.

Cannery Row – Monterrey, CA

Cannery Row is a waterfront street in Monterey, California known for its historically significant sardine canning factories made famous by John Steinbeck's novel. It currently houses stores, hotels, and restaurants in the preserved factories and is a popular tourist destination. After restaurants moved into the area following the abandonment of the canneries, the growing popularity of the "row" led to the development of a world-class aquarium that attracts over two million visitors per year, resort hotels, and additional retail and restaurants.

Monadnock Mill – Claremont, NH

In Claremont, a city of 13,000, redevelopment of former textile mills along the Sugar River attracted private investment from a growing tech company and a popular regional hospitality company. Historic mill buildings were renovated into offices, hotel rooms, and lofts. One of the developers, John Illick, "is quick to point out that this project would have

been dead in the water without a strong commitment from the city of Claremont to improve their infrastructure, including street upgrades, the creation of a riverside park, and the large scale construction of new parking."[81] State and Federal funding was also integral in financing infrastructure and a pedestrian bridge that connects the mills to parking and the Claremont Visitor's Center. The lot along with a 256 space parking garage were funded by a $10 million bond to be paid back over time through a TIF district.

Another source of lessons is Metro's report on Economic Development and Parks. Here, case studies of successful projects shared the following features:[82]

- A large vision with a high level of public investment typically combining local and federal funding with private donations.
- An extremely high level of design excellence, using nationally or internationally renowned design teams.
- High public visibility often with a trail connection or other destination linkages that increase use.
- A significant amount of upfront public investment in order to attract private development.

CONCLUSION

THE FORMER BLUE HERON PAPER MILL IN OREGON CITY IS WITHOUT A DOUBT UNIQUELY SITUATED TO BE A CATALYST FOR GROWTH AND DEVELOPMENT IN OREGON CITY, AMONG OTHER BENEFITS.

The cost of doing nothing is high. Without an investment from the public sector, it is almost certain that the site will sit vacant. If left in this state, the property will be a drag on the redevelopment of downtown Oregon City and the benefits that have been described in this report will not be realized.

Initial public investment and a fully transformed site will give residents and visitors the opportunity to enjoy the site's beauty and historical significance. It will increase property values in the City, contributing to the wealth of the community. It will spur the creation of new businesses in the City and County, from hotels and restaurants to retail stores and recreational businesses. It will house jobs that contribute to regional economic development and the growth of the Oregon City regional center. It will improve the environment through habitat protection. It will make Oregon City and the region a more attractive place to live, work, and do business.



ENDNOTES

[1] Peter Harnik and Ryan Donahue. Turning Brownfields into Parks. The Trust for Public Land, 2011.

[2] Geffel, Michael. Print's Not Dead: Legacy Contamination And Landscape Infrastructure At Blue Heron Paper Company. Prepared for Metro Natural Areas Acquisitions. May 2012

[3] "The First People of Clackamas County" http://www.usgennet.org/alhnorus/ahorclak/indians.html

[4] Ibid.

[5] Oregon Department of Transportation. Traffic Volumes on State Highways. 2010.

[6] Clackamas County Tax Assessor

[7] Site Assessment of Blue Heron Paper Mill Property. By AKS Engineering and Forestry for Oregon Metro, 2011

[8] Oregon City Utility Billing Office

[9] Metroscope population forecasts, Oregon Metro. 2012.

[10] Oregon Metro Community Investment Initiative

[11] U.S. Census Bureau. 2012. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. http://onthemap.ces.census.gov/m/

[12] Ibid.

[13] Local Area Unemployment Statistics, Bureau of Labor Statistics. www.bls.gov/laus

[14] U.S. Census Bureau. 2008-2010 American Community Survey 3-year estimates

[15] Kramer, George. Willamette Falls Industrial Area Request for Determination of Eligibility. Prepared for Portland General Electric and the Blue Heron Paper Company, May 2002.

[16] Ibid.

[17] Donovan Rypkema, Caroline Cheong, and Randall Mason. Measuring Economic Impacts of Historic Preservation. A Report to the Advisory Council on Historic Preservation, 2011.

[18] Commercial Buildings Energy Consumption Survey, 2003. Energy Information Administration. Retrieved from http://www.eia.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html

[19] MIG, Inc., IMPLAN System (data and software), 502 2nd Street, Suite 301, Hudson, WI 54016. www.implan.com

[20] Commercial Buildings Energy Consumption Survey, 2003. Energy Information Administration. Retrieved from http://www.eia.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html

[21] Hillsboro 4th and Main Community, Fiscal, and Economic Impacts and Effects. By ECONorthwest for Metro and the City of Hillsboro, Oregon. 2011.

[22] Bialik, Carl. "The Economic Oomph from Big Events." The Wall Street Journal, 2012. http://blogs.wsj.com/numbersguy/the-economic-oomph-from-big-events-1159/

[23] Economic Impact Analysis: A Case Study - Local Merchants versus Chain Retailers. By Civic Economics for Liveable City and Austin Independent Business Alliance, 2002.

[24] Exploring Authentic Oregon: The Importance of Cultural Tourism. The Oregon Arts Commission.

[25] New Study Reveals Popularity of U.S. Cultural and Heritage Travel. Laura Mandala, Mandala Research. October 21, 2009

[26] Cultural Heritage Visitor Profile. Retrieved from: http://www.culturalheritagetourism.org/resources/visitorProfile.htm

[27] Oregon Travel Impacts. Dean Runyan Associates, 2011

[28] Ibid.

[29] Ibid.

[30] Oregon Travel Impacts. Dean Runyan Associates, 2011

[31] Clackamas County Tourism and Cultural Affairs

[32] Downtown Oregon City Market Analysis and Business Development Strategy. Prepared by Marketek, Inc, 2009.

[33] Ibid.

[34] Oregon City Parks and Recreation Department

[35]Daley, Jillian. Summer festivals in downtown Portland bring big crowds, big bucks. The Oregonian. June 21, 2012. Retried from: http://www.oregonlive.com/portland/index.ssf/2012/06/summer_festivals_in_portland_b.html

[36] Glenn Littrell, Oregon State Parks

[37] Economic Benefits to Local Communities from National Park Visitation and Payroll, 2009. National Park Service. US Department of the Interior, 2011.

[38] Oregon 2009 Visitor Report . Longwoods International, 2010

[39] ESRI Business Analyst. www.bao.esri.com

[40] The Potential Economic, Environmental, Health, And Quality Of Life Benefits Of A Fully Connected Waterfront Greenway In Philadelphia. Econsult Corporation, 2010

[41] Oregon Travel Impacts. Dean Runyan Associates, 2011

[42] Peter Harnik and Ryan Donahue. Turning Brownfields into Parks. The Trust for Public Land, 2011.

[43] www.trulia.com

[44] Regional Land Inventory System, Oregon Metro

[45] Crompton, John L. "The Impact Of Parks And Open Spaces On Property Values." Department of Recreation, Park and Tourism Sciences, Texas A&M University. Volume 63, No. 1, page 32, Winter 2007.

[46] Bolitzer, B (07/2000). "The impact of open spaces on property values in Portland, Oregon". Journal of environmental management (0301-4797), 59 (3), p. 185.

[47] The Potential Economic, Environmental, Health, And Quality Of Life Benefits Of A Fully Connected Waterfront Greenway In Philadelphia. Econsult Corporation, 2010

[48] Preliminary Feasibility Analysis of Special Benefits. By Allen Brackett Shedd for the City of Seattle Department of Transportation. 2010.

[49] Peter Harnik and Ryan Donahue. Turning Brownfields into Parks. The Trust for Public Land, 2011.

[50] A Synthesis of the relationship between parks and economic development. Oregon Metro, March 2012

[51] Ibid.

[52] Mason, Randall. The Economics of Historic Preservation: A Guide and Review of the Literature. Brookings Institution metropolitan Policy Program. 2005

[53] Timothy McLendon and JoAnn Klein. "Historic Preservation: Value Added" Explore Magazine: Research at the University of Florida, Vol 8, Issue 1. http://www.research.ufl.edu/publications/explore/v08n1/historic.html

[54] Does Preservation Pay?: Assessing Cleveland Restoration Society's Home Improvement Program, 2009

[55] 2007 Central Portland Development Capacity Study. City of Portland Bureau of Planning, 2007

[56] High Capacity Transit System Plan. Oregon Metro, 2010.

[57] Florida, Richard. Quality of Place and the New Economy. http://www.ecocitycleveland.org/smartgrowth/openspace/competing_talent.html

[58] Norris Beggs and Simpson Multifamily Quarterly Report, Portland Metro, Second Quarter 2012.

[59] Ibid.

[60] Adaptive Reuse Case Study. By Civilis Consultants and emerick architects for Metro, the City of Oregon City, and Historic Downtown Oregon City, 2012

[61] Norris Beggs and Simpson Multifamily Quarterly Report, Portland Metro, Second Quarter 2012.

[62] Adaptive Reuse Case Study. By Civilis Consultants and emerick architects for Metro, the City of Oregon City, and Historic Downtown Oregon City, 2012

[63] Office Trends Report – Fourth Quarter 2011 for Portland, OR. Grubb & Ellis Company, 2012.

[64] Ibid.

[65] Marketbeat Office Snapshot, Portland Oregon 2nd Quarter 2012. Cushman & Wakefield, 2012.

[66] Downtown Oregon City Market Analysis and Business Development Strategy. Prepared by Marketek, Inc, 2009.

[67] 2007 Central Portland Development Capacity Study. City of Portland Bureau of Planning, 2007

[68] Ibid.

[69] The Potential Economic, Environmental, Health, And Quality Of Life Benefits Of A Fully Connected Waterfront Greenway In Philadelphia. Econsult Corporation, 2010

[70] The Economic Benefits of Seattle's Park and Recreation System. The Trust for Public Land, 2011

[71] Metro Trail Counts

[72] Costanza, Robert et. Al. "The Value of the World's Ecosystem Services and Natural Capital. NATURE. Vol. 387, May 1987

[73] Twill, et. Al. The Economics of Change: Catalyzing the Investment Shift Toward a Restorative Built Environment. Earth Economics, 2011.

[74] Preliminary Stormwater Report. By ESA for Oregon Metro, 2012.

[75] Peter Harnik and Ryan Donahue. Turning Brownfields into Parks. The Trust for Public Land, 2011.

[76] The Greenest Building: Quantifying the Environmental Value of Building Reuse. By Preservation Green Lab for the National Trust for Historic Preservation, 2012

[77] Clark, Kate. Capturing the Public Value of Heritage: the Proceedings of the London Conference. 2006.

[78] Loomis, John et. al. A Benefit-Cost Analysis of the Northern Spotted Owl. Journal of Forestry, December 1991.

[79] Pagiola, Stefano. Economic Analysis of Investments in Cultural Heritage: Insights from Environmental Economics. World Bank, 1996.

[80] Oregon Focus: Native American Legends: Willamette Falls. http://bluebook.state.or.us/kids/focus/willamette.htm

[81] ReArch Co., Red River Computer Co. and The Common Man Inn & Restaurant redeveloping Monadnock Mills. New England Real Estate Journal. http://nerej.com/33229

[82] A Synthesis of the relationship between parks and economic development. Oregon Metro, March 2012

APPENDIX A – DEVELOPMENT SCENARIO ASSUMPTION DETAILS

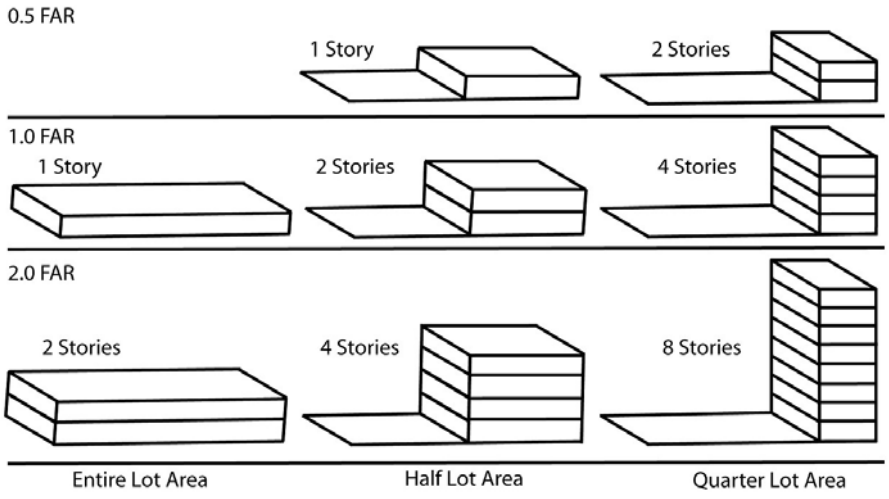
Three scenarios for intensity of future development on the site are examined - one using an average of four to one Floor Area Ratio (FAR) , another with three to one FAR , and the last with two to one FAR. Other assumptions regarding private development on the site are as follows, and further explanations are below:

- 11 acres of developable land
- 30% of total land area used for public right of way (3.3 acres), leaving 7.7 acres for development.
- Mixed Use Development: 9-13% retail, 28-30% office, 28-30% residential, and 30-31% structured parking
- Construction costs of $160 per square foot for offices, and $195 per square foot for residential and retail (high estimate), and $20,000 per parking space.

Floor Area Ratio Assumptions

Minimum FAR in downtown Oregon City ranges from 03. to 0.5, with no maximum. Height limits range from 45 to 75 feet. Thus, FARs of 2:1, 3:1, and 4:1 are all legally permissible under the MUD zoning code.

Exhibit 23.84A.012 A
Floor Area Ratio



Source: Seattle Zoning Code

Developable Land Assumptions

As the site is undergoing investigations, it is assumed that half of the total 22 acres could be available for private development, while the other half is used for open space, public access, and environmental restoration. To account for public right of way, – streets, sidewalks, and on-street parking – 30% of the acreage is removed from the 11 acre (479,160) site size, leaving 7.7 acres for development.

Parking Assumptions

Due to the high FARs assumed, structured parking is almost necessary in order for development to be feasible. It is possible that some parking could be surface or underground, but as structured parking is the middle-range for cost per space, it has been selected for analysis purposes.

Parking needs were assumed to be 2 parking spaces per 1000 square feet of office, 2 spaces per 1000 sf of retail, and .67 spaces per residential unit. Due to the availability of on-street parking, the possibility of shared parking, assumed walkable nature of the site, and nearby transit options, parking needs are expected to be lower than what is usually provided.

Area per space is estimated to be 300 square feet, and structured parking is assumed to be included in the Floor Area Ratio. Using the assumed parking needs and the mixed use development types, the percentage of building space needed for parking was estimated at 30% to 31%, depending on the scenario.

Construction cost per space is assumed to be $20,000.

Square Footage Assumptions

Table 1. Building square footage (sf) for each scenario

	2 to 1 FAR	3 to 1 FAR	4 to 1 FAR
Commercial sf	187,831	301,871	402,494
Retail sf	87,207	100,624	120,748
Residential sf	187,831	301,871	402,494
Parking sf	207,955	271,684	415,911
# Parking spaces	702	1,071	1,372
Total square footage	671,526	977,120	1,343,020

Residential unit size is assumed to be 700 sf on average, with 15% of the total residential square footage eliminated from the leasable space to account for hallways and entrances.

APPENDIX B – ECONOMIC INPUT-OUTPUT MODELS

The following explanation comes from "Oregon Convention Center: Fiscal Year 2010-11 Economic and Fiscal Impact Analysis Report" produced for Metro in 2012 by Crossroads Consulting Services.

> "In an effort to quantify the inputs needed to produce the total output, economists have developed multiplier models. The estimation of multipliers relies on input-output models, a technique for quantifying interactions between firms, industries and social institutions within a local economy. This analysis uses IMPLAN software and databases which are developed under exclusive rights by the Minnesota IMPLAN Group, Inc. IMPLAN, which stands for *Impact Analysis for Planning,* is a computer software package that consists of procedures for estimating local input-output models and associated databases.
>
> The IMPLAN software package allows the estimation of the multiplier effects of changes in final demand for one industry on all other industries within a defined economic area. Its proprietary methodology includes a matrix of production and distribution data among all counties in the U.S. As such, the advantages of this model are that it is sensitive to both location and type of spending and has the ability to provide indirect/induced spending, employment and earnings information by specific industry category while taking into account the leakages associated with the purchase of certain goods and services outside the economy under consideration."

Input-output models estimate economic and fiscal impacts as possible for any project or event. Project impacts include direct, indirect, and induced impacts. The **direct effects** include the new initial employment from the project, the new wages paid to these employees, and expenditures on all other inputs used by the project.

The **indirect effects** (or spin-off effects) result from the expenditures for supplies and materials at other businesses that sell goods and/or services to the new business or activity. Such businesses increase the number of their own employees, wages, and purchases of goods and services from businesses who supply them. This process continues to ripple outward as more and more businesses are impacted through additional production and sales.

The **induced effect** refers to the separate and additional impact of increases in household spending on goods and services that result in still further increases in employment and income that ripple through the defined region's economy.

Finally, the relationship between the initial new economic activity (the direct impact) and the final total economic impact (of the direct, indirect, and induced impacts) caused is referred to as the **multiplier effect**.

APPENDIX C – PROPERTY VALUE IMPACT ANALYSIS METHODS

A hedonic model is a common way to determine the value of certain characteristics or aspects of properties. It is based on the hypothesis that products can be treated as bundles of characteristics and that prices can be attached to the characteristics. In real estate, hedonic models can be used to test the impact of such characteristics on property values.

Metro's Regional Land Inventory System (RLIS) contains detailed parcel-level data that was used for this analysis. Two separate models were created – one using all single family residential properties within 0.4 miles of the site, and another using Oregon City commercial properties within 0.5 miles of the site. The dependent variable in this analysis, assessed value, was regressed against multiple variables for each model, all the latest available data for 2012. Assessed value is provided by Clackamas, Multnomah, and Washington County tax assessors to Metro.

The hedonic models include some variables about the physical property itself, and some variables about its surroundings, all described in the table below. The expected sign is the predicted impact (positive or negative) that an increase in the independent variable would have on the dependent variable. The analysis was limited by unavailable data, including factors that would indicate housing quality or amenities, such as garage size, fireplaces, building materials, and finishes. While these factors would ideally be included in a regression of property values, the results did predict over 60% of the variability in property values (R^2=0.626 and 0.667 for residential and commercial properties, respectively), which is considered fairly high.

Residential Model Independent Variables

Variable	Description	Expected Sign
Square feet	Square footage of structure	+
Age	2012 minus Year Built of structure	-
Age Squared	Square of Age	+
West Linn	Dummy variable; 1=property in West Linn, 0=all other properties	+
Acres	Acreage of parcel	+
Distance to park	Distance of parcel center point to nearest public park boundary	-
Within 1000	Dummy variable;1= parcel center point within 1000 feet of Blue Heron property line, 0= all others	-
1000-1500	Dummy variable;1= parcel center point between 1000 and 1500 feet of Blue Heron property line, 0= all others	-
Surface Elevation	Elevation of parcel	+

Commercial Model Independent Variables

Variable	Description	Expected Sign
Downtown	Dummy variable; 1=parcel within historic downtown, 0=all others	+
railroad	Dummy variable; 1=parcel borders railroad line, 0=all others	-
within1000	Dummy variable;1= parcel center point within 1000 feet of Blue Heron property line, 0= all others	-
acres	Acreage of parcel	+

Residential Regression Results

Dependent Variable	Total Assessed Value
Adjusted R Square	0.6474
Standard Error	34284.9051
Observations	268

Variable	*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Significant**
Intercept	115871.7	24626.52	4.71	4.14E-06	
Square feet	44.18	2.72	16.22	2.95E-41	Yes
Age	-722.88	406.97	-1.78	0.08	Yes
Age Squared	2.67	2.85	0.94	0.35	No
West Linn dummy	23109.49	7765.93	2.98	0.0032	Yes
Acres	165106.7	24912.24	6.63	1.98E-10	Yes
Distance to park	-8.73	11.61	-0.75	0.45	No
Within 1000	-15647.65	7222.95	-2.17	0.03	Yes
1000-1500	-2623.19	5835.07	-0.45	0.65	No
Surface Elevation	19.82	73.30	0.27	0.79	No

*At the p<0.1 level

Commercial Regression Results

Dependent Variable	Assessed Land Value
Adjusted R Square	0.6771
Standard Error	41366.13
Observations	165

Variable	*Coefficients*	*Standard Error*	*t Stat*	*P-value*	*Significant**
Intercept	21204.58	6809.62	3.11	0.00	Yes
Downtown	14866.40	7272.65	2.04	0.04	Yes
railroad	5678.77	9370.94	0.61	0.55	No
within1000	-11736.43	6645.66	-1.77	0.08	Yes
acres	326305.48	17846.91	18.28	4.94E-41	Yes

*At the p<0.1 level

More data on residential properties was available through RLIS, hence the difference in variables between the two models. Because no structural characteristics could be found for commercial properties, the dependent variable was simply the land value instead of the total (land plus building) value. Also, some factors, including distance to a park and surface elevation, are usually not as tied to commercial property values as they are to residential values. Coefficients can be interpreted as dollars. For example, a one-unit increase in acreage (one acre) would result in a $165,107 increase in property value. Properties within 1000 feet of the Blue Heron site result in a decrease of $15,647 in value.

APPENDIX D – BOND MEASURE 26-80

The following language appeared in the Voter Pamphlet for the November 7, 2006 election:

BONDS TO PRESERVE NATURAL AREAS, CLEAN WATER, PROTECT FISH, WILDLIFE

QUESTION: Shall Metro preserve natural areas; protect fish, wildlife; improve water quality; issue $227.4 million in general obligation bonds; audit spending? If the bonds are approved, they will be payable from taxes on property or property ownership that are not subject to the limits of sections 11 and 11b, Article XI of the Oregon Constitution.

SUMMARY: Protects specific natural areas, lands near rivers and streams, wildlife and trail corridors through land acquisition and restoration. Funds specific local water quality, wildlife and park protection projects for local parks providers. Funds water quality and wildlife habitat restoration matching grant program for local communities. Requires 2 to 1 match for local community grants. Match may be met with volunteer hours. Approved bonds will:

- Preserve specified natural areas
- Protect and restore watersheds for improved water quality
- Protect streams, fish and wildlife
- Increase the presence of nature in neighborhoods

This measure directs Metro to buy and restore natural areas for the protection of water quality and preservation of fish and wildlife habitat for the benefit and enjoyment of current and future generations, establishes a citizens oversight committee and requires a yearly independent financial audit to be published in local newspapers. Bonds mature in not more than 20 years. Bond cost estimate is about 19 cents per $1,000 of assessed value per year. The average homeowner in the region pays $2.50-$2.92 per month.

APPENDIX E – TABLE OF SIMILAR PROJECTS

Project/Site	Location	Description	Acres	Notable aspects
America's River	Dubuque, IA	Riverfront museum, park, aquarium, mixed use on brownfield site	90	$400 million project. Catalyzed downtown redevelopment in historic area.
Fort Vancouver	Vancouver, WA	National historic site, old Army fort	210	Gets over 1 million visitors per year
Torpedo Factory Art Center	Baltimore, MD	Adaptive reuse of former torpedo factory as artist center		Almost 400,000 visitors per year
Monadnock Mill	Claremont, NH	Riverfront mill buildings reused as tech offices, housing, hotel rooms and restaurants.		Used NMTC, City built infrastructure and 286-space parking garage next door. Tenants include Red River Computing and The Common Man Inn and Restaurant.
McMenamin's Edgefield	Troutdale, OR	Reuse of poor farm property into golf course, hotel, restaurant, and concert venue. Privately owned.	74	Placed on the National Register of Historic Places in 1990, same year it was purchased from county for $500,000
Tom McCall Waterfront Park	Portland, OR	Conversion of riverfront highway to linear park in downtown, houses Portland Saturday market and numerous festivals		Property values increased, private development along riverfront (Riverplace, Yards at Union Station) still required public assistance
American Tobacco	Durham, NC	Tobacco factory campus rehabilitated as mixed use center adjacent to stadium, also includes green space and trails		Private developer, 1 million square feet. Nonprofits provided some financing, public provided parking garages for $30 million.
Confluence Park	Denver, CO	Kayaking waterways and park on waterfront adjacent to REI		$70 million public investment. REI received $6.3 million in TIF for $32 million renovation of historic warehouse.
Riverwalk	Columbus, GA	22-mile riverside trail with space for events. Planned whitewater park on river after dam removal.		Economic impact studies for whitewater park predict large tourism increase and job creation.
Spokane Falls Park	Spokane, WA	Home to 1974 world's fair, features amusement rides, tram over waterfalls, trails, IMAX theater	100	Two restaurants overlook the Falls. Home to many festivals and events.
Mill Ruins Park	Minneapolis, MN	Historic Park with trails and ruins from old steel mill	8	$54 million for public park. 1.6 million visitors for larger waterfront park
Pike's Place Market	Seattle, WA	Open air produce, fish and craft market, with eateries, along the waterfront. Site of original Starbucks.		10 million visitors per year. Media coverage of fishmongers key to popularity among tourists.
Sculpture Garden	Seattle, WA	Brownfield redevelopment into ecologically restored-waterfront park with sculptures	8.5	$15 million in public investment, $70 million private donations. Big-name architect.

Project/Site	Location	Description	Acres	Notable aspects
Ghirardelli Square	San Francisco, CA	Adaptive reuse of chocolate factory as retail shops and restaurants		No public investment
Lowell National Historic Park	Lowell, MA	Textile Mills repurposed into museums and lofts, national park offers tours, trolley, interpretation		566,000 visitors in 2009 and $35 million in visitor spending
Cannery Row	Monterey, CA	Former sardine canning area on waterfront now a destination with fishing, aquarium, kayaking, retail, etc		Privately developed, 4 million visitors per year. Sardine Factory is very well-known restaurant. Community opposition stopped mall development on the site.
Concrete Plant Park	Bronx, NY	Public park and marsh restoration with river access on the site of a former concrete plant	9	$10 million public investment
Historic Mill District	Bend, OR	Open space, trails, and retail center on former lumber mill along Deschutes River	270	private developer purchased site, no public role.
Carrie Furnace	Pittsburgh, PA	Former steel furnace along the River planned to house steel museum, mixed use development, regional trails	168	County purchased site for $5.75 million and performed remediation and installed infrastructure with help from grants. Plan to sell the site to private developer.

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Willamette Falls Funding Strategy

An overview of opportunities and action steps to finance transformative re-development in Oregon City.

September 2012

Metro | *Making a great place*

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The City of Oregon City
Clackamas County
The State of Oregon

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Part 1:
Strategy Overview

INTRODUCTION

Background

Metro, along with partners at the City of Oregon City, Clackamas County, and the State of Oregon, is investigating using its Natural Areas Bond Fund to acquire the former Blue Heron Paper Mill site, a 22-acre property at Willamette Falls in Oregon City's historic downtown. This funding strategy provides a toolbox of resources and outlines steps to prepare for and capture funding opportunities as they arise. This report reflects the potential regional significance that transformation of the Willamette Falls property represents.

Objectives

This report considers funding needs throughout the Willamette Falls transformation (see Table 1). Particular emphasis is given to resources that will contribute to the early stages of the project or that fill significant gaps along multiple project stages.

Table 1: Project Timeline

Project Stage	Components
Acquisition	Investigations; Acquisition; Due diligence; Demolition & Retention; Partnership Development
Planning	Interim use and operation; Zoning; Planning; Design; Outreach
Implementation	Infrastructure; Development incentives; Achieving values
Refinement	Ongoing operation; Maintenance; Continued development

How to Use This Report

This report is divided into three sections:

1. **Part 1** is an overview of the funding strategy summarizing key resources and lessons learned.
2. **Part 2** defines the tools, mechanisms, and funds presented in this report, organized by resource type. Several indirect resources are explored, such as pro-bono support, added notoriety, or reduction of cost and risk.
3. **Part 3** provides guidance to project partners by prioritizing funding sources and presenting action steps needed for implementation.

Additional Resources

- Funding deadlines and eligible agencies are listed in Appendices A and B (p. 67-68)
- Program officers and practitioner contacts are provided in Appendix C (p. 69)

EXECUTIVE SUMMARY

The potential for transformational redevelopment at Willamette Falls represents a once-in-180 year opportunity. It also represents a significant challenge, as project partners seek to unlock this complex site's potential while upholding four critical and co-equal values: public access, economic development, cultural/historic interpretation, and ecological restoration.

Despite the magnitude of the task, an array of resources can support the public sector as it ushers the Willamette Falls property into a new era, while honoring its historic role in the region. To optimize these resources, however, significant energy is needed to build public support and foster enthusiasm. Communications and outreach form the backbone of the funding strategy. Internal partners' and elected officials' ability to promote a compelling vision for the Willamette Falls property is a pre-requisite for securing the majority of funding sources listed in this report.

Key Lessons Learned

Two principles guide the strategy for funding a major re-development project:

"Success Breeds Success". Momentum is critical to optimizing sufficient funding opportunities for a project of the scope and scale of Willamette Falls.

"There is No Silver Bullet". A layered funding strategy which combines multiple tools and resources is the most feasible option for success.

In addition, four key activities form the basis of successful execution of this strategy:

- ☐ Build relationships and develop communication tools that can foster excitement and support. A champion is critical to securing commitment and collaboration.
- ☐ Secure public and private grants to fund specific project components and outcomes.
- ☐ Employ public finance tools, which can contribute to site-readiness and and "prime the pump" for private investment.
- ☐ Attract development by preparing a package of opportunities that private sector partners can utilize to increase the likelihood of success and profitability.

Priority Funding Opportunities

Those resources and tools considered by project contributors as essential or highly likely to contribute to the re-development of Willamette Falls are summarized on the following page. These resources represent a range of different funding types to both diversify funding for the project and address varying needs. Each tool's level of priority is evaluated as follows:

Legend for ease of implementation:

A	**Essential**: Potential contribution is significant and therefore merits a high level of effort to implement
B	**Good**: Requires large effort for a fairly sizeable return, or modest return but predictable approval
C	**Challenging**: highly competitive, long timelines, complex requirements, potential controversy, etc.
D	**Risky**: Particularly unpredictable and risky path to implementation, low overall contribution
F	**Off the list**

Table 2: Funding Summary (Major Sources)

	Ease	Program	Agency/Funder	Estimated Yield
Public Funding	A	Project Funding Partner	Metro Natural Areas Bond Fund	tbd
	A	Project Funding Partner	Oregon City	tbd
	A/B	Lottery	State legislature, et al.	tbd
	A	Infrastructure Finance Authority	Business Oregon	$100K - $1 mil.
	A	Assessment Grant	EPA Brownfields	$200K - $600K
	B	Cleanup Grant	EPA Brownfields	$200K/site
	A	Revolving Loan Fund	EPA & Oregon Brownfields	tbd
	B	Planning	EDA	$60K to $70K
	B	Local Technical Assist.	EDA	Ave. $83K in 2011
	B/C	Pub. Works & Ec. Adjustment	EDA	$200K to $3 mil.
	B	Local Government Grants	State Parks	Up to $750K
	B	LWCF Grant	State Parks	Min. $12,500
	B	Recreational Trails Grant	State Parks	$10K - $160K
	B	Restoration Grant	OWEB	$250K
	A	STIP Enhance Grant	ODOT	TBD
	B	TGM	ODOT	$75K to $200K
Public Finance	A/B	Urban Renewal	Oregon City	tbd
	B/C	HUD 108 Loans	HUD/Clackamas County	5x county CDBG ($1.9 mil. in 2011)
Development Incentives	C	EB5	USCIS	tbd, min $500K
	A	Preservation Tax Credits	National Parks Service	20% credit
	A	SHPO Special Assessment	State Parks	10 year AV freeze
Private Funding	B	Grant or collaboration	Bullitt Foundation	$100K to $1 mil. +
	B	Grant or collaboration	Oregon Community Foundation	$5K to $35K +
	B	Program-related Investment	Meyer Memorial Trust	$75K to 4 mil.
	B/C	Responsive Grant	Meyer Memorial Trust	$40K to $300K
	C	Grant	Surdna Foundation	$5K to $600K
	B/C	Grant	Collins Foundation	$3K-$300K

Table 3: Funding Summary (Additional Sources)

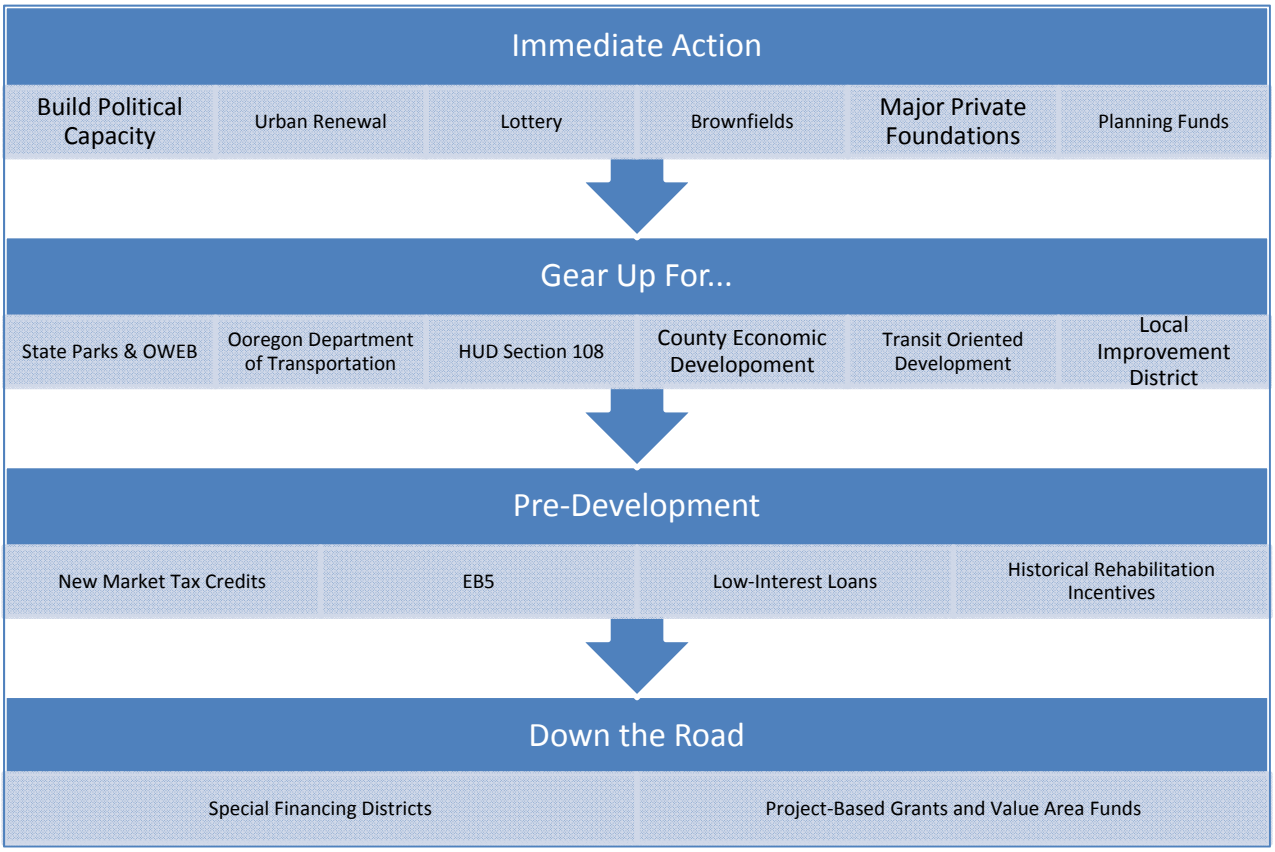
	Ease	Program	Agency/Funder	Estimated Yield
Public Funding	A	Planning and Development Grant	Metro	$30K to $400K
	B/C	Transit Oriented Development	Metro	up to $500K
	B	Regional Flexible Funds	Metro	2011 projects ranged from $100K to $5 mil.
	B	Heritage Grant Program	State Parks	$20K
	B/C	"Our Town" Grant	NEA	$25K to $150K
	A	Certified Local Government	State Parks	$15K/bi-annually
	B	Fish Restoration & Enhancement Grant	ODFW	Up to $170K
	C/D	State Wildlife Program Access & Habitat Grant	ODFW	Approx. $100K
Public Finance	A/B	Special Financing Districts	Oregon City	Tbd
Development Incentives	A	Low-interest loan	EPA/Oregon Brownfields	Tbd
	B	Low-interest loan	Business OR Special Public Works Fund	$100K to $10 mil.
	C	Low-interest loan	DEQ	$100K to $5 mil.
	B/C	Low-interest loan	DOE	Tbd
	F	New Market Tax Credits	US Treasury	39% tax credit
Private Funding	C	Large grant	Spirit Mountain Community Fund	$50K max.
	C	Capital grant	Spirit Mountain Community Fund	$100K max.
	C/D	Real Estate Investment Trust	Tbd	Tbd
	C/D	Oregon Governor's Fund for the Environment	National Fish and Wildlife Foundation	$30K to $50K

Critical Action Steps

Build relationships: The need for a project champion and significant political capacity was reiterated throughout interviews. From gaining a foothold in competitive grant processes, to generating public support, to accessing matching funds or other support from the State and Federal government, the **Willamette Falls project's success will rely heavily on the ability of its champions to spark public imagination, market the regional benefit of site transformation, and attract commitment at multiple levels**.

Be prepared: Lost time adds costs; many funding opportunities are time sensitive. A missed deadline on a competitive grant could mean a setback of a year or more. Lag time while political support is generated for certain public finance tools could mean missed opportunities in the short-term. Preparation and foresight are key. The following timeline indicates the priorities for action:

Figure 1: Funding Timeline



LESSONS LEARNED

Success Breeds Success

Contributors to this report concurred: momentum is crucial in a project where the financial gap is significant. The need to catalyze a robust funding effort forms the backbone of this funding strategy for the Willamette Falls project.

There is No Silver Bullet

Additionally, a funding strategy for the re-development of Willamette Falls will require a menu of funding options, deployed collectively and leveraged against one another, in order to achieve site transformation.

Case studies locally and nationally demonstrate how funding mechanisms are layered to facilitate development. A preliminary review by Metro staff of possible financial resources for Hillsboro's 4th and Main development identified nearly 20 possible tools or funds[1]. Wilsonville's Villebois development – which required a substantial public investment in infrastructure and transportation – combined Systems Development Charges, a Local Improvement District, Urban Renewal backed-bonds, State and Federal Grants, and utility fees to finance the project[2].

Examples also provide insight into the role that different tools and sources play in leveraging successful development. For instance, the Minneapolis Riverfront District Revitalization strategy included the following components:

- Establish a vision and ensure that planning and regulatory tools support this vision.
- Remove barriers to private investment, such as pollution or blight.
- Install the necessary infrastructure to support private development.
- Provide amenities and build on strengths – through methods such as restoring natural areas and creating public access – to make the site more attractive to investment.
- Create opportunities through financing programs and site readiness[3].

Each step in the Minneapolis strategy implies a need for funds to support it. Local development practitioners and experts verified these elements, and from this survey four key activities were determined, which are critical to funding redevelopment:

1. **Building Relationships and Communications (ongoing, but essential to begin early):** Two types of relationships are crucial. The first is with elected officials and other influential individuals with high levels of political capital who can foster public support and collaboration. The second involves building relationships with private funders. Securing funds or a preliminary letter of interest can be an important tool for leveraging developer interest or other sources of funding.

Building successful relationships and generating excitement relies heavily on a vision for transformation that can spark the imagination of the general public or potential collaborators. Although there are many unknowns on the site, and the process of shaping public and private involvement will determine a great deal of what is feasible, **a vision of transformation will help to build excitement and commitment.**

2. **Secure Public & Private Grants (at appropriate phase):** Grants are an important source of equity for a project, and can be used to leverage financing. Funds for specific projects or tasks range in size and importance. Planning ahead on these funding sources will assist in leveraging them to secure other opportunities and will enable partners to prepare for deadlines and application processes.

3. **Employ Public Finance Tools (important early on):** Local jurisdictions have a variety of tools at their disposal that can help generate cash flow, overcome property liabilities, reduce the cost of borrowing, or remove barriers to economic development. Putting these tools to use in redevelopment can provide the necessary up-front effort to "prime the pump" for future investment by the private sector.

4. **Attract Development (post-acquisition, with preparations beginning earlier):** Certain characteristics of the project make it eligible for programs and tools that can lower the risk or cost for developers. Detailing this package of incentives in advance prepares project partners to attract development; it also provides some leverage to negotiate any risk and responsibility that should be borne by the developer.



Fitting it All Together

A final lesson is the need to consider how funding sources relate to one another. Funding sources that can act as equity to leverage financing are needed. Likewise, liquid funds in the form of partner contributions or federal and state allocations will provide continuity between prescribed funds and individual grants. A diverse array of tools will likely play a role in the overall strategy for Willamette Falls.

PRIORITY FUNDING OPPORTUNITY

MAJOR FUNDING OPPORTUNITIES

ADDITIONAL FUNDING SOURCES

INDIRECT FUNDING SOURCES

Part 2: Funding Resources

BUILDING POLITICAL CAPACITY

The Willamette Falls project is a complex and dynamic one, with significant opportunities to produce region-wide benefits, but also significant potential challenges along the way. The ability to raise the required level of funds for such a project rests heavily on the ability of its leaders to build political capacity and foster support. Therefore, at the core of a funding strategy is a communications strategy.

The Basis of a Sound Financial Structure

This report describes a layered funding strategy, where a multitude of tools address financing gaps and enable site improvements that move the Willamette Falls project closer to an ambitious vision of successful transformation. However, in order for this funding strategy to be sustainable, some flexible, liquid sources of funding will be needed. Political capacity is critical in accessing this type of funding.

Many funding sources are tied to specific project outcomes. However, prescribed funding sources such as project-based grants require management, and it is unlikely that grants alone will be sufficient to cover all of the financial needs of the project, particularly if unexpected costs arise. Liquid funding can come from partner contributions, loans, and matching allocations from the State and Federal levels, but access to such capital requires strong support and commitment.

Portland's South Waterfront illustrates this point. The South Waterfront redevelopment received significant earmarks to help finance the project. In addition, a developer was brought on board early in the process, and took on approximately half of the responsibility for installing infrastructure[4]. Although the scale, capacity, and economic context in which this project took place were unique, this example nonetheless demonstrates the importance of relationship building early-on in the process.

Internal Champions

The Willamette Falls Project partnership – Oregon City, Clackamas County, Metro, and the State of Oregon – represents an opportunity. Each of these levels of government is represented by elected officials whose political capital can be leveraged to bringing in resources from the State and Federal level. These elected officials have a crucial role to play as champions, leading outreach efforts and bringing in high-caliber supporters.

A Public Face

An additional factor in building capacity is pinpointing an individual outside of the partnership whose political capital can mobilize the public as well as political stakeholders. This can be a retired politician or a well-known individual from the private sector, with sufficient name recognition and networking capabilities to generate excitement and commitment.

Branding and Communications Tools

Ongoing development of a communications plan is setting the stage for public-sector collaboration. A set of outreach tools including a presentation, talking points, and 1-page handout have been developed. These tools also provide an initial step towards project branding, as they distill the crucial elements of the Willamette Falls project history, partnership, and values into core messages.

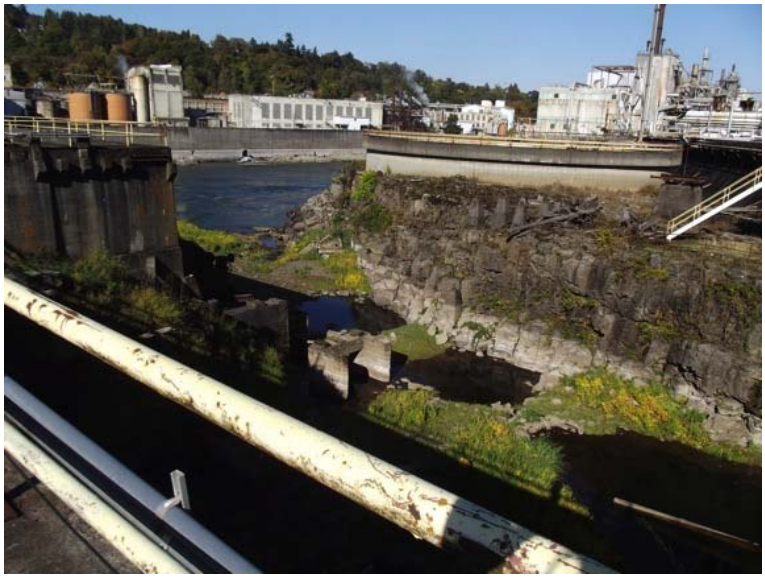
Briefing potential collaborators early on in the project will hopefully prime them to offer their support. Meetings and site tours could provide a forum for inciting excitement and demonstrating the significant potential of the project.

PROJECT PARTNER CONTRIBUTIONS

Contributions from project partners will be an essential resource to manage the Willamette Falls redevelopment.

Metro's Natural Areas Bond Fund

In 1995 and 2006, voters in the region approved natural areas bond measures to protect and restore wildlife habitat, water quality, and recreation opportunities. Through its Natural Areas Acquisitions program, Metro manages more than 12,000 acres of open space, enjoyed by more than half a million visitors each year. The program exemplifies Metro's success in both protecting natural areas and supporting effective urban growth. Metro uses bond funds to purchase ecologically strategic land from willing buyers.



The Willamette Falls property is located in Metro's Willamette River Greenway target area – one of 27 areas across the region where Metro invests bond funds. The property directly meets the goal spelled out in Metro's detailed plan for the Willamette River Greenway area: "Protect fish and wildlife habitat, water quality, scenic resources and improve public access to the river along the greenway from Wilsonville to the Multnomah Channel." Although the Willamette Falls site currently looks industrial, it directly meets these criteria, which were established with extensive input from experts and citizens after the bond measure passed.

ANALYSIS OF MAJOR FUNDING OPPORTUNITIES

Following is an analysis of each funding source that could potentially provide a significant contribution to the Willamette Falls project. Major funding sources are defined as:

- Those with the potential to provide long-term, sustained funding;
- Those which could contribute a single large sum (minimum $200k);
- Or those where the return on effort to attain them is fairly high.

A summary of the sources presented in this section is given below; each source is described in detail on the following pages.

PUBLIC GRANTS AND FUNDS	**Lottery**... *page 15* **Brownfields**... *page 18* **Economic Development Administration**... *page 20* **State Parks and Oregon Watershed Enhancement Board**... *page 22* **Oregon Department of Transportation**... *page 24*	PUBLIC FINANCE	**Urban Renewal**... *page 25* **HUD Section 108**... *page 27*
DEVELOPMENT INCENTIVES	**EB5**... *page 28* **Historical Rehabilitation Incentives**... *page 29*	PRIVATE GRANTS	**Bullitt**... *page 30* **Oregon Community Foundation**... *page 30* **Meyer Memorial Trust**... *page 30* **Surdna Foundation**... *page 31* **Collins Foundation**... *page 31*

PUBLIC GRANTS AND FUNDS

Lottery

Description: Several bodies are involved with the management and distribution of Oregon State Lottery funds. The lottery commission is a 5-member entity appointed by the Governor. This commission oversees the operation of the Lottery.

Proceeds from the Lottery are directed towards the Oregon State Lottery Fund, housed within the General Fund. The Legislative Assembly is tasked with appropriating lottery funds every two years. The next biennium will begin in January of 2013[5]. Figure 3 describes how these funds are allocated. Portions of revenues from the Oregon State Lottery are constitutionally designated for public benefit. Revenues transferred from the State Lottery Fund to the Parks and Natural Resources Fund (area X); the remainder becomes the Administrative Services Economic Development Fund (area Y)[6].

The Oregon Constitution describes three uses of funds within the Administrative Services Economic Development Fund: creating jobs; furthering economic development in Oregon; and financing public education. In order to achieve these objectives, revenues are distributed to the Oregon Department of Education; Oregon University System; counties' economic development departments; ConnectOregon; and Business Oregon. Some discretional funds may also be available through earmarks. Details on allocation of these funds are provided in Table 4.

Lottery-backed Bonds: The Oregon State Legislature can approve allocations of Lottery-backed bonds to fund specific projects or initiatives. A representative must sponsor a bill for such allocations. These bonds are restricted for uses that create jobs, further economic development, finance public education, or restore and protect parks, beaches, watersheds, and habitats. A bill authorizing issuance of lottery bonds

Lottery Snapshot

Available Through: Business Oregon, ConnectOregon, Parks and OWEB, Clackamas County, allocations from the Legislative Assembly, and Lottery Bonds

Amount Available: Dependent upon channel through which it's attained.

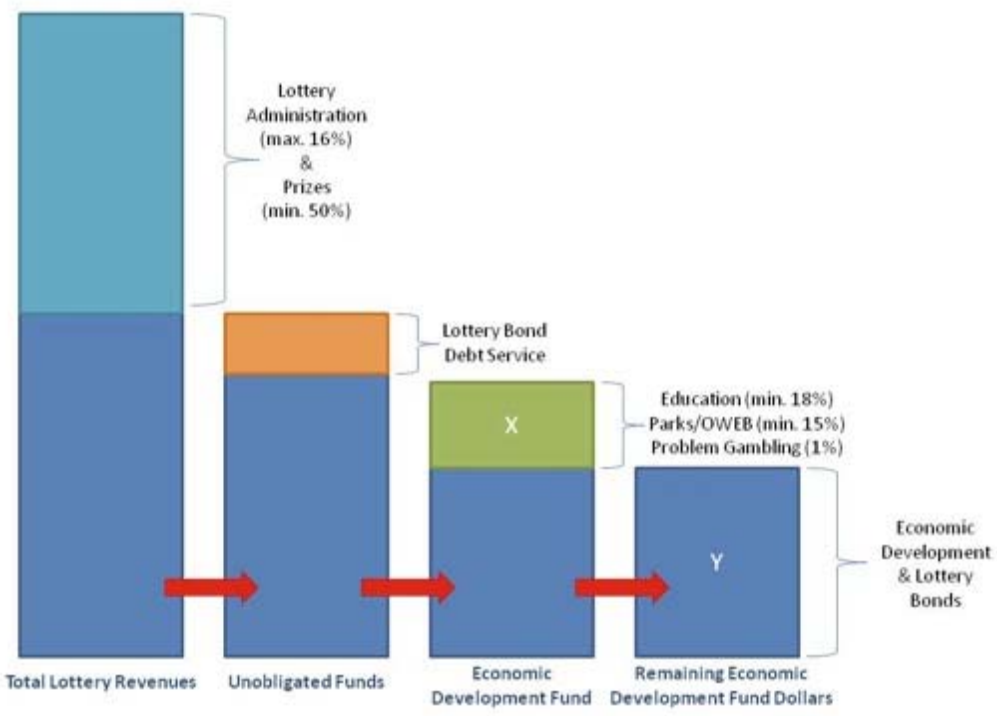
Alignment with Project Values: Lottery funds are intended to support economic development throughout Oregon; demonstration of the project's significant development capacity is key.

Overall Potential Contribution: The most likely method of attaining Lottery dollars is through grants from Lottery-funded agencies. However, further research into whether Lottery funds could provide flexible, multi-year project support to fill initial gaps in site stabilization, operation, and infrastructure development with sufficient Legislative support is needed.

must substantiate a project's compliance with one or more of those purposes.

According to a February 2010 report from the State Debt Policy Advisory Committee (SDPAC), the State expects to issue approximately $507 million in Lottery-backed bonds from FY 2012 through FY 2015. However, the SDPAC reports that declining Lottery revenues have the potential to all but eliminate debt capacity until 2015, or at the very least require the State to become more prudent in Lottery bond authorization in the coming years. The committee recommends that only the highest priority projects receive funding. Lottery bonding could be leveraged to help the project partnership access loans through the Oregon Bond Bank; however, such opportunities will rely heavily on political capitol and support from state partners and collaborators.

Figure 2: Oregon State Lottery Revenue Distribution*



**Note: Bars are not drawn to scale. Specific percentages that are constitutionally allocated are noted. Actual allocation may vary each biennium depending on the legislative process.*

Business Oregon: One use of Lottery bonds has been to fund the Oregon Business Development Department, which supports economic development throughout the State. According to representatives of Business Oregon, the program most likely to contribute to the Willamette Falls re-development is the Infrastructure Finance Authority, specifically IFA's Special Public Works Fund loan program[7]. These loans range from less than $100,000 to $10 million and come with attractive loan terms. Some grant programs are available

through Business Oregon, however their focus is on traded sector job retention or creation, and thus are a difficult fit for this project.

Clackamas County: The proportion of Lottery proceeds that go to Counties for economic development is Constitutionally determined. 2.5% of video lottery proceeds are distributed to counties. 10% of these proceeds are distributed equally among counties; the remaining 90% are distributed proportionately to the net receipts from video poker of each county.

In Clackamas County, the Oregon Lottery is the primary source of funding for the Economic Development Department[8]. For a detailed breakdown of how Lottery funds were used to benefit Clackamas County in the 2009-2011 biennium, see Appendix D: Oregon Lottery Facts and Figures.

Parks and Oregon Watershed Enhancement Board: Fifteen percent of the Lottery Economic Development Fund is allocated to the Parks and Natural Resources Fund; half of this fund is then distributed to the Oregon Watershed Enhancement Board (OWEB) and half is distributed to State Parks. A more detailed breakdown of grant opportunities available through these agencies is detailed later in this report.

ConnectOregon: ConnectOregon received $40 million in lottery-backed bonds in 2011, approved by the Oregon State Legislature[9]. ConnectOregon's purpose is to connect the highway system to other modes of transportation. The largest projects funded in the previous round of ConnectOregon awards was $7.8 million, awarded to the Port of Coos Bay.

Table 4: Lottery Allocation for Community Benefit, 2011-2013 Biennium

Agency	Biennium Allocation
State Parks	$84.2 million
OWEB	$84.2 million
Business Oregon	$275 million
Clackamas County	~$3.2 million

Brownfields

The Environmental Protection Agency (EPA) offers funding for Brownfields, which are characterized as real property or sites whose expansion, redevelopment, or re-use may be complicated by the presence or potential presence of contaminants, pollutants, or hazardous substances[10]. Brownfield redevelopment typically goes through a process whereby reuse goals are determined; investigations and assessments are then conducted to identify potential contaminants and barriers to achieving re-use goals; a plan is generated that aligns existing cleanup needs, reuse goals, and cleanup strategies necessary; and finally cleanup is implemented. Four Brownfields programs align with these steps:

1. Area-wide Planning Grant: This grant facilitates community involvement in developing an area-wide plan for a brownfield-impacted district or corridor.
2. Assessment Grant: Applicants can solicit up to $200,000 each for hazardous substances and petroleum. The $200,000 limit may be waived for a solicitation up to $350,000. These grants fund Phase 1 & Phase 2 assessments, re-use and cleanup plans, and community outreach. Grants are available for community-wide or site-specific assessments. Alternatively, an Assessment Coalition grant is available for up to $600,000; groups of 3 or more eligible entities submit an application under one name, and must assess a minimum of five sites.

The deadline for the next cycle of Brownfields Assessment Grants is November 19, 2012; this grant could provide critical funding for stage two investigations and should be considered a priority.

3. Direct Cleanup: Funding up to $200,000 per site is available. Likelihood of receiving a cleanup grant is enhanced if an applicant has received and completed an assessment or planning grant, as this indicates substantial preparatory work and accurate cost evaluation for the cleanup[11]. The applying entity must have sole ownership of the site.
4. Revolving Loan Fund (RLF): The EPA distributes up to $1 million dollars to successful applicants, who then administer an RLF, which makes low interest loans or subgrants to carry out cleanup activities. Further details on how the RLF program might be applied to this project are provided on page 37.

Brownfields Strategy: The Legacy of Industrial History

Communications could be an important piece of the strategy for acquiring Federal Brownfields funds. Although Brownfields competitive awards are based on a points system, there is a sense in the Brownfields community in the Northwest that this region is under-funded, when compared to the Midwest and Northeast*. Emphasizing that the Willamette Falls project represents an important category of region-wide need – the legacy of a changing economic landscape that once focused heavily on high-polluting industries – and bringing this message to elected officials could put the project on the radar screen for funding.

*Karen Homolac, Oregon Brownfields



Interviews for this report revealed that funding through EPA's Brownfields program can function symbiotically with Urban Renewal. Urban Renewal relies on income generated from tax increment; brownfields are typically sites that require significant capital investments and result in opportunities for development. Therefore, Brownfields grants can provide the gap financing needed to make sites shovel-ready, and Urban Renewal can capture the benefit[12].

In addition, the State operates an EPA-funded Brownfields Revolving Loan Fund, which offers both loans and grants. This can be leveraged strategically as the match requirement for a federal Brownfields grant[13].

Economic Development Administration (EDA)

Planning & Local Technical Assistance: These two programs serve Economic Development District, states, cities, regional governments, institutes of higher education, and public or private non-profits working in conjunction with a public entity. Award size is impacted by an ability to demonstrate need, defined by a region or community's economic distress; the definition of regional/community boundaries and indicators of distress are largely left to the applicant to interpret. For both awards, the EDA investment rate is between 50% and 80%, with a 50% to 30% matching requirement[14].

The project announcements for the most recent round of funding for Planning and Local Technical Assistance were released in August of 2012; applications are taken on a rolling basis. Public Works and Economic Adjustment Assistance applications are accepted quarterly. September 14th is the deadline for funding cycle 1 of FY 2013; the deadline for funding cycle 2 will likely be in December

- Planning Grant: This program assists with the creation of economic development plans designed to guide a community or region's economic development efforts. Assistance is typically provided directly to an Economic Development District – Greater PDX Inc, for the Metro region – or, alternatively, short-term or state planning funds are available to eligible entities. An annual grant amount is typically $60,000 to $70,000 per recipient.

- Local Technical Assistance (TA) Award: Local technical assistance is intended to strengthen capacity of local institutions to drive economic development through feasibility studies, impact analyses, resiliency plans, or project planning. An explicit possible use of this project is to help a city prepare a feasibility study for re-purposing an abandoned manufacturing facility to promote economic development. Median award size in 2011 was approximately $83,000. Project length for both grants is typically one year, but can be extended up to three years if appropriate. One potential application of this program would be to fund engineering studies to prepare the site for economic activity.

Public Works and Economic Adjustment Assistance: This program provides grants to construction, non-construction, and revolving loan fund investments to support regional economic development strategies and prioritizes communities whose initiatives advance new ideas and demonstrate creative approaches to continuously changing economic realities. The goal is to create jobs and enhance private investment. Two types of grants are available under this program:

- Public Works and Economic Development Facilities: EDA invests in the construction or rehabilitation of public infrastructure and facilities considered essential to economic development. The program considers communities' and regions' capacity to leverage their resources and strengths to achieve this goal.

- Economic Adjustment Assistance: Construction and non-construction assistance is available in regions where severe economic dislocations have occurred.

Certain criteria for economic distress must be met for a community to qualify under this program; the Willamette Falls project could qualify by demonstrating "special need". This is defined as the sudden closure of an employer resulting in the dislocation of 200 jobs, or 1% of the civilian labor force, whichever is less. A transitioning economic base as a result of changing trade patterns or underemployment can also contribute to the "special need" criteria.EDA will typically provide up to 50% of a project's total cost; this can be a higher proportion for a taxing district that shows it has exhausted its effective taxing and borrowing capacity. Recent grants have ranged from $200,000 to nearly $3 million[15].

State Parks

State Parks receives funding through the Lottery; however, the opportunity to receive direct funding through Parks' Lottery allocation is politically constrained, as the agency has been under scrutiny in past years for using Constitutionally-dedicated funds for natural areas on projects that are perceived as being insufficiently parks-related. The Parks Commission does have authority to make Willamette Falls a priority and authorize funding, however, this would likely be reserved for an area that is clearly a public park.[16].

As a result, the highest likelihood funding sources through State Parks are competitive grants through the following programs:

- Local Government Grants: The large grant requests fund projects up to $750,000 for land acquisition, development, and major rehabilitation on outdoor park and recreation areas or facilities that are open and accessible to the public. Both recreation facilities as well as support facilities – such as roads, parking, or utilities – are eligible[17].
- Land and Water Conservation Fund (LWCF) Grants: LWCF Funds are distributed from the National Parks Service to States; States then make these funds available to other state agencies or local jurisdictions, based on alignment with a State's most recent recreation plan[18]. Assistance is available for acquisition or development of public outdoor recreation areas and facilities. The Willamette Falls project could apply for assistance with development activities, consisting of improvements that provide the basic facilities for outdoor recreation. Projects which serve a large portion of the general public, are open year-round, provide close-to-home recreation, or are accessible by public transportation are given some preference. The program provides up to 50% funding assistance; 2010 awards in Oregon ranged from $12,000 to $150,000[19].
- Recreation Trails Grants: These grants are used to create or restore trails, develop or rehabilitate trailhead facilities, or acquire land or easements. While funding varies based on



annual Congressional allocation, during the 2011 cycle grants ranged from around $10,000 to $160,000. Grantee must provide 20% of project cost.

All of the grant opportunities listed above involve a competitive application process, and many projects vie for funding each year. Therefore, likelihood of attainment is reasonable but not given. Additionally, multi-year grants area available; the programs could therefore provide significant funding throughout multiple project years[20].

Oregon Watershed Enhancement Board

The Oregon Watershed Enhancement Board is a State agency which protects and restores watersheds and habitats. To do this, OWEB provides grants funded by the Oregon Lottery, federal dollars, and salmon license plate revenues. The two types of OWEB grants most suitable to the Willamette Falls project are Regular Grants and Special Investment Partnership grants. Both public agencies and nonprofits are eligible to apply.

Regular grants provide funding through a competitive process to projects that protect land or water, result in outreach and monitoring, restore watersheds or habitat, or are seeking technical assistance. Grant applications are typically due twice a year – in October and April.

OWEB's Special Investment Partnerships, a partnership with Meyer Memorial Trust, seeks to take a more holistic approach to restoration, targeting specific locations, which meet specific criteria in terms of their potential impact. One such target area is the Willamette Basin.

Oregon Department of Transportation (ODOT)

In August 2012, ODOT released an updated funding process. The 2015-2018 Statewide Transportation Improvement Program (STIP) consolidates funds into two categories: "Enhance" and "Fix-It". Local governments and transportation agencies outline what investments are most crucial in their region, and ODOT determines how best to fund them.

The application deadline for the upcoming round of "Enhance" funding is November 27, 2012. Most projects previously eligible to apply for Transportation Enhancement Funds or Flex funds (described below) will now apply through STIP. Projects that will not be ready for construction or implementation within the four years of the STIP should be proposed under the consolidated application as D-STIP (Development STIP) projects.

Transportation Enhancement Grant: This category supported special activities on Oregon's transportation system, in four broad categories: pedestrian and bicycle projects; historic preservation related to surface transportation; landscaping and scenic beautification; and environmental mitigation in the form of highway runoff and wildlife protection. Award size in 2011 ranged from $400,000 to $1.6 million. Funds were provided through reimbursement, not grants, and a minimum 10.27% match was required.

Interviewees who have worked with ODOT emphasized the need to engage the department as early on as possible in the project. Keeping ODOT at the table during assessment and planning familiarizes the agency with the project, and creates opportunities for cooperation through the funding process.*

**Jamie Johnk, Clackamas County*

Flexible Funds Program: This program invested in non-highway transportation, including transit, bicycle, pedestrian, or transportation demand management. A minimum 10.27% match was required. Funds could support construction, planning, program, service, or equipment acquisition projects. Previously awarded projects range in size from $83,000 to $2.1 million. Oregon City received $900,000 in 2010 for its Downtown Connective Corridor, which connects the city's riverfront trails and the McLoughlin Promenade, and improves connections between the historic core, public transportation, and municipal parking lot[21].

Transportation and Growth Management (TGM): The TGM program is available to local governments to fund planning projects in two categories:

- Transportation System Planning helps localities meet the requirements of the Oregon Transportation Planning Rule.
- Integrated Land Use and Transportation Planning promotes compact, mixed-use development with multi-modal facilities and access.

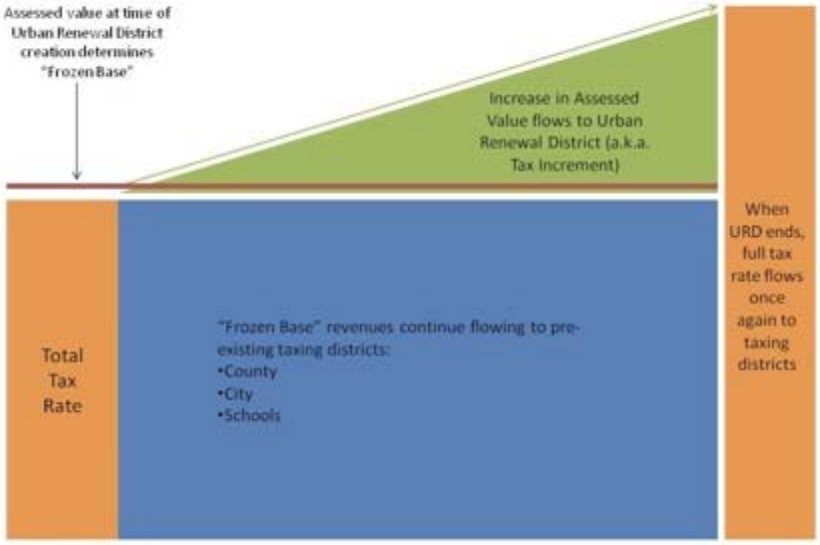
Grants have a two-year cycle for completion. Awards generally range from $75,000 to $200,000. Funding can cover the entire planning process; Estacada, for instance, used TGM for streetscape design, highway connection, and riverfront development[22].

PUBLIC FINANCE

Urban Renewal

Urban Renewal is a common method for financing development in the State of Oregon, and one which Oregon City has used on a number of projects. Urban Renewal works by freezing a tax base at a current level, then using incremental property tax increases beyond the frozen base to finance improvements or secure debt. Taxes under the base level continue to flow to previously-existing taxing entities (see Figure 3).

Figure 3: Tax Increment Financing



Urban Renewal was mentioned by nearly every interviewee for this report as a necessary tool for the re-development of Willamette Falls. Because of the high-cost of re-purposing industrial land; operating the site throughout a potentially lengthy contract, planning, and re-zoning process; and installing improvements to make the site attractive to development, a significant gap will likely need to be financed by the public sector. Urban Renewal is frequently employed for just such a purpose.

Using Urban Renewal at the Willamette Falls site also poses a series of challenges:

- The majority of the Willamette Falls site does not fall within an existing Urban Renewal district. Expanding the existing district would qualify as a significant amendment, which must be approved by a vote of the people of Oregon City.
- In order to gain public approval, a somewhat lengthy process of developing a new Urban Renewal plan and building public support are required.
- The capacity of the existing Urban Renewal area is constrained. The State of Oregon limits the amount that assessed value can increase each year. Oregon City's Urban Renewal Area may generate a limited amount of tax increment because of this.
- The existing Urban Renewal district's capacity to carry additional debt is limited.

Despite these challenges, a number of possible approaches to Urban Renewal implementation exist.

Thinking Creatively About Urban Renewal:

With the challenges associated with the Willamette Falls Project site in mind, Urban Renewal practitioners from around the region proposed several scenarios to incorporate the project into an Urban Renewal district:

Expand the existing district.

Depending on the status of the existing district, the capacity of its tax increment to finance new development at Willamette Falls may be constrained. A possible strategy to combat this could be to plan incremental development, whereby cleanup and improvements are carried out on a portion of the site, which is then developed. Income from the completed portion helps finance subsequent portions.

Re-structure the existing district.

Rather than broadening the physical and financial boundaries of the existing district, re-structuring would involve removing parcels from the existing district to free up the indebtedness capacity for the Willamette Falls site. Parcels would be selected for removal based on a current failure to contribute tax increment to the overall district, or a lack of need for Urban Renewal financing.

The benefit to this approach would be that the size of the district and amount of indebtedness could potentially remain the same, depending on how the re-structuring was executed. Time may be saved by avoiding a lengthy planning and approval process. On the other hand, the decision about what areas of the current Urban Renewal district should be removed could be a politically tricky one. It may be the case that all of the areas within the current district continue to have a need for UR financing.

Create a new district.

One approach to creating a new district would be to make a single-property district, which would exclusively encompass the Willamette Falls site. The site's low initial assessed value would create a large tax increment as development progressed; however, the risk of lending to a single-property district would likely be perceived as very high.

An approach that some practitioners consider to be more common than single-property districts or incremental implementation is to create an Urban Renewal district that is significantly larger than the area where investment is needed. This broad area could capture significant tax increment, which could be largely concentrated on the Willamette Falls site.

Ultimately, Oregon City will have to weigh the capacity of its current Urban Renewal district, the political feasibility of alternative actions to Urban Renewal implementation, and the legal issues involved in order to make a final determination of how to proceed.

Housing and Urban Development (HUD) Section 108 Loans

A loan provision under the Federal Community Development Block Grant (CDBG) program, Section 108 finances economic development, housing rehabilitation, public facilities, and large-scale development. The program allows communities to leverage their CDBG allocations towards federally-guaranteed loans. Communities must pledge current and future CDBG allocations as security, which represents a risk to local communities.

Whereas smaller cities and communities typically are granted CDBG funds directly from the state, in the case of the Willamette Falls project, Clackamas County is the local entity receiving CDBG allocations. Clackamas County is considered an entitlement community under the CDBG program; this means that the County administers its own grants to promote affordable housing and economic development.

Section 108 funds must be applied to CDBG-eligible communities and projects; in other words, for the elimination of slums or blight, or to meet an urgent community need. Specific activities eligible under Section 108 include:

- Any economic development activity eligible under CDBG
- Property acquisition
- Rehabilitation of public property
- Construction or installation of public facilities
- Other related site improvements
- Payment of interest on guaranteed loan or debt service reserves
- The amount of funding through Section 108 for entitlement communities is limited to five times the County's most recent CDBG allocation, minus any outstanding Section 108 balance. The 2011-2012 Block Grant was $1.9 million.

Economic Development Initiative and Brownfield grants can pair well with Section 108, as these programs can cover pre-development costs leading up to Section 108 development funds. They can also be used as loan loss reserves to facilitate more favorable loan terms[23].

Case Study: Section 108 and New Market Tax Credits

In 2010, one project in Oregon used Section 108 financing. The City of Gresham received a Section 108 Guaranteed Loan in the amount of $1,373,000. Gresham planned to re-lend these funds to a for-profit New Market Tax Credit investment fund owned by Bank of America. BOA would serve as intermediary by making a qualified equity investment into a Community Development Entity. The CDE could then re-lend to a for-profit developer charged with constructing a community service center in the Rockwood neighborhood. This would generate additional equity for the project. Lease revenues would be used to pay off the loan over 20 years.

http://portal.hud.gov/hudportal/documents/huddoc?id=OR-EDP-2010.PDF

DEVELOPMENT INCENTIVES

Employment-Based Fifth Preference (EB5) Program[24]

Also known as the Immigrant Investor Program, the EB5 program is designed to incentivize foreign investment that stimulates economic growth and job creation. Administered by the US Citizen and Immigration Services, EB5 visas are US Conditional Permanent Resident visas given to foreign investors in exchange for investment in a new commercial enterprise. Investors may either participate through the Basic program, or the Regional Centers program.

Investments must meet certain threshold requirements. First, at least 10 full-time jobs for qualifying US workers must be created or preserved within two years. For the Basic EB5 program, these must be direct jobs; investors in Regional Centers can create direct or indirect jobs. In addition, the investment must be a cash, equipment, inventory, or tangible property or cash equivalent contribution of at least $1 million for general investments, or $500,000 in targeted employment areas (a rural area or area with at least 150% of the average national unemployment rate).

There are 10,000 EB-5 visas available annually, plus an additional 3,000 visas set aside for investors in Regional Centers.

Two organizations are authorized to arrange EB-5 investments in Oregon. American United Development Group and the American Dream Fund LLC, both of which have ties to Chinese investors and have expressed a commitment to investing heavily in Oregon-based projects[25].

One project is currently underway in Portland, which is partly financed through EB-5 investments. As of March 2012, Williams & Dame Development had raised $8.5 million from Chinese investors backing the first hotel in the Pearl. Williams goal is to eventually raise $52.95 million.

Historical Rehabilitation Incentives

Preservation Tax Credits: The National Parks Service (NPS), in partnership with the IRS and State Historic Preservation Offices, provides a 20% tax credit for the rehabilitation of an income-producing historic structure, if the structure is listed on the National Register of Historic Places. A structure qualifies for a 10% credit if it is not listed but was constructed prior to 1936. One report identified 11 structures eligible for the 10% tax credit on the Willamette Falls site[26]. The tax credit can be applied to both hard and soft costs. A number of options for implementation exist:

1. Structures remain unlisted, and those built before 1936 qualify for a 10% tax credit. Unlisted structures would be subject to a general design review process.
2. Buildings are listed individually. This would allow the most flexibility for new development, however, it would also provide the most limited opportunity to take advantage of preservation incentives.
3. Multiple Property Documentation means that buildings are listed as a thematic group, where related properties are listed individually but submitted under a single theme. For instance, Willamette Falls buildings could be listed individually under an industrial theme[27].



The Preservation Tax Credit has not been used in Oregon City; typical project scale is insufficient to warrant use of the program. However, the program is considered a key opportunity for Willamette Falls[28]. While standards and guidelines for rehabilitation are a perceived barrier to utilizing the credit, some developers have experience with the tax credit and associated compliance. McMenamin's, for example, uses the tax credit in all of their historic rehabilitation projects[29].

SHPO Special Assessment: This program dovetails with the Preservation Tax Credit to provide further incentives for developers to rehabilitate historic structures. The Special Assessment freezes a property's assessed value for 10 years. This program should be implemented as early on in the project as possible, in order to ensure that the property value assessment is frozen at its lowest possible value, before improvements are in place.

Implementation Next Step: Providing Developers with Evidence

Calculating the potential savings that the combined application of Preservation Tax Credits and SHPO Special Assessment could offer would demonstrate to developers the potential benefit of these tools. Given the likelihood that the Willamette Falls project site will have a low initial assessed value, the cost savings could be significant.

PRIVATE PHILANTHROPY AND FOUNDATIONS

The use of private-sector grant funding for re-development seems to be an emergent approach in the region. However, given the strong philanthropic support of sustainability and smart growth initiatives, the project partners' commitment to four guiding values and a changing economic landscape that has de-emphasized the role of federal funding, private philanthropic involvement is considered to be a significant opportunity for this project.

The funders presented in this section demonstrate funding priorities which align with project values, and show a substantial capacity to contribute resources to the project. With the exception of the Surdna Foundation, these organizations are regionally-focused.

Bullitt

The Bullitt Foundation's mission is to "safeguard the natural environment by promoting responsible human activities and sustainable communities in the Pacific Northwest". They have four focus areas: ecosystem services; energy, industry and technology; urban ecology; and leadership and civic engagement. Bullitt seeks to achieve agility in responding to issues and opportunities as they arise in the region; therefore, the ability to build a partnership with this foundation outside of its typical grant process is considered highly likely.

To date in 2012, the largest grant from Bullitt was $130,000 to the Washington Environmental Council. Several other grants in the $90,000-$130,000 have been made. However, multi-year grants are common, and some projects and organizations have received support well in excess of $1,000,000 from Bullitt[30].

Oregon Community Foundation (OCF)

The Oregon Community Foundation manages pooled donor funds to improve communities throughout the state. The Community Grants Program is a competitive grants program with awards typically ranging from $5,000 to $35,000; these awards seek to address a significant community need. The Community Grants newly-designated focus on jobs and the economy, as well as their focus on increasing cultural opportunities, are the areas that most closely align with the Willamette Falls project.

In addition to the competitive grants program, Oregon Community Foundation provides a forum for donors to channel their contributions towards areas of focus of their choosing. Building a relationship with OCF representatives could be a matchmaking tool to connect a private funder with compatible interests and values to the Willamette Falls project[31].

Meyer Memorial Trust (MMT)

The mission of Meyer Memorial Trust is to "work with and invest in organizations, communities, ideas and efforts that contribute to a flourishing and equitable Oregon". The Trust does so by providing Program Related Investments as well as grants to tax-exempt organizations throughout Oregon.

The flexibility of Meyer Memorial Trust's Grant program make it a potential resource for covering gaps in the project's operating budget, or in interim site operation.

Program-related investments are typically made in the form of low-interest loans. Historically, these have ranged in size from $75,000 to $4 million, and have supported economic development and open space conservation by helping organizations acquire property and construct facilities, among other activities. PRIs have become an increasing focus of the Trust's strategy in recent years, and should be strongly considered as a resource in the Willamette Falls toolkit[32].

In addition, the Trust continues to operate a grant program. Generally ranging in size from $40,000 to $300,000, these "Responsive Grants" are awarded in areas including community development, conservation and the environment, public affairs, and arts and culture. Grants cover both operating support as well as capital improvements[33].

Surdna Foundation

Surdna's mission is to foster sustainable communities in the United States that are "guided by principles of social justice and distinguished by healthy environments, strong local economies, and thriving cultures". They make grants across the United States. Sub categories of their sustainable environments and strong local economies focus areas include transportation and smart growth and creating economic opportunities, respectively. Surdna generally does not fund capital campaigns or building projects, but they do support community-driven design, and therefore could contribute to visioning and planning. Grants size varies widely from as small as $5,000 to as large as $600,000[34]. Surdna is listed on the EPA-sponsored SMART-E website, a database of resources for Brownfield re-use, as a private foundation hose work supports revitalization of contaminated lands[35].

Collins Foundation

The Collins Foundation is an Oregon-based foundation which seeks to improve religious, educational, cultural, and scientific endeavors, as well as quality of life. Grants are made to nonprofit and government agencies, and must directly benefit Oregon residents.

Uses of funding vary widely, but do include capital improvements. The environment and arts categories are best aligned with the project values for Willamette Falls. Contributions could support ecological restoration, or provide significant support to interpretive programming down the road; organizations have received $100,000 or more to support an entire season of programming. Grant size ranges from $3,000 to $300,000, and the 2010 average amount was $28,600[36].

The foundations reviewed in this section all represent opportunities to strengthen the capacity of the Willamette Falls project. However, as noted previously, grants carry significant obligation to funders in terms of prescribed deliverables, evaluation, and reporting requirements.

ADDITIONAL FUNDING SOURCES

In this section, sources with a moderate potential contribution to the project are detailed. These sources generally contribute between $10,000 and $200,000 to the overall funding strategy; have a high level of effort for a more modest return; or do not represent a clear match to the project in terms of their requirements. Some would necessitate considerable effort to line up, but could deliver substantial return. The resources described in this section are summarized below.

PUBLIC GRANTS AND FUNDS	**Community Development Block Grants** … *page 33* **Metro Planning and Development**… *page 33* **Transit Oriented Development**… *page 33* **Regional Flexible Funds…***page 34* **Cultural/Historical**… *page 34* **Certified Local Government Program**… *page 34* **Ecological Restoration**… *page 34*	PUBLIC FINANCE	**Local Improvement District**… *page 36* **Reimbursement District**… *page 36* **Economic Improvement District/Business Improvement District**… *page 36* **Neighborhood Association**… *page 36*
DEVELOPMENT INCENTIVES	**Low-Interest Loans**… *page 37* **New Market Tax Credits**… *page 39*	PRIVATE GRANTS AND INVESTMENTS	**Spirit Mountain Community Fund**… *page 41* **Real Estate Investment Trusts**… *page 41* **Oregon Governor's Fund for the Environment**… *page 41*

PUBLIC GRANTS AND FUNDS

Community Development Block Grants

Projects interested in receiving CDBG funds apply to the County Department of Housing and Community Services, the grant's managing authority. Eligible projects are those that serve low-income communities or address slums or blight, and include community infrastructure and community betterment[37]. The CDGB program my have a special carve-out for planning, which could be applied to the Willamette Falls project; alternatively, it could be used to support infrastructure. The program is administered every two years, and typically a 5 month horizon is given for applying.

Planning and Development (P&D) Grants

This program, administered by Metro, was created in response to a need amongst small communities within the Urban Growth Boundary to fulfill planning requirements set by state law. A tax is applied to construction permits on projects valued over $100,000, the proceeds from which are administered as grants to communities needing assistance in planning. One of the program target areas includes projects that revitalize centers or employment areas in the Urban Growth Boundary[38].

Metro is preparing its third phase of the P&D grant program. Emphasis on the significant potential for job creation from the Willamette Falls re-development, its overall significance to the region, and Oregon City's status as a Regional Center offers an opportunity for a competitive application[39]. The likely range of funding available per project is $30,000 to $400,000. The next round of grant proposal solicitation is expected in October or November 2012, and applicants are urged to budget 30-60 days to complete and submit the letter of intent and full application[40]. Oregon City is in the process of initiating its application.

Transit Oriented Development (TOD)

The goal of Metro's Transit Oriented Development incentives is to promote medium to high density mixed-use urban centers that are connected to public transit. Typically, such development is difficult to achieve due to its high cost and perceived risk; therefore, TOD grants incentivize such development. Projects that promote high-density development and walkability; support low parking ratios and high floor area ratios; and increase transit use are strong candidates for funding.

According to program staff, the Willamette Falls site could be eligible for TOD funding, depending on the proposed outcomes of re-development. Because Oregon City has been designated a regional center, and the areas within the historic grid of Oregon City have good transit-orientation characteristics, the project could be a potential candidate, particularly if market strength information supports the project's ability to increase the transportation mode split and generate increased trips[41]. The program could contribute as much as $500,000 to the project if a grant is awarded.

Regional Flexible Funds

Metro manages the Regional Flexible Funds program, which is made up of transportation projects and programs selected by the Metro Council and the Joint Policy Advisory Committee on Transportation to receive federal transportation funds. Jurisdictions, transportation, or transit agencies within the region can nominate projects, and funds can be spent on a number of types of improvements, with the exception of local street construction. The 2014-2015 round of the program will focus on two areas: Active Transportation and Complete Streets and Green Economy and Freight Initiatives. Approved projects in the past have ranged in size from $100,000 to over $5 million.

Cultural/Historical Interpretation Funds

Heritage Grant Program: This program supports projects that develop or interpret Oregon's Heritage. It is administered through Oregon State Parks, and typically accepts applications every two years. The next round of applications will be accepted in 2013. The maximum funding amount is approximately $20,000. The most recent round of applications stressed preserving heritage resources of statewide significance over historical structures; while the focus may change in subsequent funding cycles, attention should be made to meeting the program's values.

National Endowment for the Arts (NEA) "Our Town" Grant: Awards ranging in size from $25,000 to $150,000 will be made to creative placemaking projects that contribute to vibrant, sustainable, and livable communities where arts play a core role. With a focus on creative, innovative projects and community partnerships, these grants support efforts to improve quality of life, create community identity and sense of place, and revitalize local economies. These goals make this program a likely fit for the Willamette Falls project.

Arts, design, and culture must be central to the project. In addition, grants do not cover construction, purchase, or renovation of facilities. Therefore, this grant would likely contribute to predevelopment, design, community planning, or installation of public art or interpretive resources. A one-to-one nonfederal match is required. Local governments qualify as lead agencies.

Certified Local Government (CLG) Program

The CLG program channels funds from the National Parks Service through the State Historic Preservation Office (SHPO) to city governments. In the State of Oregon, city governments agreed to share these funds equally, rather than having the program structured as a competitive grant program. Therefore, participating cities receive $15,000 bi-annually, which they are required to match. The focus of the program is the promotion of historic preservation.

Although small, the CLG program is a source of funding that can be anticipated with some reliability. How much CLG funding Oregon City chooses to allocate to the Willamette Falls

project is yet to be determined, however, if a specific need arises tied to a given project – for instance, application fees for historic status – Oregon could use CLG to cover this cost[42].

Ecological Restoration Funds

Oregon Department of Fish and Wildlife (ODFW) Fish Restoration and Enhancement Program: This program funds a broad variety of enhancement and restoration projects, which increase access to fishing opportunities; support fish population enhancement and habitat restoration; or improve existing fishways. Any public or nonprofit agency can apply. A seven-member citizen advisory board meets quarterly to approve proposed projects. Application deadlines are posted online, but generally occur in late February, early June, early September, and early December of each year. The largest grant for the most recent round of projects was $170,000. General habitat restoration, similar to the Fiddle Creek Stream Enhancement project, funded in the 2009-2011 biennium, or an access project such as dock installation are two potential applications of this grant for the Willamette Falls project. Projects have also been funded to conduct planning, as well as generate survey, design, and engineering products. Demonstrating partnership through matching funds can greatly strengthen an application.

ODFW State Wildlife Program Access and Habitat Grant: A&H funding is intended for projects that improve wildlife habitat or solve a wildlife damage issue. Development of wetland habitat and land acquisition are examples of previously-approved projects. Government agencies or landowners can apply. Applications are submitted to Regional Advisory Councils, which then request modifications or forward to the State Board for consideration. The Oregon Fish and Wildlife Commission then makes the final decision on funding for projects recommended by the Board. Funding ranges broadly, but could be $100,000 or more. Benefits to wildlife habitat and matching commitments from other agencies are two important criteria for review. The program is funded by hunting license fees, and preference is given to private lands, so preliminary agency outreach to assess feasibility is recommended.

PUBLIC FINANCE

Special Financing Districts

Special financing districts are mechanisms that can raise capital to finance different project stages. Different types of districts vary in their implementation. Local Improvement Districts, in particular, were frequently cited as a key tool for the Willamette Falls redevelopment. Support from the business community is essential in utilizing these tools.

Local Improvement Districts (LID): A Local Improvement District is a geographic area in which the local government taxes property owners to defray the cost of installing capital improvements or infrastructure. Costs are apportioned according to the estimated benefit of each property owner. In order to form an LID, a minimum of 50% of property owners impacted must approve its petition. Once approved, the city finances the project through the issuance of bonds; bonds are re-paid with the assessment from the LID. If a property within an LID is sold, the lien is either paid off at time of sale, or transferred to the buyer.

Reimbursement Districts: A reimbursement district functions much like an LID, however the property owner does not begin paying a fee until they are utilizing the service.

Economic Improvement Districts (EID) and Business Improvement Districts (BID): An EID involves issuing a fee to property owners within a proposed area. Funds can be used to finance improvements that benefit economic activity, business recruitment, or business retention. A BID functions similarly, however the fee is assessed against the business owner. Neither an EID nor a BID can fund capital improvements; both are more appropriate for promoting economic development in later stages of the Willamette Falls project.

Neighborhood Association: In this instance, tenants or business owners would pay a fee into a common pool of funds, most likely after development is largely complete. These funds could then be used to finance additional development or site refinement; they could also contribute to ongoing maintenance of publicly-held areas, such as parks or utilities[43].

Special Financing Districts: Tradeoffs and Opportunities

LIDs and Reimbursement Districts are contingent upon the city's capacity to provide cash up-front. In addition, they require approval by business or land owners; the willingness of these groups to participate must be assessed[1]. EIDs, BIDs, and Neighborhood Associations generate revenue in advance of its use, however they apply to later stages of development.

On the other hand, there are several different structures for special financing districts, so choosing the appropriate district for the appropriate stage of the project could increase the likelihood of success and match a structure to an appropriate gap. For instance, if the property is approached incrementally, later-stage improvements can be tied more directly to the benefit of existing tenants, and therefore participation might be more feasible.

DEVELOPMENT INCENTIVES

Low-Interest Loans

Because re-development of the Willamette Falls site – or, alternatively, failure to do so – has significant implications on the health of Oregon City's economic development and downtown revitalization efforts, the public sector may choose to incentivize developer participation by either taking out or providing low-interest loans.

Like the Section 108 program described previously, many low-interest loan programs are available to governmental bodies; however, the benefits of these loans often translate as incentives to developers, as they lower the cost of site readiness, and thus the cost and risk to the developer.

Alternatively, the public sector offers some low-interest loans directly to private developers.

Low-interest loans are available through a number of agencies:

EPA/Oregon State Brownfields: The EPA's Brownfields program capitalizes revolving loan funds throughout the nation. In Oregon, only a handful of revolving loan funds are currently funded. Business Oregon's Brownfields program was the only fund in Region 10 to seek supplemental funds for its loan program in the most recent round of applications; it received $850,000 in additional funding.

With enough advanced notice, the State's Brownfields fund operator could incorporate the needs of the Willamette Falls re-development into future applications for supplemental funds; the EPA favors recapitalization, as it demonstrates program use. The State's program is capable of structuring an array of flexible terms depending on the applicant's needs[44].

On the other hand, Metro or the partnership could apply to EPA to administer their own fund. This would make the fund more responsive to the particular needs of the Willamette Falls project, however it would likely require more effort, both in terms of application as well as administration of the fund.

Business Oregon Special Public Works Fund: This program includes loans for construction projects ranging from less than $100,000 to $10 million, and attractive interest rates and loan terms. Oregon City or Clackamas County could utilize this fund to finance buildings, equipment, restoration of environmental conditions on publicly owned industrial lands, roadways, and waste or water management systems. Loans can apply to planning, design, or implementation, depending on project needs.

Department of Environmental Quality (DEQ): A number of loan programs are operated through Oregon's Department of Environmental Quality, including the Clean Water State Revolving Loan Fund, which provides low-interest loans to projects that enhance water quality, and Pollution Control Bonds, which fund large pollution control facilities such as

wastewater and solid waste facilities. In 2012, project funding for the Clean Water fund ranged from $100,000 to $20 million; typical projects generally received between $1 million and $5 million in financing. Applications are received year-round, and must be deemed ready-to-proceed to qualify. Preliminary contact with a DEQ representative is strongly encouraged.

Department of Energy (DOE): Oregon's DOE provides loans to commercial applicants and public agencies. Projects which conserve energy, produce energy from a renewable resource, or are qualified alternative fuel projects or recycling projects can apply.

Department of Energy Loans are intended to cover only energy-saving or energy-producing components of a project. However, if the project qualifies as a demonstration project, the loan committee can recommend whole-project financing.

Qualifying demonstration projects can receive more funding than typical applicants. The Viridian Place building in Portland, for example, was in a market segment where it was important to prove the payoff of energy efficiency. In addition, a broad base of stakeholder support showed commitment to achieving energy efficiency through this project[45].



New Market Tax Credits[46]

The New Market Tax Credit (NMTC) program was established in 2000 by Congress and is operated through the Community Development Financial Institution Fund under the US Treasury. The program allows individual and corporate investors to receive a tax credit against their Federal income tax in exchange for making equity investments into Community Development Entities (CDEs). The credit totals 39% of the original investment, and is claimed over a period of seven years.

A Community Development Entity is an entity which acts as an intermediary vehicle for lending or investing in low-income communities. A CDE must be able to document that at least 60% of its activities will directly benefit low-income persons or communities.

A for-profit, non-profit, or government entity may apply for CDE status, as long as the entity is classified as a corporation or partnership at time of application. A CDE can then apply for and receive an allocation of tax credits, which it then offers to investors in exchange for equity investments in the CDE, or receive loans and investments from other CDEs with allocations of NMTCs. A Willamette Falls project partner could apply directly to become a CDE, or could partner with an existing CDE – such as Portland Family of Funds – to seek NMTC investment on the project's behalf.

The program would allow a private developer or private investor to invest in the Willamette Falls project and receive a substantial tax benefit in exchange. The program offers substantial cost reduction to the developer. However, Oregon City is not located within a listed qualifying census tract, and therefore application of the program may be challenging[47].

Organizations can apply for CDE status on a rolling basis; the NMTC application deadline for 2012 is September 12; applications are typically received on

NMTC Snapshot

Steps to Implementation:

1. Identify or create a corporation or partnership with an Employer Identification Number.
2. Apply for CDE status (rolling basis)
3. Apply for NMTC (annually)
4. If application is successful, NMTCs are offered to equity investors.
5. Proceeds of investments are then used to make loans or investments in qualified projects and communities

Benefits of NMTC: This program can provide substantial and flexible capital to facilitate real estate development or other community development activities.

Tradeoffs and Challenges: Oregon City's census tract does not meet the qualifications of a Low-Income Community, and therefore a CDE would have to prove that the area is a "Target Population" lacking adequate access to loan or equity investments. The Willamette Falls site's Brownfields status contributes to establishing need. However, the complexity of accessing the program under the "Target Population" rule is extremely complex, and perceived as very risky by investors.

In addition, the NMTC program is very competitive. Discussions with past successful applicants in the region is recommended.

an annual basis. The NMTC program is highly competitive[48], but can offer a substantial return on effort. Recent recipients of NMTCs in Oregon include:

- Oregon College of Oriental Medicine; $17,350,000: In order to finance the adaptive-re-use of the historic Globe Theater, in 2011 OCOM received a NMTC investment through two CDEs, Lowe Services and the National Development council; US Bank was the sole NMTC investor.
- Albina Community Bank, $10 million: In 2009, Albina Equity Fund 1, LLC, received an allocation of NMTC in order to invest in "shovel-ready" projects that would create jobs, stimulate growth, and jumpstart lending.
- Gerding Edlen Development, $36 million: The NMTC allocation, combined with other tax credits, provided approximately 40% of project costs on the re-development of the Portland Armory.
- Ecotrust, $60 million: Ecotrust CDE, a for-profit subsidiary of Ecotrust, has received allocations of NMTC to invest in Northwest businesses that are creating green jobs in struggling timber communities.

The most feasible scenario for capturing NMTC benefits for the Willamette Falls project would be to partner with an existing CDE. However, because Oregon City is not in a qualifying census tract, the only possibility for accessing NMTCs would be to demonstrate that a "Target Population" – or population that does qualify as low-income – would be the primary beneficiaries. This is very complex and risky, and therefore it becomes very difficult to attract investors[49]. Some local practitioners, such as Craft3, won't engage in a project that is attempting to use the "Target Population" rule for this reason. Others, such as Ecotrust, have done so.

PRIVATE GRANTS AND INVESTMENTS

Spirit Mountain Community Fund

The Spirit Mountain Community Fund's large grant program provides up to $50,000 in program support or $100,000 for capital projects to 501c3 organizations. Capital campaigns requesting more than $50,000 for construction costs must be accessible to the public and provide tangible and measurable outcomes. Health, Historic Preservation, Arts and Culture, and Environmental preservation are all categories that could be applied to the Willamette Falls Project. The next deadline for letters of inquiry is October 5, 2012. Letters of inquiry are typically accepted quarterly.

Real Estate Investment Trusts (REITs) and Private Investment

A REIT is a company that owns or engages in the financing of real estate. Pension funds and insurance companies often invest in REITs due to their potential high rate of return. They are typically associated with large-scale, commercial properties. Some REITs focus specifically on smart growth or green building investments. A REIT may acquire a site, thus limiting individual investor liability if, like Willamette Falls, the site has potential contamination issues, or the REIT may finance redevelopment.

While it would be the responsibility of a developer to bring in private investment, the Willamette Falls Partnership could begin developing relationships that would set the stage for such investments[50].

Oregon Governor's Fund for the Environment

Administered through the National Fish and Wildlife Foundation and funded through a $2 million court settlement with an international shipping company, former governor Ted Kulongoski and the US Attorney's Office established this fund to support environmental clean-up and restoration focused on Oregon's rivers and wildlife. The RFP is typically released in late August, with pre-proposals due in September and full proposals in December. Eight grants were awarded in 2012, ranging from $30,000 to $50,000.



INDIRECT FUNDING RESOURCES: LEVERAGING NOTORIETY, MITIGATING RISK, AND REDUCING COSTS

In addition to the direct funding sources outlined in this report, the Willamette Falls project can attract support through indirect means. Designations can substantiate the public significance of the project, and can be leveraged to bring in additional funding. Mitigating risk is an essential factor in attracting development, and can allow for negotiation of increased cost sharing further down the road. Finally, reducing costs lessens the fundraising burden.

Designations

Several types of designations were considered for their applicability and potential contribution to this project:

There are several precedent projects which have used National Heritage Area designation to leverage support for site development. For examples and contact information, visit :

https://sites.google.com/site/nhatrainings/home/entreprenurial-funding-strategies

National Heritage Area: Efforts have been underway by several interest groups in Oregon City to designate the area around Willamette Falls a National Heritage Area. This designation, administered by the National Parks Service, is designed to align the values and activities of stakeholders within the area, to promote economic and cultural development and tourism[51]. Designation provides benefits in the form of technical assistance and some financial assistance from NPS. In addition, designation can create unifying or catalytic value.

The current effort, let by the Willamette Heritage Area Coalition, would protect the Willamette River from Tualitin to Clackamas. It would be among few Heritage Areas in the West.

Historic Registry: In order to take advantage of tax credits linked to preservation, it is often necessary that a building or area be listed on the historic registry. While listing can constrain, to some degree, rehabilitation options, the partnership's ability to control the process of selecting and applying for listing will mitigate the risk that citizens or outside groups apply for listing on an unmanageable number of properties, thus further burdening redevelopment.

The Willamette Falls New Heritage Area or the Willamette Falls Heritage Area Coalition have expressed interest in advancing an application for Historic Registry listing; while these offers could reduce costs to the partnership, an agreement would be needed moving into this partnership to ensure that the buildings selected for listing support project goals.

Main Street: Currently, Oregon City's historic downtown is part of the National Trust for Historic Preservation's Main Street Program. This program attracts benefits in the form of funding to cover training and consultancies, and has helped leverage significant

revitalization efforts in Oregon City's downtown. Main Street designation also qualifies an area for additional National Trust grant funding.

One important consideration for the future use of the Willamette Falls site is how the end use supports or undermines Oregon City's ongoing efforts to revitalize its downtown through the Main Street program[52]. Incorporating the Willamette Falls area into the existing Main Street district is one possible strategy for ensuring that the values of these contiguous districts align.

National Water Trail: In August 2012, the Willamette River was designated a National Water Trail by the Secretary of the Interior. This designation links water resource managers along the Willamette to a network of practitioners nationwide, which is intended to facilitate information sharing and collaboration. In addition, this designation creates opportunities for funding for planning and implementation of water trail projects. Access to technical assistance, potential for increased tourism, and visibility are additional benefits[53].

Wild and Scenic Rivers: The option for designation under the Wild and Scenic Rivers program was explored. However, there was little evidence that this program was applicable to the Willamette Falls area, or that its pursuit would contribute significantly to the project's success[54].

In addition to pursuing designations or optimizing opportunities created by existing designations, there will be opportunities to mitigate risk and lower cost throughout the life of the project. An example of each that was mentioned by contributors to this report is provided below.

Risk Mitigation and Cost Reduction

Prospective Purchaser Agreement (PPA): A risk-mitigation strategy that applies to contaminated sites, a PPA is an agreement between a prospective purchaser or lessee of property and the DEQ.

Land Value Write-Down: A write-down is a method of encouraging development that adheres to previously outlined goals or stringent development requirements. It is typically implemented when a public agency assumes part of the acquisition, demolition, and improvement costs in order to direct development towards a controlled end use. The write down is the difference between market value and the fair re-use value given the restrictions proposed by the public agency. This technique was cited as a potential approach to maintaining adherence to the four value areas set forth by the Willamette Falls project partnership as the public sector becomes involved[55]. Ground leases or $1/year leases were also mentioned as approaches to attracting value-oriented development.

Partnerships and Collaboration

Pro-bono or Academic Support: Relationship building can bring in technical support or project-level input where relevant. This category involves reaching out to academic

institutions or professional support groups who may have an interest in providing in-kind support. Portland State University and University of Oregon have planning departments which provide such services.

Academic partnerships can also draw visibility to the project, thus contributing to its political capital.

Nonprofit partnership: A final consideration is the role of a nonprofit partner or "Friends of Willamette Falls" nonprofit in furthering the goals of the project. Cross-sector partnerships can facilitate certain sources of funding, which may be available only to a registered 501c3. In addition, if certain elements of development that qualify for tax credits fall to a public-sector partner without the ability to claim these tax credits, a nonprofit partner may be able to sell the credits so that funding resource can still be tapped.

If a relationship with a nonprofit is pursued, the structure of the partnership between the nonprofit, government, and private-sector partners must be carefully considered; the nonprofit's contribution should go beyond simply channeling funding[56].

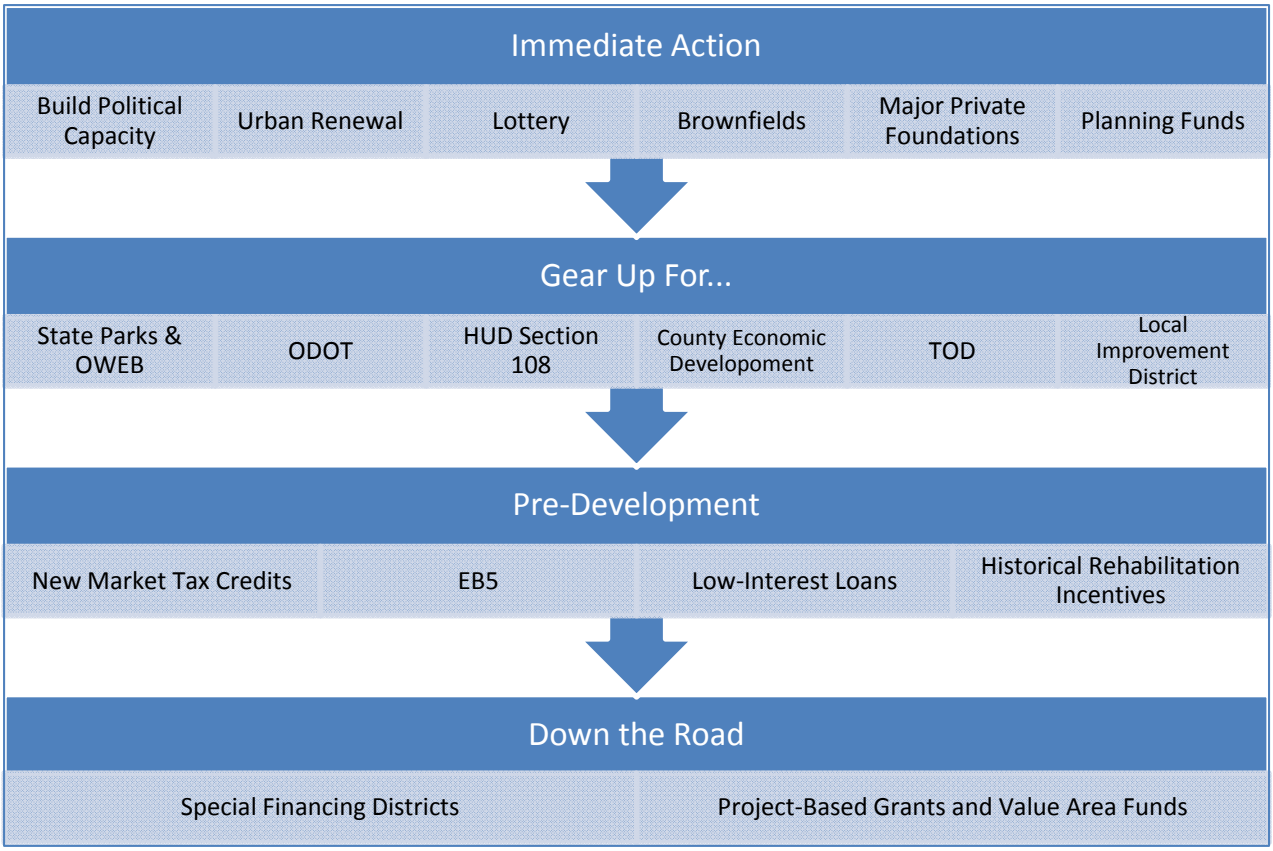
Part 3: Priorities and Action Steps

OPTIMIZING FUNDING OPPORTUNITIES

Setting Priorities and Coordinating Action

What follows are steps towards implementing a funding strategy for Willamette Falls. While many of these resources – particularly those that require immediate action – will likely play a role in the re-development of Willamette Falls, others may ultimately prove unnecessary, as some funding is secured, a site vision emerges, and developer negotiations advance.

Underlying the successful implementation of a fundraising strategy is the need to coordinate activities among participants in a complex partnership. Different funding sources may relate most clearly to a specific partner. Relationship-building, grant-writing, as well as management and reporting on funds will be an ongoing need. Frequent communication and clear roles will facilitate a dynamic approach to fundraising.



More about **Building Political Capacity: Page 12**

IMMEDIATE ACTION

Funding sources and tools requiring immediate action fall into two categories: those that can fill gaps during the early stages of the project – acquisition and planning – and those that may require longer-term, strategic effort for a long-term contribution to the overall project. This second category largely represents an opportunity to secure liquid funds.

Build Political Capacity

Necessary Conditions

- ☐ Supportive and engaged elected officials.
- ☐ A vision of transformation at Willamette Falls. To engage and excite both public representatives as well as citizens of the region, some vision of what the Willamette Falls project will ultimately provide is necessary. A somewhat concrete vision – even if is not entirely defined or subject to change – is necessary to incite the public imagination about what the results of transformation could be.
- ☐ An understanding of the needs and goals of the partnership. Once the stage has been set for engaging stakeholders, specific "asks" will shape funding efforts.

Action Steps

- ☐ Identify the most likely champions from within each partner agency. These individuals will be instrumental in communicating the significance of the Willamette Falls project to external stakeholders.
- ☐ Develop a blueprint of tasks and tools for these champions to utilize. A presentation and talking points have been developed. Further efforts towards "branding" the project are needed.
- ☐ Assess the most useful targets of outreach. For instance, the Army Corp of Engineers has some leeway to ask for project designation[57]. Other agencies administrating funds listed in this report provide direction.
- ☐ Outreach to representatives from Congress. These individuals will be instrumental in submitting delegation letters to secure federal grants.
    - Target representatives strategically; identify individuals who chair committees that might be interested in this project or co-chairs of Ways and Means.
    - For a project like Willamette Falls, which will likely seek multiple sources of federal funding, breif representatives early on the project. Provide tours, and engage staff as well as the representatives themselves.
    - Provide staff or representative with an overview of the funding schedule, so that they understand what they will likely be asked to support and when.

More about **Urban Renewal: Page 25**

- For specific grant support, provide at least a few weeks advanced notice to answer any questions. Outline a strategy for what the letters need to say, and provide this to staff members.

- ☐ Outreach to State legislators. These key decision makers will have more influence on State funds.
  - Focus energy in the short term on representatives who aren't facing re-election.
  - Prepare for interim legislative meetings in December. Members will be convening in the capitol, which is an opportune time to reach out and set up multiple meetings. However, scheduling should start as soon as possible.
- ☐ Identify a potential public face of the project. The strategy for engaging this figure will become clearer once they have been identified.
- ☐ Think carefully about a vision of transformation at Willamette Falls that can be presented externally. Given the long time horizon that is likely for this project, providing a vision can be risky. Therefore, a strategic approach is necessary, which can both incite imagination but also avoid making unsubstantiated promises. Several potential scenarios or past examples of transformational re-development can serve as proxies for a single, concrete vision.

Urban Renewal

Necessary Conditions

- ☐ City-Level political support. Bringing the Willamette Falls site into an Urban Renewal district would require approval by the Urban Renewal Commission, the City Commission, and a vote of the people.
- ☐ Financial and legal capacity of Oregon City's Urban Renewal district. The method of applying Urban Renewal – whether by incorporating into an existing district or creating a new district – depends on the current Urban Renewal context.

Action Steps:

- ☐ Plan a process for public engagement to build support. Having the support of Oregon City's citizens, as well as the Urban Renewal Commission and City Commission, will facilitate the ability of the city to take the necessary actions to bring Willamette Falls into an Urban Renewal District.
- ☐ Assess Urban Renewal capacity. Oregon City's finance team must determine Urban Renewal capacity, and make a recommendation as to the best approach for applying to the Willamette Falls property. Outreach efforts to local citizens as well as the commissions can help to assess political feasibility.
- ☐ Estimate Urban Renewal increment generation. In order to do this, a market analysis and estimate of projects within the site are necessary.

More about **Oregon Lottery: Page 15**

- ☐ Seek approval of overlapping taxing districts.
  75% approval is need.
- ☐ Initiate a public vetting process.
- ☐ Submit the plan for approval by the public, the urban renewal commission, and the city commission.

Oregon Lottery

Necessary Conditions

- ☐ State-Level Political Support. The Oregon State Legislature is responsible for allocating Lottery funds, in large part guided by constitutionally-set dedications. However, some discretionary funding is available, and additional channels through which Lottery dollars are allocated provide opportunities for the Willamette Falls project. Building State-level support is necessary to leverage these opportunities.

Action Steps

- ☐ Begin outreach as soon as possible to the members of the Legislative Assembly. The next opportunity to secure earmarks through the Lottery is 2013; cultivating interest among State legislators should begin immediately. Because the decision to acquire the site has not been made, one-on-one outreach to the most likely supporters is most appropriate. Educating them on the project while being open and honest about the level of uncertainty that it will move forward is important.
- ☐ Communicate the compatibility of the Willamette Falls project values and the Lottery's mission. The scope and potential of the Willamette Falls project and the evolving economic landscape in Oregon City reflect the mission of the Lottery to support economic development.
- ☐ Follow up on specific opportunities within Lottery-funded agencies.
  - Business Oregon
  - Clackamas County Economic Development
  - State Parks and OWEB
  - ConnectOregon
- ☐ Investigate further opportunities for funding through the Special Public Works fund or Lottery-backed bonds. Further due diligence should be done to assess the capacity of this resource. Building political support at the state level – particularly in the office of the governor and among legislative representatives – could help determine which route to access is most suitable for this project.

More about **Brownfields: Page 18**

Brownfields Area-Wide Assessment

Necessary Conditions

- ☐ A partner willing to take the lead on drafting the grant application.

Upcoming Brownfields Deadline:

The deadline for the EPA's Assessment Grant for FY13 is November 19, 2012

Action Steps

- ☐ Consult with EPA's Region 10 coordinator. This meeting can help to determine which assessment grant is most appropriate to pursue, and ensure that the project meets all of the eligibility requirements.
- ☐ Identify the primary party responsible for completing the grant application.
- ☐ Consult with experienced EPA grantees. Metro staff has worked on EPA grants, and Karen Homolac of the State's Brownfields program has been supportive of the project. Have these resources on hand if questions arise.
- ☐ Solicit the necessary supporting documents. Reach out for these early. Eligibility documentation from the State can take some time to procure, and letters of support from project partners can benefit an applicant's score.
- ☐ Be prepared to paint a clear picture of the project need as it relates to EPA priorities.



Gathering data on population demographics, health needs, economic impacts, and other detrimental impacts of the Willamette Falls site's current conditions substantiates the importance of the project and its alignment with EPA goals.

- ☐ Complete the grant application.

Additional Brownfields Grants

Necessary Conditions

- ☐ While not necessary, prior successful completion of an Area-Wide Assessment grant can greatly increase the chances of subsequent awards.
- ☐ A clear idea of need in terms of Brownfields Planning, Clean-up, or Revolving Loan Fund.

Action Steps

- ☐ Assess additional project gaps that can be filled by Brownfields. Once Assessment is complete and the project budget continues to become more fleshed out, the need for financial support to plan and clean up the site should be better understood.
- ☐ Assess the best method for filling these gaps with Brownfields funding. EPA's Planning and Clean-up grants can both provide financing for gaps in the site remediation timeline. However, a Revolving Loan Fund program can provide key leverage for these programs; it may even replace the competitive grant programs. A better understanding of these gaps could guide a conversation with the State's Brownfields office or the regional coordinator to best determine how to proceed.
- ☐ Track the EPA Brownfields program. The timing of RFP announcements and grant deadlines is typically unknown until only a short time before an announcement is made. Once the announcement is made, there is typically a 60-day window to complete the application. Maintaining a relationship with the state or regional Brownfields offices, and appointing a person to follow the Brownfields opportunities, is important to avoid a missed deadline.

Successful Brownfield Grant Application Tips:

The Brownfields Grant applications are scored based on a points system. Several tactics can help ensure maximum points are received.

- Use the term "integrated design". EPA favors this approach to re-development.
- The EPA also views complex regional partnerships and clear public support favorably. The multi-jurisdictional partnership working on Willamette Falls is an asset in seeking EPA funding. In addition, if Urban Renewal is approved, this can show community support.
- Follow application instructions diligently. Copy formatting provided by EPA where possible.
- Answer every single question. If a question does not apply, specify that it does not apply.
- Pay attention to the relative weight of each section, and give proportionate attention to each section accordingly.
- Assume the reviewer knows nothing about the project or community; explain everything.

More about **Private Grants: Page 30**

Major Private Foundations

Necessary Conditions

- ☐ Vision of project goals to align funder's values and priorities with project needs.

Action Steps

- ☐ Build relationships. Whether seeking competitive grants or discretionary funds, building relationships with funders allows partners to better assess a funder's interest. Interviewees recommend building excitement around the project, but keeping the "ask" open-ended, so funders can suggest their vision for collaboration.
- ☐ Secure letters of interest. Early on, firm commitments from private foundations may not be forthcoming; however, a letter of interest can help provide leverage for other funding, as well as a way to re-connect to a foundation at a later project stage.
- ☐ Assess the best method of collaboration. This may largely emerge from relationships with foundation representatives, who can provide guidance on the likelihood of support through competitive grants versus direct funding or investment.
- ☐ Prioritize outreach to the Bullitt Foundation. Bullitt's agility would allow them, if interested, to join the partnership early on.
- ☐ Evaluate where grant funding is needed. Depending on the project phase or other funding opportunities, grant proposals will be tailored to current needs.
- ☐ Approach Meyer Memorial Trust with a flexible "ask". MMT offers both Program Related Investments as well as grants. Keeping the conversation open to both resources will allow MMT to suggest which they feel is more appropriate.
- ☐ Track key dates for competitive grant cycles. Appoint an individual who will be responsible for anticipating up-coming deadlines in advance.
- ☐ Determine eligibility and appropriate partner applicant. Some grants are only available to nonprofit entities.

Private Foundations: Key Grants and Deadlines

Bullitt: Prospective grantees must submit a letter of inquiry prior to applying for a grant.
- Spring: March 15th inquiry, May 1st proposal. Fall: September 15th inquiry, November 1st proposal.

Meyer Memorial Trust: Responsive grants fund an array of community development and conservation activities.
- Grants generally range from $40,000 to $300,000; no grant deadline, but full process takes 5-7 months.

Oregon Community Foundation: A variety of grant programs are available; Community Grants are primary grant type.
- Average grant size is $20,000; deadlines for proposals are February 1 and August 1.

Surdna: Relevant categories include: Sustainable Environments, Strong Local Economies, or Thriving Cultures.
- There are no deadlines for submission. Grants range from $5,000 to $600,000.

Collins: Environment or arts categories are best aligned with the Willamette Falls project needs.
- The Board meets six times annually to review proposals. In 2010, the average grant amount was $28,600.

More about **Brownfields: Page 18**
More about **EDA Planning & Local TA: Page 20**
More about **ODOT: Page 24**
More about **Planning and Development: Page 33**
More about **Surdna: Page 31**
More about **NEA Our Town: Page 34**
More about **ODFW R&E: Page 34**

Planning Funds

Many sources of planning funds are further reviewed in other sections; focus in this section is on EDA, ODOT, and ODFW opportunities. For a list of upcoming grant deadlines that can be used for planning or development, see Appendix B.

Necessary Conditions

- ☐ The ability to anticipate a timeline for planning. Many planning funds take several months to secure, and may only fund one year of activity.
- ☐ Prioritized planning needs. Knowing which funds are needed for general planning or project-specific planning will guide the funding efforts.

Action Steps

- ☐ Identify scope of planning and financial needs. This will help project partners define what combination of resources can help meet these needs.
- ☐ Begin developing a relationship with regional program officers. Project partners with experience working on ODOT grants recommended involving the agency as early as possible. Likewise, consulting with EDA or ODFW officials will help assess whether the project meets program criteria.
- ☐ Engage the State's Regional Solutions Center coordinator. As project goals and become clearer, the Regional Solutions Center can coordinate state funding opportunities.
- ☐ Track key dates for competitive grant cycles. Appoint an individual responsible for anticipating up-coming deadlines.
- ☐ Identify appropriate applicant. Some grants are only available to nonprofit entities

Economic Development Administration: Strengthening Program Candidacy

According to David Porter of the EDA, the Willamette Falls project could be a good candidate for EDA funding provided the following:

1. No environmental liability. The EDA typically holds some real estate interest, and therefore liability risk must be covered.
2. Ability of partners to match funds. The maximum funding amount is $3 million, and must be matched 1-1.
3. Job creation. The EDA favors projects that create jobs, particularly those with an incubator/ tech training component.
4. Emphasize sustainability. For instance, energy in buildings, solar power, green roofs, and LEED certification.
5. Involve tribes. This is a key stakeholder group for the EDA; their support is critical.
6. Equity matters. Focus on displaced populations or other equity issues is essential.

Overview of Opportunities for Planning Activities:

Brownfields Assessment and/or Area-Wide Planning: $200K, $350K, or $600K grants available for comprehensive planning.

Economic Development Administration Planning & Local Technical Assistance Awards: Must demonstrate community economic distress; up to $70K is available for planning and $83K or more for Technical Assistance.

ODOT Transportation and Growth Management: Awards generally range from $75K to $200K in two program areas:

- Transportation System Planning
- Integrated Land Use and Transportation Planning

ODOT Flex Funds: In 2011, awards ranged from $83,000 to $2.1 million.

Planning and Development: Metro's program provides $30K to $400K to small communities for planning.

Surdna Foundation: Surdna's grant for community-driven design can provide up to $600K to support some planning efforts.

National Endowment for the Arts "Our Town" Grant: If the role of arts and culture is central enough to the development of the site, it may qualify for up to $150K.

ODFW Restoration & Enhancement: This grant can provide 100K or more to cover engineering, survey, and design products that contribute to fish habitat improvement.

or specific project partners.

☐ Prepare to highlight project characteristics that support a funder values. For instance, Oregon City has been working to support arts and creative industries through its Blue Collar Creative campaign; this can drive a strong application for NEA "Our Town" funds. A changing economic landscape could form the basis of an appeal for EDA funding. Finally, a dynamic regional partnership is often viewed favorably by the EPA's Brownfields program (see sidebar, "Successful Brownfields Grant Application Tips", page 50).



More about **State Parks: Page 22**

More about **OWEB: Page 23**

More about **ODOT: 24**

GEAR UP FOR…

Many decisions will impact financial needs throughout the project: the stage at which a developer is brought on board; the decision to choose a master developer or work with multiple developers; the size and nature of any publicly-owned portions. However, the public sector's role in "priming the pump" for development will require funds early on. Infrastructure is an early priority; many development practitioners also indicated the importance of realizing some green space and public access opportunities in the short term. Funding sources in this section largely address these needs.

State Parks, OWEB, and ODOT

Upcoming ODOT Deadline:

The deadline for ODOT's STIP Enhance application is November 27, 2012.

Necessary Conditions

- ☐ A commitment from the State's Regional Solutions Center regarding its role in the funding strategy. While many opportunities are available through state grant programs, the Regional Solutions Center could greatly facilitate coordination of these funds.

Action Steps

- ☐ Appoint a team member for grant oversight. Many state grant funds will apply to the development stage of the Willamette Falls project; therefore, several grant cycles may pass before the partnership is ready to secure these funds. A point person should track deadlines and be prepared to identify these grants when appropriate.
- ☐ Be prepared for a competitive application process. Consulting with Parks, OWEB, or ODOT staff can help ensure that a grant proposal demonstrates the necessary elements to be successful. The point person should also be aware of any potential workshops or webinars that may arise.
- ☐ Line up matching funds. Most grants require matching funds.
- ☐ Ensure the transportation needs for the Willamette Falls project are listed as a JPACT priority. This is an important mechanism for accessing ODOT funds.
- ☐ Assess the availability of non-grant funds. This is largely a role for the State's Regional Solutions Center coordinator, who is responsible for coordinating between state agencies to meet the goals of regional priority projects.
- ☐ Complete an ODOT STIP application for upcoming round of funding. The application deadline is November 27, 2012.

More about **HUD 108: Page 27**

More about **County Economic Devel: Page 17**

More about **CDBG: Page 33**

HUD Section 108

Necessary Conditions

- ☐ County cooperation in leveraging its CDBG allocation to secure 108 funding. Because this program is linked to CDBG funding, and Clackamas County is the local entity charged with CDBG distribution, their participation is key to feasibility.

Action Steps

- ☐ Determine whether an agreement with the county is feasible. An important component of this is to evaluate a future revenue stream to repay county debt.
- ☐ Connect with a local HUD representative to initiate the process.
- ☐ Think creatively about uses of HUD funding. A case study on HUD 108 Loans on page 27 demonstrates how HUD can be used in tandem with New Market Tax Credits. Brownfields grants can also be paired with HUD.

County Economic Development

Two resources for County-level funding are reviewed here: the County's Business and Economic Development department, and the Community Development Block Grant (CDBG) program.

Necessary Conditions

- ☐ A governance or partnership agreement with the county. Commitment to project participation from Clackamas County could be an important pre-requisite to accessing economic development funds through the Business and Economic Development department.

Action Steps

- ☐ Identify the appropriate role for the county's Business and Economic Development Department. For instance, assistance on a campaign to recruit developers[58].
- ☐ Secure commitment on project partnership.
- ☐ Illustrate how the Willamette Falls project aligns with CDBG goals. These include benefit to low and moderate income persons; elimination of slums or blight; and meeting an urgent community development need. Currently, the Willamette Falls property is located in a qualifying area, defined as an area where 51% of individuals have low to moderate incomes[59].

More about **TOD: Page 33**

More about **LIDs: Page 36**

More about **EDA: Page 20**

Transit Oriented Development

Necessary Conditions

- ☐ Proposed outcomes of re-development that align with TOD program goals.

Action Steps

- ☐ Continue to engage TOD program staff as the project develops. Because of the relatively undefined outcomes of the Willamette Falls project at this early stage, follow-up with TOD program staff as the vision develops is needed.
- ☐ Leverage the project's location within a regional center.

Local Improvement District

Necessary Conditions

- ☐ Local political capacity to form a district.

Action Steps

- ☐ Continue building local support.
- ☐ Engage Oregon City staff in determining the role of LIDs project finance.

EDA Public Works and Economic Adjustment Assistance

Necessary Conditions

- ☐ Ability to demonstrate a compelling need for funding.

Action Steps

- ☐ Maintain engagement with regional EDA coordinator.
- ☐ Emphasize special need. Major plant closure, lack of investment, and a shifting economic landscape are all factors contributing to Oregon City's need.
- ☐ Coordinate proposal with other agency projects. It is important to ensure that Metro or other partners aren't submitting competing proposals.
- ☐ Begin building a relationship with the Regional Council for Economic Development. This agency receives EDA funding and could be a key partner.

More about **NMTC: Page 39**

More about **EB5: Page 28**

PRE-DEVELOPMENT

Having a menu of incentives prepared when negotiations with a developer take place can act as leverage to ensure that the public sector's values are addressed through the project's implementation and the private sector takes on a reasonable share of the development burden.

New Market Tax Credits

The City of Beaverton used New Market Tax Credits to partially fund the development of the Round Executive Suites.

Necessary Conditions

- ☐ A qualifying census tract or ability to demonstrate qualification through a special category. The Willamette Falls site is not within a qualifying census tract; therefore, the project would have to benefit a low-income "Target Population".
- ☐ Private sector interest in the Willamette Falls redevelopment.

Action Steps

- ☐ Identify whether the benefits of NMTC outweigh costs. NMTC is complex, competitive, and burdensome, particularly because the project is not located in a qualifying census tract. Discussions with expert practitioners at agencies like Portland Family of Funds are needed to determine feasibility.
- ☐ Build relationships with a consultant or project partner who has hands-on experience with NMTC. BusinessOregon, Craft3, and United Fund Advisors are potential resources in the Portland area.

EB5

Necessary Conditions

- ☐ Willamette Falls Project capacity to support the threshold requirements for EB5 investment. Certain job creation standards must be met; Metro's *Catalytic Value of the Willamette Falls Project* report provides some indication of whether these thresholds could be met.

Action Steps

- ☐ Outreach to authorized EB-5 investment coordinators in Oregon. These coordinators are American United Development Group and the American Dream Fund LLC.

More about **Low-interest Loans: Page 37**

More about **Historic Incentives: Page 29**

Low-Interest Loans

Necessary Conditions

- ☐ Debt capacity of project partners. Although some low-interest loan programs are available to private partners, the need for early-stage cash flow may indicate where borrowing might be needed.

Action Steps

- ☐ Specify cash flow timeline. As project costs become more concrete, lining up grants or other allocations with funding needs and then identifying remaining gaps will help to illustrate where additional funding is needed.
- ☐ Align gaps with lenders. Different lenders have different priority areas; securing low-interest loans will rely partly on an ability to match funding needs with the appropriate resource.
- ☐ Focus some effort on the Lottery's Strategic Reserve Fund. Oregon's Governor can initiate involvement with a project, particularly if it has potential to contribute to significant job creation. One typical use of Strategic Reserves Funds is to forgive a Business Oregon Loan.
- ☐ Consider options for leveraging and re-paying debt. Sherwood used a $30 million investment from a private investor as leverage to secure a Business Oregon loan. Canby used Urban Renewal TIF to back their loan[60].

Historic Rehabilitation Incentives

Necessary Conditions

- ☐ A private developer willing to utilize these incentives. Choosing the correct developer with experience using these incentives can remove perceived barriers to re-development often associated with registered historic properties.
- ☐ Listing on the National Register of Historic Places.

Action Steps

- ☐ Identify the potential benefit of utilizing these programs. This can help demonstrate their value to private developers. For instance, historic rehabilitation can save costs on development, because you keep what you already have, thus reducing costs on materials[61].
- ☐ Identify qualifying buildings and properties, and apply for National Register of Historic Places listing.

- ☐ Market the project to developers with experience in historic rehabilitation. Developers who have used these incentives will understand the procedures and compliance issues involved.
- ☐ Plan ahead. Prior to utilizing historic tax credits, buildings must be listed on the National Register of Historic Places. The listing process takes about a year from start to finish; approximately 70-100 hours of staff time can be anticipated per building.



More about **Financing Districts: Page 36**

More about **Additional Grants: Page 41**

DOWN THE ROAD

There are prescribed funding sources available for an extremely wide variety of activities and projects; when a vision of re-development is more concrete, it will become clearer which avenues of funding to pursue.

Special Financing Districts

Necessary Conditions

- ☐ Sufficient local support. The majority of special financing districts require approval by the parties affected by the fee. Therefore, maintaining engagement with these stakeholders is key to successful implementation.

Action Steps

- ☐ Evaluate the most appropriate tools to implement. City officials can provide insight.
- ☐ Weight the potential contribution of these tools against the political capital needed to successfully implement them.

Project-Based Grants and Value Area Funds

Necessary Conditions

- ☐ Capacity to anticipate funding needs and deadlines. As the project progresses into the future, the funding landscape may evolve and new opportunities may arise. It is important to track and anticipate previously-identified as well as emerging funding opportunities so that partners are prepared to develop strong applications.

Action Steps

- ☐ Maintain a database of funding opportunities and update regularly.

CONCLUSION

Urban revitalization represents the future of Oregon City's downtown. The funding success of the Willamette Falls project relies heavily on the ability of partners and supporters to promote a vision that will excite the public, engage funders, and convince stakeholders throughout the region of its far-reaching significance.

The transformation of the Willamette Falls property is a once in 180-year opportunity. Successful communication of this points, and concerted efforts towards building political capacity, are critical to ensuring that a diverse array of liquid and prescribed funds are available to the project.

In addition, a high level of organization centered around the ability to anticipate opportunities and execute a coordinated implementation strategy is needed to guide what is certain to be a dynamic funding process. Securing the grants listed in this report require several basic action steps:

- ☐ Track key dates and deadlines
- ☐ Coordinate with project partners to identify the most appropriate applicant
- ☐ Consult with grant coordinators and past grantees for guidance
- ☐ Attend closely to funder values
- ☐ Build political support

One point person who can ensure that the above needs are fulfilled, as well as coordinating the management and reporting often required from funders, will be a significant asset to the success of this project.

The level of staff time required to coordinate this funding strategy is likely to be significant. A grant application submitted to the National Parks Service in August required three full days of staff time. This was a technical assistance grant and entailed a relatively simple, straightforward application process; more complex grants and larger funding amounts are likely to demand more staff time and effort. Metro staff with experience applying for OWEB funding, a moderately complex application process, estimated 40-60 total staff hours to complete the application. Some programs could require a time commitment of several weeks or even a month or more.

While the staff time and resources needed to fund the Willamette Falls project are significant, they represent the backbone for project success. The ability of the public sector to invest patient capital in this complex site can unlock the potential for private investment and development, and ultimately capture the opportunity to tell this amazing Oregon story.

APPENDIX A: GRANT DEADLINES & ELIGIBLE APPLICANTS

Program	Eligible Applicant	Deadlines
Lottery	Dependent upon program	Outreach to elected officials should begin immediately
Business Oregon IFA	Oregon City, Clackamas County (Special Public Works Fund); Water system owner (Water Project)	N/A
EPA Brownfields Assessment Grant	Coalition of 3 public agencies, with one lead agency	November 19, 2012
EPA Brownfields Cleanup Grant	Landowner	Typically early October/late November
Brownfields Revolving Loan Fund	May be best to apply directly through state; any public agency can apply	Advanced notice to State Brownfields program can allow time to re-capitalize the fund if necessary
Local Government Grants	City, County, Metropolitan Service District, or Parks and Rec. District	Typically Winter/Spring
LWCF Grant	Public agency	2012 funding has not been announced; expected soon
Recreational Trails Grant	Public agency or nonprofit	October: Letter of intent January: Application due
ODOT TGM	Public agency	Annually in June
ODOT STIP	Any public agency can sponsor an application	November 27, 2012
OWEB Large Grant	Public agency	October 22, 2012
TGM	Oregon City, Clackamas County	Annually in June
Urban Renewal	Oregon City	N/A
HUD 108 Loans	Clackamas County	N/A
EB5	Private developer	N/A
Preservation Tax Credits	Private developer	N/A
SHPO Special Assessment	Private developer	N/A
Bullitt Foundation Grant	Public agency or nonprofit	Letters of inquiry due March 15 & September 15
Oregon Community Foundation Grant	Typically nonprofit	February 1 and August 1
Meyer Memorial Trust	Public agency or nonprofit	N/A
Surdna Grant	Nonprofit 501c3	N/A
Collins Foundation Grant	Public agency or nonprofit	Proposals reviewed 6x/year

APPENDIX B: PLANNING FUNDS DEADLINES

Grant	Description	Award Size	Eligible Partner	Date
NPS Rivers, Trails, and Conservation Assistance Grant	One year technical support to address access	TA only	Metro	**APPLIED 8/15**; support would begin Oct 1
Metro Planning and Development Grants	Planning needs in small communities	$30,000 to $400,000	Oregon City	Solicitation begins Oct or Nov 2012; Application takes 30-60 days to complete.
EPA Brownfields Area-Wide Assessment Grant	Inventory, characterization, assessment, project planning, and community involvement	$600,000 for Coalition	Coalition: Minimum of three agencies, with one lead agency	November 19, 2012
EDA Planning Award	Can be used to create economic development plans	$70,000	Portland Regional Partners Council for Economic Development is contact agency	Opened Aug. 2012, rolling application
EDA Local Technical Assistance	Feasibility studies, impact analyses, resiliency plans, or project planning; investigate abandoned facility re-use	Average $83,000	Any public agency	Opened Aug. 2012, rolling application
ODOT Enhance Funds	Enhance, expand, or improve transportation system; consolidates several ODOT grants	TBD	Any public agency can sponsor an application	November 27, 2012 Funds will cover years 2015-2018
ODOT TGM	Planning efforts to expand transportation choices	$75,000 to $200,000	Public agency	Annually in June
ODOT Immediate Opportunities	Building and improving roads in strategic locations to support economic development	$500,000	Public agency	Rolling application
NEA “Our Town” Grant	Master planning and design if area is arts-centered; creative industry hub planning; design of public spaces	Up to $150,000	Two partners required: a nonprofit and a local government entity (city/county)	Typically in March
ODFW Restoration and Enhancement	Engineering, survey, and design products that enhance fish habitat	$100,000 or more	Any public or private nonprofit	Quarterly: Feb, June, Sept, and Dec
Surdna Foundation	Community-driven design grants support planning	$600,000	Nonprofit (501c3)	N/A

APPENDIX C: FUNDING CONTACTS

Program Representatives directly represent the funding agency. Practitioner Contacts are local resources who have experience utilizing a specific tool or resource.

Appendix C 1: Major Funding Sources

Grant	Program Representative or Grant Coordinator	Practitioner or Internal Contact
Lottery	Jim Carbone, Department of Administrative Services james.v.carbone@state.or.us; Larry Trott, Oregon Lottery, larry.trott@state.or.us	Randy Tucker (securing earmarks) Randy.tucker@oregonmetro.gov
Business Oregon IFA	Janet Hillock, janet.a.hillock@state.or.us	
EPA Brownfields	Mike Slater, Oregon EPA contact Slater.mike@epa.gov Susan Morales, Region 10 coordinator Morales.susan@epa.gov	Karen Homolac, Karen.homolac@biz.state.or.us; Miranda Bateschell, Miranda.bateschell@oregonmetro.gov
Oregon Brownfields Revolving Loan Fund	Karen Homolac, Business OR Karen.homolac@biz.state.or.us	
State Parks Local Government Grants	Michele Scalise, Parks michele.scalise@state.or.us	Roger Roper, SHPO Roger.roper@state.or.us
State Parks LWCF Grant	Marilyn Almero Lippincott, Parks Marilyn.lippincott@state.or.us	
State Parks Recreational Trails	Mark Cowan, Parks mark.cowan@state.or.us	
ODOT STIP Enhancement Funds 2015-2018	Jeff Flowers, ODOT Jeffrey.a.flowers@odot.state.or.us	Ted Leybold, Metro ted.leybold@oregonmetro.gov
ODOT TGM	Lidwien Rahman, ODOT lidwien.rahman@odot.state.or.us	
OWEB	Wendy Hudson, Regional Officer wendy.hudson@state.or.us	Brian Vaughn, Metro Brian.vaughn@oregonmetro.gov
Urban Renewal	Oregon City staff; Harvey Rogers, OC bond attorney	Kate Porsche, City of Albany, kate.porsche@cityofalbany.net; Association of Oregon Renewal Agencies, orurbanrenewal.org; UR Consultants: Elaine Howard, Elaine@elainehconsulting.com; Jennette launer, jmlauner@comcast.net

EDA Planning & Local Technical Assistance	David Porter, EDA David.r.porter@eda.gov	Chris Deffebach, Metro; agency contact for Portland/Vancouver Regional Partners Council for Economic Development
EDA Public Works and Economic Adjustment	David Porter, EDA David.r.porter@eda.gov	
HUD 108 Loans	Doug Carlson, HUD Region 10 Doug.carlson@hud.gov	
EB5 Program	Approved regional centers: American Dream Fund, www.adreamfund.com; American United Development Group, www.audgus.com	
Preservation Tax Credits	Joy Sears, SHPO Joy.sears@state.or.us	Christina Robertson-Gardiner crobertson@ci.oregon-city.or.us
SHPO Special Assessment	Joy Sears, SHPO Joy.sears@state.or.us	Christina Robertson-Gardiner crobertson@ci.oregon-city.or.us
Bullitt Foundation	Dennis Hayes, President dhayes@bullitt.org	
Oregon Community Foundation	Max Williams, President and CEO mwilliams@oregoncf.org	
Meyer Memorial Trust	Pam Wiley, Willamette River Initiative Manager pam@mmt.org	
Surdna Foundation	Phillip Henderson, President Sharon Alpert, Senior Director salpert@surdna.org	
Collins Foundation	Cynthia Addams, Exec. VP caddams@collinsfoundation.org Cindy Knowles, Program Director cknowles@collinsfoundation.org	

Appendix C 2: Additional Funding Sources

Grant	Program Representative or Grant Coordinator	Practitioner or Internal Contact
Planning and Development Grant	Gerry Uba, Metro	
Transit Oriented Development	Megan Gibb & Meganne Steele, Metro	
State Parks Heritage Grant Program	Kyle Jansson, State Parks Heritage.info@state.or.us	
NEA "Our Town" Grant	Our Town coordinator OT@arts.gov	
State Parks Certified Local Government	Kuri Gill, CLG Coordinator Kuri.gill@state.or.us	Christina Robertson-Gardiner crobertson@ci.oregon-city.or.us
ODFW Fish Restoration and Enhancement	Josie Thompson R&E Program Coordinator 503-947-6259	
ODFW State Wildlife Access and Habitat	Matthew Keenan, State Coordinator Matthew.t.keenan@state.or.us	
Community Development Block Grants	Chuck Robbins, chuck@co.clackamas.or.us	
Special Financing Districts		Nancy Kraushaar, Wilsonville, Kraushaar@ci.wilsonville.or.us
New Market Tax Credits	John Berdes, jberdes@craft3.org	Alma Flores, City of Beaverton
Business Oregon Special Public Works Fund Loan	Janet Hillock, Business Oregon, janet.a.hillock@state.or.us	
DEQ Low-interest Loan	Tiffany Yelton Bram, Portland Project Officer Yelton.tiffany@deq.state.or.us Jim Harris, Pollution Control Bonds Harris.jim@deq.state.or.us	
DOE Low-interest Loan	Kathy Estes, Government Loans Kathy.estes@state.or.us Ed Tabor, Large Commercial and Industrial Loans Ed.tabor@state.or.us	
Spirit Mountain Community Fund Grants	Kathleen George, Director Kathleen.george@ Thecommunityfund.com	
REITs or private investments		Stuart Cowen, Autopoiesis, scowan@apoiesis.com
Oregon Governor's Fund for the Environment	Cara Rose, Assistant Director Western Partnership Office Cara.rose@nfwf.org	

Appendix C 3: Additional Contacts

Grant/Topic	Practitioner, representative, or expert contact
National Heritage Area Designation	Alice Norris or Peggy Siggler
General development expertise	Will Macht, willmacht@gmail.com
Travel Oregon/Tourism Funding	Carol Astley; Scott West
Green Building/Design	Eden Bruckman
Land Re-use	Ignacio Dayrit, Center for Creative Land Recycling
Water Trails and River Recreation	Rick Bastasch, City of Portland Office of Healthy Working Rivers
Oregon history, design and development	Chet Orlaff
Prospective Purchaser Agreements	Mike Rosen, DEQ

APPENDIX D: OREGON LOTTERY FACTS AND FIGURES

2009-2011 Biennium Reports by County: Clackamas County[1]

Business Oregon: OBDD

Project	Lottery Grant	Lottery Loan
Credit Enhancement Fund and OBDF – Anderson Quality Spring Manufacturing, Inc. Loan Guarantee and New facility for business expansion		1,075,000
Entrepreneurial Development Loan Fund – The Place to Be Café, LLC Working capital & equipment to start business		25,000
Small Business Programs – Various Business Retention	56,000	3,500
Special Public Works Fund – City of Sandy Design engineering to produce project ready plans for construction	19,125	
Strategic Reserve – OECO, LLC Expansion of company's facility to accommodate consolidation of its Carpenteria, California generator and alternator system manufacturing operations	150,000	
Strategic Reserve – Oregon Iron Works, Inc. Expansion and diversification of company's products to include streetcar manufacturing in response to demand and interest of many cities which are considering the establishment of streetcars as part of their urban transportation alternatives	120,000	
Various Fund loss reserve to incent small business lending		25,800
Agency Totals	345,125	1,129,300

Department of Education: ODE/ESDs

Project	Lottery Grant	Lottery Loan
Clackamas ESD	1,128,553	
Agency Totals	1,128,553	

Department of Education: ODE/SSF

[1] Oregon Lottery

Project	Lottery Grant	Lottery Loan
Canby SD 86	3,783,810	
Colton SD 53	585,220	
Estacada SD 108	2,324,566	
Gladstone SD 115	1,700,360	
Lake Oswego SD 7J	2,617,961	
Molalla River SD 35	2,086,040	
North Clackamas SD 12	11,831,681	
Oregon City SD 62	5,627,439	
Oregon Trail SD 46	2,770,367	
West Linn-Wilsonville SD 3J	4,630,929	
Agency Totals	37,958,372	

Department of Transportation

Project	Lottery Grant	Lottery Loan
Wilsonville SMART Transit Operations Center	2,000,000	
Agency Totals	2,000,000	

Oregon Watershed Enhancement Board

Project	Lottery Grant	Lottery Loan
Council Support Clackamas River Basin Council; Greater Oregon City Watershed Council; Johnson Creek Watershed Council; Sandy River Basin Watershed Council. – Support for community efforts to protect and enhance clean water and healthy habitats for fish and wildlife	16,399	
Restoration and Protection Nineteen grants to: Clackamas River Basin Council; Clackamas Soil and Water Conservation District; Ecotrust; Johnson Creek Watershed Council; Lower Willamette East Small Grant Team; Marion Soil and Water Conservation District; Molalla River Watch Inc.; The Freshwater Trust; Tualatin River Watershed council. – Support for restoring habitat for native fish and	1,032,009	

wildlife, planning native trees and shrubs along streams and rivers, weed removal, and improving water quality. For example, Johnson Creek Watershed Council restored a quarter-mile stretch of Johnson Creek where it meets the Willamette River in order to improve the habitat of coho salmon, steelhead trout, and spring Chinook salmon.		
Agency Totals	1,048,408	

Parks and Recreation

Project	Lottery Grant	Lottery Loan
Gleason Cemetery About 25 trees in the cemetery will be trimmed for their health and preservation of markers	2,800	
Michael J. Gudge St. John's Catholic Church: Repair Roof	8,500	
Milo McIver State Park Paving-McIver Entrance Road Overlay	62,040	
Milo McIver State Park McIver Pump Station Vault Replacement	3,930	
Milo McIver State Park ARRA0-McIver Group Camp Restrm Rplc	22,941	
Tryon Creek Cazadero Trail Bridge-Cazadero Geotech Eval	15,641	
Tryon Creek Cazadero Trail CAZADERO TRAIL – Boring to Barton Park – Bridge Washout-Culvert	29,894	
Tryon Creek Cazadero Trail Cazadero Trail – Phase 2 1.06 miles to North Fork Deep Creek	95,114	
City of West Linn Oak Savanna Park	333,000	
Clackamas Boring Station Trailhead Park	425,000	
METRO Graham Oaks Nature Park	500,000	
Oregon City Canemah Neighborhood Park	253,900	
Agency Totals	1,752,760	

Video Lottery/Local Economic Development

Project	Lottery Grant	Lottery Loan

Video Lottery proceeds to county for local economic development projects (per ORS 461.547).	2,699,853	
Agency Totals	2,699,853	

TOTAL CLACKAMAS COUNTY 09/11

Lottery Funded Grants: **$46,933,071**

Lottery Funded Loans: **$1,129,300**

Total Lottery Funded Dollars: **$48,062,371**

REFERENCES

[1] Meganne Steele, Metro, Personal Correspondence, August 2012
[2] Villebois Development Finance Plan
[3] Presentation by City of Minneapolis CPED Department and Minneapolis Park and Recreation Board
[4] Cheryl Twete, Metro, Personal Interview, July 2012
[5] Larry Trott, Oregon Lottery. Personal Interview & Correspondence, July 2012.
[6] Oregon Constitution, Section 461
[7] Janet Hillock, Business Oregon, Personal Interview, July 2012
[8] Jamie Johnk, Clackamas County. Personal Interview, August 2012.
[9] http://cms.oregon.gov/ODOT/COMM/Pages/CO4_Final_Review_Meet.aspx
[10] epa.gov/brownfields
[11] Miranda Bateschell, Metro, Personal Interview, August 2012
[12] Kate Porsche, City of Albany, Personal Interview, August 2012
[13] Karen Homolac, BusinessOregon, Personal Interview, August 2012
[14] http://www.eda.gov/ffo.htm
[15] http://www.eda.gov/grants.htm
[16] Roger Roper, State Historic Preservation Office, Personal Interview, July 2012
[17] http://www.oregon.gov/OPRD/GRANTS/local_more.shtml#large
[18] http://www.nps.gov/ncrc/programs/lwcf/funding.html
[19] http://cms.oregon.gov/oprd/GRANTS/pages/lwcf_other.aspx#important
[20] Roger Roper, State Historic Preservation Office, Personal Interview, July 2012
[21] http://downtownoregoncity.org
[22] Jamie Johnk, Clackamas County, Personal Interview, August 2012
[23] Hud.gov
[2424] http://www.uscis.gov/portal/site/uscis
[25] "EB-5 to trigger millions for real estate projects", Wendy Culverwell, www.bizjournals.com/portland
[26] AKS Engineering & Forestry, Site Assessment of Blue Heron Paper Mill Property, November 2011
[27] AKS Engineering & Forestry, Site Assessment of Blue Heron Paper Mill Property, November 2011
[28] Christina Robertson-Gardiner, Oregon City, Personal Interview, July 2012
[29] Christina Robertson-Gardiner, Oregon City, Personal Interview, July 2012
[30] http://bullitt.org/
[31] http://www.oregoncf.org/receive/grants
[32] Stuart Cowen, Autopoesis, Personal Interview, July 2012
[33] http://www.mmt.org/grants
[34] http://www.surdna.org/grants/grants-overview.html
[35] http://www.smarte.org/smarte/resource/sn-sources-money.xml?page=4
[36] http://www.collinsfoundation.org/
[37] Jamie Johnk, Clackamas County, Personal Interview, August 2012
[38] Oregonmetro.gov
[39] Chris Deffebach, Metro, Personal Interview, July 2012
[40] Gerry Uba, Metro, Personal Correspondence, August 2012
[41] Conversation with Megan Gibb and Meganne Steel, Metro, August 2012
[42] Christina Robertson-Gardiner, Oregon City, Personal Interview, June 2012
[43] Cheryl Twete, Metro, Personal Interview, July 2012

[44] Karen Homolac, Business Oregon, Personal Interview, August 2012
[45] Cms.oregon.gov/energy, Veridian Case Study
[46] Information on NMTC from cdfifund.gov
[47] http://www.cdfifund.gov/what_we_do/programs_id.asp?programID=5
[48] Megan Gibb, Metro, Personal Interview, August 2012 and Stuart Cowen, Autopoesis, Personal Interview July 2012
[49] John Berdes, Craft3, Personal Interview, September 2012
[50] Cheryl Twete, Metro, Personal Interview, July 2012
[51] Roger Roper, State Historic Preservation Office, Personal Interview, July 2012
[52] Roger Roper, SHPO, Personal Interview, July 2012
[53] http://www.nps.gov/WaterTrails/Home/About
[54] Rick Bastasch, City of Portland Office of Healthy Working Rivers, Personal Interview, August 2012
[55] Conversation with Megan Gibb and Meganne Steele, Metro, August 2012
[56] Stuart Cowen, Autopoesis, Personal Interview, July 2012
[57] Chris Deffebach, Metro, Personal Interview, July 2012
[58] Eric Underwood, City of Oregon City, Personal Interview, July 2012
[59] http://www.clackamas.us/communitydevelopment/improvement.html
[60] Janet Hillock, Business Oregon, Personal Interview, July 2012
[61] Christina Robertson-Gardiner, City of Oregon City, Personal Interview, July 2012

COLLABORATIVE PLANNING AGREEMENT

DATED: February 27, 2013

BETWEEN: CITY OF OREGON CITY, (the "City")
An Oregon municipal corporation
ATTN: Tony Konkol, Community Development Director
625 Center Street
Oregon City, Oregon 97045

AND Peter McKittrick, Trustee of the Estate of (the "Trustee")
Blue Heron Paper Company, U.S. Bankruptcy
Court for the District of Oregon
Case No. 09-40921-rld7
515 NW Saltzman Road, DBM #917
Portland, Oregon 97229

The Trustee owns title to the improved real property described on attached Exhibit A (the "Property"). The Property is the site of the former Blue Heron paper mill. The Trustee owns the Property due to the bankruptcy of the Blue Heron Paper Company. The Trustee is subject to the jurisdiction and authority of the U.S. Bankruptcy Court, Portland, Oregon.

The Trustee's responsibility is to liquidate the Property for the benefit of creditors of the Estate. To date, the Trustee has entered into a contract with NRI Global Inc. to remove salvageable material from the Property. That work will be completed by approximately August 2013. The ultimate liquidation of the Property will be accomplished by a sale of the Property.

The Property is located in Oregon City, Oregon, and has a comprehensive plan designation of Industrial, is zoned General-Industrial, and is subject to other "overlay" land use regulations, all as described in more detail on attached Exhibit A.

The City and the Trustee agree that the land use regulations that affect the Property need to be revised to reflect the fact that the Property is unlikely to be used in the future for industrial use. Further, given the size and complexity of the Property and the structures located on the Property, the City and the Trustee agree that the objectives of the City and the Trustee will best be served by the adoption of a simplified general development master plan (Oregon City

Municipal Code, Section 17.65). The elements of and process for the development of such a master plan is further described on the attached Exhibit A.

This Collaborative Planning Agreement (the "Agreement") is intended to set forth the respective obligations of the City and the Trustee to work together to develop such a master plan.

NOW THEREFORE, in consideration of the mutual promises of the parties set forth in this Agreement, the City and the Trustee agree as follows:

SECTION 1 EFFECTIVENESS OF AGREEMENT

1.1 Trustee

This Agreement shall not be binding on the Trustee unless and until it is approved by the U.S. Bankruptcy Court for the District of Oregon (the "Court"). The Trustee agrees to file a motion with the Court within twenty (20) days after the execution of this Agreement by the City seeking approval of this Agreement. Upon the ruling of the Court, the Trustee will promptly advise the City. To the extent that the Court requires changes in this Agreement, the City and the Trustee will attempt in good faith to negotiate those changes; however, any modified version of this Agreement will not be binding on the Trustee unless it is approved by the Court. If the City and the Trustee cannot agree on such Court-required changes within thirty (30) days of the Court's order, then this Agreement shall automatically terminate.

1.2 City

The City, through the action of its City Commission, approved this Agreement on March 6, 2013, subject to the subsequent approval of the Court pursuant to Section 1.1.

SECTION 2 TERM

The term of this Agreement shall commence on the date first set forth above and shall terminate on the earlier of: (i) any termination pursuant to Sections 1.1 or 3.3, or (ii) submittal to the City Planning Commission of a master plan, a comprehensive plan amendment and a zoning map amendment for the Property.

SECTION 3 OBLIGATIONS OF THE CITY

3.1 In General

The City agrees to take responsibility for the development of a master planning process which will lead to the adoption of a master plan. The outline of the master planning process and the elements of an adopted master plan are set forth in attached Exhibit A. Further, the City agrees to be responsible for retaining, directing, and coordinating all consultants that will be retained by the City to implement the master planning process and produce a completed master plan. The City's role in the development of a master plan does not guarantee approval of the eventual land use applications arising out of the master plan. All land use changes will require approval of the Oregon City Planning Commission and the Oregon City City Commission pursuant to the applicable state and municipal land use processes.

3.2 Cooperation with Trustee

The City agrees to cooperate with the Trustee in the master planning process by means of (i) engaging the Trustee in the master planning process; (ii) inviting the Trustee to participate in all aspects of the master planning process including public and non-public meetings; (iii) allowing the Trustee to review draft reports and deliverables from consultants used in the master planning process; (iv) allowing the Trustee access to all documents, including emails, generated in the master planning process; and (v) giving due consideration to the comments and opinions of the Trustee, as the owner of the Property, in the master planning process.

3.3 Selection of Consultants

The City agrees to be responsible for conducting a process for the selection of all consultants that will be necessary for the master planning process. Accordingly, the City agrees to issue a Request for Proposals ("RFP") within ten (10) days of the date of this Agreement. The City agrees to provide the Trustee with copies of all responses to the RFP, agrees to involve the Trustee in interviews with respondents to the RFP, and agrees to involve the Trustee in the process of selecting the consultants to be involved in the master planning process. The choice of consultants is subject to the mutual agreement of the City and the Trustee and if they cannot agree, then either party may terminate this Agreement by written notice to the other. Once a

consultant is selected, the City shall enter into an agreement with the consultant to prepare a master plan for the Property and to take other actions as agreed to by the parties to this Agreement (the "Master Plan Contract").

SECTION 4 FINANCIAL COMMITMENTS

4.1 By the City

The City agrees provide not less than FOUR HUNDRED THOUSAND DOLLARS ($400,000) to fund the master planning process. It is anticipated that these funds will come from multiple sources: City general fund, Clackamas County funds, and Metro funds. To the extent that the City is unable to secure adequate funds, then either party to this Agreement shall have the right to terminate this Agreement at any time up to the execution by the City of the Master Plan Contract.

4.2 By the Trustee

The Trustee agrees to provide not less than FIFTY THOUSAND DOLLARS ($50,000) to fund the master planning process.

4.3 Expenditure of Funds

One-half of the Trustee's funds will be required to be paid to the City within ten (10) days of the execution of the Master Plan Contract. The remainder of the Trustee's funds shall be paid to the City within ten (10) days of the consultant providing a final version of a master plan. Upon the consultant's delivery of the final version of the master plan for the Property, the City will schedule a public hearing before the City's Planning Commission to consider the land use applications to implement the master plan.

4.4 Indemnity of Trustee

The City will be the only party executing contracts with the chosen consultants. The Trustee will have no liability to the chosen consultants on account of being a party to this Agreement. The City will defend and indemnify the Trustee from any liability with respect to the contracts with the chosen consultants except to the extent the Trustee enters into a separate written agreement with a chosen consultant.

SECTION 5 ADDITIONAL OBLIGATIONS OF THE TRUSTEE

5.1 Abandonment of the Property

Between the date of this Agreement and the date when the City enters into a contract with the lead consultant for the master planning process, the Trustee may abandon the Property and terminate this Agreement, as permitted under the U.S. Bankruptcy Code. However, thereafter, the Trustee agrees not to file a motion to abandon the Property with the Court prior to April 1, 2014. The City acknowledges that the Court has the authority to direct the Trustee to abandon the Property and to terminate this Agreement.

5.2 Maintenance of the Property

From the date of this Agreement until the earlier of (i) the abandonment of the Property, or (ii) May 30, 2014, the Trustee agrees to (a) cover the Property with property damage insurance with a reasonable scope of coverage and reasonable coverage limits, (b) reasonably secure the Property and structures on the Property, and (c) maintain water to the Property for fire protection and maintain reasonable electrical service.

5.3 Access

The Trustee agrees to provide reasonable access to the Property to representatives of the City, the County, Metro, and the chosen consultants. Access will be provided based on reasonable advance notice, which may be arranged by email or telephone and shall be subject to approval by NRI Global Inc. under current protocols.

5.4 Participation in Master Planning Process

The Trustee agrees to actively participate in the selection of the consultants, the specification of the consultants' scope of work, and all aspects of the master planning process. Further, the Trustee will participate in events where the City requests the presence of the owner of the Property.

5.5 Execution of Land Use Applications

5.5.1 In the event the consultant-prepared master plan is not acceptable to both the City and the Trustee, then either the City or the Trustee may terminate this Agreement by written notice to the other.

5.5.2 Whenever, in the master planning process, a land use request or application is necessary to initiate a process under the Municipal Code of the City, the Trustee agrees to execute such request or application so as to initiate such process. However, by executing request or application, the Trustee is not necessarily agreeing to the substance of the request or application. The Trustee's obligation to execute such a request or application may be subject to the Court's prior approval, if the Trustee determines that prior approval by the Court is required.

5.6 Transfer of Title to the Property

To the extent that this Agreement has not been completed prior to the transfer of title to the Property by the Trustee to a third party, then the Trustee will use reasonable efforts to have such third party agree to assume this Agreement. However, the parties acknowledge that such an assumption may require changes to this Agreement, which the parties agree to negotiate in good faith.

SECTION 6 GENERAL PROVISIONS

6.1 Complete Agreement

This Agreement constitutes the complete agreement between the parties with respect to the matters covered by this Agreement and supersedes and replaces all prior written or oral agreements on the same matters.

6.2 Governing Law

This Agreement shall be governed by the laws of the State of Oregon and the U.S. Bankruptcy Code. Exclusive jurisdiction for any dispute regarding this Agreement shall be in the United States Bankruptcy Court, District of Oregon.

6.3 Notices

Any notices given under the terms of this Agreement must be in writing and be delivered by messenger or certified mail, return receipt requested, to a party at its address first set forth above.

6.4 Amendment

This Agreement may only be amended by a written amendment signed by both parties.

6.5 Assignment

Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party, which may or may not be given in such party's sole discretion.

6.6 Exhibits

The attached Exhibits are an integral part of this Agreement.

IN WITNESS WHEREOF, the parties executed and delivered this Agreement to be effective on the date first set forth above.

City

City of Oregon City, an Oregon municipal corporation

By: _____

Its: _____

Trustee

_____

Peter McKittrick

Trustee

OREGON CITY

Willamette Falls Legacy Project: Visioning/Master Plan Process

Request for Proposal



March 7, 2013

Collaborative Planning Agreement Exhibit A

Willamette Falls Legacy Project
REQUEST FOR PROPOSAL

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SECTION 1 - PROCURMENT INFORMATION

Procurement Schedule

Table 1: Procurement Schedule

Schedule of Events	Date	Location
RFP Release	March 7, 2013	www.orcity.org/planning
Pre-Proposal Conference/Site Tour	**Saturday-April 6, 2013**	See below*
Deadline for Questions	April 10, 2013	
Sealed Proposals Due to the City	April 15, 2013	See below
RFP Interviews	April 25th and 26th, 2013	City Hall
Announcement of Successful Proposer	May 1, 2013	
Anticipated Negotiation Schedule	May 1st – May 22, 2013	
Contract Execution	June 5, 2013	

* **The Pre-Proposal Conference and Site Tour Will Be Held On Saturday, April 6, 2013**

Conference- 10:00AM – 12:00PM
City Hall Commission Chambers, 625 Center Street, Oregon City
Though not required for attendance, a courtesy RSVP to crobertson@orcity.org by March 13th would be appreciated.

Site Tour- 1:30PM-3:30PM
419 Main Street, Oregon City

Consultant teams wishing to attend the site tour must register with the Project Manger, Christina Robertson-Gardiner by March 26, 2013. Only two people per RFP submittal will be allowed on the site visit.

The City reserves the right to modify this schedule at the City's discretion. Notification of changes will be posted on the City website (www.orcity.org) or as otherwise stated herein. Inquiries shall be directed to Christina Robertson-Gardiner, AICP, Planner, the City project manager, by email (crobertson@orcity.org), phone (503-596-1564) or fax (503/722-3880). Two (2) unbound copies of the proposal must be received at the City of Oregon City, Community Development Department, at the address below:

Table 2: Delivery Address

Fed Ex & Hand Delivery - Physical Address	US Post Office - Mailing Address
Oregon City Planning Division 221 Molalla Avenue, Ste. 200 Oregon City, OR, 97045	City of Oregon City Planning Division – Attn: Christina Robertson-Gardiner P.O. Box 3040 Oregon City, OR 97045

No later than 4:00 P.M. on April 15, 2013.

Proposals received after this date will not be accepted. Faxed copies of bid proposals are not accepted. An electronic version of the submittal may be emailed to **crobertson@orcity.org** as a supplementary document. The electronic version will not be accepted as the formal submittal.

The anticipated contract start date is June 5, 2013 with contract duration of approximately one year. The period of performance continues until the project deliverable schedule is complete. The selected Consultant shall assume responsibility for all contractual matters and services outlined in their proposal.

All proposals become part of the public file for the project, without obligation to the City of Oregon City. The City reserves the right to reject any and all proposals for good cause, in the public interest, and is not liable for any costs incurred by the Consultant in the preparation or presentation of the proposal.

SECTION 2- PROJECT PERSONNEL

Christina Robertson-Gardiner, AICP, Planner for the City of Oregon City, will be the Project Manager for the City of Oregon City. Unless authorized by the Project Manager, no other City official or employee may speak for the City with respect to this solicitation. Any Proposer seeking information, clarification, or interpretations from any other City official or City employee is advised that such material is used at the Proposer's own risk. The City will not be bound by any such information, clarification, or interpretation. Following the Proposal submittal deadline, Proposers shall continue to direct communications to only the City Project Manager. The Project Manager will send out information to responding companies as decisions are concluded.

SECTION 3 - PROJECT PURPOSE

The Willamette Falls Legacy Project site's dynamic location immediately adjacent to Willamette Falls and the Oregon City bluffs and its notable role in Oregon's history make this 23 acre, single-owner property a truly unique and regionally-significant development opportunity. In early 2011, after over 100 years of paper manufacturing on the site, the Blue Heron Paper Company ceased operations and permanently closed its paper manufacturing facility on the site. Since that time, the property has gone into receivership and is currently for sale. It is being managed by the lender's Trustee. The City of Oregon City, Metro, Clackamas County and the State of Oregon have deemed the site to be a "legacy opportunity"

The purpose of this Request for Proposals is to select a Consulting Team to assist the City of Oregon City, in cooperation with the bankruptcy trustee, in completing a Master Plan and Rezoning of the former Blue Heron Paper Mill Site. This planning project will create a vision for the site through a robust public process that respects the history and nature of the land and provides needed certainty to the development community by removing or reducing barriers to site redevelopment.

A description of the project area is provided in Section 5.

Background information and required deliverables are provided in Section 6.

SECTION 4 - PERIOD OF PERFORMANCE

The period of performance continues until the project deliverable schedule is complete. We estimate the planning period will take approximately one year to submittal of final plan documents for Planning Commission and City Commission public hearings for adoption of the quasi judicial file.

The deliverable deadlines provided in the attached scope of work are estimates only. The schedule of completion will depend on several variables, including the timing of meetings, availability of the public, summer vacations, holidays and other factors. The final contract will include an agreed-upon deliverable schedule based on these factors.

SECTION 5 - DESCRIPTION OF THE PROJECT AREA

(See Description of Project Area – Exhibit C)

SECTION 6 –BACKGROUND INFORMATION AND REQUIRED DELIVERABLES

(See Background Information and Required Deliverables – Exhibit D)

SECTION 7 - EXPECTATIONS ABOUT WRITTEN AND GRAPHIC DELIVERABLES:

All documents shall become, and remain, the property of the City. The Consultant shall furnish the following documents to the City:

A. All graphic deliverables outlined in the final, signed scope of work shall be provided both in hard copy and in the electronic format specified by City. All graphic deliverables can be in color, however, they must be readable and usable in black and white.
B. Electronic versions SHALL BE delivered in a compatible version of Microsoft Word® and Adobe Acrobat® PDF format.
C. All maps and map data produced shall be in a format as specified by the Oregon City GIS coordinator, Chris Dunlop, email cdunlop@orcity.org.

7.1 - INSURANCE AND BUSINESS LICENSE REQUIREMENTS

The Consultant must show proof of insurance (workers compensation, automobile, and errors and omissions) as required by the City's Personal Services Agreement (see Exhibit B). The Consultant must also have a current Oregon City or Metro Regional business license.

SECTION 8 - PROPOSAL FORMAT

The City requests that the Consultant respond to specific criteria that will facilitate proposal evaluation. The specific criteria are presented below. Page limitations are presented in Section 9.6. The criteria need not be presented on separate pages.

8.1 - Introductory Letter

The letter shall name the person(s) authorized to represent the Consultant in any negotiations and name of the person(s) authorized to sign any contract, which may result. The letter shall indicate insurance carried by the Consultant. The proposal letter shall be signed by an authorized representative of the Consultant.

8.2 - Minimum Qualifications

These criteria relate to the firm's minimum capabilities and resources in relation to this project, and provide a reasonable basis on which to evaluate potential Consultants

- The Consultant must have the resources available to perform the work for the duration of the project.
- The Consultant must have successfully performed at least one contract with a public or private agency of similar size to the City of Oregon City within the last five-years, with services similar to those expected by the City for this contract.

8.3 - Project Team

This criterion relates to the project principal, the project manager, key staff and sub-Consultants. The basic question is: how well does the team's qualifications and experience relate to this specific project?

Additionally, please describe the project principal's experience in project management and describe how responsibilities will be assigned and managed, how decision points and milestones will be identified and how the project team will manage the costs of the project and ensure that the available resources are used in an efficient manner to meet the objectives of the proposal.

Please Include Information On:

- Project principal experience on similar projects.
- Extent of principal involvement.
- Names of team members who will be performing the work on this project and their responsibilities.
- Identity of project manager and his/her experience on similar projects.
- Experience of key staff.
- Unique qualifications.
- Project team experience on similar projects.
- Qualifications and relevant sub-Consultant experience.
- How the team's expertise covers all phases of the project.

8.4 - Project Understanding

Please describe your understanding of the project and what creative approaches you may have for meeting the Required Deliverables within the project time frame.

8.5 - Project Approach

This criterion is the heart of the response and deals with the Consultant's ability to clearly define the action to be taken to deal with the objectives and problems outlined in the scope of work. It should include the proposed outline and schedule that indicate tasks, milestones, and staff assignments.

The Consultant shall include an estimated fee for services to be used by the city for budgetary purposes including the number of hours proposed for the services required, deliverables, due dates, expenses and hourly rates. The fee estimate will not be used as an evaluation criterion.

8.6 – Scope of Work

The City has provided background information and required deliverables (Exhibit D). The Consultant's proposed scope of work will be evaluated based on this information to ensure that the required deliverables can be met within the time period identified.

SECTION 9 - PROPOSAL REVIEW, EVALUATION, AND SELECTION

9.1 - Review

The City of Oregon City will award a contract to the Consultant whose proposal would be most advantageous to the City. will evaluate proposals and decide on those firms to be interviewed. An interagency selection committee will evaluate applicants, rank the proposals, and make recommendations to the City within two weeks of the submittal date. The City has the right to require any clarification or change it needs to understand the Consultant's approach to the project and view of the work scope.

9.2 - Pre-Proposal Conference and Site Tour.

The City shall conduct a pre-proposal conference and site tour on the time, date and location provided in page 1. Proposers are highly encouraged to attend but not required to attend in order to be eligible to propose. The meeting and tour are to answer questions about the solicitation and clarify issues. This also allows Proposers to raise concerns. Failure to raise concerns over any issues at this opportunity will be a consideration in any protest filed regarding such items that were known as of this pre-proposal conference.

9.3 - Questions.

Proposers may submit written questions to the City Project Manager at any time until the deadline stated on page 3. The City prefers questions be sent through e-mail or the online bid program to the City Project Manager. Failure to request clarification of any inadequacy, omission, or conflict will not relieve the Consultant of responsibilities under any subsequent

contract. It is the responsibility of the interested Consultant to assure they receive responses to Questions if any are issued.

9.4 - Changes to the RFP.
A change may be made by the City if, in the sole judgment of the City, the change will not compromise the City's objectives in this acquisition. A change to this RFP will be made by formal written addendum issued by the City's Project Manager and shall become part of this RFP and included as part of the Contract.

9.5 - Receiving Addenda and/or Question and Answers.
It is the obligation and responsibility of the Consultant to learn of addendums, responses, or notices issued by the City.

Note that some third-party services independently post City of Oregon City solicitations on their websites as well. The City does not, however, guarantee that such services have accurately provided submitters with all the information published by the City.

All submittals sent to the City may be considered compliant to all Addendums, with or without specific confirmation from the Consultant that the Addendum was received and incorporated, at the sole discretion of the City Project Manager. The City Project Manager may reject the submittal if it does not fully incorporate an Addendum.

9.6 - Evaluation and Selection

Each proposal will be limited in length and judged as a demonstration of the Consultant's capabilities and understanding of the project. Evaluation criteria, maximum points and page limitations (one page is considered to measure 8 1/2" x 11") will be as follows:

Proposal Format and Evaluation Criteria
Page Limitations and Maximum Points

Contents	**Max. # Pages**	**Max. Points**
Introductory Letter	1	0
Project Team/ Firm's Capabilities	8	40
Project Understanding and Approach	12	40
Availability to Meet Time Limits	5	20
TOTAL	**26**	**100**

Any protests concerning the selection process must be delivered, in writing to the City of Oregon City Project Manager, within or not later than 14 days after notification to the City of Oregon City Project Manager. The protest must state the grounds upon which it is based. The City of Oregon City will review the protest and present a decision to all involved parties within 45 calendar days.

SECTION 10 - CONTRACT REQUIREMENTS

The successful Consultant shall enter into a Personal Services Agreement with the City (PSA boilerplate is attached, see Exhibit B). The contract boilerplate is open to negotiation, but the Consultant must specify requested modifications up-front and submit with their proposal. The chosen Consultant must also have a current business license.

Payment for contract services will be made monthly, upon receipt of the Consultant's billing statement, for work done to date.

Invoices shall include a summary of progress through the billing date and shall not be submitted more often than once per month. All billings will be processed through the City Project Manager.

10.1 - Budget Breakdown

The funding source for this project is partially funded by the Bankruptcy Trustee, Clackamas County, the City of Oregon City and potentially the Metro Construction Excise Tax. The budget appropriated for consulting work on this project is $500,000. No federal funding is anticipated for this project.

The Consultant shall include an estimated fee for services to be used by the city for budgetary purposes including the number of hours proposed for the services required, deliverables, due dates, expenses and hourly rates. This proposed budget shall be based on the deliverables expected, but the fee estimate will not be used as an evaluation criterion.

SECTION 11 – EXHIBITS

A. Willamette Falls Legacy Project Area Maps and Tax Lot Information.
B. Personal Services Agreement (PSA) Boilerplate.
C. Description of the Project Area.
D. Background Information And Required Deliverables.
E. Existing Reports And Information About The Site

Exhibit A

Blue Heron Mill -- Map Packet

Aerial Photo ..... Page 1

Contour Map ..... Page 2

Taxlot and Ownership Map ..... Page 3

Zoning Map ..... Page 4

Utilities Map ..... Page 5

Natural Resources Map ..... Page 6

Original Plat Map ..... Page 7

Tax Map (2S-2E-31BD) ..... Page 8

Tax Map (2S-2E-31) ..... Page 9

City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.orcity.org

Plot date: March 28, 2011
Plot name: Blue Heron Mill - Cover Sheet - 24x36L - 20110328.pdf
Map name: Blue Heron Mill - Cover Sheet - 24x36L.mxd



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

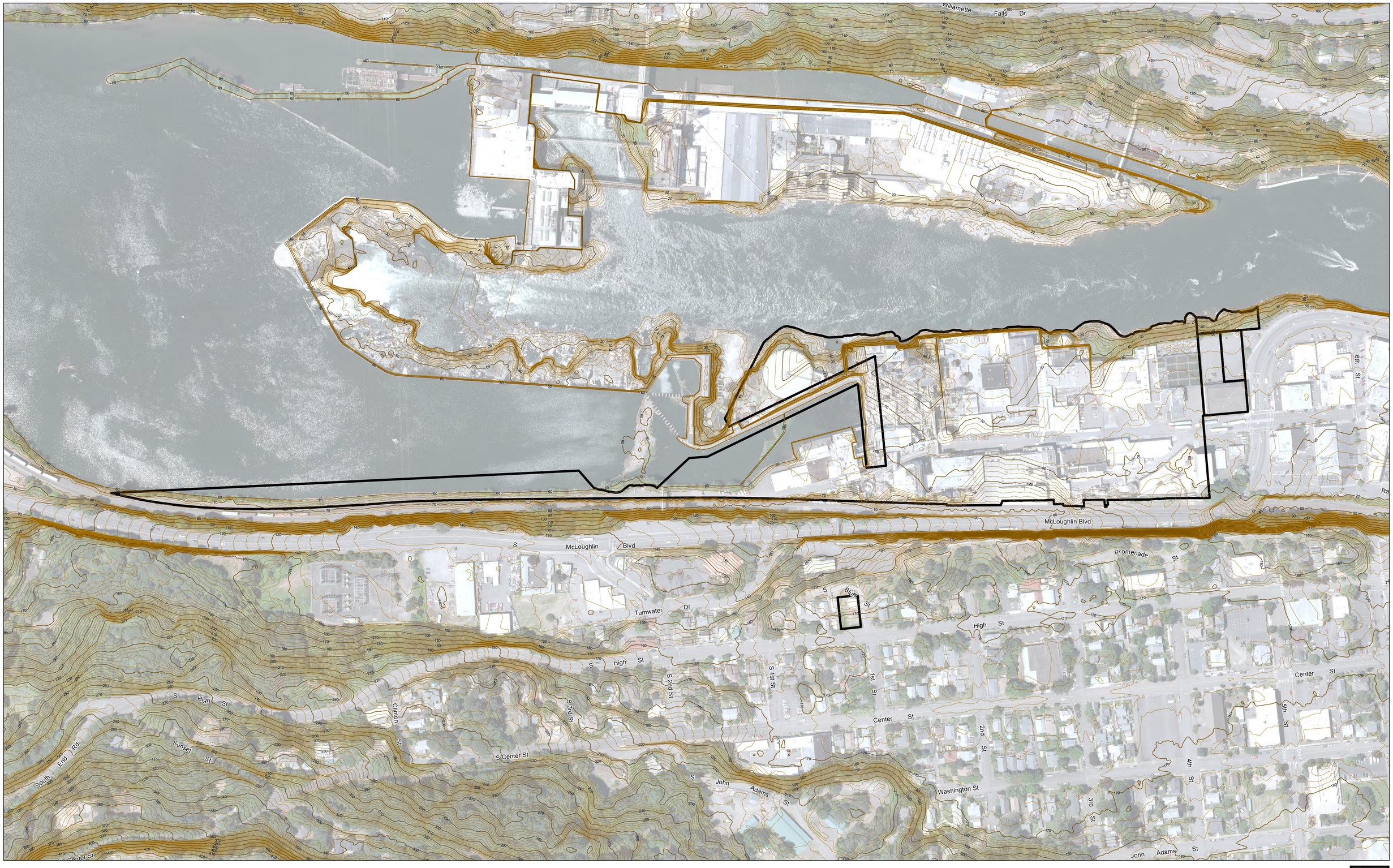
Please recycle with colored office grade paper.

Blue Heron Mill -- Aerial Photo Map (2010)

0 200 400 600 800 1,000 Feet

City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.orcity.org

Plot date: March 25, 2011
Plot name: Blue Heron Mill - Aerial Photo Map - 24x36L - 20110325.pdf
Map name: Blue Heron Mill - Aerial Photo Map - 24x36L.mxd



Blue Heron Mill -- Contour Map

2 ft contours

10 ft contours

0 200 400 600 800 1,000 Feet

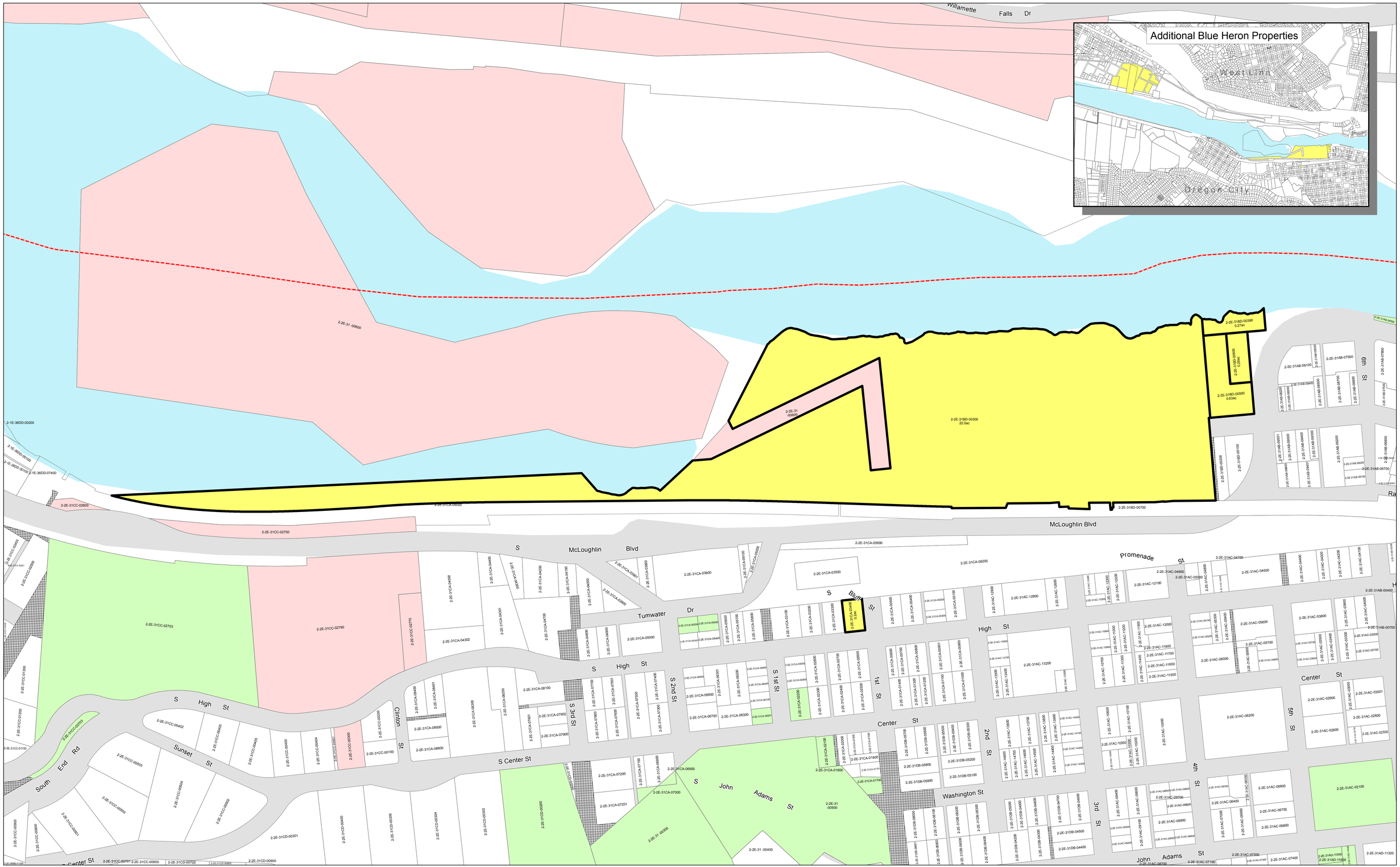
The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

Please recycle with colored office grade paper.

City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.orcity.org

Plot date: March 25, 2011
Plot name: Blue Heron Mill - Contour Map - 24x36L - 20110325.pdf
Map name: Blue Heron Mill - Contour Map - 24x36L.mxd

Blue Heron Mill -- Taxlots and Ownership Map


Willamette Falls Dr
2-2E-31 -00600
2-2E-318D-00390
0.27ac
2-2E-318D-00400
0.28ac
2-2E-318D-00500
0.63ac
2-2E-318D-00300
22.0ac
2-2E-31 -00600
2-1E-36DD-00200
2-1E-36DD-00100
2-1E-36DD-00700
2-1E-36DD-07400
2-2E-31CC-02600
2-2E-31CC-02700
2-2E-31CC-02703
2-2E-31CC-02790
2-2E-31CC-02770
2-2E-31CA-09000
2-2E-318D-00700
McLoughlin Blvd
S McLoughlin Blvd
2-2E-31CA-00690
2-2E-31CA-09200
2-2E-31CA-03500
2-2E-31CA-03600
2-2E-31CA-04302
2-2E-31CA-05000
Tumwater Dr
S Bluff St
2-2E-31CA-03400
0.29ac
Promenade St
2-2E-31AC-04700
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2-2E-31AC-03100
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2-2E-31AB-00700
Center St
2-2E-31AC-02900
2-2E-31AC-02800
2-2E-31AC-03001
2-2E-31AC-02600
2-2E-31AC-02550
2-2E-31AC-02100
5th St
4th St
3rd St
2nd St
1st St
6th St
2-2E-31AB-04500
2-2E-31AB-07900
2-2E-31AB-08100
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- Willamette River Greenway
- R-10 - Single Family Dwelling
- R-8 - Single Family Dwelling
- R-6 - Single Family Dwelling
- RC-4 - McLoughlin Conditional
- RD4-MDP - Manufactured Dwelling Park District
- R-3.5 - Medium Density Residential
- R-2 - Multi-Family Dwelling
- C - General Commercial
- MUC-2 - Mixed Use Corridor 2
- MUC-1 - Mixed Use Corridor 1
- LO - Limited Office
- NC - Neighborhood Commercial
- HC - Historic Commercial
- MUD - Mixed Use Downtown
- MUE - Mixed Use Employment
- GI - General Industrial
- CI - Campus Industrial
- I - Institutional
- FU-10 - County Zoning
- County

Blue Heron Mill -- Zoning Map and Willamette Greenway

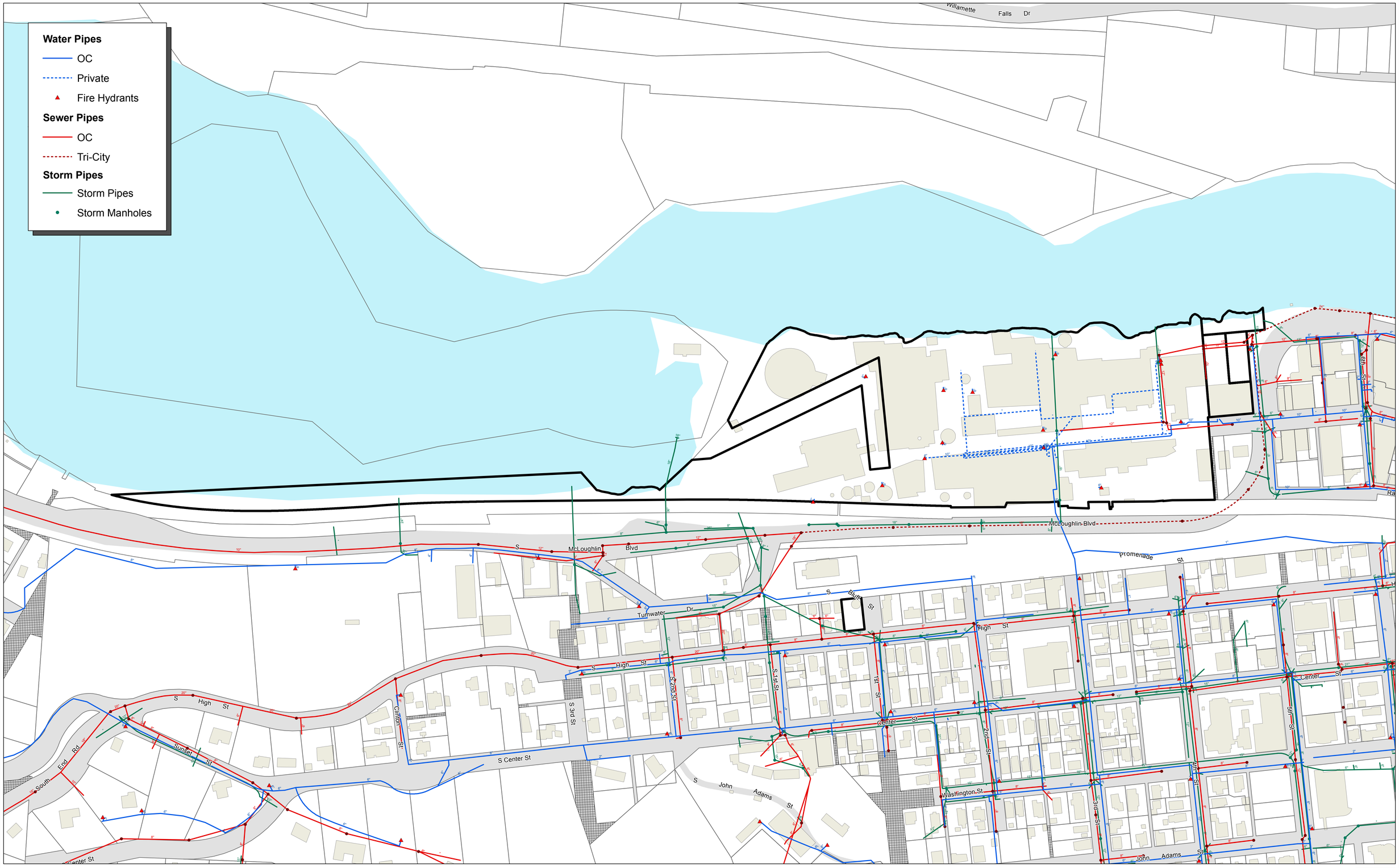
The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

Please recycle with colored office grade paper.

0 200 400 600 800 1,000 Feet

City of Oregon City
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Oregon City, OR 97045
503-657-0891 phone
503-657-6829 fax
www.orcity.org

Plot date: March 28, 2011
Plot name: Blue Heron Mill - Zoning Map - 24x36L - 20110325.pdf
Map name: Blue Heron Mill - Zoning Map - 24x36L.mxd



Blue Heron Mill -- Utilities Map

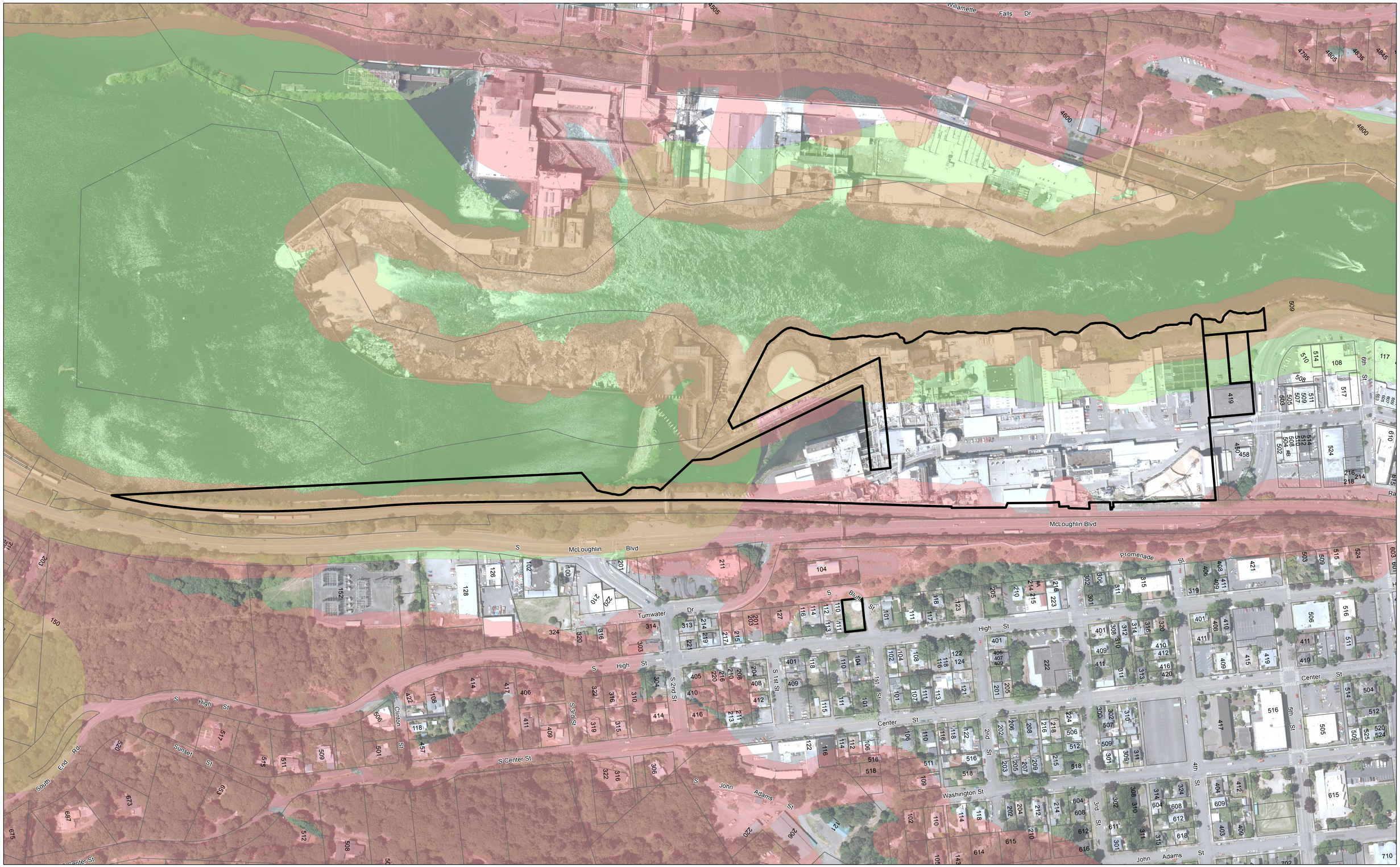
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Blue Heron Mill -- Natural Resource Map

0 200 400 600 800 1,000 Feet

- Geologic Hazards
- Natural Resource Overlay District
- Both

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Map name: Blue Heron Mill - Natural Resource Map - 24x36L.mxd

2

PLAT OF OREGON CITY

~ Scale: 320 feet to the Inch ~

3 P 2

Oregon Territory }
Clackamas County } ss

Be it remembered that on this second day of December in the year of our Lord one thousand eight hundred and fifty personally appeared before me Francis S Holland Clerk of the Probate Court of Clackamas County in Oregon Territory the above named John Mc Loughlin with whom I am personally acquainted and acknowledged the signing of the above and foregoing instrument accompanying the town plat of Oregon City for the purpose therein mentioned.

Witness my hand and the seal of my office the day and year above written.

(signed) F. S. Holland
Clerk of the Probate Court of Oregon City

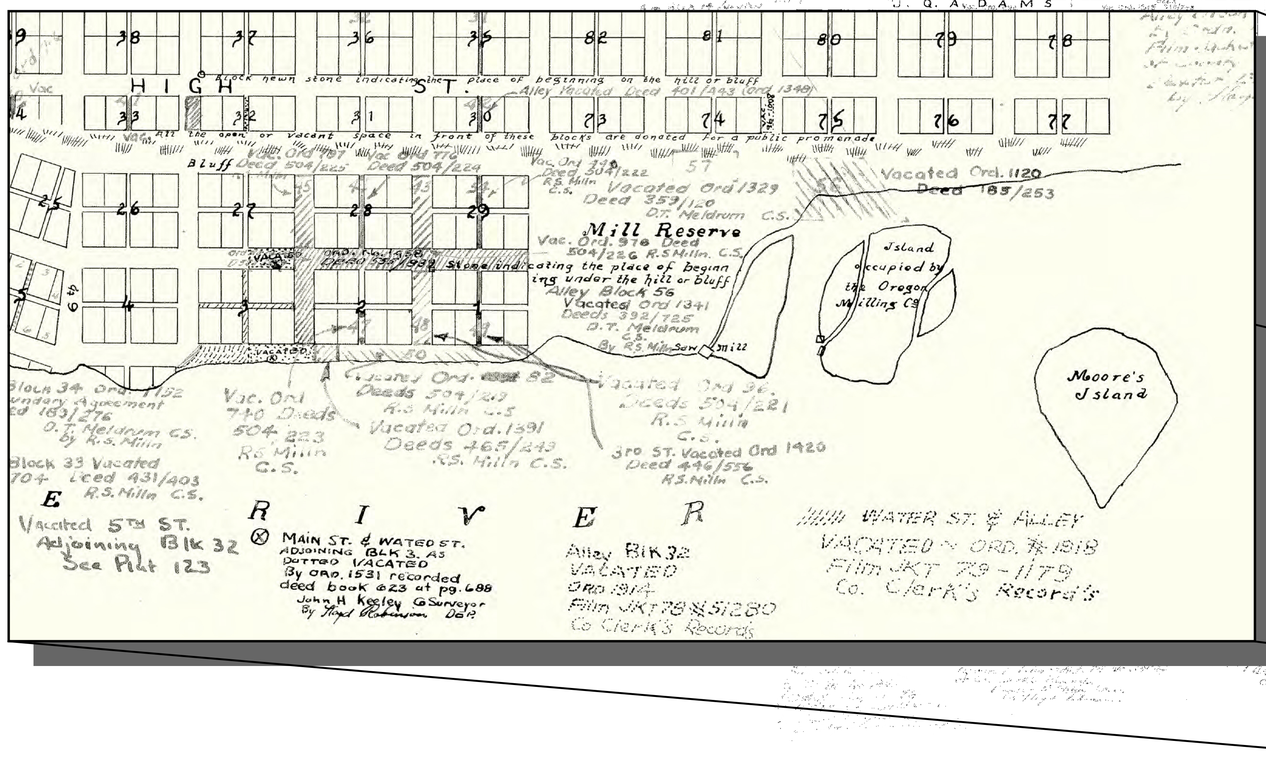
Seal

This (the original) Plat is on a scale of two hundred and forty feet to the inch & so much of the town as lies between Washington street and the River was surveyed in the Spring of 1844 by Jesse Applegate. The remainder of the town from Block numbered ninety three (93) to one hundred and seventy nine inclusive was surveyed by Robert R Short in the Autumn of 1849. All streets except 6th Street are 60 feet wide and cross each other at right angles 6th Street is 80 feet wide on the hill or bluff and at the River but is only (about) 30 feet wide at the foot of the bluff. All lots in that part of the town surveyed by Jesse Applegate are at least 66 feet front and 100 feet back. The Alleys in this part of the town are 16 feet wide. Fractions of lots as marked on the plat. All Lots in that part of the town surveyed by Robert R Short are 60 feet front and 105 feet back, the alleys in this part of the town are 20 feet wide. Blocks numbered 96 to 102 and 152 are public squares. That part of the town set apart by red lines has been donated to the Probate Judges of Clackamas County in trust and upon conditions specified in the deed conveying it. Some lots are more than 60 feet front in consequence of an allowance made because of difficulty of measuring the Blocks being in some instances made more than full. The space between the edge of the Bluff and Blocks numbered 33, 32, 31, 30, 73, 74, 75 and 76 is donated for a promenade for the inhabitants of Oregon City. All the space in front of the blocks on Water Street not covered by the width of the street (sixty feet) is reserved as private property. All the space below the edge of the bluff along in front of Blocks numbered 13, 14, 15, 16 and 17 is reserved as private property. The place of beginning for that part of the town which lies immediately along the River and below the bluff is at the North East Corner of Block numbered one (1) as marked in the plat - the land mark being a black hewed stone planted in the ground at the place designated. The streets in this portion of the town parallel with the River from the Southern end of Block numbered one (1) to the Northern end of Block numbered four, bear North 35°30' East from Block numbered five to Block numbered nine (9) they bear North 55° East. The place of beginning for that portion of the town lying on the hill in Back of the Bluff is at the North West corner of Block numbered thirty seven (now owned by Judge Thornton) distinguished by a black hewed stone placed in the ground. Streets in this part of the town parallel with the River bear North 34° East. All streets, Alleys and Squares are donated to the City Corporation for the use of the streets to be forever kept open, the squares to be enclosed & decently ornamented. All necessary rights are reserved along the entire front of the town.

(signed) John Mc Loughlin

I do hereby certify that the above plat representing the Town of Oregon City and distances are correct.

(signed) R R Short, Surveyor

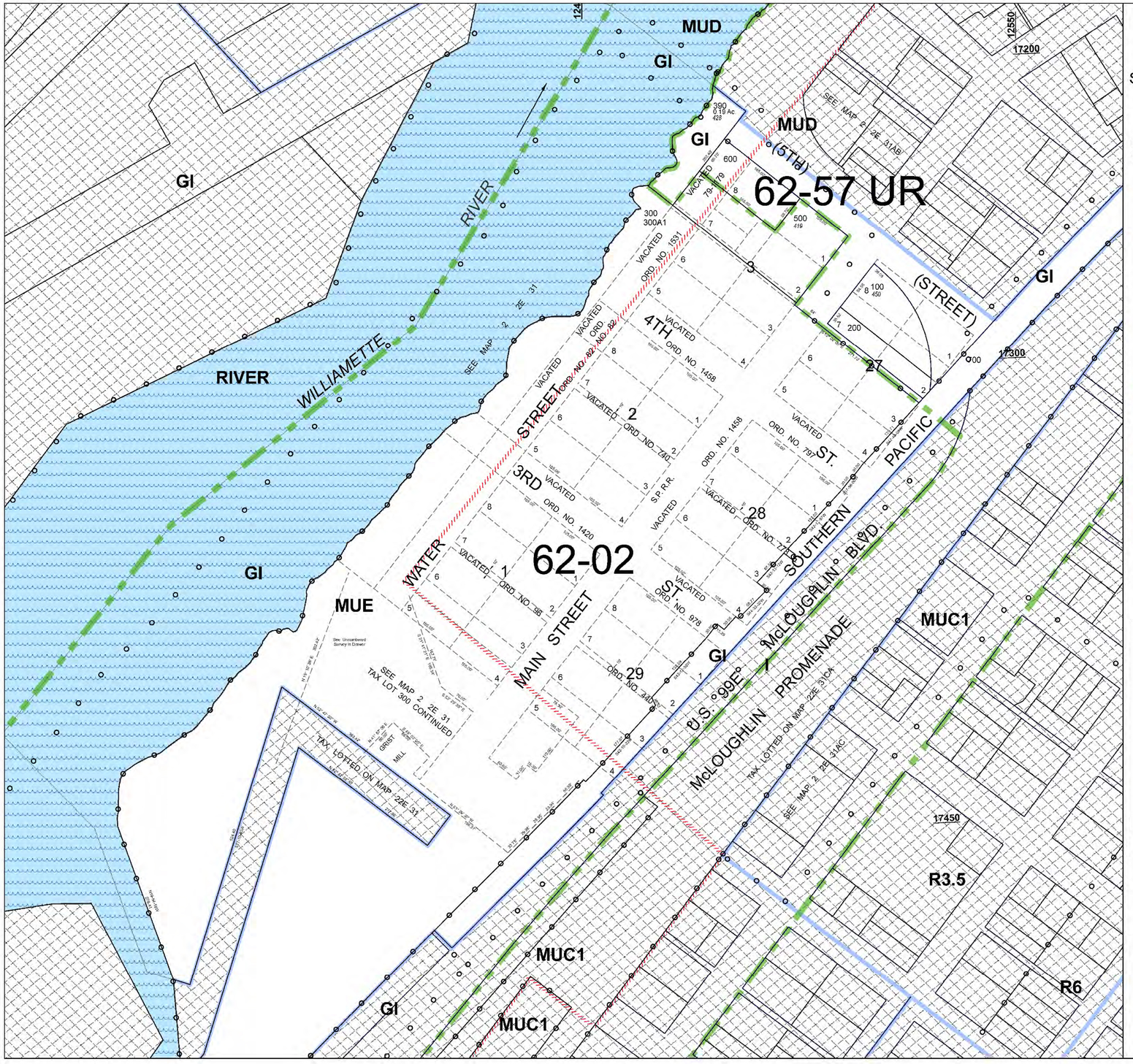


2

Blue Heron Mill -- Original Plat

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Map name: Blue Heron Mill - Plat Map - 24x36L.mxd



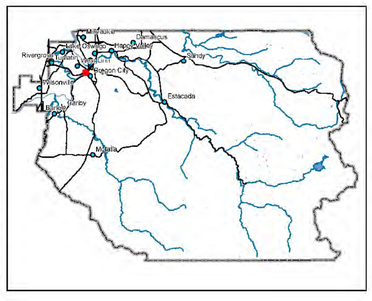
2 2 E 31 BD

S.E.1/4 N.W.1/4 SEC.31 T.2S. R.2E. W.M.
Clackamas County
1" = 100'

D. L. C.
OREGON CITY CLAIM (UNRECORDED)

Cancelled Taxlots
400

- Parcel Boundary
- Private Road ROW
- Historical Boundary
- Railroad Centerline
- TaxCodeLines
- Map Index
- WaterLines
- Land Use Zoning
- Plats
- Water
- Corner
- Section Corner
- 1/16th Line
- Govt Lot Line
- DLC Line
- Meander Line
- PLSS Section Line
- Historic Corridor 40'
- Historic Corridor 20'



THIS MAP IS FOR ASSESSMENT PURPOSES ONLY

Feet
0 20 40 80 120 160

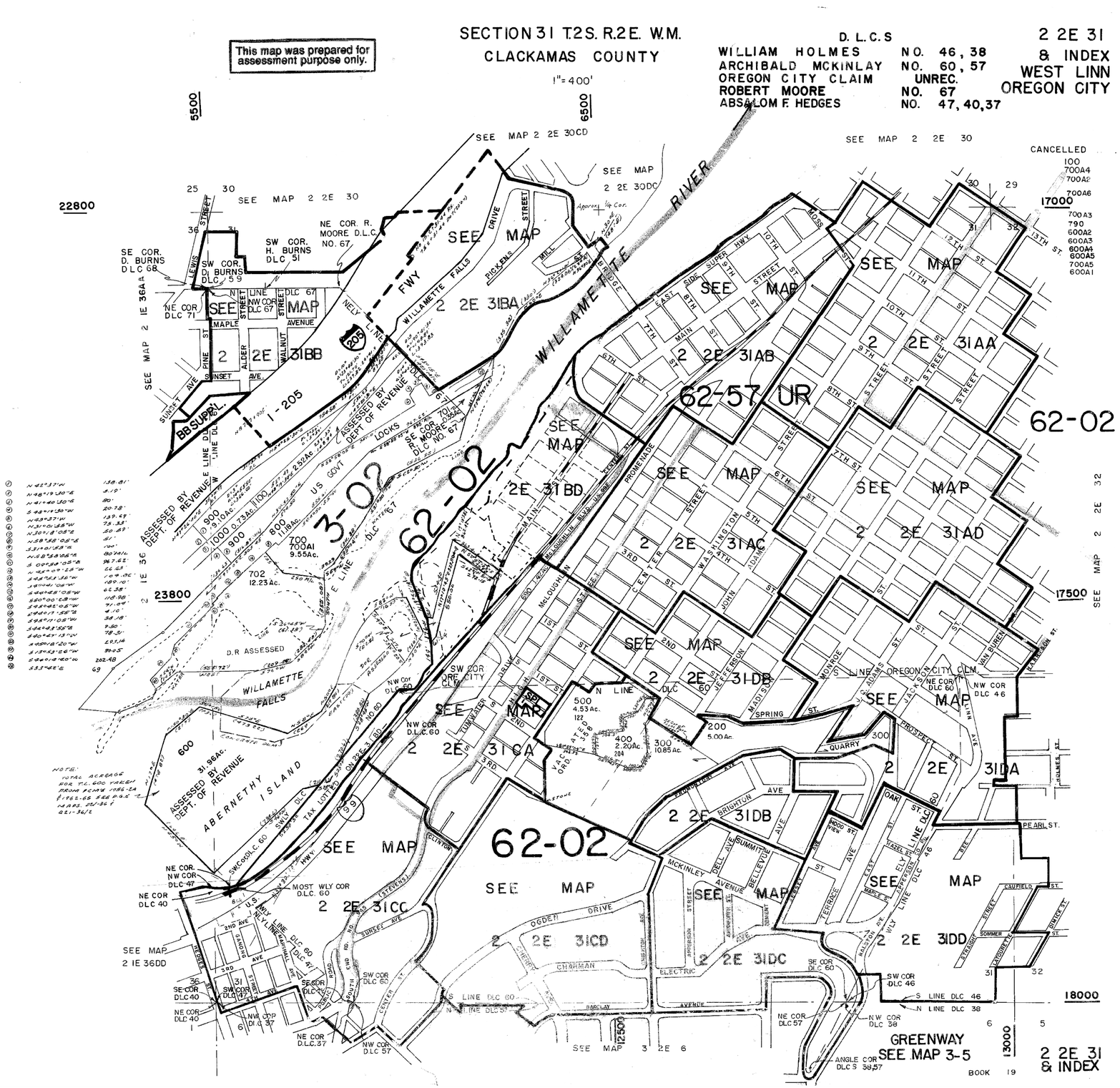
9/21/2010

2 2 E 31 BD

Blue Heron Mill --Tax Map 2-2E-31BD

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503-657-0891 phone
503-657-6629 fax
www.orcity.org

Plot date: March 25, 2011
Plot name: Blue Heron Mill - Tax Map 2-2E-31BD - 24x36L - 20110325.pdf
Map name: Blue Heron Mill -Tax Map 2-2E-31BD - 24x36L.mxd



Blue Heron Mill --Tax Map 2-2E-31

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Plot date: March 25, 2011
Plot name: Blue Heron Mill - Tax Map 2-2E-31 - 24x36L - 20110325.pdf
Map name: Blue Heron Mill -Tax Map 2-2E-31 - 24x36L.mxd

STANDARD CONDITIONS TO OREGON CITY PERSONAL SERVICES AGREEMENT

1. Contractor Identification. Contractor shall furnish to City its taxpayer identification number, as designated by the Internal Revenue Service, or Contractor's social security number, as City deems applicable.

2. Payment.

(a) Invoices submitted in connection with this Agreement shall be properly documented and shall identify the pertinent agreement and/or purchase order numbers.

(b) City agrees to pay Contractor within thirty (30) days after receipt of Contractor's itemized statement. Amounts disputed by City may be withheld pending settlement.

(c) City certifies that sufficient funds are available and authorized for expenditure to finance the cost of the services to be provided pursuant to this Agreement.

(d) City shall not pay any amount in excess of the compensation amounts set forth above, nor shall City pay Contractor any fees or costs that City reasonably disputes.

3. Independent Contractor Status.

(a) Contractor is an independent contractor and is free from direction and control over the means and manner of providing labor or services, subject only to the specifications of the desired results.

(b) Contractor represents that it is customarily engaged in an independently established business and is licensed under ORS chapter 671 or 701, if the services provided require such a license. Contractor maintains a business location that is separate from the offices of the City and bears the risk of loss related to the business as demonstrated by the fixed price nature of the contract, requirement to fix defective work, warranties provided and indemnification and insurance provisions of this Agreement. Contractor provides services for two or more persons within a 12 month period or routinely engages in advertising, solicitation or other marketing efforts. Contractor makes a significant investment in the business by purchasing tools or equipment, premises or licenses, certificates or specialized training and Contractor has the authority to hire or fire persons to provide or assist in providing the services required under this Agreement.

(c) Contractor is responsible for obtaining all assumed business registrations or professional occupation licenses required by state or local law (including applicable City or Metro business licenses as per Oregon City Municipal Code Chapter 5.04). Contractor shall furnish the tools or equipment necessary for the contracted labor or services. Contractor agrees and certifies that:

(d) Contractor is not eligible for any federal social security or unemployment insurance payments. Contractor is not eligible for any PERS or workers' compensation benefits from compensation or payments made to Contractor under this Agreement.

(e) Contractor agrees and certifies that it is licensed to do business in the state of Oregon and that, if Contractor is a corporation, it is in good standing within the state of Oregon.

4. Early Termination.

(a) This Agreement may be terminated without cause prior to the expiration of the agreed-upon term by mutual written consent of the parties or by the City upon ten (10) days written notice to the Contractor, delivered by certified mail or in person.

(b) Upon receipt of notice of early termination, Contractor shall immediately cease work and submit a final statement of services for all services performed and expenses incurred since the date of the last statement of services.

(c) Any early termination of this Agreement shall be without prejudice to any obligation or liabilities of either party already accrued prior to such termination.

(d) The rights and remedies of City provided in this Agreement and relating to defaults by Contractor shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

5. No Third-Party Beneficiaries. City and

EXHIBIT B

Contractor are the only parties to this Agreement and are the only parties entitled to enforce its terms. Nothing in this Agreement gives, is intended to give, or shall be construed to give or provide, any benefit or right, whether directly or indirectly or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Agreement.

6. Payment of Laborers; Payment of Taxes.

(a) Contractor shall:

(i) Make payment promptly, as due, to all persons supplying to Contractor labor and materials for the prosecution of the services to be provided pursuant to this Agreement.

(ii) Pay all contributions or amounts due to the State Accident Insurance Fund incurred in the performance of this Agreement.

(iii) Not permit any lien or claim to be filed or prosecuted against City on account of any labor or materials furnished.

(iv) Be responsible for all federal, state, and local taxes applicable to any compensation or payments paid to Contractor under this Agreement and, unless Contractor is subject to back-up withholding, City will not withhold from such compensation or payments any amount(s) to cover Contractor's federal or state tax obligation.

(v) Pay all employees at least time and one-half for all overtime worked in excess of forty (40) hours in any one week, except for individuals excluded under ORS 653.100 to 653.261 or under 29 U.S.C. §§ 201 to 209 from receiving overtime.

(b) If Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished by any person in connection with this Agreement as such claim becomes due, City may pay such claim to the person furnishing the labor or services and shall charge the amount of the payment against funds due or to become due Contractor by reason of this Agreement.

(c) The payment of a claim in this manner shall not relieve Contractor or Contractor's surety from obligation with respect to any unpaid claims.

(d) Contractor and subcontractors, if any, are subject employers under the Oregon workers' compensation law and shall comply with ORS 656.017, which requires provision of workers' compensation coverage for all workers.

7. SubContractors and Assignment. Contractor shall neither subcontract any of the work, nor assign any rights acquired hereunder, without obtaining prior written approval from City. City, by this Agreement, incurs no liability to third persons for payment of any compensation provided herein to Contractor.

8. Access to Records. City shall have access to all books, documents, papers and records of Contractor that are pertinent to this Agreement for the purpose of making audits, examinations, excerpts and transcripts.

9. Ownership of Work Product; License. All work products of Contractor that result from this Agreement (the "Work Products") are the exclusive property of City. In addition, if any of the Work Products contain intellectual property of Contractor that is or could be protected by federal copyright, patent, or trademark laws, or state trade secret laws, Contractor hereby grants City a perpetual, royalty-free, fully paid, nonexclusive and irrevocable license to copy, reproduce, deliver, publish, perform, dispose of, use and re-use, in whole or in part (and to authorize others to do so), all such Work Products and any other information, designs, plans, or works provided or delivered to City or produced by Contractor under this Agreement. The parties expressly agree that all works produced (including, but not limited to, any taped or recorded items) pursuant to this Agreement are works specially commissioned by City, and that any and all such works shall be works made for hire in which all rights and copyrights belong exclusively to City. Contractor shall not publish, republish, display or otherwise use any work or Work Products resulting from this Agreement without the prior written agreement of City.

10. Compliance With Applicable Law. Contractor shall comply with all federal, state, and local laws and ordinances applicable to the services

EXHIBIT B

to be performed pursuant to this Agreement, including, without limitation, the provisions of ORS 279B.220, 279C.515, 279B.235, 279B.230 and 279B.270. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with (i) Title VI of the Civil Rights Act of 1964; (ii) Section V of the Rehabilitation Act of 1973; (iii) the Americans With Disabilities Act of 1990 (Pub. L No. 101-336), ORS 659.425, and all regulations and administrative rules established pursuant to those laws; and (iv) all other applicable requirements of federal and state civil rights and rehabilitation and other applicable statutes, rules and regulations.

11. Professional Standards. Contractor shall be responsible, to the level of competency presently maintained by others practicing in the same type of services in City's community, for the professional and technical soundness, accuracy and adequacy of all services and materials furnished under this authorization.

12. Modification, Supplements or Amendments. No modification, change, supplement or amendment of the provisions of this Agreement shall be valid unless it is in writing and signed by the parties hereto.

13. Indemnity and Insurance.

(a) Indemnity. Contractor acknowledges responsibility for liability arising out of Contractor's negligent performance of this Agreement and shall hold City, its officers, agents, Contractors, and employees harmless from, and indemnify them for, any and all liability, settlements, loss, costs, and expenses, including attorney fees, in connection with any action, suit, or claim caused or alleged to be caused by the negligent acts, omissions, activities or services by Contractor, or the agents, Contractors or employees of Contractor provided pursuant to this Agreement.

(b) Workers' Compensation Coverage. Contractor certifies that Contractor has qualified for workers' compensation as required by the state of Oregon. Contractor shall provide the Owner, within ten (10) days after execution of this Agreement, a certificate of insurance evidencing coverage of all subject workers under Oregon's workers' compensation statutes. The insurance certificate and policy shall indicate that the policy shall not be terminated by the insurance carrier without thirty (30) days' advance written notice to City. All agents or Contractors of Contractor shall maintain such insurance.

(c) Comprehensive, General, and Automobile Insurance. Contractor shall maintain comprehensive general and automobile liability insurance for protection of Contractor and City and for their directors, officers, agents, and employees, insuring against liability for damages because of personal injury, bodily injury, death, and broad-form property damage, including loss of use, and occurring as a result of, or in any way related to, Contractor's operation, each in an amount not less than $1,000,000 combined, single-limit, per-occurrence/annual aggregate. Such insurance shall name City as an additional insured, with the stipulation that this insurance, as to the interest of City, shall not be invalidated by any act or neglect or breach of this Agreement by Contractor.

14. Legal Expenses. In the event legal action is brought by City or Contractor against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for attorney fees, costs, and expenses as may be set by a court. "Legal action" shall include matters subject to arbitration and appeals.

15. Severability. The parties agree that, if any term or provision of this Agreement is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected.

16. Number and Gender. In this Agreement, the masculine, feminine or neuter gender, and the singular or plural number, shall be deemed to include the others or other whenever the context so requires.

17. Captions and Headings. The captions and headings of this Agreement are for convenience only and shall not be construed or referred to in resolving questions of interpretation or construction.

18. Hierarchy. The conditions contained in this document are applicable to every Personal

EXHIBIT B

Services Agreement entered into by the City of Oregon City in the absence of contrary provisions. To the extent there is a conflict, the terms of the Personal Services Agreement will control over the terms of the standard conditions. To the extent there is a conflict between the terms of the standard conditions and any other document, including the scope of services, the terms of the standard conditions shall control those other terms.

19. Calculation of Time. All periods of time referred to herein shall include Saturdays, Sundays and legal holidays in the state of Oregon, except that, if the last day of any period falls on any Saturday, Sunday or legal holiday, the period shall be extended to include the next day that is not a Saturday, Sunday or legal holiday.

20. Notices. Any notices, bills, invoices, reports or other documents required by this Agreement shall be sent by the parties by United States mail, postage prepaid, or personally delivered to the addresses listed in the Agreement attached hereto. All notices shall be in writing and shall be effective when delivered. If mailed, notices shall be deemed effective forty-eight (48) hours after mailing, unless sooner received.

21. Nonwaiver. The failure of City to insist upon or enforce strict performance by Contractor of any of the terms of this Agreement or to exercise any rights hereunder shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights of any future occasion.

22. Information and Reports. Contractor shall, at such time and in such form as City may require, furnish such periodic reports concerning the status of the project, such statements, certificates, approvals, and copies of proposed and executed plans and claims, and other information relative to the project as may be requested by City. Contractor shall furnish City, upon request, with copies of all documents and other materials prepared or developed in relation with or as a part of the project. Working papers prepared in conjunction with the project are the property of City, but shall remain with Contractor. Copies as requested shall be provided free of cost to City.

23. City's Responsibilities. City shall furnish Contractor with all available necessary information, data, and materials pertinent to the execution of this Agreement. City shall cooperate with Contractor in carrying out the work herein and shall provide adequate staff for liaison with Contractor.

24. Arbitration.

All disputes arising out of or under this Agreement shall be timely submitted to nonbinding mediation prior to commencement of any other legal proceedings. The subsequent measures apply if disputes cannot be settled in this manner.

(a) Any dispute arising out of or under this Agreement shall be determined by binding arbitration.

(b) The party desiring such arbitration shall give written notice to that effect to the other party and shall in such notice appoint a disinterested person of recognized competence in the field as arbitrator on its behalf. Within fifteen (15) days thereafter, the other party may, by written notice to the original party, appoint a second disinterested person of recognized competence as arbitrator on its behalf. The arbitrators thus appointed shall appoint a third disinterested person of recognized competence, and the three arbitrators shall, as promptly as possible, determine such matter, provided, however, that:

(i) If the second arbitrator is not appointed as described above, then the first arbitrator shall proceed to determine such matter; and

(ii) If the two arbitrators appointed by the parties are unable to agree, within fifteen (15) days after the second arbitrator is appointed, on the appointment of a third arbitrator, they shall give written notice of such failure to agree to the parties and, if the parties fail to agree on the selection of the third arbitrator within fifteen (15) days after the arbitrators appointed by the parties give notice, then, within ten (10) days thereafter, either of the parties, on written notice to the other party, may request such appointment by the presiding judge of the Clackamas County Circuit Court.

(c) Each party shall each be entitled to present

EXHIBIT B

evidence and argument to the arbitrators. The determination of the majority of the arbitrators or the sole arbitrator, as the case may be, shall be conclusive on the parties, and judgment on the same may be entered in any court having jurisdiction over the parties. The arbitrators or the sole arbitrator, as the case may be, shall give written notice to the parties, stating the arbitration determination, and shall furnish to each party a signed copy of such determination. Arbitration proceedings shall be conducted pursuant to ORS 33.210 et seq. and the rules of the American Arbitration Association, except as provided otherwise.

(d) Each party shall pay the fees and expenses of the arbitrator appointed by such party and one-half of the fees and expenses of the third arbitrator, if any.

25. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the state of Oregon without resort to any jurisdiction's conflicts of law, rules or doctrines.

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EXHIBIT B

STANDARD CONDITIONS TO OREGON CITY
PERSONAL SERVICES AGREEMENT

EXHIBIT B

CITY OF OREGON CITY
PERSONAL SERVICES AGREEMENT

This PERSONAL SERVICES AGREEMENT ("Agreement") is entered into between the CITY OF OREGON CITY ("City") and _____ ("Consultant").

RECITALS

A. City requires services that Consultant is capable of providing under the terms and conditions hereinafter described.

B. Consultant is able and prepared to provide such services as City requires under the terms and conditions hereinafter described.

The parties agree as follows:

AGREEMENT

1. Term. The term of this Agreement shall be from the date the contract is fully executed until _____, unless sooner terminated pursuant to provisions set forth below. However, such expiration shall not extinguish or prejudice City's right to enforce this Agreement with respect to (i) breach of any warranty; or (ii) any default or defect in Consultant's performance that has not been cured.

2. Compensation. City agrees to pay Consultant on a time-and-materials basis for the services required. Total compensation, including reimbursement for expenses incurred, shall not exceed $_____.

3. Scope of Services. Consultant's services under this Agreement shall consist of services as detailed in Exhibit A, attached hereto and by this reference incorporated herein.

4. Standard Conditions. This Agreement shall include all of the standard conditions as detailed in Exhibit B, attached hereto and by this reference incorporated herein.

5. Integration. This Agreement, along with the description of services to be performed attached as Exhibit A and the Standard Conditions to Oregon City Personal Services Agreement attached as Exhibit B, contain the entire agreement between and among the parties, integrate all the terms and conditions mentioned herein or incidental hereto, and supersede all prior written or oral discussions or agreements between the parties or their predecessors-in-interest with respect to all or any part of the subject matter hereof.

6. Notices. Any notices, bills, invoices, reports or other documents required by this Agreement shall be sent by the parties by United States mail, postage prepaid, or personally delivered to the addresses below. All notices shall be in writing and shall be effective when delivered. If mailed, notices shall be deemed effective forty-eight (48) hours after mailing, unless sooner received.

To the City:

City of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045
Attention: City Manager

To Consultant:

_____
_____
_____
_____

Consultant shall be responsible for providing the City with a current address. Either party may change the address set forth above for purposes of notices under this Agreement by providing notice to the other party in the manner set forth above.

7. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the state of Oregon without resort to any jurisdiction's conflicts of law, rules or doctrines.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly appointed officers on this _____ day of _____, 20____.

CITY OF OREGON CITY

By: _____
David W. Frasher
Title: City Manager

DATED: _____, 20___.

By: _____
Department Head's Name
Title: Department Head's Title

APPROVED AS TO LEGAL SUFFICIENCY:

By: _____
City Attorney

(CONSULTANT)

By: _____

Title: _____

DATED: _____, 20___.

EXHIBIT C- DESCRIPTION OF THE PROJECT AREA.

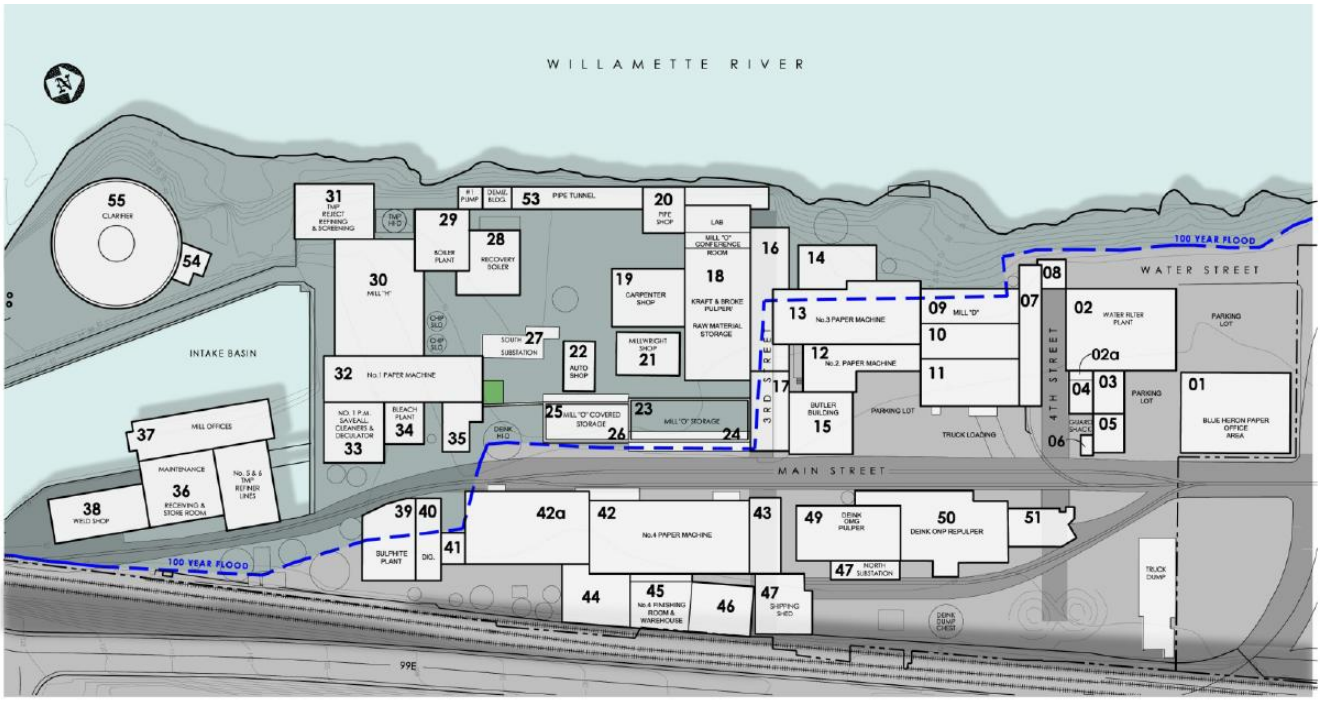


FIGURE 3 - BUILDING KEY PLAN

dl loretoARCHITECTURE

Due to the possibility of unintended variances of digital images and electronic equipment, this information is considered in DRAFT form and is NOT FINAL.

Willamette Falls Legacy Project

Oregon City, Oregon

50' 0 25' 50' 100' 200'

ADDRESS

419 Main Street

TAX LOTS

2-2-E-31BD TL 300 (21.99 acres)

2-2-E-31BD TL 390 (.27 acres)

2-2-E-31BD TL 500 (.63 acres)

2-2-E-31BD TL 600 (.26 acres)

SITE DESCRIPTION AND HISTORY

The Project site is located adjacent to Willamette Falls, a natural waterfall on the Willamette River between Oregon City and West Linn, the Oregon City bluffs, as well as Oregon City's downtown commercial core. Willamette Falls is the largest waterfall in the Pacific Northwest and 2nd largest in the United States behind Niagara Falls by volume. The Falls have been an important gathering place for fishing, trading, and gathering of several tribes for many centuries prior to white settlement.

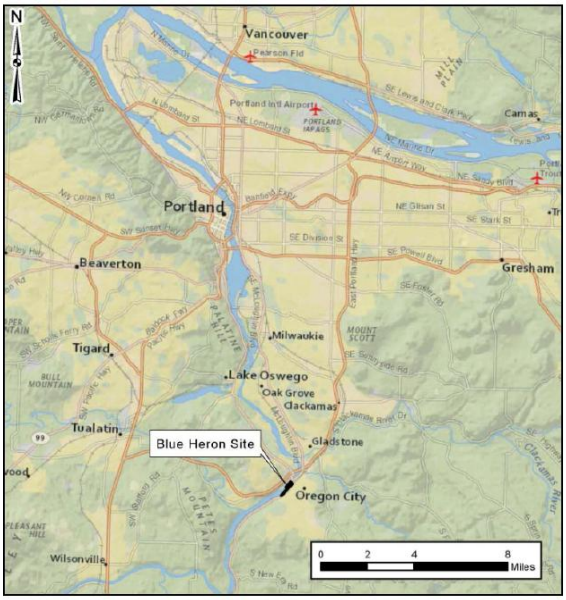


Figure 1: Location Map

The property includes three blocks facing historic Main Street, which has long been characterized by traditional downtown uses such as barbers, hotels and restaurants. Since the 1830's, the site has been occupied by large industrial uses including a flour mill, sawmill, brick production, woolen mill and, since 1908, a paper mill. Over 600,000 square feet of vacant industrial space cover the site in 57 buildings that are in varying states of condition. The project does not included the settling ponds/lagoon in West Linn, which were purchased by Clackamas County's Water Environment Services (WES)

The Oregon City mill as it is today started in 1908 as the Hawley Pulp and Paper Mill. W.P. Hawley bought the mill and adjacent properties and eventually installed four paper machines to produce a variety of paper products including fruit wrap, bread paper, wrapping paper, toweling, bags and newsprint. Ownership transferred to the Los Angeles Times as Publishers Paper Co. and then to Jefferson Smurfit Corporation. In May 2000, Smurfit Stone Container Corporation sold the mill to its employees and KPS Special Situations Fund, L.P., a New York City-based private equity fund, creating the Blue Heron Paper Company.

In 2006, the employees bought out KPS creating Blue Heron Paper Company as a 100% employee owned stock ownership plan (ESOP). On February 23, 2011, the Blue Heron Paper Company announced the closure of the mill and the layoff of over 175 employees. The site is currently being held by a bankruptcy trustee who is in the process of property disposition.

STRUCTURES AND BUILDINGS

Existing equipment, utilities and non-building structures with salvage value are currently being removed from the site under a contract between the bankruptcy Trustee and a salvage contractor. Salvage work is scheduled to be completed in November 2013and includes the removal of the majority of the paper mill operations infrastructure. Major renovation work is necessary to put most of the buildings and much of the site into a stable and usable condition for any type of future use. Roadways would require upgrades for pedestrian/vehicle separation, improvements to the pavement and new lighting.

With the exception of the former Blue Heron Paper Office Building and the Mill E Offices the buildings would be difficult to reuse even as industrial facilities without improving their entries, emergency exiting, general circulation, restroom facilities, heating and cooling systems, power supply distribution and fire protection.

There are over 500,000 square feet of vacant industrial space in 57 separately identified structures in various states of condition. Preliminary study indicates there is compatibility for adaptive re-use, hazardous buildings materials and extensive structural retrofitting considerations. (More detailed information can be found in Exhibit E)

PGE DAM

PGE owns the Willamette Falls Dam and associated property upriver of the site including easements and land under some of the foundation of the buildings abutting the dam. Whilst the Dam's main power generating infrastructure is located on the West Linn side of the Willamette River, PGE has rights of access across the Blue Heron Mill site to access its property and maintain its facilities on the Oregon City side of the river. PGE's history at the falls dates back 125 years, so they're very supportive of community efforts to protect, retain and enhance a mix of uses in the area while still achieving the strict environmental and operational standards in their newly-renewed 30-year hydroelectric generating license.

HABITAT

The location of the site near Willamette Falls provides critical habitat opportunities such as a refuge for migrating salmonids (on federal list of endangered species) and pacific lamprey, as well as providing improved connectivity for migrating birds. Currently, fish and wildlife habitat on the site is relatively limited and fragmented due to the proximity of major highways, the railroad and urban development on both shores. Integrating these opportunities would be part of an effective site development strategy.

STORMWATER

Prior to 1995, the mill operation's process water and stormwater runoff, as well as excess river water were discharged directly back to the Willamette River via three tailraces located on the site. In 1995, a

collection and treatment system was installed to treat both process water and stormwater together prior to discharge. Industrial processes are no longer occurring at the site and materials from these processes including pipe and pump infrastrucutre are being salvaged from the site. Following salvage operations, some of the buildings may be demolished, and the site stabilized and left essentially dormant until redevelopment occurs.

An Interim Stormwater Plan was created by ESA and Associates and is available in Exhibit E of the RFP. It is intended to provide a conceptual plan for managing stormwater runoff during interim site conditions prior to commencement of any major site improvements.

Discharges from the site are currently regulated under an industrial NPDES (1200-z) permit issued for the former industrial paper mill operations. While industrial activities for which this permit was originally intended no longer occur at the site, the permit has not been officially terminated. However, the existing system currently discharges to a wetland treatment pond which will be unavailable in the near term. It is understood that the 1200z permit (including monitoring and reporting requirements) will cover stormwater management at the site until the site is stabilized as negotiated with DEQ.

Under the existing stormwater management system, stormwater is centrally collected in the pipe tunnel, pumped to the clarifier and then pumped to the offsite wetland treatment ponds. Redevelopment activities on the site are not anticipated for many years and would not be covered by the current industrial permit. Rather, any development would be required to adhere to the Stormwater Management Plan, which is part of the Municipal (MS4) permit for Oregon City, and to follow adopted City design guidelines at that time.

HISTORIC SIGNIFICANCE

The project site is located on the site of Dr. John McLoughlin's original mill as well as the original first 5 blocks of historic Oregon City, which were slowly overtaken by mill development through the years. The site is also adjacent to scenic Willamette Falls (second largest in the United States). Willamette Falls is also recognized by the Confederated Tribes of the Grand Ronde and Warm Springs, and Siletz, and the Confederated Tribes of the Umatilla Indian Reservation, and Yakama Indian Nation as a sacred gathering place of high cultural significance.

There are currently no locally designated historic structures (OCMC 17.40) located on the property. The Blue Heron site is not currently located within a local or National Register Historic District. However, a report was prepared for Portland General Electric & the Blue Heron Paper Company, in cooperation with the West Linn Paper Company, in May 2002 by Kramer and Company, George Kramer, M.S., HP, Sr. Preservation Specialist. Heritage Research Associates indicated that some of the buildings located onsite are contributing historic structures. *"Willamette Falls Industrial Area Request for Determination of Eligibility 2002"– George Kramer.*

In the spring of 2012, the City of Oregon City provided updated survey data to the 2002 Determination of Eligibility, including additional information on the 1950s structures into the Oregon Historic Site Database. In the fall of 2012, the Oregon State Historic Preservation Office issued a Revised Determination of Eligibility for the site that concurred with the updated information and, due to the

salvage work onsite, indicated that the site was no longer eligible for listings as a National Register District. Therefore, all of the buildings were reviewed for individually eligibility. (See Exhibit E for more information on this topic)

Buildings listed in the National Register of Historic Places, either individually or as a contributing building in a historic district, are eligible to take advantage of the 20% Federal Tax Credit Program and the State Special Assessment Program. A future property owner may choose to designate some or all of the historically contributing buildings to take advantage of both programs. It is anticipated that the Master Plan will require the retention and rehabilitation of some of the historic buildings onsite.

WILLAMETTE FALLS HERITAGE AREA COALITION

The Coalition, a 501(c)(3) partnership of public, private, and nonprofit organizations and citizens that share a common passion for the Willamette Falls and its heritage, is currently applying for designation as a National Heritage Area and the newly created State Heritage Area Designation. National Heritage Areas (NHAs) are designated by Congress as places where natural, cultural, and historic resources combine to form a cohesive, nationally important landscape. NHAs are a grassroots, community-driven non-regulartory approach to heritage conservation and economic development. Through public-private partnerships, NHA entities support historic preservation, natural resource conservation, recreation, heritage tourism, and educational projects. Leveraging funds and long-term support for projects, NHA partnerships foster pride of place and an enduring stewardship ethic. The Coalition shares many of the same goals for the area and will be a major stakeholder in the planning process.

CURRENT ZONING

Underlying Zone

G-I General Industrial –OCMC 17.36

Comprehensive Plan: Industrial

The General Industrial District is designed to allow uses relating to manufacturing, processing, production, storage, fabrication and distribution of goods or similar as defined by the community development director. The uses permitted in the General Industrial District are intended to protect existing industrial and employment lands to improve the region's economic climate and protect the supply of sites for employment by limiting new and expanded retail commercial uses to those appropriate in type and size to serve the needs of businesses, employees, and residents of the industrial areas.

OVERLAY INFORMATION

Willamette Greenway OCMC 17.48

The City's greenway regulations were established in the 1980 Comprehensive Plan with the purpose of minimizing potential negative impacts to the river, while encouraging industrial uses of the river (for Oregon City, primarily focused on logging/mill uses). Chapter 17.48, which includes the greenway code, is not implemented very often, as the City has limited developable land adjacent to the river. Almost all of the mill site is located within the "compatibility area", which requires a Planning Commission review of the development application/master plan process. The city has generally viewed development that meets the adopted commercial development standards to be in compliance with the goals and standards for the Willamette Greenway District.

Geologic Hazard OCMC 17.44

The Geologic Hazards Overly regulates development on unstable or steep slopes or on land abutting unstable or steep slopes. The Geologic Review is done at the time of development review and may require enhanced geotechnical reports and documentation by a structural engineer to ensure that the proposed development adequately addresses the Geologic Hazards construction criteria.

Nat. Res. Overlay District (NROD) OCMC 17.49

The Natural Resource Overlay District designation provides a framework for protection of Metro Titles 3 and 13 lands, and Statewide Planning Goal 5 resources within Oregon City. The Natural Resource Overlay District (NROD) implements the Oregon City Comprehensive Plan Natural Resource Goals and Policies, as well as Federal Clean Water Act requirements for shading of streams and reduction of water temperatures, and the recommendations of the Metro ESEE Analysis.

The NROD district utilizes a 200 foot buffer from the ordinary high water line for land abutting the Willamette River. Any new development (new impervious surfaces on existing pervious land) within the buffer must be processed by a Type III Planning Commission Variance. Please note that very little pervious land exists on the main developed mill site. Additionally, a development that involves concurrent demolition/new construction review would be considered exempt from the overlay

district as it would be considered an onsite replacement (OCMC 17.49.80- Exemptions “Replacement, additions, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased.”

Flood Management Overlay District OCMC 17.42

The Flood Management Overlay District is an overlay zone classification defining areas subject to periodic flooding or inundation which can result in property harm or loss, disruption of public services, hazards for public health, or added expense for public services. Land within the 1996 flood inundation area and the 100- year flood plain are subject to this chapter. The areas or special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study (FIS) for Clackamas County, Oregon and Incorporated Areas," dated June 17, 2008, with accompanying flood insurance maps is adopted by reference and declared to be a part of this chapter. The Clackamas County FIS study determined that the Base Flood Elevation for Oregon City is 50.8 feet. The 1996 flood event (considered a 100 year flood event) exceeded this elevation in portions of the site.

A good portion of the southern half of the site is also within the Oregon City Flood Overlay District. All new construction or substantial upgrades to buildings located within the overlay district is required to meet all applicable sections of the district. The development standards are found in OCMC 17.42.160. However, variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register or identified as a locally designated historic structure.

While completing the due diligence report this fall, it became apparent that further study is needed to determine how the existing flood management overlay district may be impacted by development at the site. As such, hydraulic modeling or review of the hydraulic model developed in the FIS is recommended as part of the Master Plan process to better answer this question.

PROPOSED ZONING

Mixed Use Downtown- "MUD" OCMC 17.34

The mixed-use downtown (MUD) district is designed to apply within the traditional downtown core along Main Street and includes the "north-end" area, generally between 5th Street and Abernethy Street, and some of the area bordering McLoughlin Boulevard. Land uses are characterized by high-volume establishments constructed at the human scale such as retail, service, office, multi-family residential, lodging or similar as defined by the community development director. A mix of high-density residential, office and retail uses are encouraged in this district, with retail and service uses on the ground floor and office and residential uses on the upper floors. The emphasis is on those uses that encourage pedestrian and transit use.

During the 2004 Comprehensive Plan update, the city approached Blue Heron to see if they were interested in upzoning their property to MUD, but allow the existing industrial use to be permitted onsite. At that time, Blue Heron felt that it was not in their best interest to support a rezoning of the property. Ever since 2004, the city has been generally supportive of rezoning the site to MUD, subject to meeting all applicable criteria.

However, through the Master Planning process, a new district or zoning designation may be created that better implement the vision. A hybrid MUD zone with additional text amendments could also be utilized.

EXISTING REPORTS AND INFORMATION ABOUT THE SITE

EXHIBIT E

Attachments

1. **Willamette Falls Legacy Project Site Stabilization and Building Assessment Report-** Prepared by: Shiels Obletz Johnsen, Inc. Kramer and Company, DiLoreto Architecture llc, KPFF Environmental Science Associates, Environmental Resource Management

2. **Willamette Falls Legacy Project Habitat and Water Resources Opportunities**- Environmental Science Associates

3. **Phase II Environmental Site Assessment Results**, prepared by ERM

4. **Boundary Survey –**prepared by AKS

5. **2002 Willamette Falls Industrial Area, Request For Determination Of Eligibility** prepared by George Kramer

6. **Historic Site SHPO Database** – survey printout

7. **Sanborn Maps**

8. **September 2012 updated Determination of Eligibility Letter,** Oregon State Historic Preservation office

9. **Historic Context Statement of Mill Site-** Stephen Dow Beckham (in draft form- currently not available)

10. **Willamette Falls Heritage Area Coalition Application for Federal Heritage Area** (in draft form-currently not available)

11. **Sample photos from Blue Heron Photo Collection:** Clackamas County Historical Society *all rights reserved*

12. **Catalytic Value of the Willamette Falls Project: A report on the impact of transformation of Oregon City's former Blue Heron Mill site:** prepared by Metro

13. **Willamette Falls Funding Strategy An overview of opportunities and action steps to finance transformative re-development in Oregon City**, prepared by Metro

Exhibit D. Background Information and Required Deliverables

The site's dynamic location immediately adjacent to Willamette Falls and the Oregon City bluffs and its notable role in Oregon's history make this property a truly unique and statewide-significant development opportunity. In early 2011, after over 100 years of paper manufacturing on the site, the Blue Heron Paper Company ceased operations and permanently closed its paper manufacturing facility on the site. Since that time, the property has gone into receivership and is currently for sale. It is being managed by the Blue Heron Bankruptcy Trustee. The City of Oregon City, Metro, Clackamas County and the State of Oregon have deemed the site to be a "legacy opportunity" due to the extraordinary opportunity to transform not only downtown Oregon City but this entire part of the metropolitan Portland region.

Oregon City will lead a public visioning, master planning and rezoning process designed to help transform a former paper mill alongside Willamette Falls into a regionally significant economic redevelopment project and visitor destination. The 23-acre site will reconnect Oregonians with the second-largest waterfall in North America for the first time in more than a century. Further, the sites represents not only one of the state's most significant natural and scenic resources, but also one of its most historic for its role in Native American history through the "End of the Oregon Trail" era and the sawmill/papermill industrial era and now into the new economies of the 21st century.

With support from state agencies, Metro and Oregon City evaluated the site and conducted extensive investigations during the past two years to assess opportunities and risks. Results of environmental investigations are promising; they indicate that conditions are manageable, and aren't as significant as feared. The public collaboration also gained a clearer understanding of the possibilities for reusing historical structures and the significant costs necessary to stabilize the site.

The Site Stabilization and Building Assessment Report is included in Exhibit E and will be accessible to firms submitting a Request for Proposal. The assessment did not identify any one particular issue that would prohibit future redevelopment of the site. However, it did identify stabilization and redevelopment costs for numerous development scenarios, thus contributing to a better understanding of the interrelationship of the buildings to the site. The redevelopment scenarios were created as an exercise to understand the short and long-term costs associated with the site, they should not be construed as a preferred development model.

At this point, the public partners do not have the resources needed to purchase, redevelop and operate the entire site. However, the partnership remains committed to being a catalyst for its transformation, working toward four core values: economic redevelopment, public access, cultural interpretation and habitat restoration.

As the local governing body of the site, Oregon City is the leader for the master planning phase of the project. The city is collaborating with the property's trustee, while Metro, the State of Oregon and Clackamas County remain active partners.

The resulting vision will facilitate rezoning, preparing a portion of the site for economic redevelopment and a portion as an outdoor habitat restoration and public access destination. These future uses should be not only compatible but synergistic, taking full advantage of the transformational opportunity that access to and viewing of the majestic Willamette Falls can provide. The partners believe that planning for the property will create an opportunity for public purchase of the portion necessary to let visitors experience the falls, offer cultural and historical interpretation, and restore habitat along the Willamette River. Meanwhile, by eliminating

uncertainty, this work will prepare the rest of the site for private investment. Throughout the planning process, the property will remain on the market.

Four Guiding Values

The future of the Willamette Falls site will be shaped by four shared values: public access, economic development, habitat restoration and cultural interpretation. These values were initiated by the Oregon City City Commission and have been used as the framework/lenses for all project decisions since the spring of 2011.

Public access: Visitors will get a front-row seat to experience the majestic and truly extraordinary Willamette Falls. Cut off from public enjoyment and effectively removed from the public consciousness for more than 150 years, the falls are one of the most scenic places along the Willamette River. They also provide an important opportunity for Oregonians to connect with the river, which is isolated from many of the communities along its route.

Economic redevelopment: The Willamette Falls property will carry on a tradition of economic development along the riverfront, where mills thrived for more than a century. With the closure of the Blue Heron Paper Co., Oregon City lost 175 jobs – a blow that must be made up through redevelopment. Returning part of the site to private developers, the partners will ensure the transformation supports Oregon City's vision for the future and reinvigorates the downtown as a hub of employment, shopping, business and tourism.

Habitat restoration: Historically, the falls were surrounded by unique plants because of microclimates from the mist. Protecting the site provides an opportunity to reestablish native plant communities, enhancing this ecologically diverse stretch of the upper reaches of the Willamette. Many rare plants thrive on river islands, in the Willamette Narrows and along Canemah Bluff. This land is also critical for water quality – every fish and lamprey that travels the river passes through or around the falls.

Cultural interpretation: Future visitors will learn about the rich history of the Oregon City riverfront. Much like Celilo Falls in the Columbia River George, Willamette Falls served as an important cultural site for native tribes. The falls also tell the story of the area's industrial development – John McLoughlin built the Pacific Northwest's first lumber mill here. And, in 1844, Oregon City became the first incorporated city west of the Rocky Mountains. As the End of the Oregon Trail and the birthplace of Oregon, it served as a launching point for thousands of new Oregonians.

Willamette Falls Visioning/Master Plan Process

Objective

The purpose of this Request for Proposal is to select a Consulting Team to assist the City of Oregon City, in cooperation with the bankruptcy trustee, in completing a Master Plan and Rezoning of the former Blue Heron Paper Mill Site and adjacent falls area. This planning project will create a vision for the site through a robust public process that respects the history and nature of the land and provides needed certainty to the private and non-profit development community by removing existing and perceived barriers to site redevelopment.

The site is currently zoned G-1 General Industrial and per Policy 2.2.12 of the Oregon City Comprehensive Plan, is required to undergo a master planning process prior to obtaining a Zone Change and Comprehensive Plan amendment. Understanding the value of gaining land entitlements for the site, the bankruptcy trustee has given initial support to sign off on any needed land use applications while the site remains in bankruptcy.

Oregon City will act as the lead agency in the visioning and master planning process. The visioning and master plan process will look at further refining and expanding on the four shared values (Public Access, Economic Development, Cultural Interpretation, and Habitat Restoration) and the existing due diligence documentation that has been performed to date.

Staff Support

Oregon City has dedicated approximately 1.5 FTE to support this project over the next year. The complexity of the site, substantial interest of the project by the public and the need to coordinate communications between the Partnership, will require that the Project Manager, along with key Oregon City staff will be more involved in the day to day coordination of the project. It is anticipated that the Project Manager will attend all weekly consultant meetings and will be available for light administrative duties. Metro staff will also be on hand to support the project through technical review and will be available to assist the project team with TPR compliance discussions with ODOT.

Visioning /Community Engagement Plan

A major component of the plan will be the implementation of a stakeholder and public engagement process that aims to bring a broad base of interests into a vibrant visioning process. The mill site is not just an Oregon City redevelopment concern. It is located along almost a mile of the Willamette River shoreline on land that can arguably be called the birthplace of Oregon and the industrial expansion of the West. This site elicits local, regional and statewide passion, and potentially national and international recognition. The public outreach plan aims to engage a diversity of groups to create a long-range multi-phased plan that fully embraces the four shared values, yet understands the market forces in Oregon City and financing needed to make the vision a reality.

This process will capitalize on existing involvement frameworks used by the City and Metro; and the ongoing public outreach created for the surrounding Willamette Falls Heritage Area application. The plan shall establish public involvement objectives; identify all project stakeholders and their aspirations, values and concerns; describe the array of tools and activities best suited to inform and engage Oregon City, regional residents, businesses, regional and statewide elective officials and other stakeholders (e.g. environmental, historic advocacy groups, tribal interests); establish a schedule for implementation; and incorporate measures to evaluate success. Above all, the visioning and engagement plan should also be structured to inspire and create an environment that allows for the creation of champions for the project. The Consultant team will need to effectively communicate with the public on how their input will be used in this and/or future planning efforts onsite.

Potential community engagement tools and activities include, but are not limited to:

- Recognizable look or logo included on all project-related materials.
- Informative, accessible and interactive website led by City staff. The consultant will provide consultation and site content, including photos and narrative that describes the status of the project, upcoming meetings, video updates, other opportunities for involvement, and draft and final work products.

- Communications language that will ensure the project is understandable in common terms, not only "plannereze."
- Facebook page to be created and administered by City staff. The Consultant will provide content for updates, photos, community activities, etc.
- 1-3 Open Houses as appropriate.
- Community conversations (30-40) as early in the process as possible that engage in two-way communications with stakeholders. These conversations should be held in venues that are familiar and comfortable to the various stakeholders, (standing meetings at stakeholder locations, religious buildings, schools, senior centers, farmers markets, existing community celebrations, libraries, businesses and/or business organizations)
- Activities tailored to engage the area's youth, minority, elderly, non-English speaking and disenfranchised groups.
- Community surveys (2-3) with a potential to utilize the Metro's Opt In survey which 18,000 citizens participate in, Newsletters, flyers, FAQs and other outreach materials that provide project information and publicize community forums and other activities.
- Media releases, short films, advertisements and content for potential stories in local and regional publications.
- Guided site tours and facilitated conversations in conjunction with city staff.
- Summaries of public input delivered in a timely fashion to decision-makers preceding project milestones.
- Final report summarizing public input and recommendations for using the information gained in future planning phases (e.g. open space planning)

Master Plan

Based on the outcome of the visioning process, the city will, in concert with the Blue Heron Bankruptcy Trustee', embark on a simplified general development master plan (OCMC 17.65) that will lead to the needed entitlements for the site, a major step for the development community. This plan will provide a balance of certainty and flexibility which will incorporate the core values of the visioning process, but provide enough fluidity for the plan to adapt to changing market forces.

The Master Plan is intended to be a **framework document**, rather than a fleshed out redevelopment plan, but it should provide a high level aspirational vision for the future of the site. It is anticipated that future property development will further refine the document as development occurs.

The Master Plan process will provide the following final outputs/deliverables:

1. The Consultant team is responsible for writing and submitting the Quasi-Judicial Land Use application for the master plan on behalf of the applicant. Representatives of the consultant team are expected to attend all public headings related to this project (4-7). The application shall be submitted in time to be heard at the **April 24, 2014 Planning Commission Hearing.** This is part of an agreement with the City and the Trustee. The chosen team will frame all scopes of work to meet this timeline. This date can only be amended with approval by the Trustee.
2. Rezoned and amended Comprehensive Plan from GI-Industrial to MUD- Mixed Use Downtown (or equivalent) on the property. *A new district or zoning designation or a hybrid*

MUD zone with additional text amendments may be utilized if it better implement s the Master Plan.

3. Clarification of the flood plain boundary (based on hydrology studies)
4. Identification of off-site impacts and mitigation projects necessary to address the identified impacts.
5. Infrastructure improvement estimates and financial framework plan
6. Compliance to the Regional Transportation Plan (RTP) and Transportation Planning Rule (TPR) and adoption of a Multimodal Mixed-use Area (MMA) from the Oregon Department of Land Conservation and Development, if necessary
7. Identification of lands available for open space, public access and development
8. Allowance for a partition of open space/public access parcel, if applicable.
9. Strategy for general public access from the North to South end of the property and identified opportunities to connect the site to surrounding pedestrian amenities on both land and water
10. Market study and financial implementation and strategy plan that will guide and educate elected officials and the general public on the fiscal and political approach needed to implement the vision.
11. Identification / incorporation of innovative design approaches and strategies appropriate for the site

Concerns , Aspirations, and Hurdles For the Project

This is a very dynamic site with amazing opportunities and challenging complexities. At its heart, the master plan will need to balance at lot of competing interests with a goal to adopt a plan that will put the site on a firm institutional, political, financial and physical foundation for site development.

This master plan will, in no particular order, need to:

- Elevate the site into a regional amenity by providing development and open space opportunities to ensure that the site will be a four- season destination location.
- Validate the work and stories of the former Blue Heron employees within the existing public involvement process
- Take advantage of and leverage redevelopment and revitalization efforts of nearby downtown Oregon City.
- Successfully articulate the public roles, private roles, the general re-development model to be followed and who will manage and govern implementation.
- Provide clear communication and direction to the public on how the master plan and rezoning fits within the larger visioning process.
- Find a way to create a master plan and development model that will be financially viable with a firm understanding of the existing Oregon City and regional real estate market.
- Inspire regional, state and national political support for future phases of the project and hopefully clearly identify a near term catalyst project that can keep the momentum moving.
- Balance the desires of the bankruptcy trustee and the public without a clear understanding of the needs and wants of a future owner or developer.

- Incorporate innovative and green approaches to redevelopment that encourages rather than deters private investment.
- Take advantage of regional access provided by I-205 while tempering the barrier effect of McLoughlin Boulevard (Highway 99E) which separates the site from downtown Oregon City.

Specialties and Sub-Consultants

The specialties and sub-consultants listed below will be needed to adequately assess the site, engage the public and provide the desired information for the entitlement process. The specialties/products will most likely be amended upon selection of the chosen consultant team and are listed below for informational purposes.

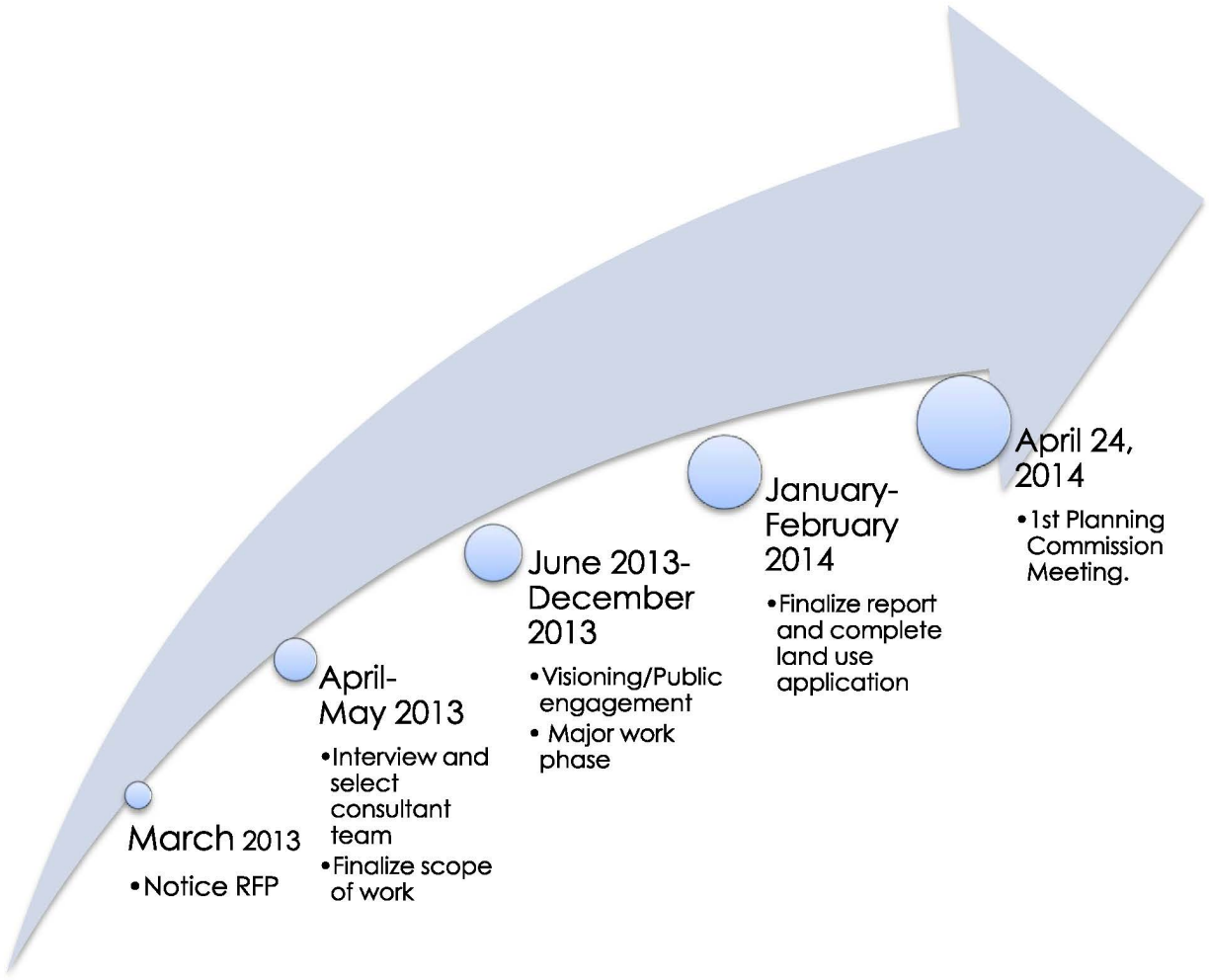
The consultant is encouraged to review the existing information in Exhibit E to determine what existing work products can be utilized by the consultant team, the amount of additional work needed for each specialty/deliverable, and if additional specialties will be needed for this project. The City of Oregon City encourages the consultant teams to build on existing information as much as practicable and avoid duplicating documents unless there is sufficient cause. Utilizing consultants that have multiple skills sets can also help keep costs within budget.

The total budget shall not exceed **$500,000.**

SPECIALTIES	***PRODUCTS***
Lead Consultant	Co-ordinate Master Plan/Outreach/Strategy
Urban Designer / Planner	Develop Urban Design Options, Prepare and submit Master Plan Land Use application.
Preservation Architect	Identify and explore adaptive reuse and historic rehabilitation options for buildings.
Hydraulic Engineer or Water Resource Engineer	Review base flood elevations, hydraulic modeling. Look at the potential for altering existing flood plain boundaries if certain buildings are removed/constructed.
Landscape Architect, Biologist	Develop conceptual site design options for open space, habitat conservation/restoration and streetscapes as appropriate to secure public buy in.
Commercial Real Estate Advisor	Establish value of development options
Economic Advisor / Studies	Market studies to (1) guide potential uses; (2) guide current and future investment; (3) development feasibility studies to test market viability and; (4) recommendations to seed near and far term development and provide strategies for next steps and implementation (5) financial implementation plan, with cost breakdown of funding gaps.

Pre-Construction Services	Consult team on proposed development options, cost estimates, constructability.
Transportation Planner	Identify multimodal transportation issues and alternate transportation design approaches for entitlement process.
Transportation/ access study	Reduce trans. impact requirements for development Oregon City to formally adopt Regional Center Plan (Regional Center Compliance) to meet ODOT TPR reqs. Provide support for obtaining MMA if necessary
Engineering Services	Provide further work on stormwater and infrastructure improvements and timing, with a look at implementing a shared systems approach to the site.
Illustrator / Graphics	Provide illustrations and graphic support for final report
Outreach / Visioning/Public Engagement Plan	Engage public, stakeholders and other agencies meaningfully in the process with a view to collective support of the final framework master plan, sufficient to support re-zoning . Link public input to decision-making milestones.
Cultural/ Historic Landscape Inventory/Archaeology	Establish a common cultural understanding of the site as a baseline for the Visioning process. Utilize existing work products and augment as needed. Archeological issues white paper and creation of an inadvertent discovery plan for future development may be warranted.
	Total **$500,000**

Visioning and Master Planning Timeline



Willamette Falls Legacy Project
Site Stabilization and Building Assessment Report



Prepared for:
The Willamette Falls Legacy Project Partners

Prepared by:
Shiels Obletz Johnsen, Inc.
Kramer and Company
DiLoreto Architecture llc
KPFF
Environmental Science Associates
ERM

January, 2013

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B. Existing Hydrological Conditions (ESA)
C. Building Evaluation Criteria and Assessments
D. SHPO Determination of Eligibility
E. National Park Service, Seven Aspects of Integrity
F. Historic Assessment Memo (Kramer)
G. Reuse Memorandum (DiLoreto)
H. Oregon City Overlay Districts Memo
I. Rapid Visual Screenings, Category A (KPFF)
J. Boilers Review Memo (ERM)
K. Demolition to Main Street Level (ERM)
L. "Scenario 2" Demolition (ERM)

References (not included in this report)

- Environmental Phase 1/Phase 2 Technical Memo (ERM, November 2012)
- Willamette Falls Survey (AKS, September 2012)
- Habitat & Water Resource Opportunities Memo (ESA, August 2012)
- Interim Stormwater Management Plan (ESA, October 2012)

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The closing of the Blue Heron Paper Mill operations in 2011 left 23 acres of land with abandoned industrial buildings stretching from Willamette Falls to the southern doorstep of Oregon City's historic downtown. The site was placed on the market in 2011 and is currently for sale.

Given the site's significant historic associations and strong connection to the Willamette River and Willamette Falls, the site has been identified as a "legacy opportunity" to support multiple public aspirations. A cooperative group of public agencies including Metro, the City of Oregon City and the State of Oregon (the "Partners") have come together to evaluate the existing conditions and implications of purchasing the site.

Designated as the Willamette Falls Legacy Project ("Project"), the Partners see the future of the site being shaped by four Partner Values:

- public access to Willamette Falls
- economic development
- habitat restoration
- cultural and historical interpretation

This report provides an analysis of over 50 existing industrial structures on the site and the physical viability of reusing some or all as part of future redevelopment. The intended outcome is to identify reasonable approaches to getting the site to a "safe and stable" condition in the near term through selective building retention and demolition.

The Partners will use the findings of this report—along with work prepared by others related to environmental conditions, stormwater management and a property survey—to evaluate the costs and potential issues associated with purchasing and stabilizing the site.

Should the project advance, it is anticipated that a redevelopment plan would be generated to more specifically address the opportunities associated with the four shared values described above.



Site and Building Evaluations

A consultant team comprised of Kramer & Company, DiLoreto Architecture, KPFF, Environmental Science Associates and Environmental Resource Management (ERM) provided historic, reuse, structural, stormwater/ habitat and demolition expertise to generate an integrated evaluation of the structures and site. Shiels Obletz Johnsen has managed the consultant team's efforts on behalf of the Partners.

KPFF conducted a preliminary structural analysis of each building and sought to identify any "fatal flaws" that would preclude opportunities for reuse. No structural "fatal flaws" were discovered; although some of the buildings scored low in terms of their existing condition and renovation potential, KPFF believes that all of the buildings could be salvaged and re-purposed given sufficient financial resources. Due to the complexity of the basement levels throughout the site, the building foundations were visually reviewed but not individually assessed.

The buildings were also evaluated based on historic value and reuse potential. These evaluations resulted in the identification of fourteen buildings with the greatest potential for adaptive reuse and support for interpreting the history of the site.

The building evaluations were then used to develop two site scenarios to assess the opportunities associated with different building retention options. Given that all buildings were seen as structurally viable for renovation and adaptation, the historic and reuse evaluations were the primary determinants of the building retention scenarios proposed by the consultant team.

Conclusions

The industrial heritage of the existing buildings and site present a viable physical framework for adaptive reuse of selected structures and may offer access to both State and Federal incentive programs for rehabilitation that support historically sensitive development.

While there are no buildings on the site that are considered to be "beyond repair," the majority of structures are not considered to have great adaptive reuse or historic value. These buildings could be considered candidates for removal without compromising the historic and reuse value of the remainder of the site. In many cases, the removal of non-historic structures improves the historic character of adjacent buildings and the overall site. It may also provide greater flexibility for economic development, public access to the Willamette River, habitat restoration and cultural and historical interpretation.

Work conducted in parallel with this building assessment report investigated other site conditions to determine to what extent any building retention strategy would be affected by stormwater management needs, water quality/habitat enhancement, hazardous building materials and contaminated soil. In general, while these site elements must be considered as part of any strategy to secure the site and prevent unwanted building deterioration, it was found that these factors would not significantly impact decisions associated with building retention. However, it is worth noting that the presence of hazardous materials in eight steam-producing boilers on the site is likely to require either mitigation in place or removal.

Some issues affecting building retention have not been evaluated in this report due to schedule and budget constraints. The following investigations will be required to support the scenarios presented in the report.

Establish a Framework for Site Development

- Identify a site-wide redevelopment vision, priority investments, finance plan and delivery/management mechanism that integrates private development/market perspectives, public access considerations, habitat restoration and cultural and historic interpretation opportunities.

Refine Potential "Fatal Flaws" Information

- Integrate regulatory considerations such as flood plain development, City/County fire/life safety, Army Corps of Engineers, DEQ stormwater discharge, FERC relicensing and historical/cultural impacts related to building retention/demolition.
- Secure a complete title report and survey noting all site development constraints.

1. BACKGROUND

PROJECT OVERVIEW

The Willamette Falls Legacy Project site's dynamic location immediately adjacent to Willamette Falls and the Oregon City bluffs and its notable role in Oregon's history make this 23 acre, single-owner property a truly unique and regionally-significant development opportunity.

In early 2011, after over 100 years of paper manufacturing on the site, the Blue Heron Paper Company ceased operations and permanently closed its paper manufacturing facility on the site. Since that time, the property has gone into receivership and is currently for sale. It is being managed by the lender's Trustee.

The Partners have deemed the site to be a "legacy opportunity" and are evaluating the implications of purchasing the site to support broader community access, water quality and habitat enhancement, cultural and historic values and economic development. While the long-term vision is to redevelop the site and reuse some or all of the existing buildings, the near-term focus is to identify a reasonable approach to get the site to a "safe and stable" condition through selective building retention and demolition.

PURPOSE OF THIS REPORT

This report is intended to evaluate critical physical conditions of the site and buildings that would significantly impact future development should the Partners proceed with acquiring the site. The report:

- Summarizes the evaluation of the 57 industrial structures on the site and describes their historic value and reuse potential.

- Identifies potential building retention/demolition strategies that would allow selected buildings to be retained with a reasonable amount of investment to (a) prevent further deterioration, (b) provide site security, and (c) stabilize the buildings and site to minimize ongoing maintenance costs until the site is developed.

- Creates a tool to generate and respond to questions from decision-makers regarding potential building retention/removal.

- Considers stormwater, habitat and environmental issues that may affect building retention/removal.



Figure 1: Location Map

Note that this report does not include an evaluation of the site's cultural values or archaeological resources. Nor does it propose a development recommendation. The building reuse assessments are based upon the physical attributes of the buildings—no market feasibility or transportation evaluations have been conducted.

CONSULTANT TEAM

The consultant team assembled to conduct the site evaluation and prepare this assessment report includes:

Shiels Obletz Johnsen	Project Management
Kramer & Company	Historic Consultant
DiLoreto Architecture	Reuse Consultant
KPFF	Structural Engineer
Environmental Science Associates (ESA)	Water Quality/Habitat Consultant
ERM	Hazardous Materials/ Demolition Consultant

See Appendix N for more detailed firm resumes.

SITE DESCRIPTION

The Project site is located adjacent to Willamette Falls and the Oregon City bluffs, as well as Oregon City's downtown commercial core. The property includes three blocks facing historic Main Street, which has long been characterized by traditional downtown uses such as barbers, hotels and restaurants. Since the 1830's, the site has been occupied by large industrial uses including a flour mill, sawmill, brick production, woolen mill and, since 1908, a paper mill. Over 600,000 square feet of vacant industrial space cover the site in 57 buildings that are in varying states of condition.

Not all of the 23-acre site is considered to be "developable". Figure 2 shows the relative size and location of the intake basin and clarifier area along the shoreline. The linear configuration of the "Railroad Strip" constrains its use to pathway or track/roadways. The remaining 17 acres of built-up area is broken into those parts of the sites that were inundated by the 1996 flood and those areas that were not. The development constraints on the inundated area are further described in Appendix H.



Structures and Buildings. Existing equipment, utilities and non-building structures with salvage value are currently being removed from the site under a contract between the bankruptcy Trustee and a salvage contractor. Salvage work is scheduled to be completed in November 2013. For purposes of the assessments in this report, assumptions have been made regarding the final condition of the buildings.

In their current state, particularly given the nature of the salvage operation, it is unlikely that the site and structures could be reused for their original industrial purposes. Major renovation work is necessary to put most of the buildings and much of the site into a stable and usable condition. Roadways would require upgrades for pedestrian/vehicle separation, improvements to the pavement and new lighting. With the exception of the former Blue Heron Paper Office Building (building 01) and the Mill E Offices (building 37), the buildings would be difficult to reuse even as industrial facilities without improving their entries, emergency exiting, general circulation, restroom facilities, heating and cooling systems, power supply distribution and fire protection.

Figure 3 provides a key for a majority of the structures on the site and Appendix A provides a summary of all buildings and their basic attributes.

Stormwater. The majority of all on-site storm water runoff is currently routed from storm drains to a pipe tunnel, pumped to the clarifier, and piped under the river to the off-site treatment facility in West Linn where it is treated and discharged into the Willamette River. This off-site connection will be terminated once salvage operations are completed. The existing stormwater and water treatment system is characterized in an Existing Hydrological Conditions report (see Appendix B). Water quality of site discharges is expected to improve compared to what has occurred during industrial operation of the site and there are potential opportunities to provide regional treatment BMPs to offsite sub-basins that currently discharge directly to the Willamette River or to the sanitary sewer system untreated.

Habitat. The location of the site near Willamette Falls provides critical habitat opportunities such as refugia for migrating salmonids (on federal list of endangered species) and improving connectivity for migrating birds. Currently, fish and wildlife habitat on the site is relatively limited and fragmented due to the proximity of major highways, the railroad and urban development on both shores. A separate Habitat and Water Resources Opportunities report (October, 2012) details ways in which the fish and wildlife habitat and water resources could be enhanced on the site. Prioritizing and integrating these opportunities would be part of an effective site development strategy.



Hazardous Building Materials. Currently, there are eight low pressure steam producing boilers located in Buildings 28 and 29, all constructed circa 1940. These boilers contain hazardous materials that are likely to require either removal or mitigation, depending upon whether the buildings that house them are demolished or reused. Given the industrial uses and age of buildings, there is a high likelihood of asbestos-containing materials, lead paint and other unknown hazardous building materials on the site. Assessment of these materials is not included in the scope of this report.

Figure 2: Site Aerial / Development Zone

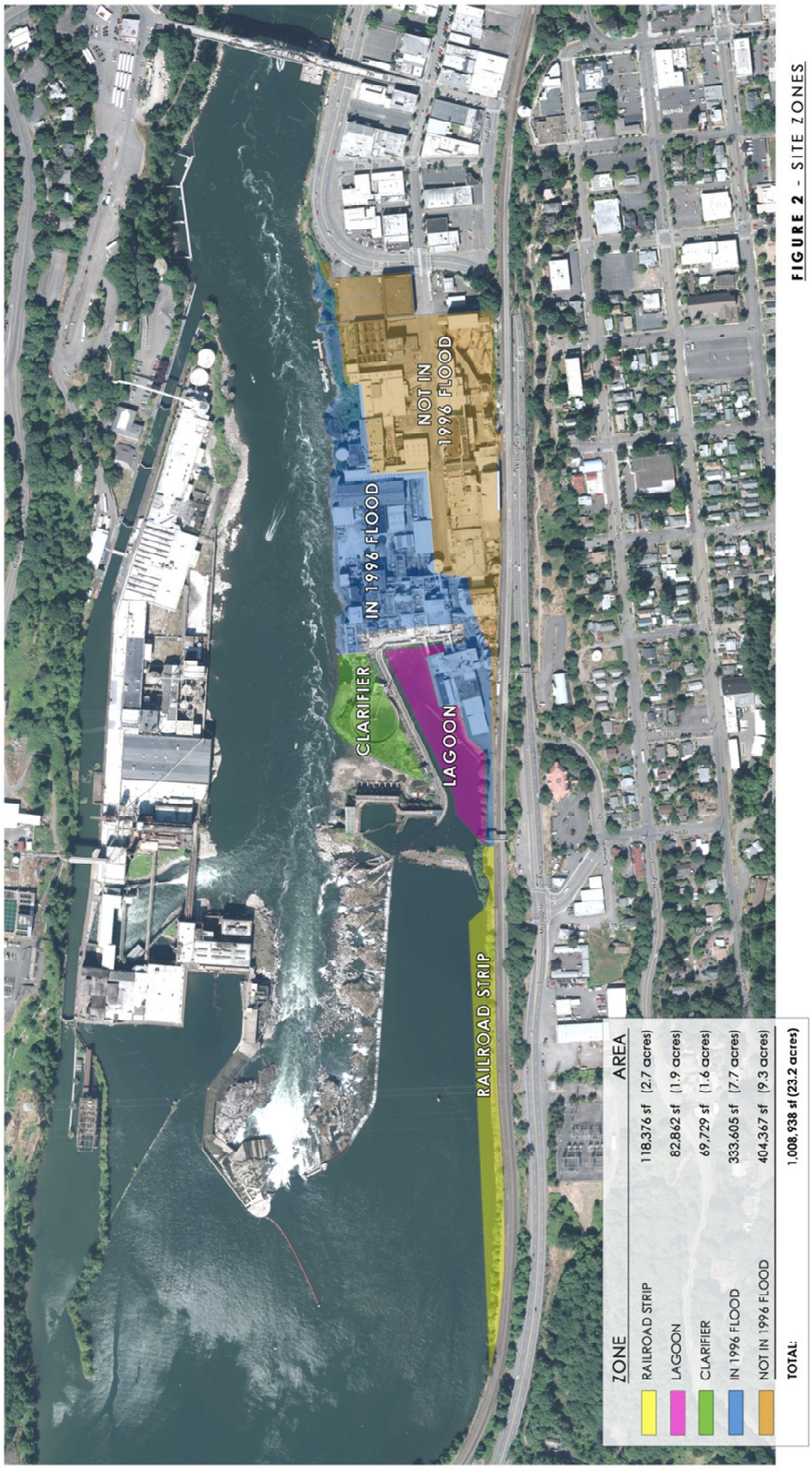
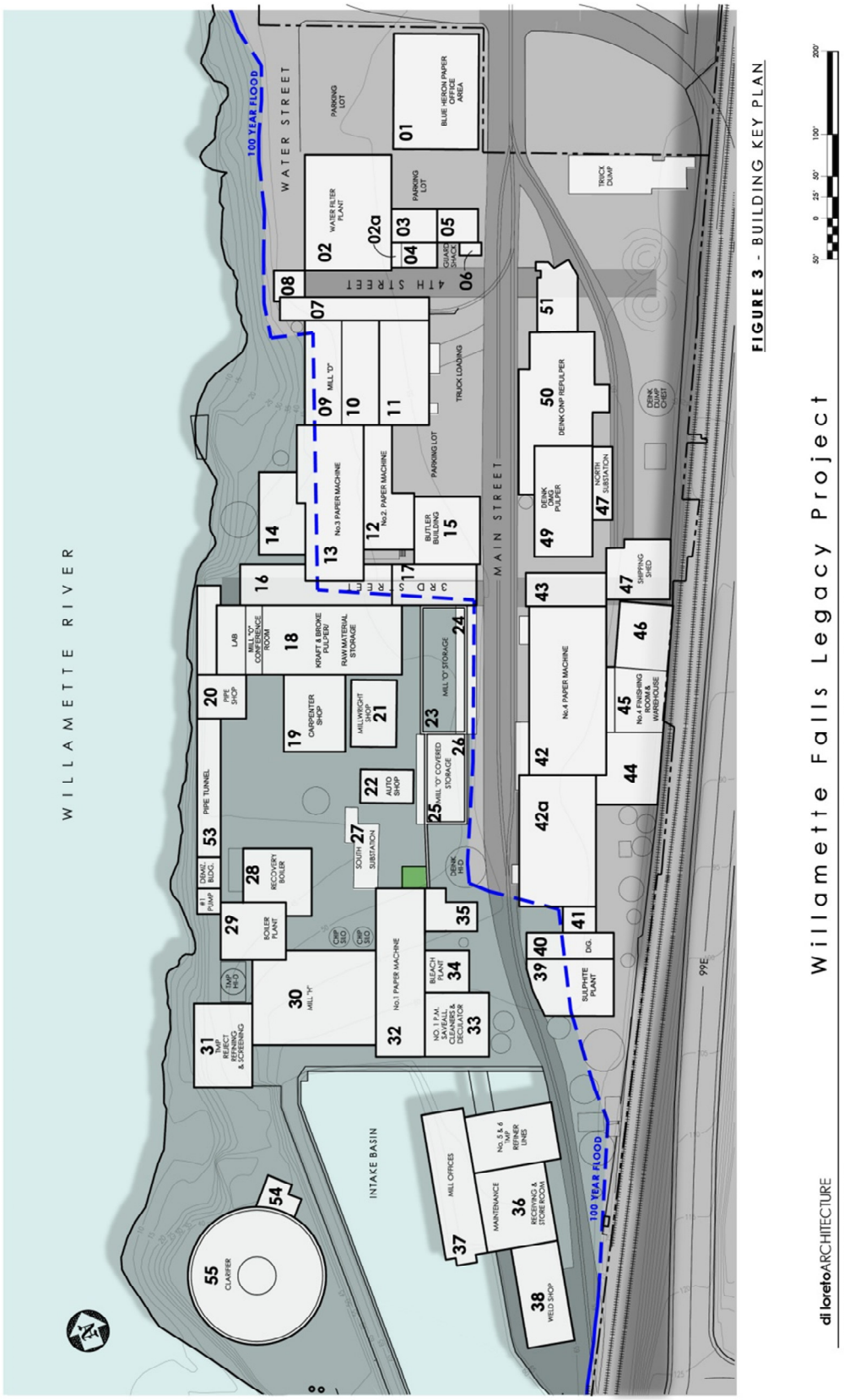


Figure 3: Building Key Plan



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2. ASSESSMENT APPROACH

This section describes the approach used to evaluate the physical characteristics of each building and to develop site scenarios illustrating potential building retention and demolition options.

ASSESSMENT PROCESS

The consultant team divided the site evaluation into a two-step process:

1. ***Individual Building Assessments***. The consultant team conducted walk-through visual inspections of each building on the site and evaluated them based upon three criteria: historic value, reuse potential and structural characteristics. Prior to embarking on the individual assessments, the buildings were categorized as described below.

2. ***Site Scenarios***. Two site plan options were developed that retain some portion of the buildings and structures on the site. These scenarios represent two options that fall between the "demolish all" and "keep all" bookends.

BUILDING CATEGORIES

Given the size and complexity of the site, the consultant team conducted an initial site overview session to prioritize the level of evaluation to be conducted on each building based on their general attributes. The 57 buildings plus miscellaneous structures were identified as either "Category A" buildings or "Category B" buildings (see Figure 4). All of the buildings were then evaluated on their historic value, reuse potential and structural condition. More thorough analyses were performed on the prioritized Category A buildings.

Category A Buildings. These buildings were prioritized by the consultant team based on initial perceptions of reuse potential. These buildings stood out as having the greatest opportunity for adaptive reuse based on their combined historic integrity, building condition, physical layout, access, structural condition and value for supporting adjacent historic structures. There are 16 structures identified as Category A, including four that have sufficient historic integrity to be considered individually eligible for listing on the National Register of Historic Places.

Category B Buildings. This category includes all structures not captured in Category A. There are three general types of structures in this category:

- Minor structures with low priority for retention, although some of these buildings may be worth retaining to support adjacent Category A buildings and broader site goals.

- Buildings located within the flood plain to be demolished to the Main Street level of the site to be retained as platforms until future development options are evaluated.

- Buildings for which the primary retention/ demolition consideration is the containment or removal of the boilers.

A few Category B structures were determined to have high historic value and are considered eligible for listing on the National Register of Historic Places. However, they were found to have low re-use potential as a result of their construction, design, original function or position on the site.

For the purposes of this report, historic, adaptive re-use and structural assessments focused on structures above the "Main Street level". This term is used to distinguish portions of buildings above grade from sub-grade basements, support systems and foundations (see Figure 5). Due to the complexity of the basement levels throughout the site, the building foundations were visually reviewed but not individually assessed. Observations revealed that foundations, and basements appear to be robust and in generally good condition. For buildings identified for reuse as part of a site redevelopment plan, further assessment of these foundations would be required.

Figure 4: Matrix Site Plan

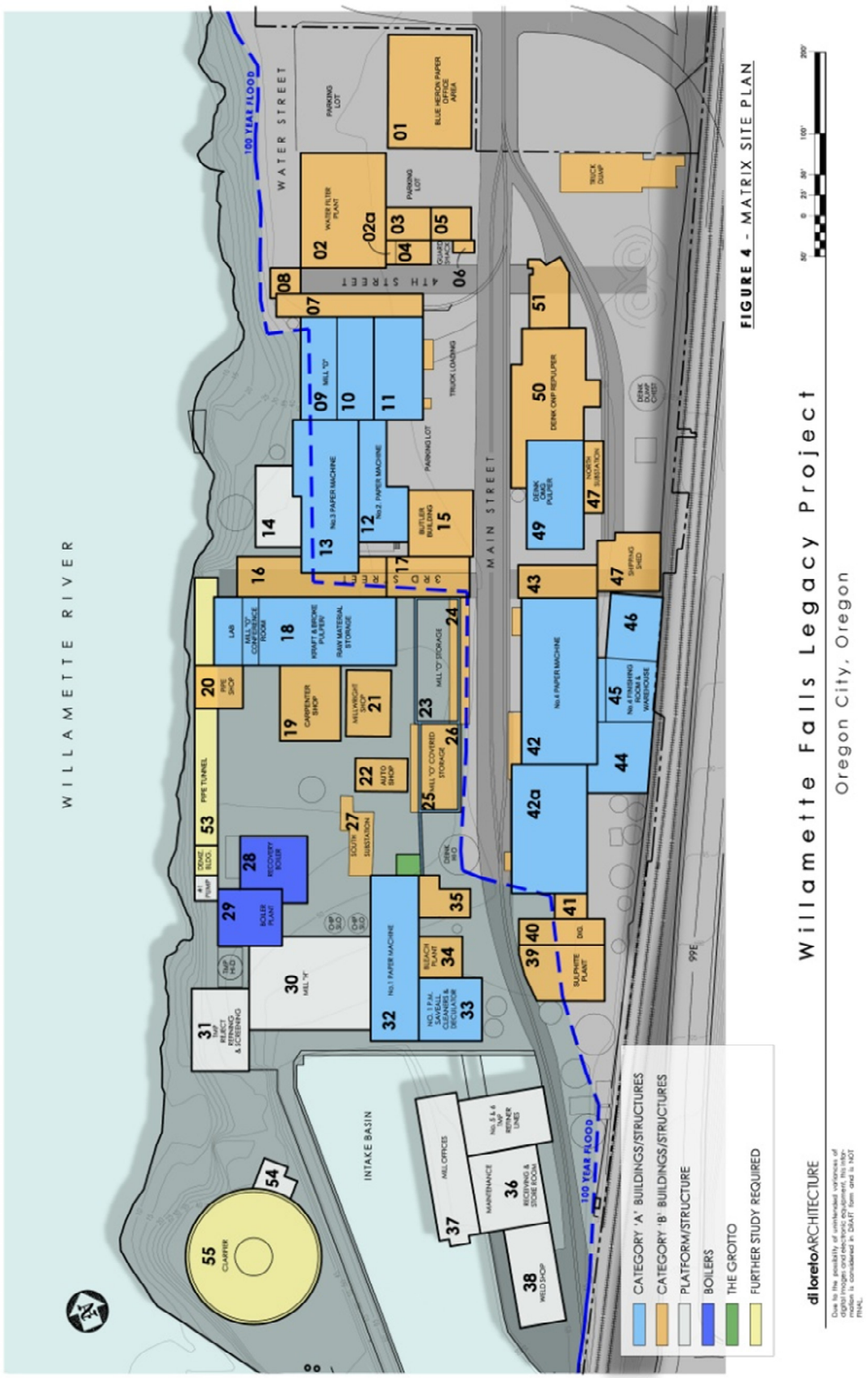
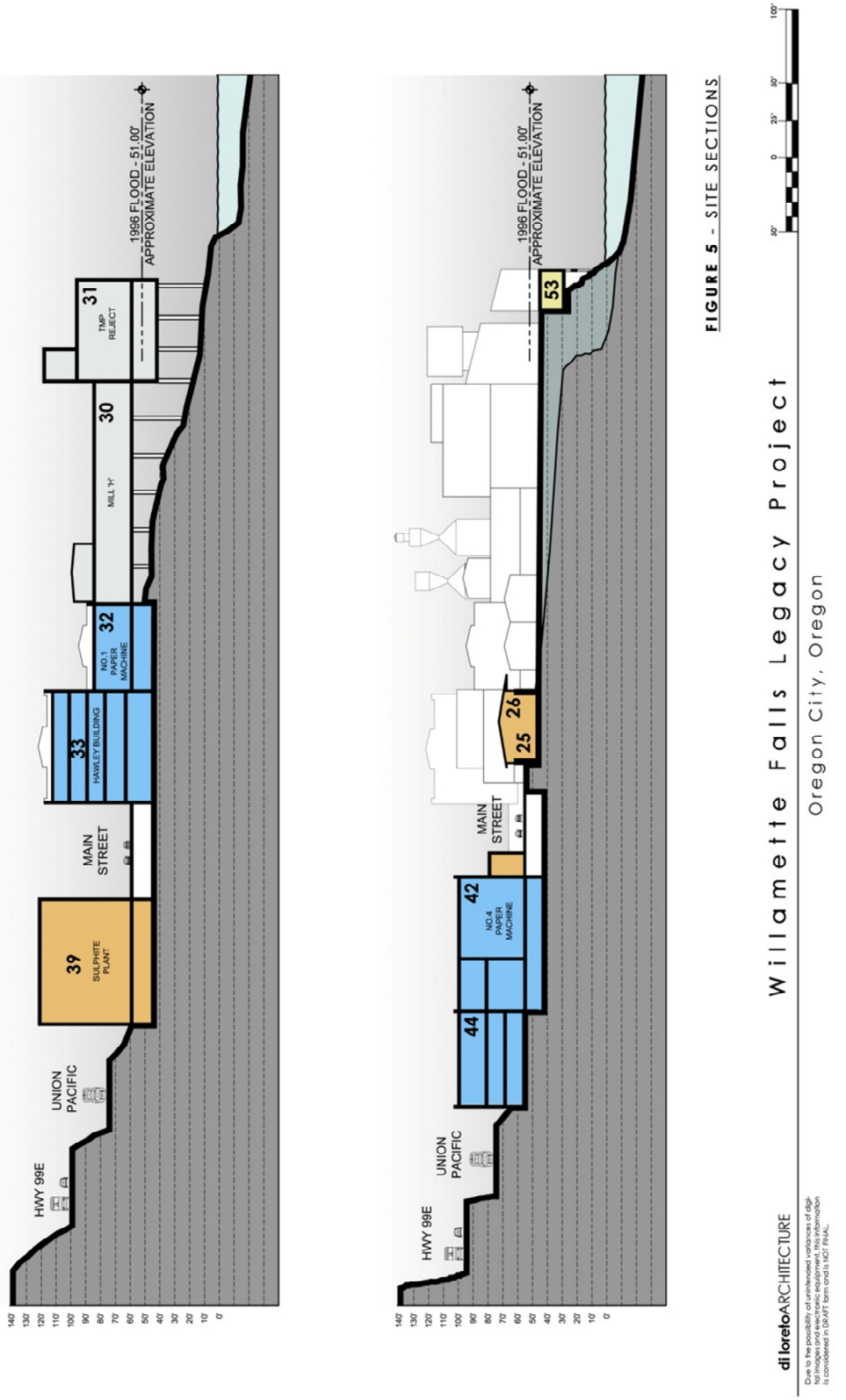


Figure 5: Site Sections



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3. BUILDING ASSESSMENTS

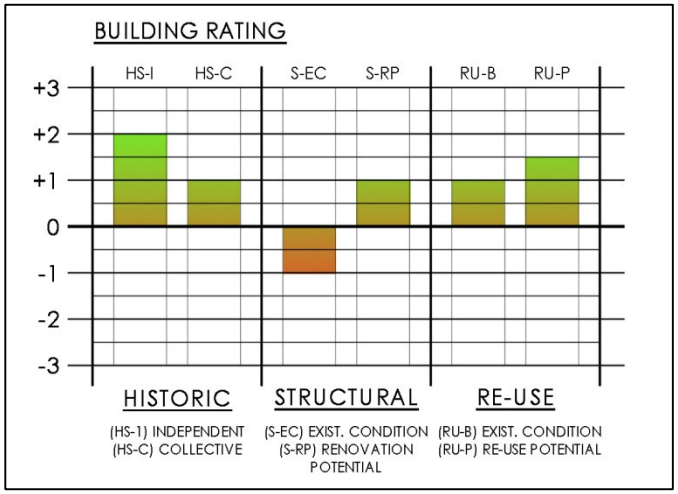
This section describes the methodology used to evaluate each building and the findings from those evaluations. These evaluations informed recommendations regarding building retention and demolition options.

INDIVIDUAL BUILDING ASSESSMENTS

The consultant team evaluated each of the buildings based on:

- Historic integrity/significance
- Reuse potential
- Structural characteristics

Buildings were assigned a numeric value along a 6-point continuum (+3 to -3) for each criterion as described below. More detailed descriptions of the historic, reuse and structural evaluation criteria are found in Appendix C.



Historic Evaluations: Most of the individual structures at the Project site were evaluated for historic significance in 2003, as part of the Portland General Electric relicensing process through the Federal Energy Regulatory Commission (FERC). That study assessed the Willamette Falls Industrial Area as a whole and concluded that the paper and hydropower-related uses flanking the river were eligible for listing in the National Register as part of a historic *district*. The individual structures on the Project site were, as part of that potential district, evaluated as either "contributing" or "non-contributing" within the district framework. Resources built prior to 1953 (50 years prior to the date of the evaluation) were considered "eligible" for listing on the National Register.

Following the closure of the mill and the end of industrial activities, the City of Oregon City re-evaluated the structures at the former Blue Heron Paper Mill site in February 2012, completing an updated survey in May 2012, and SHPO responded with its concurrence in September 2012. The updated SHPO Determination of Eligibility considered all of the "contributing" buildings identified in the earlier district study as being *individually* eligible for listing on the National Register. Additional buildings constructed in the 1950s (but after 1953) were also determined eligible. SHPO and Oregon City agreed that after the completion of the NRI deconstruction process, the Blue Heron site would not be considered eligible as a historic district (see Appendix D). Individual resource forms (Appendix C) retain the 2003 district (contributing) language as well as the current eligibility to document the entire evaluation process.

While the SHPO DOE evaluation serves as the definitive document in determining historic significance, the 2012 Project process by design required the evaluation of each structure from a multi-disciplinary viewpoint. Site tours, especially increased interior access, helped the consultant team further document the historic "integrity" of each building as one of several complimentary perspectives, only one of which was historic significance and ability to interpret the historic uses of the site.

That process, built upon the existing evaluations by Oregon City and SHPO, considering date of construction, original function, and relationship to the industrial history of the site. Structures were evaluated using the standard National Register integrity criteria; a 7-element process (Location, Design, Setting, Materials, Workmanship, Feeling and Association) to determine integrity and historic

significance. Appendix E contains a more complete description of the "Seven Aspects of Integrity". Evaluation considered each building's individual role in the history of the site ("HS-I" evaluation). *Non-historic structures* were also evaluated on the same scale for their potential impact (either positive or negative) as they support or diminish the ability of adjacent historic resources to relate that history, either by adding to and supporting industrial character or, in the negative sense, by obscuring an adjacent historic building.

All structures were also evaluated for their role in supporting the historic "context," the overall, combined qualities of the site and its ability to relate the complex, often conjoined, character of development during the historic period ("HS-C" evaluation). Structures, both historic and non-historic, were assigned an "HS-C" number, reflecting their role in supporting the character of the industrial uses of the site. A detailed description of this analysis is found in Appendix F.

Inherent in the multidisciplinary approach of this evaluation was the recognition that historic value was just one aspect of the review. It is specifically acknowledged that not all buildings and structures at the Willamette Falls Legacy Project site identified as being historically significant and eligible for listing on the National Register of Historic Places are likely to survive. As the future of the site is clarified, any adverse impacts to identified historic resources, including removal, will be addressed and mitigated as required by State and Federal law.

Reuse Evaluations. The review of existing structures for their reuse potential was based on visual inspections carried out over a period of three months involving multiple tours of the site. No destructive or investigative testing was included. The site is complex and layered with construction on top of construction that occurred over a span of more than a century. The consultants utilized a check list of elements such as building condition, plan layout, ease of modification and accessibility (see Appendix G) to develop an understanding of the reuse potential of each building. It is



understood that those structures recommended for reuse are suggestions and any reuse will ultimately be determined by market forces, building code and zoning restrictions and requirements associated with historic structures which are outside the scope of this study.

Given enough funds and market desire, almost all of the buildings on the site could be renovated for some type of adaptive reuse. However, this would be infeasible given the unknown market needs and large investment required. For purposes of this report, the rating system ranks those structures that met a threshold consideration for building condition and reuse potential from the visual evaluation. Evaluation attributes included the building condition from excellent to poor ("RU-B"), and its reuse potential from simple to difficult ("RU-P").

In addition, the team assumed that, given the previous heavy industrial use, the below-grade foundations would be in good condition and sufficient to support any type of future application. While the consultants considered the effects the flood plain could have on reuse, it was assumed that existing structures within the flood plain would be allowed to be redeveloped. Appendix H provides more detailed information regarding the issues associated with redevelopment within the flood plain.

Along with these base assumptions, the consultant team considered:

- Can the floor plan be adapted for some marketable reuse?
- Does the architectural character make the required investment potentially attractive?
- Can the exterior be easily modified to provide openings for natural light and view?
- Is its location accessible by vehicles and/or pedestrians?
- Does the location of the flood plain hamper any type of reuse?

While largely subjective, the rankings are based on the architect's 30 years of experience re-purposing complex historic buildings.

Structural Evaluations. The structural assessments were performed by a team of two engineers that conducted multiple site visits to observe the current conditions of the existing structures. The primary purpose of the structural evaluations was to determine if the structures could be renovated and reused for another purpose, and the extent of work required to do so. The assessments were limited to conditions that could be readily observed as no testing or exploratory work was included in this effort. Existing structural drawings detailing the original construction of the buildings were not available for review as part of this effort. However, the primary structural elements for the buildings were typically exposed, making it relatively easy to observe the nature and condition of the structural frame. Additionally, efforts were limited to assessing the primary structural frame and did not include non-structural or secondary elements such as stairs, cladding, ceilings, etc.

The assessments for both the Category A and Category B buildings were limited to observations noting the overall condition of the structure, any significant deficiencies, and the types of structural systems that were present. Given the scope of this study was to assess a relatively high number of buildings in a limited amount of time, the structural evaluation effort focused more time on the Category A buildings, or those with the greater potential for reuse given their combined historic and reuse potential. Rapid Visual Screening summary sheets (Appendix I) were completed for the Category A buildings in accordance with FEMA 154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards". The time spent evaluating the Category B buildings was fairly brief, and focused primarily on identifying the general nature and condition of the structural system.

In all structures, the primary building structure was observed to assess the condition of the gravity load resisting system (i.e. downward acting loads due to the weight of the structure and its contents) and the lateral load resisting system (i.e. loads resulting from wind or seismic events). The evaluations also assessed the relative ease or difficulty of performing likely renovation work, both for the gravity system and the lateral system. A score was assigned to each building rating its existing condition and renovation potential. The structural evaluations were based on the structural engineer's observations and experience with similar structures. Detailed evaluations, testing and/or inspection programs, and detailed structural calculations were not included in this effort.

CATEGORY A BUILDINGS

No.	Building Name	Building Information	Photograph
09	MILL 'D' WESTERN WAREHOUSE	Dated as early as 1925, this building is of mixed concrete and steel construction with wood-framed roofing and steel support columns.	
10	MILL 'D' CENTRAL WAREHOUSE	This middle portion of Mill D, also referred to as the "No. 3 Finishing Room," is of wood frame construction, with some steel reinforcement and other modification.	
11	MILL 'D' EASTERN WAREHOUSE	Of light wood-frame construction, it consists of fairly typical open storage, but has a strong visual connection to the river.	
12	NO. 2 PAPER MACHINE	Paper Machine No 2 contains elements of earlier structures dating as early as the 1880s. Much of the above grade portions were destroyed by fire except for the remaining perimeter masonry wall.	
13	NO. 3 PAPER MACHINE	A large, multi-floor concrete structure comprised of multiple connected elements, Paper Machine No. 3 was a key element of the Hawley facility and has strong connections to the history of paper-making.	
18	MILL 'O'	Of wood construction within its concrete exterior, Building 18 is the only standing structure on the site that is related to the Oregon City Woolen Mill, one of the first industrial facilities on the property.	
23	NORTH WOOLEN MILL STONE WALLS AND FOUNDATIONS	Built of stacked basalt; among the oldest remaining built resource on the property helping to relate one of Oregon's earliest industrialized manufacturing concerns, the Oregon City Woolen Mill.	
25	SOUTH WOOLEN MILL STONE WALLS AND FOUNDATIONS	Built of stacked basalt; among the oldest remaining built resource on the property helping to relate one of Oregon's earliest industrialized manufacturing concerns, the Oregon City Woolen Mill.	

CATEGORY A BUILDINGS

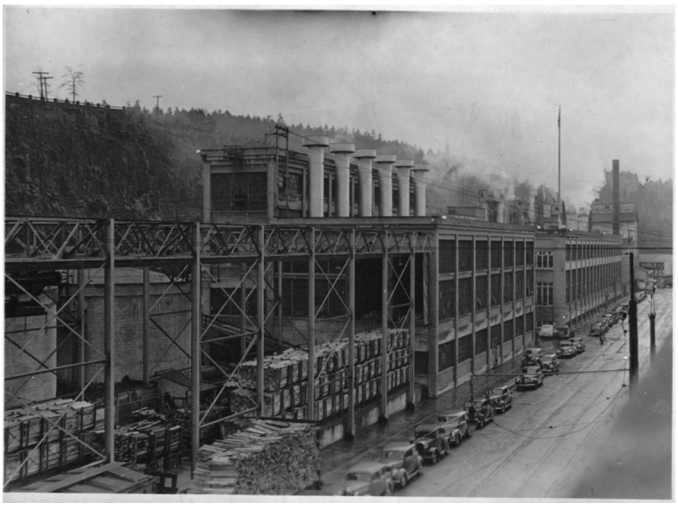
No.	Building Name	Building Information	Photograph
32	NO. 3 PAPER MACHINE	A sturdy concrete structure, Building 32 is a long narrow volume that is located immediately west of Building 33, the Hawley Building.	
33	HAWLEY BUILDING	This four story concrete structure is prominently located at the base of the intake basin. With its iconic stepped parapets, painted signage and repetitive window bands it has long been a key visual element of the mill site.	
42	NO. 4 PAPER MACHINE	Paper Machine No. 4 is among the most distinctive structures of the Hawley Pulp and Paper Company- era and visually dominates the eastern side of Main Street, serving a major element in defining the 20th century industrial character of the site.	
42A	NO. 4 PAPER MACHINE SOUTH ADDITION	A large open industrial volume, this building is generally viewed as a continuation of Paper Machine No. 4 (Building 42).	
44	NO. 1 SOUTHERN WAREHOUSE	Building 44 is of concrete construction matched to the large window/cast concrete style of No. 4 Paper Machine and was built concurrently with that project.	
45	NO. 4 CENTRAL WAREHOUSE	Building 45 is of mixed wood-frame construction with a large gable roof.	
46	NO. 4 NORTHERN WAREHOUSE	Building 46 is of wood framed construction with a cross-gable room; A large open volume with multiple floors, this structure retains high integrity as an early example of industrial/warehouse construction.	
49	MILL 'B' DE-INKING	This three+ story concrete structure was built as part of the Hawley 1928 expansion.	

BUILDING EVALUATION FINDINGS

Because all buildings were seen as structurally viable for renovation and adaptation, a building's historic value and reuse potential became the primary criteria for determining retention. Appendix C includes assessments for each building, the results of which are summarized below.

Historic. Based upon the Oregon City and SHPO evaluation, sixteen (16) structures at the Blue Heron site have been determined to be individually eligible for listing on the National Register of Historic Places. From the Legacy Project review, six (6) of these are considered "key" to interpreting the site's history. Key buildings include a core group of three early 20th century structures (Building 32 "Hawley Building, Building 42 "Paper Machine No. 4" and Building 49 "DeInker") built by the Hawley Pulp and Paper Company prior to 1930, accurately reflect their original design, use, and role in the history of paper-making in Oregon City.

Though of 20th century construction, the Mill O Annex (Building 18), through its wood frame materials design, and history, offers an opportunity to relate an earlier 19th century development period through its connection to the Oregon City Woolen Mill. Two related resources, the coursed basalt foundation stones of the Oregon City Woolen Mill (Buildings 23 and 25), are also considered key elements. The foundation walls are among the oldest surviving built resources on the site. and relate some of the earliest industrial development at Willamette Falls, adding considerable interest to the site. While probably not practical for re-use as-is, these significant features could be incorporated into new work, retained as-is for interpretative value, or used as landscape or interior design elements associated with new development, supporting the historic character of a future project.



A larger group of resources, including both eligible historic and non-historic structures, are located in what have been termed "clusters" around the key historic structures identified above. These clusters substantially enhance historic character, support overall historic significance. Their retention canstrengthen the quality of a project and its ability to interpret the history of the site.

Reuse. After completing the review of the site and existing conditions, a pattern emerged highlighting a number of structures with clear reuse possibilities. Highlighting those structures that ranked highest simplified the complex site into understandable opportunities. Most of the existing buildings and construction will require major renovation. Many obstruct the overall redevelopment potential of the site since their original purpose was industrial use. However, four key iconic structures emerge as a nucleus for redevelopment given their condition, design and history as described in the historic evaluation above: Buildings 18, 32, 42 and 49.

Structural. In general, the structural engineer found that all of the Category A buildings could be renovated and reused for another purpose. Many of the structures had robust gravity systems that would be able to support the required loadings for a future building occupancy. Most of the structures would require a fair amount of repair and maintenance work to remedy cracks, spalls, and corrosion that has occurred over the years. However, the primary structural frames appeared to be generally adequate for future reuse.

Due to the age of the buildings and the recent advances in seismic design, none of the observed buildings would meet the current code requirements for earthquake safety. Most future occupancies of the buildings would trigger a code-mandated seismic upgrade to ensure that the buildings meet current standards for seismic safety. Although some of the structures would be challenging to upgrade, the structural engineer believes it would be technically feasible to seismically upgrade the buildings to allow for a future reuse.

Hazardous Building Materials. The eight low-pressure, steam producing boilers located in Buildings 28 and 29 contain hazardous materials that would need to be mitigated either by removal or by repairing and maintaining them in place. Hazardous removal procedures would be followed to address the presence of the brick or refractory within the boiler body, the steam drum insulation, gasket materials and lead-based paint chips. The cost for leaving the boilers in place and repairing/maintaining them has been estimated at $50,000–250,000, while the cost to remove and demolish the boilers is estimated at approximately $1,000,000. A more complete description of the boilers is contained in Appendix J.

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4. SITE ASSESSMENT

This section describes some of the key site conditions that could impact decisions regarding building retention and demolition as well as potential infrastructure improvements required to support retained buildings. Additional site information is provided in Section 1, under Site Information.



STORMWATER

For purposes of this assessment report, building demolition has been defined as terminated at the "Main Street level". Given a large portion of the site is currently impervious, building demolition will not significantly add to the demands of the on-site stormwater management system. However, depending on site conditions following demolition of specific buildings, structures with basements could end up collecting water and may require some form of ongoing water removal.

The water quality consultant has evaluated the existing site hydrology after reviewing available site plans, interviewing former facility employees and conducting site visits. An Existing Hydrological Conditions summary has been prepared (see Appendix B). Key findings include:

- Water quality of site discharges is expected to improve compared to prior industrial operations because the site no longer generates process water.
- General runoff can be managed with stormwater source control and treatment. At a minimum, Best Management Practices (BMP's) will be required at the site to satisfy DEQ requirements anticipated for the closure of the existing NPDES stormwater permit. The site includes three tailraces which were likely former natural channels that were later converted to convey water away from a waterwheel or turbine for industrial uses. They have also been used to discharge process water stormwater, and excess river water associated with high flow events. After treatment, runoff can be discharged to the Willamette River via the tailraces or other existing outfalls, assuming tailrace sediment contamination levels are acceptable.
- A water quality vegetative filter strip (VFS) is feasible along the western perimeter of the property where the grade breaks between relatively flat surfaces and the steep slope down to the river. The VFS could be designed to treat sheet flow from the site or flow from several concentrated points.

An interim Stormwater Management Plan (October 2012) details operation BMP's, source control BMP's and stormwater treatment options for the site. The findings of this Plan would be considered in a next phase of site redevelopment evaluation and are not incorporated into this report.

HAZARDOUS ENVIRONMENTAL CONDITIONS

The environmental consultant has prepared an evaluation of potential environmental impacts. This work was conducted outside the scope of this building assessment report and is not incorporated into this report.

WATER RESOURCES / FISH AND WILDLIFE HABITAT

The current habitat conditions at the site include a fragmented system of rocky Willamette River shoreline, tailraces, backwater intake basin and rocky bluff and shallow pool habitat in the area surrounding the clarifier. The following opportunities were identified to improve the existing habitat and water resources on the site:

- Expose and restore the historical Willamette River shoreline and outlets of tailraces
- Provide sustainable stormwater treatment within the Grotto
- Increase intake basin water circulation
- Diversify intake basin habitat
- Establish an upslope vegetated buffer

These enhancements can be pursued in either of the site scenarios with a similar level of impact. A Habitat and Water Resources Opportunities report (October 2012) further details places where the site fish and wildlife habitat and water resources could be enhanced. Prioritizing and integrating these opportunities would be evaluated as part of a site redevelopment strategy.

5. SITE SCENARIOS

This chapter describes the second step of the building evaluation process, which includes the development of two building retention/demolition scenarios to assess the impacts of retaining a fewer or greater number of buildings.

SCENARIO DEVELOPMENT

Based on the building assessments, the consultant team identified the clusters of buildings, structures and site features that provide the greatest opportunity for sustainable design and adaptive reuse. These elements were selected based on their combined historic integrity, building condition, physical layout, access, structural condition and value for supporting adjacent historic structures (Figure 6). They include:

- Category A buildings
- Selected Category B buildings that support key buildings
- Unique site features
- Structures that are recommended for retention as platforms at the Main Street level until a more specific development plan is formed.

The consultant team then developed two site scenarios with the intention of portraying two distinct approaches for building retention.

Site Scenario 1 (Figure 7) retains a core group of buildings that ranked highest in historic value and would be most easily repurposed.

Site Scenario 2 (Figure 8) incorporates groups of buildings of lesser historic and reuse value that surround the key buildings used in Site Scenario 1. Retaining these structures would preserve more of the existing industrial environment and reduce up-front demolition costs.

COMMON FEATURES

Both site scenarios share some common elements and historic, reuse and demolition considerations.

Historic. Both scenarios share the retention of four key buildings , as well as the Oregon City Woolen Mill foundations, to relate the historic industrial uses of the site over the past 150 years. Both scenarios include properties eligible for listing on the National Register of Historic Places, the threshold requirement for access to the 20% investment tax credit for certified rehabilitation activities.

Because both scenarios involve the potential demolition of resources that are considered eligible for listing on the National Register, both scenarios will require, in varying degree, mitigation efforts to be developed by the Partners in coordination with Oregon State Historic Preservation Office. The form of any mitigation will be determined by the level of effect (i.e., the impact to historic resources). Typical mitigation forms include documentation of existing structures, academic study and on- or off-site interpretation. Mitigation may also include incorporating historically-sensitive design into a future use of the property or salvage of key site or building elements and their re-use as part of new projects on the site.

Removal of the majority of Category B buildings was not seen as overly detrimental to the historic character of the project. Balancing the multiple values of the Partners, these buildings were not included in either of the proposed site scenarios.

Reuse. The retained structures are intended to impart a sense of the site's historic development while creating viable market reuse opportunities. It has been assumed that the existing site access and circulation network is acceptable for firefighting purposes.

Demolition/Secure Buildings. To assess the land value impact associated with potential building removal and retention, costs were developed for the following:

- demolish selected buildings, structures and remaining equipment to an elevation level with Main Street
- construct improvements to make retained buildings safe and protect them from further deterioration
- provide ongoing oversight and maintenance to maintain the integrity of structures and minimize issues typically associated with vacant buildings such as break-ins, vandalism, theft and public safety hazards over a period of ten years.

One-time building demolition and retention steps and associated costs are summarized in Appendix K and Appendix L. Costs associated with maintaining the site in a safe and stable condition over a period of 10 years is detailed in Appendix M.

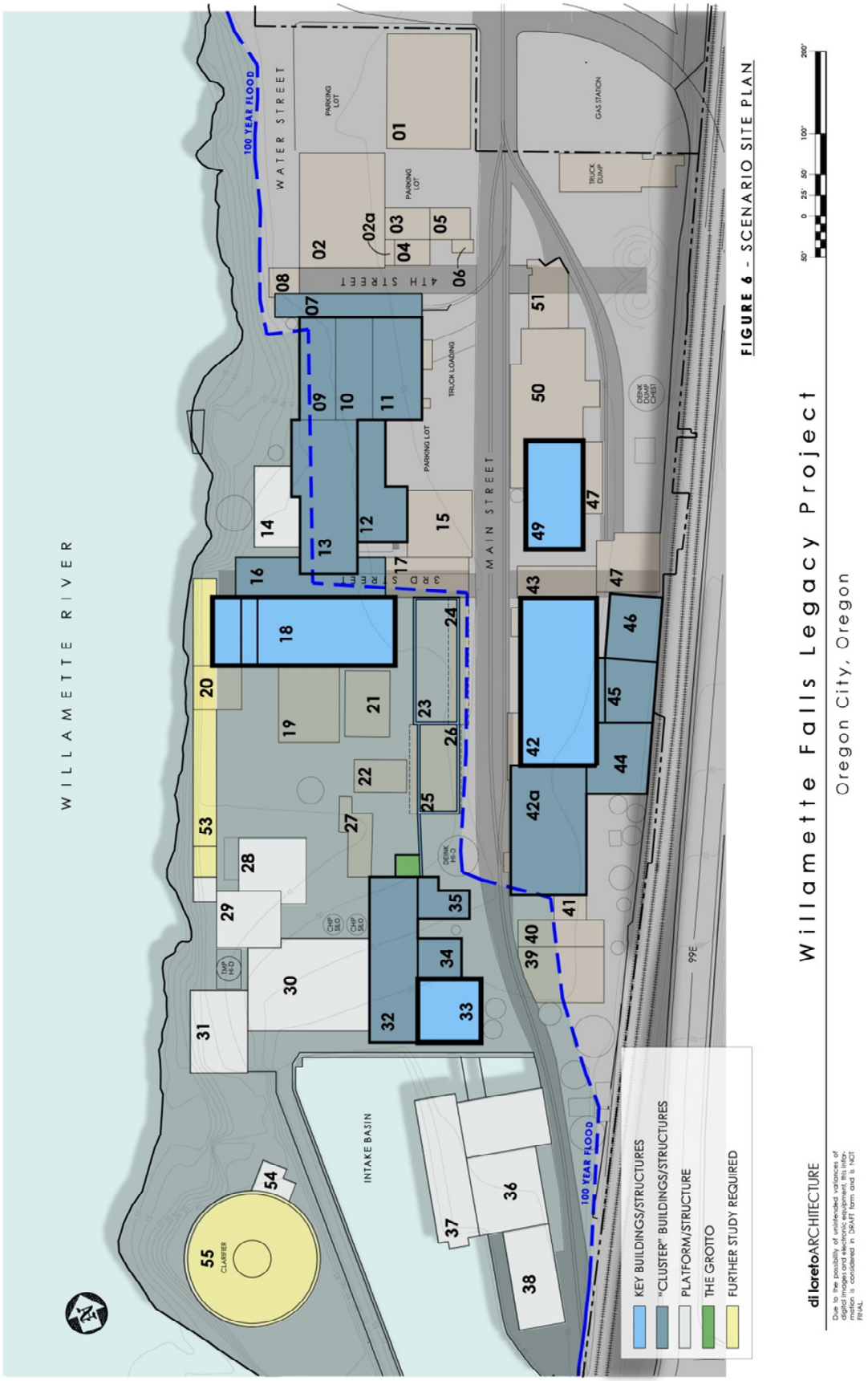
Sustainability. Rehabilitation and restoration of the existing structures whether or not they are historic, reflects environmentally sound and sustainable practice. Retaining existing structures and avoiding unnecessary demolition reduces the volume of material going to the solid waste stream and conserves the embodied energy of the existing structures, reducing energy impact as compared to new construction and use of new materials (see Appendix F).

Through the redevelopment of an area within the city limits that is already served by public infrastructure (sewer, power, and transportation systems) and public safety services, both scenarios promote a sustainable approach to supporting the Partner Values of public access, economic development, habitat restoration and cultural and historic interpretation.

Habitat Enhancement Overlaps. Each of the scenario plans incorporates preliminary findings of potential habitat opportunities on the site. While these are not specific recommendations, they are included in this report for the purpose of generating discussion related to the integration and potential overlap of the varying Partner Values on the site as part of a future site development strategy. Initial enhancement elements with potential to impact building retention and demolition strategies include:

- Historical tailrace locations with possible future daylighting and habitat restoration. Several of these tailraces have been filled in with rock and debris over the years. The ultimate configuration would be informed by further geological and habitat evaluation.
- Upslope vegetative buffer along the eastern boundary of the site to provide water quality and habitat enhancement.
- Shoreline enhancements.

Figure 6: Scenario Site Plan



SCENARIO DESCRIPTIONS

Scenario 1: Key Buildings

Structures Retained (Figure 7):
- Building 18, Mill O (Oregon City Woolen Mill Annex), 1918
- Building 33, Mill 1, (Hawley Building), 1923
- Building 42, No. 4 Paper Machine, 1928
- Building 49, Deinking/Pulper, 1928
- Buildings 23 and 25 Oregon City Woolen Mill Foundations, (1865)

These retained structures include approximately 110,000 gross square feet.

In this scenario, the bare minimum of structures is retained on the site. The four buildings, and the two eligible foundation structures, represent a cross section through time of the site's physical development and have physical characteristics that will facilitate their adaptive reuse into marketable assets. Each building has a relatively straightforward, open floor plan, as well as large and regular exterior openings for natural light, which will make adapting to an array of new uses possible. Finally, each building is structurally independent, which allows for a phased improvement approach that will reduce initial development scope and costs.

Scenario 2: Building Clusters

This scenario adds structures clustered around the key buildings listed in Scenario 1 (Figure 8). Each of the key buildings is a main component of a cluster of lesser quality structures that could serve as support space for the key structure and enhance their reuse potential. These cluster structures could be used for ancillary functions, such as circulation, parking and utilities.

Three basic clusters of structures are proposed that total nearly 230,000 gross square feet.

Cluster 1 (79,000 gross square feet) expands and connects to Mill 'O' (Building 18) and the Oregon City Woolen Mill Foundations (Buildings 23 and 25), to include multiple adjacent buildings identified as historically significant Mill D Warehouse (Building 9), No. 3 Paper Machine (Building 13) and No. 2 Paper Machine (Building 12) plus two non-historic roof structures (Buildings 7 and 16). This expanded area supports future mixed-use development with retail uses in the lower floors and offices/housing in the former Woolen Mill.

Cluster 2 (43,000 gross square feet) is anchored by the Hawley Building Mill No. 1 (Building 33). The attached No 1 Paper Machine (Building 32), Bleach Plant (Building 34) and Rewind (Building 35) provide vertical and horizontal circulation to support the reuse of the iconic Hawley structure.

Cluster 3 (105,000 gross square feet) is centered on the No. 4 Paper Machine Building (Building 42) and includes Mill B DeInk (Building 49), No 4 Paper Machine South Addition (Building 42a) and the three elements of the No. 4 Finishing Room and Warehouse (Buildings 44, 45 and 46). With three multi-story elements, this cluster reinforces the Main Street streetscape and provides a relatively simple adaptive reuse project with substantial floor area for a variety of potential uses.

Other Site Options

While the two scenarios illustrate contrasting approaches to building retention and demolition, additional structures may be determined to be appropriate for retention to achieve the critical mass needed to create a vibrant commercial destination and viable development opportunity.

Several of the Category B buildings, such as Buildings 01 and 37, are viable for reuse based on their current condition but do not support the historic character of the site. Retention and reuse of these buildings may be appropriate on an interim basis.

Figure 7: Scenario 1 Site Plan

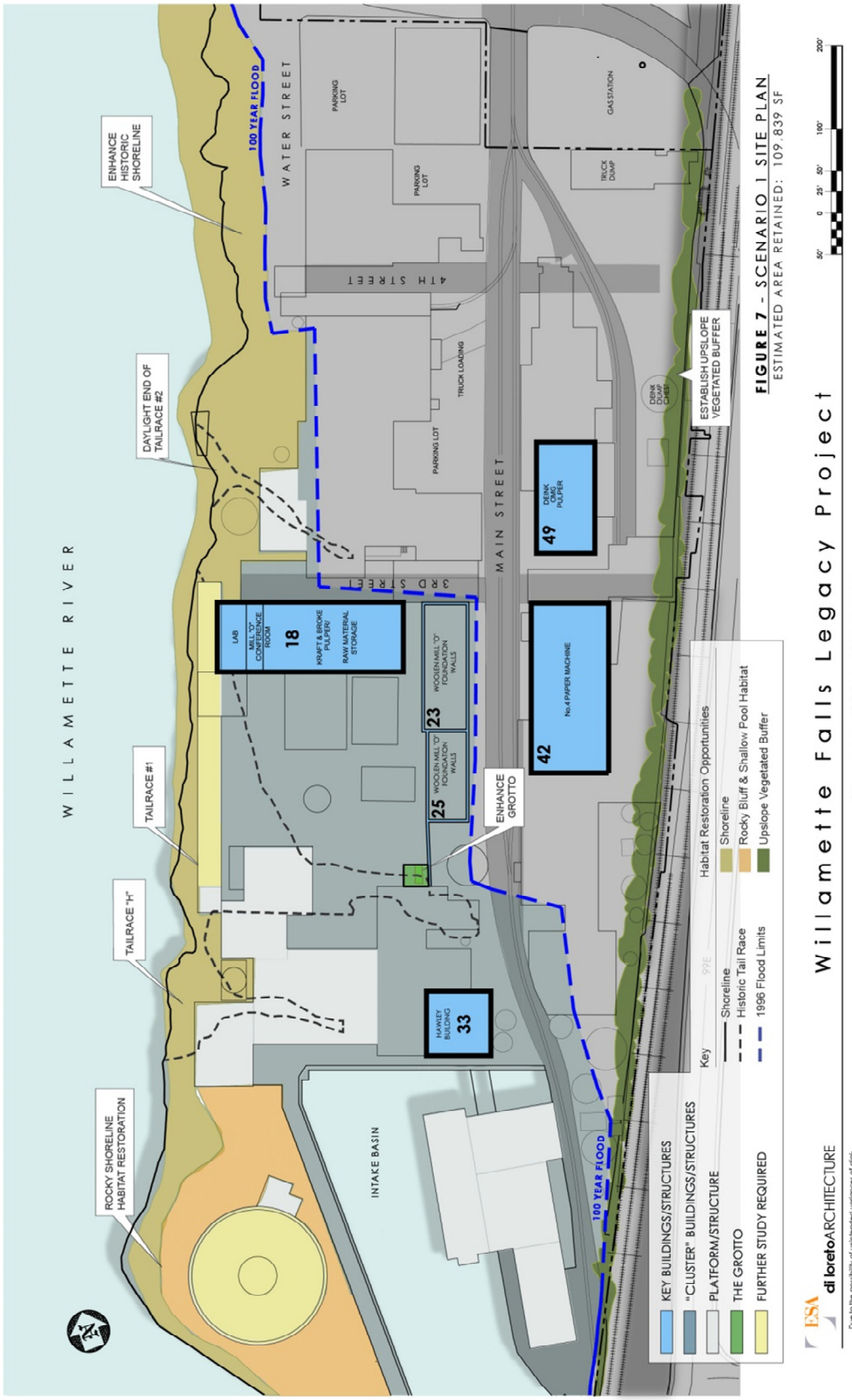
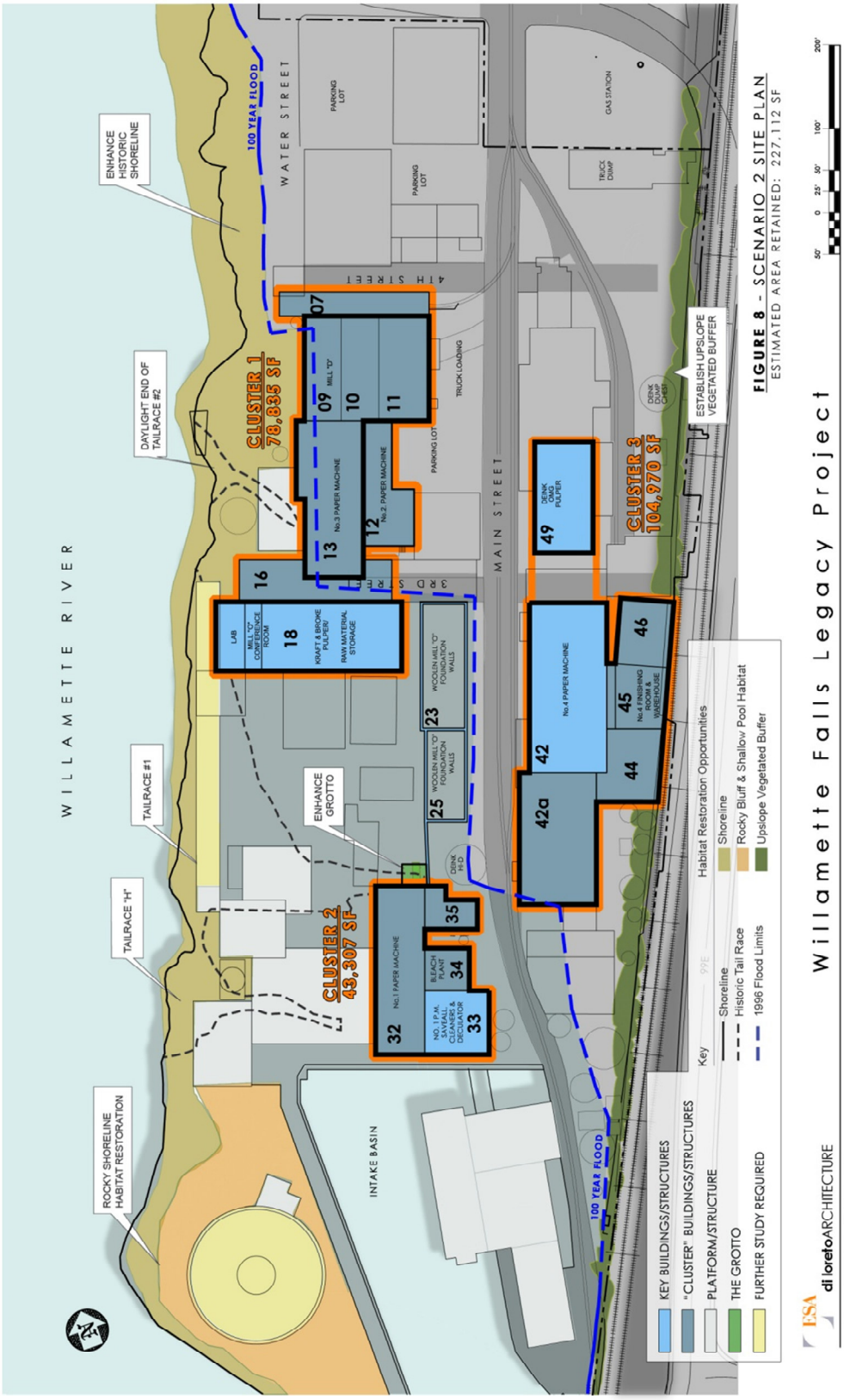


Figure 8: Scenario 2 Site Plan



SCENARIO EVALUATIONS

The following paragraphs describe the contrasting elements inherent in the two site stabilization scenarios. Each attribute could be considered to be beneficial, depending upon the Partners' development goals for the site among public access, economic development, habitat restoration and cultural/historical interpretation.

Scenario 1: Key Buildings

Historic. Scenario 1 retains only a minimum number of key structures, reducing the opportunity to successfully interpret the traditional historic character of the site and possibly limiting the availability of Certified Rehabilitation tax incentives to support adaptive reuse. Even with the retained Woolen Mill foundations, these four isolated key structures, while individually significant, lack context or a meaningful relationship to the historic character of the site.

Reuse. Scenario 1 illustrates the use of key buildings in a minimalist ideal to tell the story of the industrial site. Depending upon the redevelopment priorities for the site, the advantages and challenges of this scenario are that it:

- Provides the greatest amount of land area for new public and private improvements as part of a coordinated development plan.
- Allows for plenty of natural light into each retained structure
- Takes advantage of each retained structure's view of the falls, the city, the river and the hills
- Minimizes the amount of adaptive building reuse
- Allows for phased improvements to minimize initial investment

Demolition. This scenario assumes a greater number of buildings are demolished with associated up-front costs. Demolition costs are proportionally less than a selective building demolition approach required with Scenario 2 given the relatively open area to conduct the work (see Table 1).

Ongoing Security and Maintenance. Should development be delayed for an extended period of time, the large, open site with fewer buildings would provide less exposure to ongoing building security and maintenance costs (see Table 1).

Scenario 2: Building Clusters

Historic. Scenario 2 builds upon the four key buildings of Scenario 1 by retaining adjacent historic and non-historic buildings to create "clusters" of development. This plan retains existing spatial relationships that better convey the industrial history of the site. By retaining multiple historic properties, Scenario 2 also offers greater access to Certified Rehabilitation tax incentives, expanding the availability of the 20% credit for all retained historic structures, not just the four key buildings considered individually eligible for listing on the National Register. This provides added financial support for historically-based adaptive reuse and creative interpretation that can successfully convey the site's history.

Reuse. Scenario 2 retains more of the site's existing built fabric. The potential economic redevelopment benefits and challenges of this scenario are that it:

- Retains more built square footage than Scenario 1, and thereby provides additional adaptive opportunities, and the potential for economies of scale during reconstruction
- Provides ample opportunity for new public and private improvements as part of a coordinated development plan
- Reduces views and natural light into the key structures
- Requires higher initial investment for redevelopment of multiple buildings that make up the cluster

Demolition. Although there are fewer buildings proposed for demolition than in Scenario 1, there is a premium associated with the need to work around retained buildings (see Table 1). This is particularly evident in the cost of removing structures along the waterfront.

Ongoing Security and Maintenance. Retaining a greater number of buildings would presumably require more onsite time to conduct security and building maintenance inspections however it is not anticipated that the difference would be significant (see Table 1).

Comparative Issues

The consultant team identified questions to help guide a comparative evaluation of the proposed site scenarios, or other scenarios that may be considered.

Historic

- To what extent does the scenario retain a connection to the significant visual history of the site?
- To what extent does the scenario support interpretation of the paper-making and industrial processes?
- To what extent does the scenario allow government programs that support rehabilitation?

Reuse

- Does the scenario provide adequate space for a marketable reuse?
- Will the scenario improve the ultimate state of the site or does it require additional or fewer structures to be workable?
- To what extent does the scenario take advantage of existing views and access to both Oregon City and the Willamette River?
- Will the scenario allow for future development?
- Does the scenario allow for a phased improvement?
- To what extent does the scenario promote conservation through "embodied energy"?

Building Retention and Demolition

- What is the trade-off between the up-front building stabilization/demolition costs and the long-term operating costs of the scenarios?

Daylighting/Habitat

- To what extent do the buildings overlap with potential daylighting to historic tailrace boundary?

SCENARIOS COSTS

To better understand the cost implications of the various building demolition and retention options, the Demolition Consultant prepared estimates for the following:

- **One-time costs** to demolish buildings and secure the remaining structures and site. These actions would be pursued in the near term and include isolating hazardous areas, preserving the integrity of the retained buildings and minimizing issues typically associated with abandonment such as break-ins, vandalism, squatting, theft, public safety hazards and extreme deterioration,

- **Ongoing costs** to hold the property over ten years in the "stabilized" condition while project funding and development planning advance. Assumed costs include providing 24-hour, seven days a week security, ensuring fire and life safety standards for vacant buildings are met, repairing damage from a 10-year flood event and maintaining retained structures to prevent further deterioration.

The one-time demolition costs assume the buildings are demolished to the Main Street level as described earlier in this report. First floor slabs, decks, pits and associated basements would remain in place. The demolition cost estimates are based upon visual inspections of the structures, the Demolition Consultant's experience with similarly scaled projects and a reasonable projection of building material salvage values. Until the actual demolition scope of work is detailed and bid, it is recommended that a 30 percent cost and estimating contingency be included to cover unforeseen conditions and potential salvage market volatility.

The following table summarizes demolition and maintenance costs associated with the two site scenarios described earlier in this report as well as a "demolish all" option. For budget management purposes, the Demolition Consultant was asked to prepare detailed costs for "Demolish All" and "Scenario 2" only. "Scenario 1" demolition costs were extrapolated from these two estimates. Costs to secure all buildings and the site area were broken out by type of work including fire and environmental hazards removal, building enclosures, inspections, fencing and other minor modifications.

These numbers are provided for comparative planning purposes and it is recommended that costs be refined once a specific building retention/demolition scenario is identified. A more detailed scope of the assumed demolition work is described in Appendix K and Appendix L and ongoing maintenance cost assumptions are described in Appendix M.

Table 1: Estimated Demolition and Maintenance Costs

	Demolish All	Scenario 1	Scenario 2
One Time Costs			
Demolition Includes personnel, equipment, materials/ salvage, subcontractors, indirect costs and profit. (1) Secure Buildings/Site (2) Estimating/Cost Contingency (30%)			
TOTAL			
Maintenance and Security (10 years)			
Security guards (24/7), building maintenance, inspections, trespassing, environmental, site manager, alarm system, 3% annual inflation, one flood event. (3)			
TOTAL			

(1) *Hazardous soil/materials mitigation and stormwater management system not included*

(2) *Cost estimate (Appendix M) assumed all buildings on site are retained; total cost of $[redacted] Demolish All costs include fencing as primary expense plus miscellaneous site modifications. Scenarios 1 and 2 reflect proportional share of remaining costs for retained buildings.*

(3) *Security guards, site manager and flood repair = 90% of annual costs which is not anticipated to vary significantly among the scenarios.*

6. SUMMARY

The results of this report reflect a two-step, integrated approach to identify the buildings with the greatest potential value for retention. The first step involved evaluating each building based on its historic value, reuse potential and structural condition. The second step was to develop two site scenarios that are used to evaluate different building retention strategies and their associated costs.

KEY OUTCOMES OF BUILDING ASSESSMENT

Site Stabilization Risks. This study provides contrasting options for site stabilization, based on general site-wide and building evaluations of priority structures. The consultant team has identified what are considered to be the major influences in getting the site to a "safe and stable" condition until redevelopment can occur. Given this general level of evaluation, none of these influences were seen to be "fatal flaws" in pursuing redevelopment of the site. Detailed building and site evaluations outside the scope of this study would be required to provide conclusive determinations.

Viable Adaptive Reuse. The industrial heritage of the existing buildings and site present a viable physical framework for adaptive reuse and historic interpretation of selected structures.

Building Removal. While there are no buildings that were considered to be "beyond repair", the majority of structures are not considered to have great adaptive reuse or historic value. These buildings could be considered candidates for removal without compromising the historic and reuse value of the remainder of the site.

Hazardous Materials Removal. The presence of hazardous materials in eight steam-producing boilers on the site warrant further study and are likely to require either mitigation in place or removal. Recommendations regarding asbestos and other hazardous building materials are addressed outside the scope of this study.

Partner Values. The results of this building assessment are intended to serve as a foundation for site acquisition decision-making and do not affect the individual Partner Values identified in the Executive Summary except as noted in the comparisons of the two site scenarios.

STAGE 2 RECOMMENDED ACTIONS

Over the course of the project, the consultant team has identified issues that would be considered appropriate to pursue in the next phase of due diligence prior to closing on the property. These items are included as "big swing" elements that would have a significant impact on the ultimate cost of bringing the site to a safe and stable condition, and which could not be resolved during the course of this study.

Establish a Framework for Site Development

- Pursue a redevelopment strategy for the site that integrates the outcomes of this report with private development perspectives for economic development in new and adapted building investments, public access to Willamette Falls, habitat restoration and cultural and historic interpretation.
- Create an infrastructure improvement and finance plan that integrates near- and long-term investments for fire/life safety needs, stormwater management, hazardous material mitigation, power, sanitary sewer, transportation, water service and parks.
- Establish organizational structure to manage site development based upon the identified Site Development Framework

Refine Potential "Fatal Flaws" Information

- Integrate regulatory considerations such as flood plain development, Army Corps of Engineers, DEQ stormwater discharge, FERC relicensing and historical/cultural impacts related to building retention/demolition.
- Secure a complete title report and survey noting all site development constraints.
- Conduct a hydrology study to identify specific impacts of the flood plain, site contours and

how the city of Oregon City will evaluate future redevelopment in these areas.
- Integrate findings and recommendations of the environmental (Blue Heron Phase II Technical Memo prepared by ERM) , survey and interim stormwater improvements with the outcomes of this report.

Target Priority Site Stabilization Actions
- Conduct structural testing of buildings to be retained.
- Prepare demolition plans and specifications to allow initial building removal work to proceed.
- Prepare an archaeology evaluation to identify opportunities for historic interpretation.
- Pursue due diligence/site preparation steps identified through refined environmental, regulatory, historic and hydrology studies.

APPENDICES

APPENDIX A
BUILDINGS SUMMARY

Willamette Falls Legacy Project
Buildings Summary

Building ID #	Building / Group Name	Building Area / Zone	Date of Construction	National Register Status (A)	Within Floodplain	Comments
1	Blue Heron Paper Office Building (Post Office)	Entire Building	1932/1970	UN	No	1960's Renovation of historic post office. No historic fabric remains intact. 2-story with partial basement. Concrete, steel and wood.
2	Water Filtration Plant	Filter Plant	1953	ES	No	Multi-story, pump room and multiple open air basins. Concrete and steel.
2A	Water Filtration Plant	Stair / Elevator Tower	1953		No	Multi-story, steel stair and elevator. Concrete and steel.
3	Water Filtration Plant	Control Tower	1953		No	Multi-story, 2 mixing basins and control room. Concrete and steel
4	Fire Station	One Story Addition - South	1955	NP	No	1 story, CMU / wood
5	Office	Restroom Addition - East	1953	NP	No	1 story, CMU / wood
6	Guard Shack	Entire Building	1953	NC	No	1 story, modular wood frame
7	Mill "D' - North Train Siding on 4th Street	Entire Structure	1947	ES	No	Open roof structure attached to Mill 'D' Warehouse. Steel frame
8	Mill 'D' - Metal Roof west end of 4th St	Entire Structure	TBD		No	Open roof structure. Steel frame
9	Mill "D' Warehouse	No. 3 Warehouse	1910 - 1916		Partially	1 story with multiple basements. Concrete, steel
10	Mill "D' Warehouse	No. 3 Finishing	1910 - 1916		No	1 story with full basement. Concrete, steel, wood
11	Mill "D' Warehouse	No. 2 Finishing	1925		No	1 story with full basement. Concrete, steel, wood
12	No. 2 Paper Machine	Entire Building	1910	ES	No	2 story with multiple basements. Damaged by Fire, Floor Mill foundations pre 1888, + Drive shaft and fly wheels in sub-basement
13	No. 3 Paper Machine	Main Building	1913	ES	Partially	1 story with multiple basements. Concrete, steel
14	No. 3 Paper Machine	West Additions	Post 1962, Post 1972		Partially	2 story on raised structure. Concrete, steel, wood
15	Butler Building east of No. 2 Paper Machine	Entire Building	1970's	NC	No	1 story, built over pipe chase. Steel pre-fab structure
16	Roof Structure over 3rd Street Access	West	Post 1972	NP	Partially	Open roof structure. Steel
17	Roof Structure over 3rd Street Access	East	Post 1962	NP	Partially	Open roof structure. Steel
18	Mill 'O'	Mill 'O'	1918	ES	Yes	Concrete exterior walls with heavy timber framing, multi-story with partial basement
19	Carpentry Shop	Entire Building	Pre 1911	ES	Yes	2 story. Heavy timber frame, translite siding
20	Pipe Shop	Entire Building	1960's	NC	Yes	1 story. Steel pre-fab structure
21	Millwright Shop	Entire Building	1960's	NC	Yes	1 story + mezzanine. Steel pre-fab structure, partial CMU interior walls
22	Auto Shop	Entire Building	Mid 1950s	NC	Yes	1 story. Concrete exterior walls, steel frame

(A) ES = Eligible Significant
NC = Not Eligible/Non-Contributing
NP = Not Eligible/Out of Period
UN = Undetermined/Lack of Info

Willamette Falls Legacy Project
Buildings Summary

Building ID #	Building / Group Name	Building Area / Zone	Date of Construction	National Register Status (A)	Within Floodplain	Comments
23	North Woolen Mill Stone Walls and Foundations	North	Pre 1888	ES	Yes	Basalt masonry walls
24	North Woolen Mill Stone Walls and Foundations	Partial Roof Covering	Post 1977	NP	Yes	Open roof structure / 1/2 bay. Steel pre-fab structure
25	South Woolen Mill Stone Walls and Foundations	South	Pre 1892	ES	Yes	Basalt masonry walls
26	South Woolen Mill Stone Walls and Foundations	Roof Covering	Post 1977	NP	Yes	Open roof structure. Steel pre-fab structure
27	South Substation	South Substation	Post 1962	NC	Yes	1 story with raised transformer platforms. Concrete
28	Mill 'G'	Recovery Boiler	1950's	ES	Yes	Multi-story with multiple basements. Concrete, steel
29	Mill 'G'	Boiler Plant	1949	ES	Yes	Multi-story with multiple basements. Concrete, steel
30	Mill 'H'	Deink / THP Area	1950's	NP	Yes	Multi-story with full basement on raised structure, connected to sea wall. Concrete, steel
31	Mill 'H'	THP Reject Refining	1970-1979	NP	Yes	Multi-story with full basement on raised structure, connected to sea wall. Concrete, steel
32	No. 1 Paper Machine	West Hawley	1917	ES	Yes	1 story with full basement, connected to sea wall. Concrete, steel, wood
33	No. 1 Paper Machine	4 Story Hawley	1917	ES	Yes	4 story with full basement, connected to sea wall. Concrete, steel, wood
34	No. 1 Paper Machine	Bleach Plant	1960		Yes	Multi-story with partial basement. Concrete, steel
35	No. 1 Paper Machine	Rewind +	1962		Yes	1 story with full basement. Concrete, steel, wood
36	Mill 'E'	Main Building	1945	NC	Yes	Multi-story on raised base. Located within intake basin. Concrete, steel, wood
37	Mill 'E'	West Addition	1944-45; 1970's	NC	Yes	Multi-story on raised base. Located within intake basin. Concrete, steel, wood
38	Mill 'E'	Weld Shop	1970's	NC	Yes	1 story. Steel pre-fab structure
39	Sulphite Plant	Entire Building	1956	ES	No	Multi-story with full basement. Concrete, steel, Translite siding
40	Digesters	Entire Building	1890 / 1910	ES	No	4 story access walkway, wood chip connivance loft and partial basement. Steel frame with Translite siding.
41	Save All	Entire Building	Post 1972	NP	No	Steel frame structure supported on tile tank
42A	No. 4 Paper Machine	South Addition	1923	ES	No	Multi-story with full basement. Pre 1928 Building replaced after Main Building was completed. Addition extends over Main Building.
42	No. 4 Paper Machine	Main Building	1928		No	Multi-story with full basement. Concrete, steel.
43	No. 4 Paper Machine	North Addition	Post 1972		NO	Multi-story with full basement. Concrete, steel.

(A) ES = Eligible Significant
NC = Not Eligible/Non-Contributing
NP = Not Eligible/Out of Period
UN = Undetermined/Lack of Info

Willamette Falls Legacy Project
Buildings Summary

Building ID #	Building / Group Name	Building Area / Zone	Date of Construction	National Register Status (A)	Within Floodplain	Comments
44	No. 4 Finishing Room / Warehouse	South Addition	1928	ES	No	Multi-story. Structurally integrated with rail line. Concrete, steel
45	No. 4 Finishing Room / Warehouse	Central	1911	ES	No	Multi-story. Structurally integrated with rail line. Wood Frame
46	No. 4 Finishing Room / Warehouse	North	Pre-1925	ES	No	Multi-story. Structurally integrated with rail line. Wood Frame
47	No. 4 Finishing Room / Warehouse	Shipping Shed	1977	ES	No	1 story open structure. Steel pre-fab structure
48	North Substation	Entire Structure	1927	NC	No	Multi-story steel support frame
49	Mill 'B' - Deink	Entire Building	1927	ES	No	Multi-story. Concrete, steel
50	Deink ONP Repulper	Central	1953	NC	No	1 story. Concrete, steel
51	Deink ONP Repulper	North	1960's	NC	No	1 story. Concrete, steel
52	PGE Dam Structure	Entire Structure	1943, prior	ES	Yes	Concrete
53	Pipe Chase Cistern	Entire Structure	1967	NP	Yes	Concrete
54	Clarifier Control Structure	Entire Structure	1967	NP	Yes	Multi-story. Concrete, steel
55	Clarifier	Entire Structure	1967	NP	Yes	Open concrete tank on basalt bedrock terrace
56	Sulphite Sphere / Tank	Entire Structure	Post 1947	NC	Yes	Riveted steel spherical tank on steel support structure
57	Multiple Tile Tanks	Entire Structure	Varies	NC/NP	Varies	Tile containment tanks for paper making processes.

(A) ES = Eligible Significant
NC = Not Eligible/Non-Contributing
NP = Not Eligible/Out of Period
UN = Undetermined/Lack of Info

APPENDIX B
EXISTING HYDROLOGICAL CONDITIONS

WILLAMETTE FALLS LEGACY PROJECT

Existing Hydrological Conditions

Prepared for
Metro
Regional Services

August, 2012



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APPENDIX A: Figures

Overview

The Blue Heron Mill Site is a 23-acre industrial site located on the right bank (east side) of the Willamette River at Willamette Falls, Oregon City Oregon. Industrial uses on the site dating back to the 1830s include a flour mill, sawmill, brick production, and a woolen mill. Around 1900, the site was used primarily for the water and power industry (Geffel, 2012). Following 1909, the site was converted primarily to the pulp and paper industry which remained in effect for over 100 years. Industrial uses of the site ended in February 2009 when the Blue Heron Paper Company closed. Currently active salvage operations are being conducted at the site.

This site includes a highly complex intake, distribution, and discharge system that has evolved considerably over time. In general, the Willamette River has been the primary source of water supply and was used in a variety of industrial processes throughout the site. Prior to 1995, the process water used for industrial purposes, stormwater, and excess river water associated with high flow events was discharged directly back to the Willamette River via three tailraces located on the site (Figure 1). In 1995, a collection and treatment system was installed to treat both process water and stormwater together prior to discharge.

Metro is in the process of evaluating this site for purchase and redevelopment. As part of this evaluation process it is important to understand the existing drainage system on the site; potential liabilities related to stormwater management, and potential opportunities to provide regional stormwater treatment on the site. It is also important to understand how the site and drainage systems relate to the 100-yr flood elevation and historic flood events. This technical memorandum is intended to map and describe the existing on-site drainage and treatment systems to support this evaluation process. Specifically this technical memorandum maps the NPDES outfalls for the site and describes the relationship between the tailraces and the water intake and collection system. In addition, off-site sub-basins that direct flow onto the site will be characterized in terms of peak flows that must be conveyed across the site as well as potential areas that could be treated with regional stormwater facilities.

Methods

Existing conditions on the site were characterized using a variety of historic maps of the site; anecdotal information from prior employees, and a site visit conducted on May 14, 2012. Drainage basins contributing flow to the site were delineated using topographic and stormwater drainage information provided by Oregon City in GIS format.

Land-use in the contributing basins was calculated using GIS (NOAA, 2006). Peak runoff rates generated on the site and the volume of water requiring treatment were estimated using the methods in the Oregon City Storm Water and Grading Design Manual (Oregon City 1999). These estimated volumes requiring treatment are likely to slightly increase under new stormwater management guidelines and will be updated once the draft Oregon City treatment standards are made available. The peak flows to be conveyed across the site were calculated using the SCS TR55 method (Oregon City 1999; USDA, 1986).

Existing Site Conditions

On-Site Water Systems

Although the Blue Heron Site is no longer used for industrial purposes, discharges from the site are still covered under an Industrial NPDES permit. This permit regulates discharges at five permitted outfalls (DEQ, 2011). Outfall 001 is the main outfall for the site that in recent history included all the industrial process water as as well

as the onsite stormwater collected in the clarifier tank (Figure 1). Outfall 002 is directly connected to the filtration plant and primarily discharged backwash water created during maintenance procedures for the site when it was in operation. Outfalls 003, 004, and 005 represent the three historic tailraces (Photograph 1).



Photo 1. Mill H Tailrace Outfall (05/14/2012).

Water management on the site is complex largely due to the long history of evolving operations at the site. The site includes intake facilities, a distribution system, and a discharge system. Water has been used for a variety of functions during the many different industrial operations conducted at the site and methods of discharge have also changed over time. Some of the features observed on the site are relics of earlier industrial uses and there are many cross connections in the water system. Due to the complex nature of the site there may be areas that do not function as originally designed. Water supply for operations of the industrial processes at the site was obtained from the river through four intakes located along the southern (upstream) end of the site at the dam of the embayment or lagoon (Figures 1 and 2, see description below). On the site, water is currently collected in the tailraces as well as a private storm sewer system that connects to two onsite pump stations (Figure 3). All the onsite water is collected and ultimately directed to a pipe tunnel located along the shoreline and is then sent to the clarifier prior to discharge through Outfall 001. For this discussion, the site has been organized into three main systems (1) Willamette River Water Intake; (2) Process Water, Floor, and Street Drains Collection; and (3) direct discharges; these are summarized on Figures 2 and 3.

Willamette River Water Intake

- Intake No. 1 – Intake piped directly to Pump Station No. 1 Intake No. 2 – River Water by-pass connected to Mill H Tailrace
- Intake No. 3 - Intake for Filter Plant and Paper Machine No. 1
- Intake No. 4 – Intake for Paper Machine No. 3, No. 4, Mill C, and Mill H
- Tailrace No. 1 – historic connection has been abandoned but water is collected and sent to pipe tunnel
- Tailrace No. 2 – historic connection has been abandoned but water is collected and sent to pipe tunnel
- Mill H Tailrace – historic connection has been abandoned but water is collected and sent to pipe tunnel

Process Water, Floor and Street Drains Collection

- Pump Station No. 1
    - South Line
    - North Line
- Pump Station No. 2
    - Third Street Line

Direct Discharge

- Downspouts
- Uncollected sheet flow

Willamette River Water Intake

Water from the Willamette River is impounded in an embayment upstream of the site on the right bank of the Willamette River. There is an intake system that screens river water. When the site was operating, river water was then routed to one of three pipe systems (Intakes No. 2, 3, and 4). In addition, an unscreened intake system, Intake No. 1, was used to route water directly to Pump Station No. 1 and was likely used to dilute some of the process water.

Intake No. 2 is a by-pass intake associated with the Mill H Tailrace. In 1925 paper mill buildings were constructed over this tailrace, which now flows underneath much of Mill H (Geffel 2012). Based on observations made in the field, water in this tailrace was likely historically used to turn a waterwheel to run some of the machinery associated with the former Woolen Mill. Intake No. 3 primarily routed water to the Filter Plant, Paper Machine No. 1 and Mill E Refiners. This system was installed during the 1960s when higher quality paper was produced at the site. Intake No. 4 routed water to most of the remainder of the site; the water was filtered prior to use, but did not receive any other treatment.

Tailraces No. 1 and No. 2 were in use around the turn of the 19th century, likely for power generation, water supply, waste discharge, as well as possibly supply of raw materials. The area of the site referred to as the Grotto was likely associated with Tailrace No. 1 during this period of time and abandoned after 1925. Tailrace No. 1 was also covered by construction of paper mills in 1925 (Geffel 2012). These Tailraces were used for direct discharge of process and stormwater from the site up until 1995. After 1995 the Clarifier Tank and treatment system were installed to treat process water and stormwater prior to discharge and Tailraces No. 1 and 2 were dammed near the river. Currently, this system is still used to treat stormwater runoff collected on the site. Tailrace H remains in use as an overflow system during high flow events.

Process Water, Floor and Street Drains Collection

During operation of the site, water from the Willamette River was either filtered or treated and then used on site for a variety of industrial processes associated with making paper. Process water was then collected in one of three systems: Pump Station No. 1 South Line, Pump Station No. 1 North Line and Pump Station No. 2 Line. These systems also collected water in various floor drains, sumps, and street drains and routed this water to either Pump Station No. 1 or 2 (Photograph 2).

The pumps would then pump water to the pipe tunnel before being transferred to the clarifier tank, and then to an off-site treatment lagoon associated with NPDES Outfall No. 1 located upstream of the site and on the other side of the river. As discussed in the previous sections, process water is no longer generated at the site. However, water from street drains is still collected and routed to the pump stations. Based on observations made during the site investigation, it is unclear if the sump drains are in operation.

Direct Discharge

In addition to the collection system, some runoff from the site directly discharges to the Willamette River. Based on field observations, roof runoff from some of the buildings directly adjacent to the river or constructed on piles is collected in downspouts that outfall directly to the river. In addition, some of the undeveloped areas near the clarifier tank and along the river sheet flow directly to the Willamette River (Photographs 3 and 4). There may also be other areas that through alterations, demolition, or other unauthorized changes, are not captured by the existing system.

Site Land Use

The Blue Heron Site covers approximately 23 acres. Because active salvage activities on the site affect the type and location of pollutants in stormwater, land-use for this analysis was characterized assuming salvage activities were complete. For the purposes of this analysis, land use on the site was assumed to be entirely impervious surface.

Although roofs were considered non-PGIS (pollutant generating impervious surfaces), several studies have demonstrated that metal roofs (and siding) can be a source of metals (Portland 2006; Ecology 2006, 2008). Based on field observations of the buildings located on the site following demolition activities, it is likely that some or all of these buildings would be a potential source of metals (Photograph 4). Under current conditions runoff from roofs, roads, and parking areas is all mixed before discharge.

Existing Stormwater Treatment BMPs

During operation of the site, the filter plant, the clarifier tank and an offsite treatment system treated most of the stormwater runoff from the site. Stormwater runoff is currently collected in the on-site storm sewer system and pumped to the clarifier tank or allowed to flow directly to the Willamette River. Other than the clarifier tank and off-site treatment system, the site does not currently have any stormwater management treatment best management practices (BMPs).



Photo 2. Slot Drain System (05/14/2012).



Photo 3. Tight lined Downspout (05/14/2012)



Photo 4. Metal Siding and Roof (05/14/2012).

On-site Flooding

Based on a site visit, the intake system no longer regularly intakes water for use on the site and very little water from the Willamette River flows through the site. Most of the river is bypassed except during high flood events. The southern portion of the site is mapped within the 100-year floodplain of the Willamette River and roughly half of the southern portion of the site was inundated during the 1996 flood event (see Figure 1).

Stormwater Management

On-Site Water Quality Treatment

As discussed in the previous section, treatment is currently provided by an offsite treatment system. However, this site will not be available in the near future because it is being purchased for habitat restoration. An alternate form of stormwater management will need to be provided to replace the current treatment system once it is taken offline. Therefore, on-site stormwater facilities were conceptually sized to ensure they are feasible at the site and could be implemented by Metro until such time as the site is redeveloped. During industrial operation of the site, water discharged likely contained organic pollutants such as PCBs (Polychlorinated Byphenyl), PAHs (Poly Aromatic Hydrocarbons), SVOCs (Semi Volatile Organic Compounds), COCs (Colloidal Organic Carbon), Dioxins/Furans (PCDDs/Fs) associated with industrial uses (Geffel 2012). Although the site is no longer generating many of these pollutants, runoff is still likely a source of metals, sediments and other pollutants associated with urban land-uses as well as any residual contaminants that remain on the site. Urban runoff is

generally regulated under municipal NPDES permits which require treatment of stormwater runoff with BMPs prior to discharge.

The entire site is largely impervious; considering the underlying bedrock, areas exposed through demolition would still be considered impervious. It was assumed that stormwater runoff from the entire site would be collected and routed to stormwater treatment facilities on the site. Based on this analysis a total volume of approximately 66,000 cubic feet of stormwater runoff would need to be treated prior to discharge from the site (Table 1).

Table 1. On-Site Stormwater Runoff

Return Frequency	Precipitation (inches)	Peak Flow (cfs)	Volume (cuft)
Pwq	--	--	65,962
2-yr	2.6	13.7	197,886
10-yr	3.4	18.3	264,395
50-yr	4.4	24.1	347,671
100-yr	4.5	24.6	356,004

1. Assumes treatment required for 30% of the 2-yr 24 hour runoff volume for PGIS (Oregon City 1999).

Stormwater treatment facilities will be required to meet the Oregon City Storm Water and Grading Design Manual (1999). These design guidelines were used to conceptually size stormwater treatment facilities for the site. Either a rain garden approximately 200 feet by 200 ft by 4 feet deep or a wet pond 100-ft by 160-ft by 4 ft deep would be adequate to provide stormwater treatment for the site. It may be preferable to build a few separate facilities along existing drainage pathways rather than pumping to a single facility. It is likely that runoff from the site collects in several low areas prior to discharge to the Willamette River. Additional topographic information will be needed to determine if runoff could be treated by one or more facilities located throughout the site

In addition to traditional water quality treatment, it is recommended that roof runoff from any remaining buildings with exposed metal surfaces should be tested; if concentrations of metals, particularly zinc exceed the discharge requirements then these surfaces should be removed, painted or have additional treatment BMPs installed.

Off-Site Stormwater

In addition to site runoff, five stormwater outfalls associated with the City's stormwater infrastructure (Outfall A, B, C, D, and E) have been mapped in the vicinity of the site (see Figure 1). Table 2 summarizes each contributing basin and estimated land use associated with each sub-basin.

Table 2. Off-Site Sub-Basins

Sub-Basin	Area (acres)	% TIA[1]	TIA (acres)	Curve Number[2]
Off-site A	122.8	36	44.2	
Off-site B	3.7	36	1.3	87
Off-site C	7.1	50	3.6	91
Off-site D	5.7	74	4.2	93
Off-site E	7.0	85	6.0	95

1. NOAA CCAP 2006
2. NRCS 2012

During the May 2012 site visit, several observations were made that suggest that the city stormwater utility maps are incorrect and require additional field investigation. Outfall A was located in the field, but the lower portion of the outfall, from the shoreline waterward is damaged, likely during the 1996 flood event. Outfall B could not be located, it is likely that runoff from this system is routed down McLoughlin Blvd to Sub-basin C. The pipe conveying flow from Sub-basin C across the site to the Willamette River outfall was located in the field; however, a field inspection and dye test of this pipe indicated that midway through the site flow is directed north to the sanitary sewer system through a weir structure (Figure 1). During high flows, runoff spills over this weir and discharges to the river at Outfall C. A further evaluation of this line is currently being conducted by Oregon City Public Works to determine the location of additional manholes and the size of the contributing basin. Outfalls D and E were not located during the field investigation. Catch basins on the site in the vicinity of Outfalls D and E were dry and partially full of sediment (Photograph 5).

Stormwater runoff from each off-site sub-basin was calculated using the SCS methods described in the previous section. Peak flows are summarized in Table 3; however it is likely that under current conditions little or none of this flow enters the site.

Table 3. Off-Site Peak Flow Rates

Sub-Basin	Peak Flow Rate (cfs)				
	Sub-Basin A	**Sub-Basin B**	**Sub-Basin C**	**Sub-Basin D**	**Sub-Basin E**
2-yr		1.3	3.0	2.7	3.6
10-yr		1.9	4.4	3.8	5.0
50-yr		2.8	6.1	5.2	6.7
100-yr		2.9	6.2	5.3	6.9



Photo 5. Catch Basin; vicinity of Outfalls D and E (05/14/2012).

Conclusions

While the site evaluation provided additional understanding of the stormwater and process water systems at the site, additional investigation is needed to definitively characterize the system. The age of the system and the number of historical modifications has resulted in a complex system with widely varying components.

Based on this evaluation of existing conditions, water quality of site discharges is expected to improve compared to discharges that occurred during industrial operation of the site because the site no longer generates process water. In general stormwater runoff from the site will be characteristic of urban stormwater runoff and could be managed with stormwater quality BMPS that are incorporated into the site. After treatment, runoff can be discharge to the Willamette River via the tailraces or other existing outfalls. However, the level of contamination of sediment on the site is unknown and should be evaluated prior to final design of stormwater management techniques, to determine if additional management measures may be needed.

In addition, off-site stormwater systems and cross connections with the sanitary sewer system should be verified prior to design of stormwater systems on the site. It is likely that portions of off-site runoff can be treated on the site prior to discharge to the Willamette River. Specifically, Outfall A has a significant amount of head and could be modified to convey flow to a treatment facility located on the footprint of the abandoned portion of the existing road and the discharged to the Willamette River. Potential opportunities to provide regional stormwater treatment facilities may also exist for portions of sub-basins B, C, D, and E.

References

BCD (By Carrier Design). 1993a. Sewer Layout, General Routing, Mill Locations. Drawing Number D-7492. Prepared for Smurfit Newsprint Corporation. November 16, 1992.

BCD (By Carrier Design). 1993b. Water Rights Determination, Current Process Water Usage Diagram. Drawing Number D-7517-1. Prepared for Smurfit Newsprint Corporation. November 16, 1992.

DEQ (Oregon State Department of Environmental Quality). 2011. NPDES Permit No. 102229; File Number 72634. Blue Heron Paper Company.

Ecology (Washington State Department of Ecology). 2006. A survey of zinc concentrations in industrial stormwater runoff. Prepared by Toxic Studies Unit, Watershed Ecology Section, Environmental Assessment Program. Publication Number 06-03-009. January 2006.

Ecology (Washington State Department of Ecology). 2008. Suggested practices to reduce zinc concentrations in industrial stormwater discharges. Prepared by Toxic Studies Unit, Watershed Ecology Section, Environmental Assessment Program. Publication Number 08-10-025. June 2008.

Geffel, M. 2012. Print's not dead: Legacy of contamination and landscape infrastructure @ Blue Heron Paper Company. Prepared for Metro Natural Areas Acquisitions. May 15, 2012.

NOAA (National Oceanic and Atmospheric Administration). 2006. Coastal Change Analysis Program (C-CAP) Land Cover and Change Data.

NRCS (National Resource Conservation Service). 2012. Soil Map Clackamas County Area, Oregon. WEB soil survey accessed May 1, 2012.

Oregon City (City of Oregon City, Oregon). 1999. Public Works: Stormwater and Grading Design Standards. Prepared by Oregon City Community Development Department; Engineering Division. Effective December 17, 1999.

Oregon City (City of Oregon City, Oregon) and Metro (Metro Regional Services). 2011. Confidential Site Assessment of Blue Heron Paper Mill Property. Prepared by AKS Engineering and Forestry LLC. November 30, 2011.

Portland (City of Portland, Oregon). 2006. Non Structural Stormwater BMP Assessment. Portland Bureau of Environmental Services. Prepared by Herrera Environmental Consultants. May 2006.

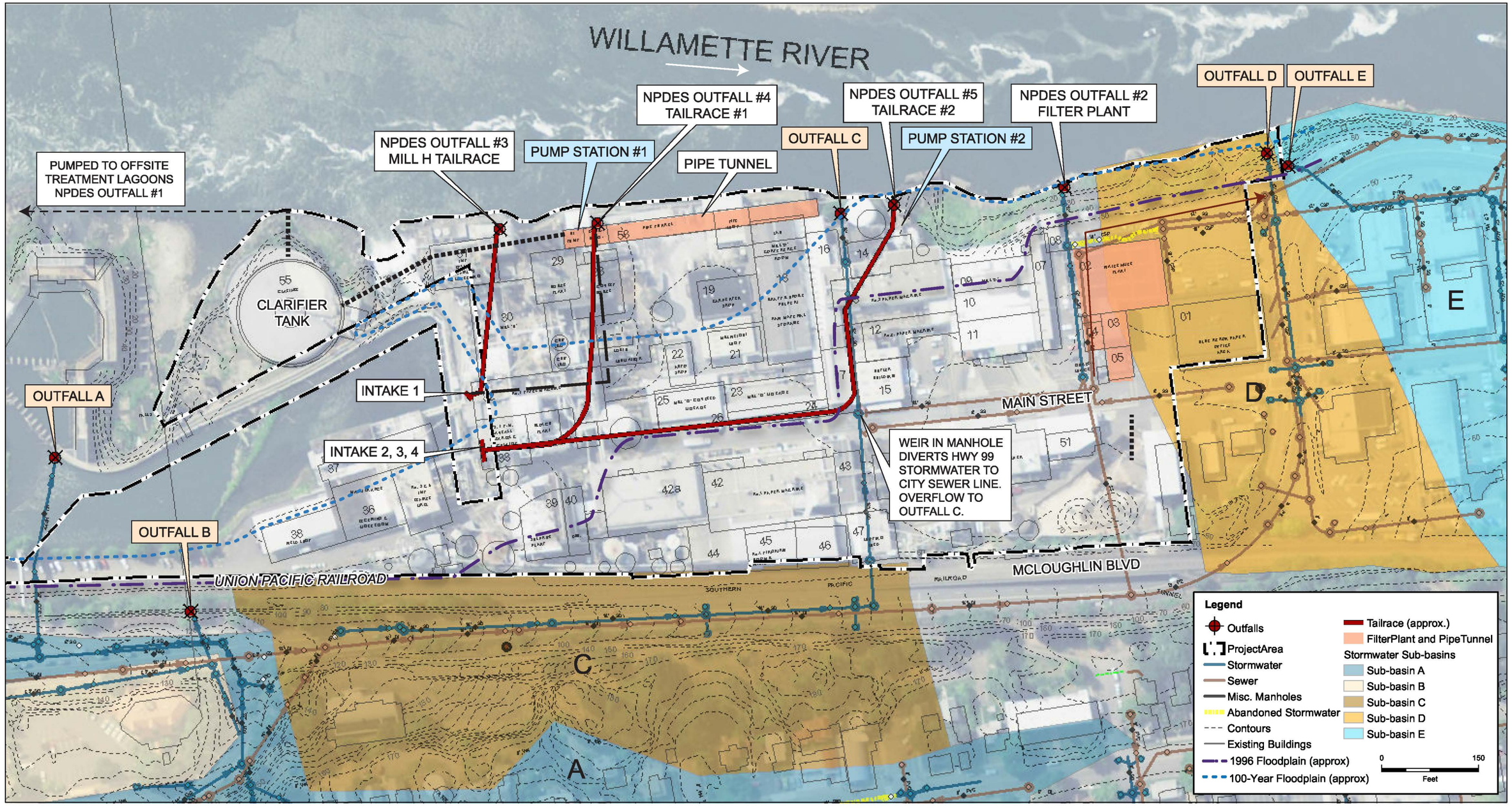
USDA (United States Department of Agriculture). 1986. Urban Hydrology for small watersheds, Technical Report (TR) 55. USDA Natural Resource Conservation Service and Conservation Engineering Division. June 1986.

Appendix A: Figures

Figure 1. Existing Conditions Site Map

Figure 2. Water Management Block Diagram

Figure 3. Storm Sewer Layout



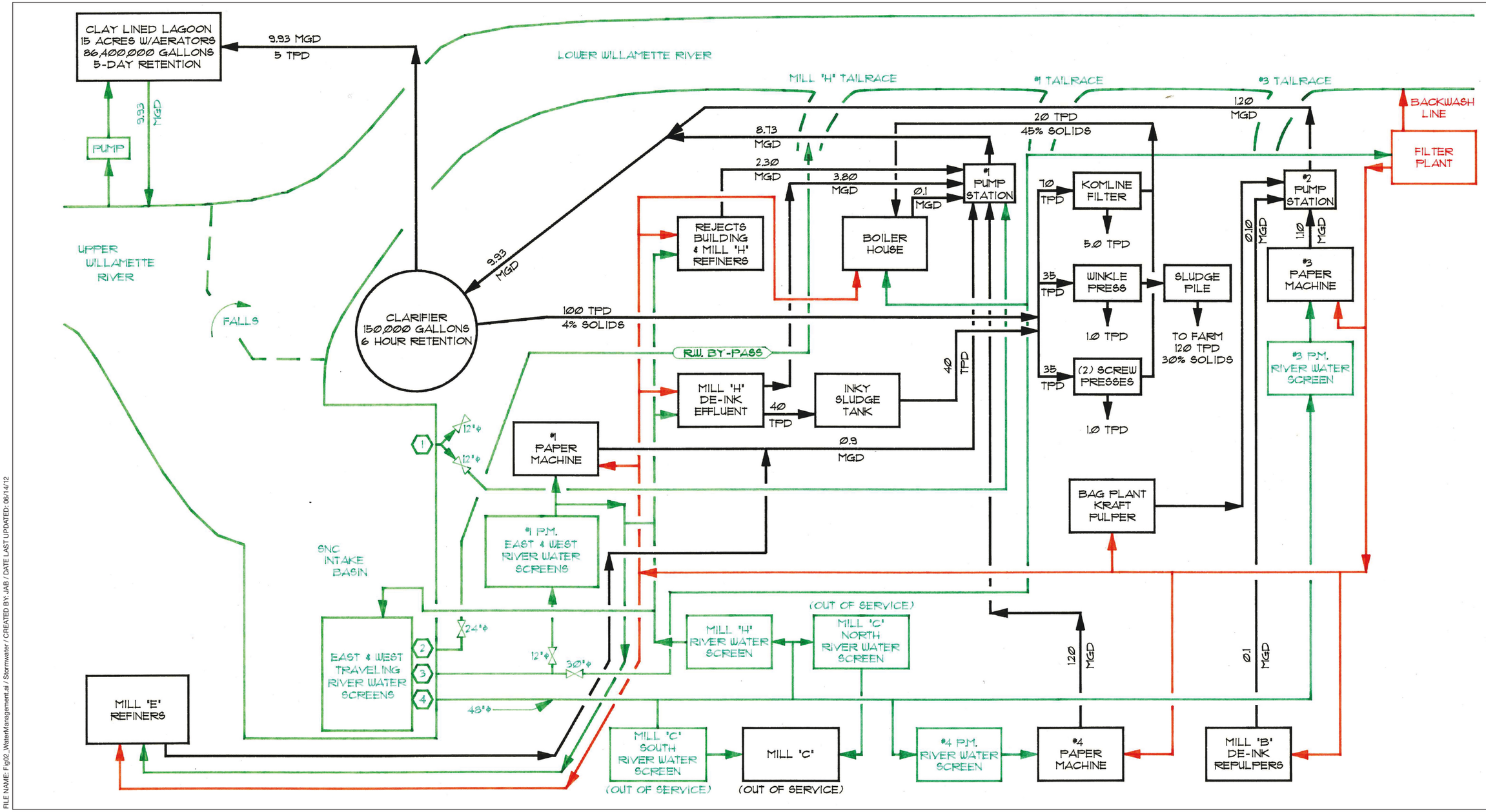
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SOURCE: Metro, 2012; ESA, 2012
Service Layer Credits: Copyright: ©2012 Esri, DeLorme, NAVTEQ
Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Map data shown here are approximate and reflect the best available data at the time of publication. Inaccuracies may exist, and ESA implies no warranties or guarantees regarding any aspect of data depiction.

Blue Heron Mill . 207018.04

Figure 1
Blue Heron Mill Stormwater Existing Conditions
Oregon City, Oregon



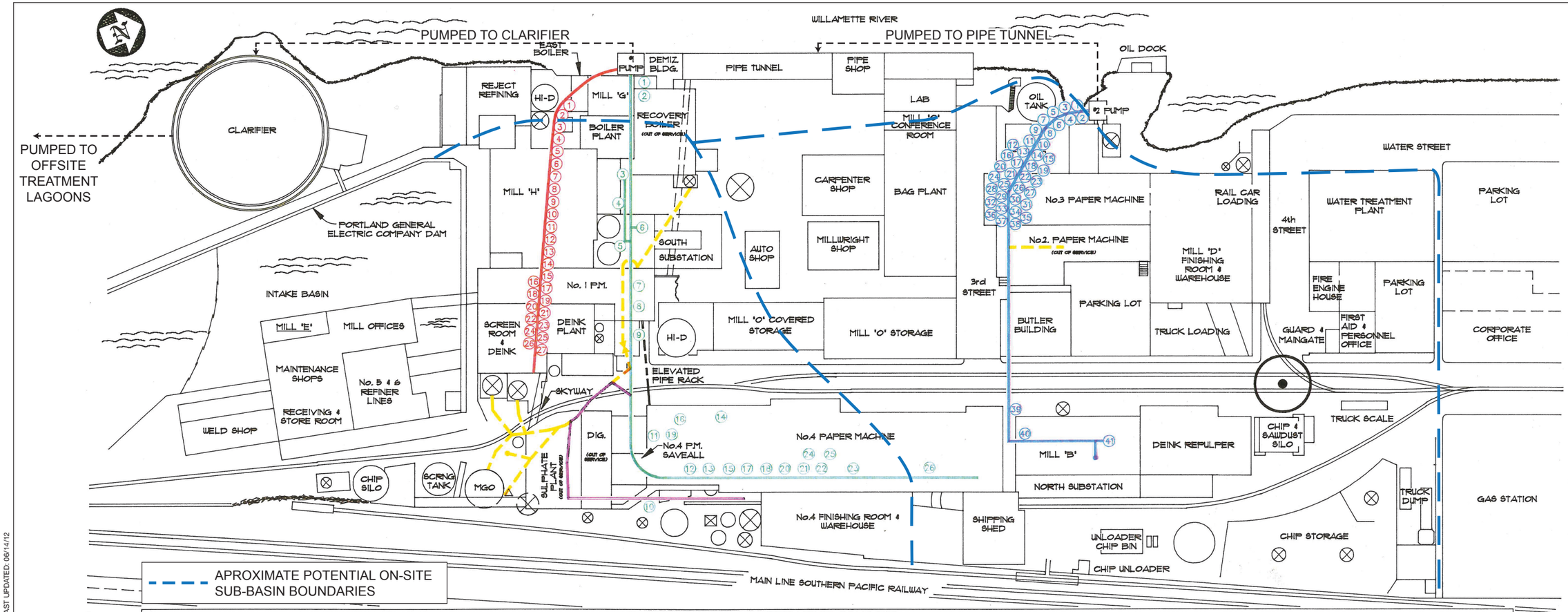
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SOURCE: BCD, 1993a.

Blue Heron Mill . 207018.04

Figure 2

Blue Heron Water Management Block Diagram
Oregon City, Oregon



EFFLUENT SOURCES

ITEM	No. 1 PUMP STATION (SOUTH LINE)
1	MILL "H" HI-D DRAINS
2	MILL "H" HI-D DRAIN
3	RIETZ PRESS FLOOR DRAINS, COIL FILTER BY-PASS, MILL "H" #4 SYS. FLOOR DRAIN
4	COIL FILTER OVERFLOW – MILL "H" REJECTS ROOM FLOOR DRAINS
5	BLEACH BRIGHTENING TOWER TANK DRAINS
6	MILL "H", D.I. BASEMENT FLOOR DRAINS
7	MILL "H" BASEMENT FLOOR DRAINS
8	D.I. BASEMENT FLOOR DRAINS
9	TERTIARY REVERSE CLEANER, QUATENARY SCREEN REJECTS
10	FLOOR DRAIN BY QUATENARY PUMP
11	INKY SLUDGE CHEST OVERFLOW, FLOOR DRAINS
12	D.I. TRENCH DRAIN AT PRIMARY FINE SCREEN FEED PUMP
13	HOT WATER PUMP PIT DRAIN
14	#1 P.M. SAMPLER DRAIN LINE

ITEM	No. 1 PUMP STATION (SOUTH LINE)
15	#1 P.M. TRENCH DRAIN
16	20" LINE (NOT IN SERVICE)
17	#1 P.M. FOURDRINIER DRAIN
18	#1 P.M. RICH WHITEWATER BOX OVERFLOW
19	#1 P.M. 4" FLOOR DRAIN
20	16" LINE (NOT IN SERVICE)
21	FLOOR DRAIN BY D.I. LO-D TANK
22	FLOOR DRAIN
23	FLAT BOX VACUUM SEAL PUMP DRAIN
24	AES REJECTS – #1 P.M.
25	FLOOR DRAINS – WEST OF KROFTA
26	WEMCO REJECT DRAINS
27	MC SYSTEM FLOOR DRAINS (3 BY PUMP & STANDPIPE)

ITEM	No. 1 PUMP STATION (NORTH LINE)
1	(4) AREA DRAINS & OLD CONDENSATE TANK
2	CENTRAL WHITEWATER TANK OVERFLOW

ITEM	No. 1 PUMP STATION (NORTH LINE)
3	STREET DRAIN & BARREL WASH-UP
4	DRAINS FOR NORTH END OF DEINK BASEMENT
5	#1 P.M. WHITEWATER TANK OVERFLOW
6	#1 P.M. WHITEWATER TANK DRAIN
7	#1 P.M. DRY END REPULPER & FLOOR DRAIN
8	DEINK PLANT HI-D TANK DRAIN
9	DEINK PLANT
10	#4 P.M. GROUNDWOOD TANK AREA DRAIN, #4 P.M. H_2SO_4 TANK & DIGESTER AREA DRAINS
11	#4 P.M. VACUUM TANK EFFLUENT
12	CLEANERS EFFLUENT
13	SCREEN DRAIN
14	CLEANERS EFFLUENT
15	SCREEN DRAIN
16	DECULATOR DRAIN & PIPE TUNNEL DRAIN
17	MACHINE CHEST DRAIN

ITEM	No. 1 PUMP STATION (NORTH LINE)
18	BROKE CHEST DRAIN
19	WHITEWATER CHEST DRAIN
20	BLEND CHEST DRAIN
21	CLOUDY WATER DRAIN
22	COUCH PIT DRAIN
23	INTERMEDIATE DRAIN
24	1st FELT UHLE BOX DRAIN
25	3rd PRESS FELT UHLE DRAIN
26	DRY END REPULPER DRAIN

ITEM	No. 2 PUMP STATION
1	TOTE DRAIN
2	BROKE CHEST OVERFLOW
3	LAB AREA DRAIN
4	BROKE CHEST DRAIN
5	DRY END FLOOR DRAIN
6	FLOOR DRAIN NEAR TURN & AES DRAW
7	FLOOR DRAIN
8	1st PRESS VACUUM PUMP SEAL WATER

ITEM	No. 2 PUMP STATION
9	COUCH VACUUM PUMP SEAL WATER
10	FLAT BOX VACUUM PUMP
11	DEAD
12	FLOOR DRAIN BY HEAT EXCHANGER
13	WHITEWATER CHEST OVERFLOW
14	UHLE BOX SEAL PIT OVERFLOW
15	FLOOR DRAIN
16	FLOOR DRAIN & 1st & 2nd SAW DRAIN
17	VACUUM PUMP 1st PRESS
18	FLOOR DRAIN
19	FLOOR DRAIN
20	FLOOR DRAIN
21	WHITEWATER BOX DRAIN
22	WHITEWATER BOX OVERFLOW
23	FLOOR DRAIN
24	FLOOR DRAIN BY COUCH PIT
25	RICH WHITEWATER BOX DRAIN
26	FLOOR DRAIN
27	FLOOR DRAIN

ITEM	No. 2 PUMP STATION
28	
29	FLOOR DRAIN
30	WHITEWATER CHEST OVERFLOW
31	DEAD
32	FLOOR DRAIN
33	#1 & 2 UHLE PUMP SEAL
34	FLOOR & DYE AREA DRAIN
35	SAVEALL DRAIN
36	
37	SAVEALL SEAL BOX OVERFLOW
38	
39	STREET DRAIN
40	DRUM PULPER FLOOR DRAIN
41	DEINK LOW CONSISTENCY PULPER PUMP PIT

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SOURCE: BCD, 1993b.

Figure 3
Blue Heron Mill Storm Sewer Layout
Oregon City, Oregon

APPENDIX C
BUILDING EVALUATION CRITERIA AND ASSESSMENTS

This appendix includes the detailed descriptions of the evaluation criteria and assessment results for all buildings on the Willamette Falls Legacy Project site.

BUILDING CATEGORIES

Given the size and complexity of the Willamette Falls Legacy Project site, the consultant team conducted an initial site overview session to prioritize the level of evaluation to be conducted on each building based on their general historic, reuse and structural attributes. The 57 buildings plus miscellaneous structures were identified as either "Category A" buildings or "Category B" buildings.

Category A Buildings. These buildings stood out as having the greatest opportunity for adaptive reuse based on their combined historic integrity, building condition, physical layout, access, structural condition and value for supporting adjacent historic structures. There are 16 structures identified as Category A, including four that have sufficient historic integrity to be considered individually eligible for listing on the National Register of Historic Places.

Category B Buildings. This category includes all structures not captured in Category A. These buildings are generally minor structures with low priority for retention although some may be worth retaining to support adjacent Category A buildings.

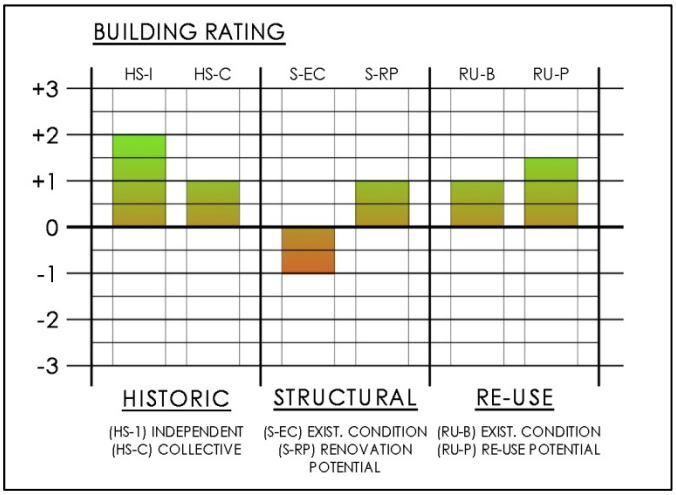
It should be noted that given the site's complexity, the project team did not specifically evaluate buildings below the "Main Street elevation" (see Figure 5 in the Site Stabilization and Building Assessment report). The structural engineer's evaluations do include some very general observations of below Main Street structural conditions for each building.

INDIVIDUAL BUILDING ASSESSMENTS

The consultant team evaluated each of the buildings based on:

- Historic integrity/significance
- Re-use potential
- Structural characteristics

Buildings were assigned a numeric value along a 6-point continuum (+3 to -3) for each criterion. Summaries of the findings are found in Section 3. of the Building Assessment Report.



- **HS-I Historic Significance-Interna**l: Evaluates the structure's individual historic attributes and ability to convey industrial history.
- **HS-C Historic Significance-Collective**: Evaluates the structure's ability to support the collective historic industrial character of the site.
- **RU-B Building Condition:** Evaluates the level of repairs needed to make the building habitable.
- **RU-P Reuse Potential**: Evaluates the physical attributes of the building for its flexibility to accommodate new uses.
- **S-EC Structural Existing Condition**: Assesses the physical condition of the primary structural frame of a building and its ability to safely resist required loads.
- **S-RP Structural Renovation Potential**: Assesses how much effort and resources would be required to repair the structure to safely resist current prescribed code level forces.

HISTORIC EVALUATION CRITERIA

Historic Significance/Internal [HS-I]

HS-I is an evaluation of the individual historic significance/character of a structure for its ability to effectively convey the industrial history and associations that make the area historic. High-ranked resources, which may or may not have additional *architectural* significance, will each be strongly and directly associated with the theme of industry or paper-making during the historic period and retain sufficient integrity in design and materials so as to relate that association. "Integrity" as used here refers to the relative degree of physical/built character (setting, materials, design, workmanship, etc.) that retains a connection to the historic period. Individual numbered resources are evaluated using the following rating system:

3 Historic Resource has high significance and high integrity
2 Historic Resource with mixed high/low significance/integrity
1 Historic Resource has low significance/ integrity (no evaluation in 2002)

0 No significance/no impact

-(1) No significance, impacts adjacent historic resource(s) minimally
-(2) No significance, impacts adjacent historic resource(s) moderately
-(3) No significance, impacts adjacent historic resource(s) highly

Historic Significance/Collective [HS-C]

HS-C evaluates a resource as it supports or enhances the collective historic industrial character of the Blue Heron site, through the creation/retention of the connected, additive and inter-related visual qualities of the site. Resources may add to the overall, contextual, historic character by supporting a unified industrial "streetscape" or as elements of the complex, multi-building, development pattern. High-ranked resources, whether individually significant or not, are closely joined to others in a way that supports a compound or cluster of structures, typically centered upon a single key historic building. Each numbered resource is evaluated using the following system:

3 Historic resource adds significantly to the collective character
2 Non-historic resource adds significantly to collective character
1 Resource (historic or not) adds minimally to collective

0 Resource does not impact or effect collective character (isolated resources)

-(1) Resource detracts from collective character minimally
-(2) Resource detracts from collective character moderately
-(3) Resource significantly detracts or obscures collective character

Total individual resource ranking under this system is a composite/average, added to other evaluated areas (structure and reuse) to yield a single building evaluation.

REUSE EVALUATION CRITERIA

Building Condition [RU-B]

RU-B Building Condition rating is based on the criteria outlined below.
Major Repairs include - Changes and updates to egress, vertical circulation, roofing, flashing, windows and any water intrusion.
Minor Repairs include - Finishes, Hardware, Sealant, Cleaning, etc.
Individual numbered buildings are evaluated using the following rating system:

3 Building is in excellent condition and would not require repairs/renovation
2 Building is in very good condition and would require minor repairs
1 Building is in good condition and would require minimal major repairs along with minor repairs
2 Building is in fair condition and would require several major repairs along with minor repairs

-(1) Building is in poor condition will require a significant renovation to the building envelope and interiors
-(2) Building is in very poor condition will require very significant renovation to the building envelope and interiors
-(3) Building is in bad condition will require a complete renovation to the Building Envelope and Interiors

Reuse Potential [RU-P]

RU-P Reuse Potential rating is based on the criteria outlined below.
Fire, Life and Safety - Type of Construction, Building Area, Number of Stories, Vertical Circulation and Means of egress.
Adaptability – Flood Plain location, Vertical Circulation, Horizontal Circulation, Demising Capability, Potential for repurposing, Impact on Adjacent Structures, Accessibility and Site Accessibility.
Individual numbered buildings are evaluated using the following rating system:

3 Reuse is very simple – Fire, life, safety are in place
2 Reuse is simple – Fire, life, safety are mostly in place
1 Reuse is fairly simple – Fire, life, safety are partially in place

0 Reuse is moderate - Fire, life, safety are fairly in place

-(1) Reuse is fairy complex - Fire, life, safety are in poor condition
-(2) Reuse is complex - Fire, life, safety are in very poor condition
-(3) Reuse is very complex – No Fire, life , safety are existing

Total individual resource ranking under this system is a composite/average, added to other evaluated areas (Structure and Historic) to yield a single building evaluation.

STRUCTURAL EVALUATION CRITERIA

Structural Existing Condition - [SEC]

The Structural Existing Condition (SEC) is an assessment of the physical condition of the primary structural frame of a building and its ability to safely resist required loads. The assessment will be broken down into an evaluation of the building's gravity load resisting system and lateral load resisting system. Elements included in the assessment would be the building's foundations, columns and bearing walls, girders, beams, slabs, etc. The assessment would include an evaluation of the current physical condition of the element (e.g. significant corrosion, rot, or other damage) as well as whether or not the element is adequate for its use (e.g. columns or beams being overstressed). It should be noted that this assessment is based on our observations and experience with similar structures and not a detailed analysis of the building. This assessment uses the following system:

3 Structure is in excellent condition and would not require any repair/renovations.
2 Structure is in very good condition and would require very minor/renovations.
1 Structure is in good condition and would require minor repair/renovations.

0 Structure is in fair condition and would require moderate repair/renovations.

-1 Structure is in poor condition and would require significant repair/renovations.
-2 Structure is in very poor condition and would require very significant repair/renovations.
-3 Structure is in bad condition and would require complete repair/renovations.

Structural Renovation Potential - [SRP]

The Structural Renovation Potential (SRP) is an assessment of how much effort and resources would be required to repair and renovate the structure to safely resist current prescribed code level forces. The assessment will be broken down into an evaluation of the building's gravity load resisting system and lateral load resisting system. This assessment uses the following system:

3 Repair and renovation work would be very simple and have very limited impact on the building.
2 Repair and renovation work would be simple and have limited impact on the building.
1 Repair and renovation work would be fairly simple and have fairly limited impact on the building.

0 Repair and renovation work would be moderate and have a moderate impact on the building.

-1 Repair and renovation work would be fairly complex and have a fairly significant impact on the building.
-2 Repair and renovation work would be complex and have a significant impact on the building.
-3 Repair and renovation work would be very complex and have a very significant impact on the building.

CATEGORY A BUILDINGS





SYNOPSIS:

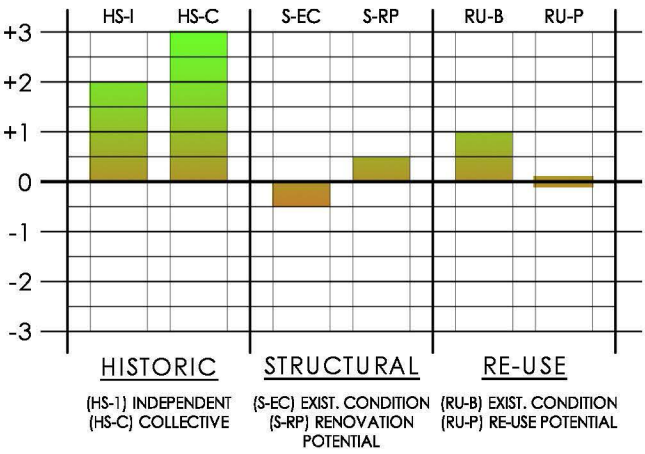
This two story concrete structure is located on the south side of 4th Street. The building contains paint shops and storage. Both the basement and first floor connect to buildings 10 and 13. The building is fully sprinklered and has one stair and a freight elevator. The south wall is integrated into the north wall of building 13. The first floor exits on to a concrete loading dock that runs the length of 4th Street.



BUILDING INFORMATION

Date built:	1910-1916
Area:	4,441 SF footprint
	8,883 SF total + basement and roof
Stories:	2+basement
Historic:	Contributing
Flood hazard:	partial

BUILDING RATING





LOCATION MAP





SYNOPSIS:

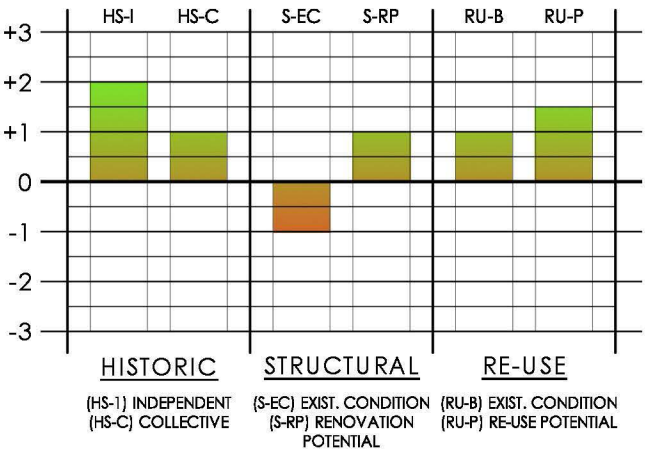
This one story concrete, steel and wood structure is located on the south side of 4th Street. The building was used for storage and housed some equipment. The first floor is open to building 11 for the entire length of the east wall and is partially open to building 9 along the west wall. The north wall is primarily a loading bay and exits on to a concrete loading dock that runs the length of 4th Street. The basement is accessed via building 9 and is continuous under both buildings 10 and 11. There is a connection between the basement of building 10 and the basements of buildings 12 and 13.



BUILDING INFORMATION

Date built:	1910-1916
Area:	4,441 SF footprint
	8,883 SF total + basement and roof
Stories:	1+basement
Historic:	Contributing
Flood hazard:	no

BUILDING RATING





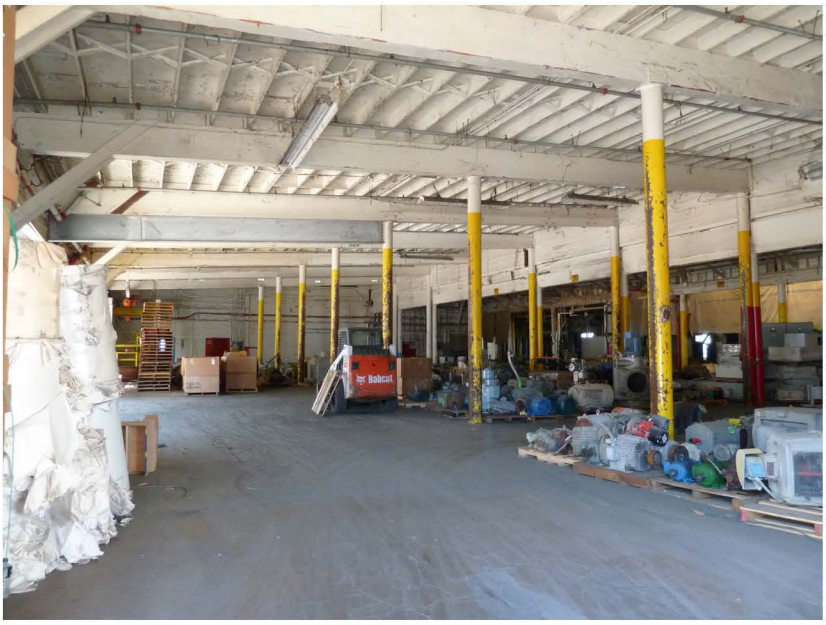
LOCATION MAP





SYNOPSIS:

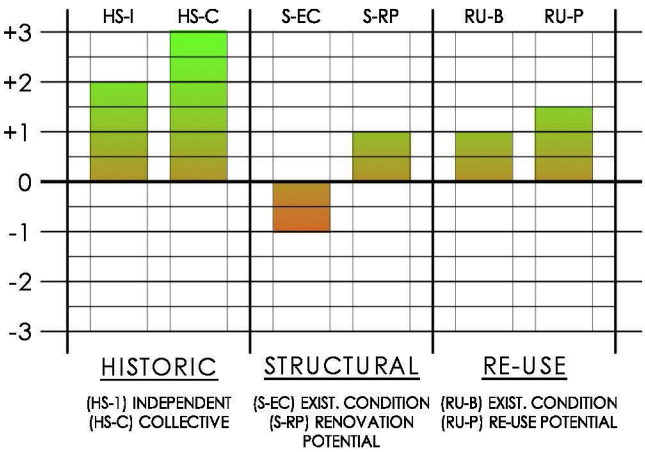
This one story concrete, steel and wood structure is located on the south side of 4th Street. The building served as a warehouse and is fully sprinklered. Basement access occurs via stairs in building 9. The basement is continuous under buildings 11 and 10. The entire length of the first floor west wall is open to building 10. There are multiple loading bays on the north and east walls, and the north bay exits directly to a concrete loading dock.



BUILDING INFORMATION

Date built:	1925
Area:	4,170 SF footprint
	5,170 SF total + basement + roof
Stories:	1+basement
Historic:	Contributing
Flood hazard:	no

BUILDING RATING





LOCATION MAP

NO. 2 PAPER MACHINE





SYNOPSIS:

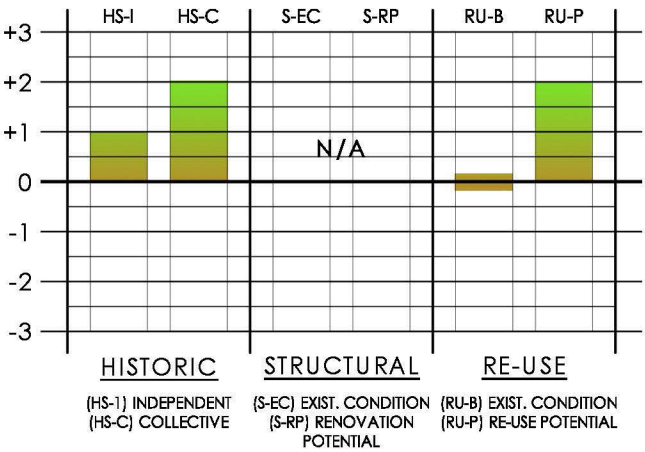
This concrete structure is located directly east of building 13 (Paper Machine #3) The building was previously damaged by fire and only the basement remains - the first floor is open to the air. The basement is accessed via 3rd Street, the basement of building 13, and a stair located on the open 1st floor. The basement also connects to the basement of building 10.



BUILDING INFORMATION

Date built:	1910
Area:	6,898 SF footprint
Stories:	only basement remains
Construction Type:	N/A
Historic:	Contributing
Flood hazard:	no

BUILDING RATING

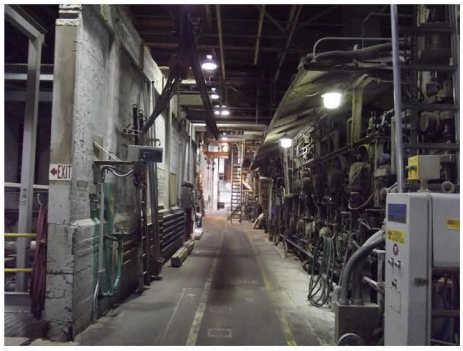




LOCATION MAP

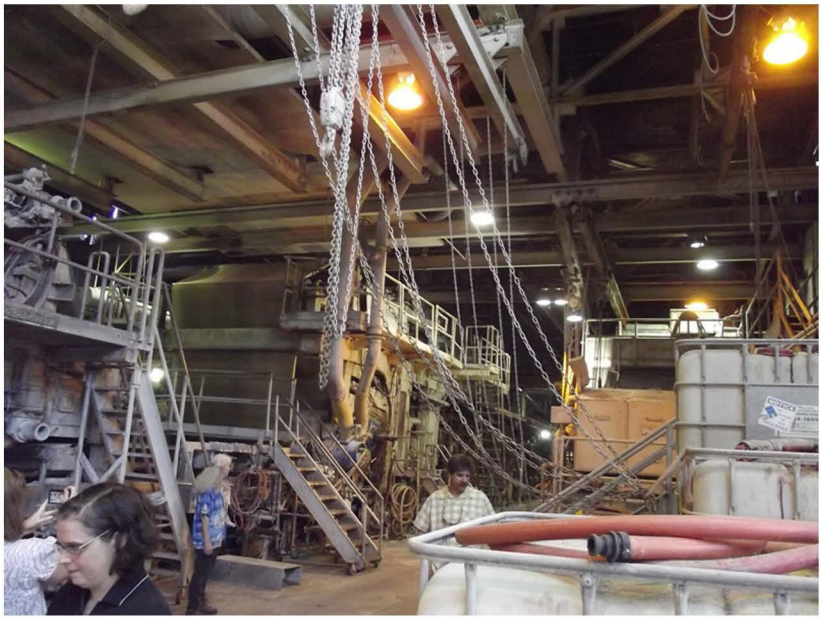
NO. 3 PAPER MACHINE





SYNOPSIS:

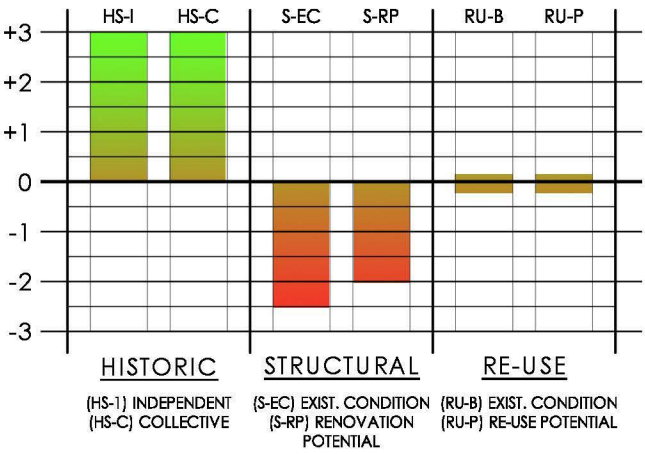
This one story concrete, steel and wood structure is located towards the west end of 3rd Street. It houses Paper Machine No. 3 and a basement primarily used for maintenance access. The basement exits directly to 3rd Street as well as the shed to the west (building 14). There are also basement connections to building 13 from buildings 9, 10 and 12. From the first floor of this building one can reach the open first floor of building 12. There are views of the river from the west side of the building and the adjacent open concrete terrace.



BUILDING INFORMATION

Date built:	1913
Area:	14,074 SF footprint
	14,074 SF total + basement + roof
Stories:	1 + basement
Historic:	Contributing
Flood hazard:	partial

BUILDING RATING





LOCATION MAP







SYNOPSIS:

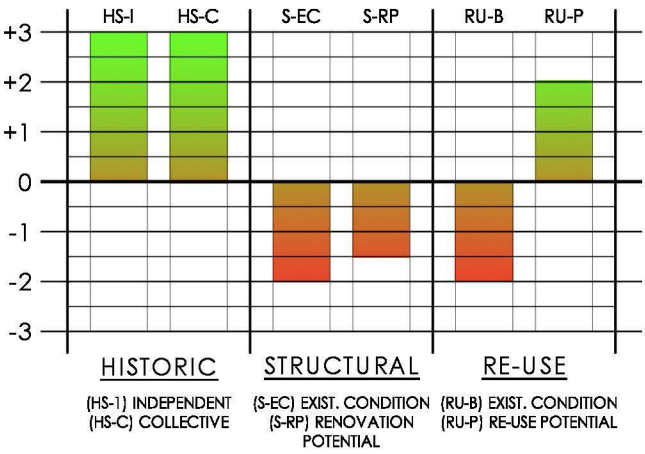
This 3 story structure is centrally located on 3rd street. It served as raw material storage, housed the kraft and broke pulper, and contained a large conference room and the environmental lab. The structure has a concrete exterior, with the exception of the east wall, which is wood framed and covered with corrugated metal siding. The interior is a combination of heavy timber and steel. The building is fully sprinklered and has one non-compliant stair at the east end of the building and one fire escape at the northwest end. The west end of the building has views of the river.



BUILDING INFORMATION

Date built:	1918
Area:	17,428 SF footprint
	40,665 SF total + basement
Stories:	3 + basement
Historic:	Contributing
Flood hazard:	partial

BUILDING RATING





LOCATION MAP

NO. 1 PAPER MACHINE



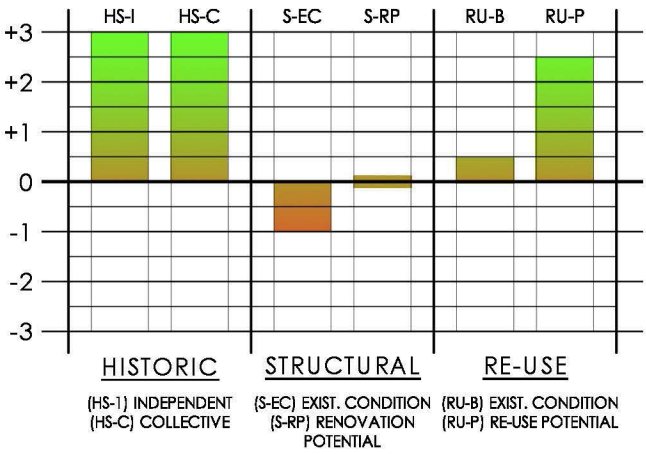
SYNOPSIS:
A sturdy concrete structure, Building 32 is a long narrow volume that is located immediately west of Building 33, the Hawley Building. Constructed after a fire destroyed an earlier structure at this site, the building has been extended to the north and east (See Building 35), to form a roughly "ell" shaped volume.



BUILDING INFORMATION

Date built:	1917
Area:	13,186 SF footprint
Stories:	1 + basement
Historic:	Contributing
Flood hazard:	yes

BUILDING RATING





LOCATION MAP

HAWLEY BUILDING - MILL #1 FINISHING ROOM

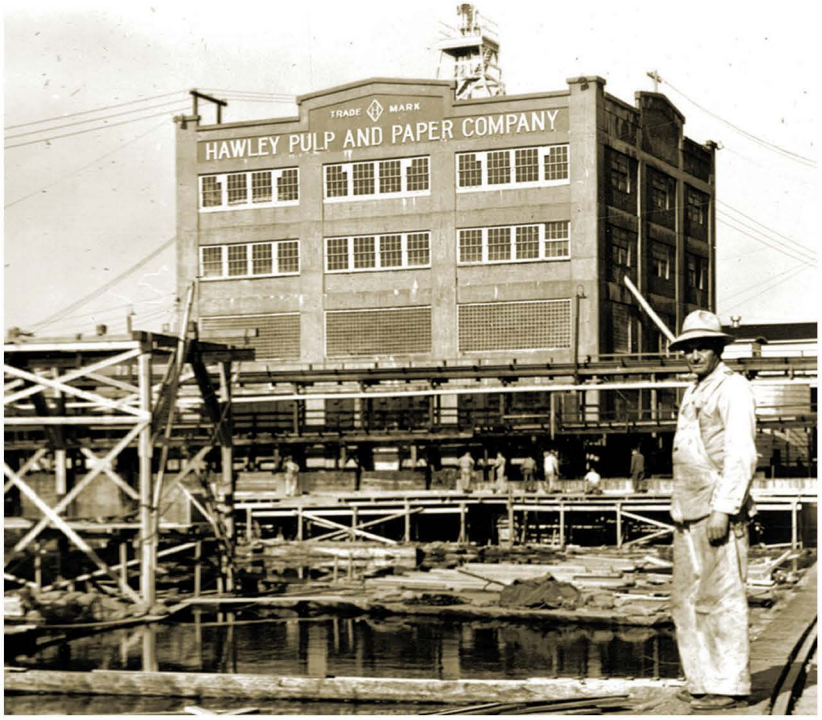






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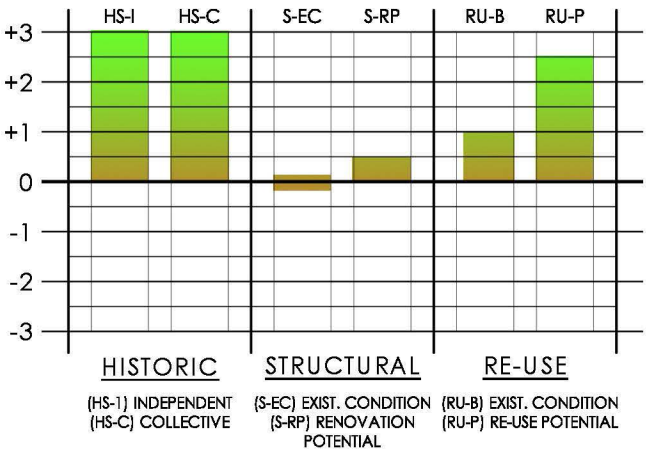
This three story concrete structure is prominently located at the base of the intake basin. With its iconic stepped parapets, painted signage and repetitive windows bands it has long been a key visual element of the mill site. The building retains high integrity in design and materials and is the focal point of a multi-building "cluster" that includes the immediately adjacent Paper Machine No. 1 (32), the Bleach Plant (34) and the so-called "Rewind Plant" (35), which appears to be an addition to Paper Machine No. 1.



BUILDING INFORMATION

Date built:	1923
Area:	5,776 SF footprint
	17,328 SF total + basement and roof
Stories:	3 + basement
Historic:	Contributing
Flood hazard:	partial

BUILDING RATING





LOCATION MAP

NO. 4 PAPER MACHINE





SYNOPSIS:

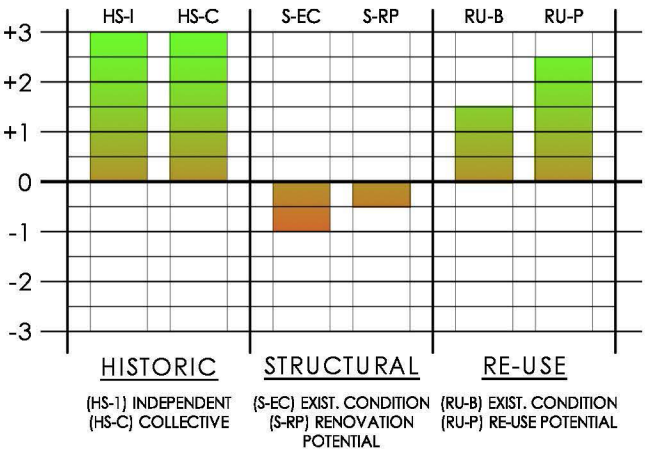
Paper Machine No. 4 is among the most distinctive structures of the Hawley Pulp and Paper Company- era and visually dominates the eastern side of Main Street, serving a major element in defining the 20th century industrial character of the site. Strongly related to the historical significance of the site, the building is additionally significant for its design and generally high level integrity behind a series of unfortunate additions to the west façade (See Building 42B) that partially obscure the original design. Containing multiple levels, Paper Machine No. 4 is a large generally open volume built of reinforced concrete with large banks of industrial windows, many of which remain. It remains a key resource within the project area.



BUILDING INFORMATION

Date built:	1928
Area:	18,835 SF footprint
	23,910 SF total + basement and roof
Stories:	1 + basement
Historic:	Contributing
Flood hazard:	no

BUILDING RATING





LOCATION MAP

NO. 4 PAPER MACHINE SOUTH ADDITION





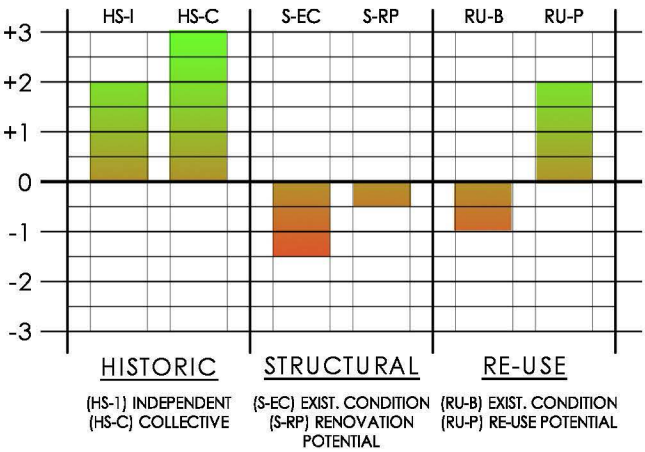
SYNOPSIS:
This one story concrete, steel, and wood structure is located on the east side of Main Street, adjacent to building 42 (Paper Machine #4). The two buildings are connected in order to provide enough space for the paper machine.



BUILDING INFORMATION

Date built:	1923
Area:	14,531 SF
Stories:	1
Historic:	Contributing
Flood hazard:	no

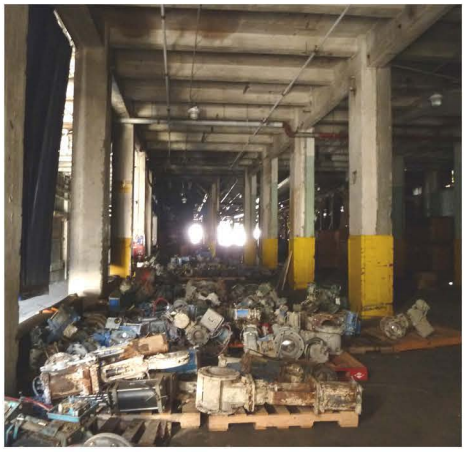
BUILDING RATING





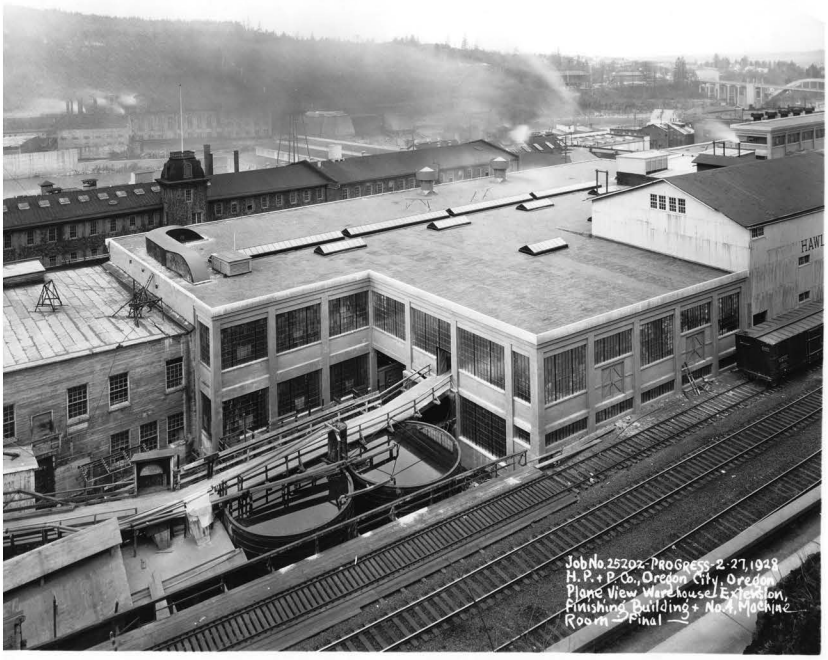
LOCATION MAP

NO. 4 FINISHING ROOM AND WAREHOUSE



SYNOPSIS:

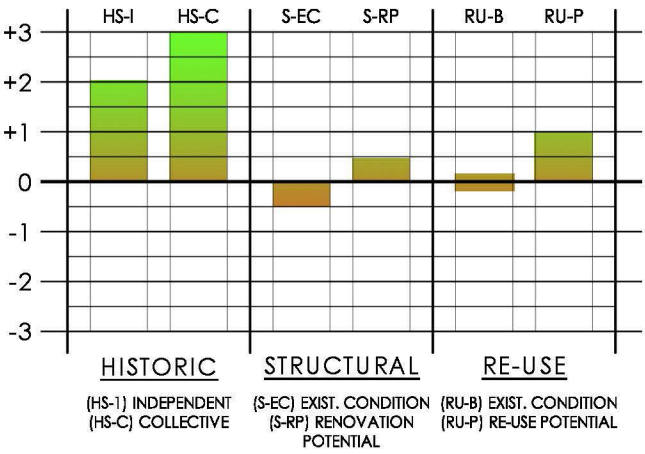
This two story concrete structure is located behind the No. 4 Paper Machine (Building 42). The building served as a warehouse and is fully sprinklered. The first floor is open to buildings 45 and 46; the second floor is also connected to buildings 45 and 46. The first floor exits into open courtyard behind building 42a. Vertical circulation (stair and freight elevator) is located in building 45.



BUILDING INFORMATION

Date built:	1928
Area:	5,632 SF footprint
	10,393 SF Total
Stories:	2 + basement
Historic:	Contributing
Flood hazard:	no

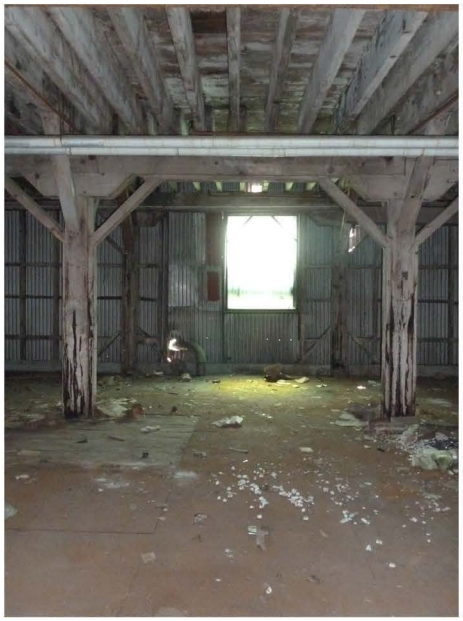
BUILDING RATING





LOCATION MAP

NO. 4 FINISHING ROOM AND WAREHOUSE



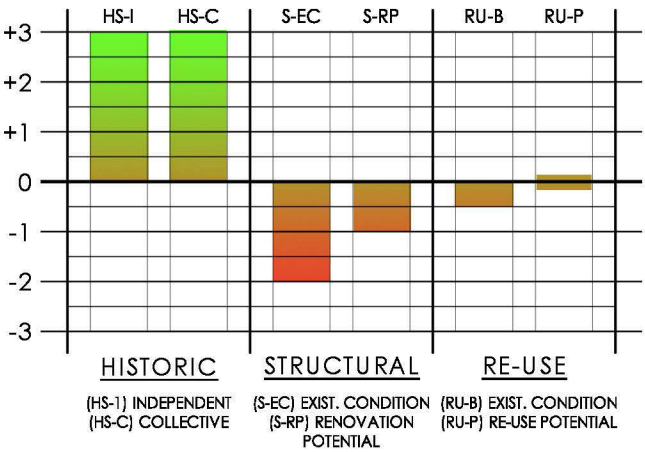
SYNOPSIS:
This four story wood and steel structure is located behind the No. 4 Paper Machine (building 42). The building was used as a warehouse and finishing room and is fully sprinklered. Vertical circulation (stair and freight elevator) serves buildings 44, 45, and 46. The first floor is open to buildings 44 and 46. The east wall is also the retaining wall for the adjacent railway. At the second floor, the building connects to building 44 and the mezzanine of building 42. A door at the 3rd floor provides roof access to buildings 42 and 44.



BUILDING INFORMATION

Date built:	1911
Area:	3,525 SF footprint 14,100 SF Total
Stories:	4
Historic:	Contributing
Flood hazard:	no

BUILDING RATING





LOCATION MAP

NO. 4 FINISHING ROOM AND WAREHOUSE





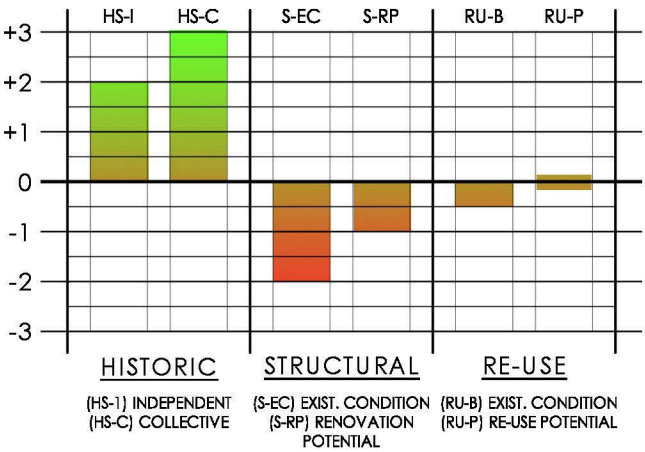
SYNOPSIS:
This four story wood and steel structure is located behind the No. 4 Paper Machine (building 42). The building was used as a warehouse and is fully sprinklered. Vertical circulation (stair and freight elevator) is located in building 45 and serves buildings 44, 45 and 46. The first floor is open to buildings 44 and 45. The east wall is also the retaining wall for the adjacent railway. At the fourth floor, a passageway connects to building 42's freight elevator.



BUILDING INFORMATION

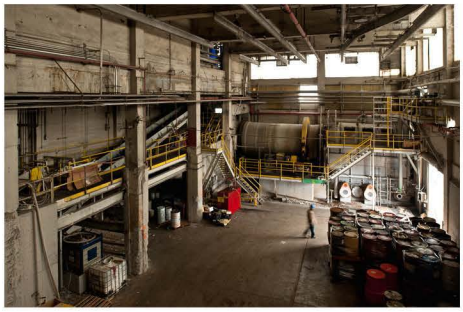
Date built:	1925
Area:	3,525 SF footprint
	14,100 SF Total
Stories:	4
Historic:	Contributing
Flood hazard:	no

BUILDING RATING





LOCATION MAP





SYNOPSIS:

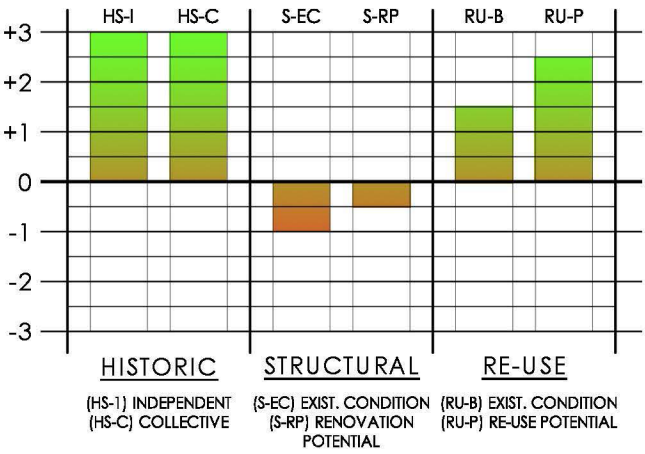
Paper Machine No. 4 is among the most distinctive structures of the Hawley Pulp and Paper Company- era and visually dominates the eastern side of Main Street, serving a major element in defining the 20th century industrial character of the site. Strongly related to the historical significance of the site, the building is additionally significant for its design and generally high level integrity behind a series of unfortunate additions to the west façade (See Building 42B) that partially obscure the original design. Containing multiple levels, Paper Machine No. 4 is a large generally open volume built of reinforced concrete with large banks of industrial windows, many of which remain. It remains a key resource within the project area.



BUILDING INFORMATION

Date built:	1927
Area:	8,976 SF footprint
	23,936 SF total + basement
Stories:	3 + clerestory + basement
Historic:	Contributing
Flood hazard:	no

BUILDING RATING





LOCATION MAP

CATEGORY A
HISTORIC EVALUATION

Building 09
"Mill D Warehouse" [Western Portion] (1910-1916?) Eligible/Historic Contributing

The Mill D Warehouse complex consists of three separate structures of varied designs that are nested together to form a conjoined whole. Portions of the group may be as early as 1910 according to Oregon Historic Site Form (2012), and continued through the post-WWII period. Although modified, Building 09, also referred to as the "No. 3 Warehouse," is likely among the earliest portions of the building Mill D Warehouse complex and has significant associative values. Of light wood-frame construction, it consists of fairly typical open storage, but has a strong visual connection to the river. The building is located above a complex, inter-connected, basement level.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
09	Mill D Warehouse (Western)	Modified, wood frame	2	3	2.5

Comment:
Evaluation of Building 09 is compounded by its location within the Mill D complex, which will likely link its ultimate future as part of the group, rather than as an independent single structure. Collectively, either in its entirety augmented by new construction, or with selected removal, this space could be repurposed for a number of uses while still retaining and enhancing its historic qualities. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 9 "Mill D Warehouse" :

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
9	Mill D Warehouse (Western)	Modified, wood frame	1	0	0.5

Comment:

Building Condition (RU-B) Ranking Comments:

This building is attached to buildings #10 & #13 and sits adjacent to the Willamette River. Consisting of concrete construction with minimal exterior openings, the building is in relatively good overall condition:

Shell: Building surround is stable and secure. Roofing and rainwater removal system requires replacement and/or improvement.
Interior: Interior walls are in fair condition. Multiple openings exist between the first and basement floors.
Fire & Life Safety Systems: Existing exiting system is poor and not adequate for modification to another use.
Connectivity: This structure is joined to those around it at both the basement and first floor levels. This connection is open and would make removing this structure by itself difficult.

Building Reuse (RU-P) Ranking Comments:

Given Building 9's connections to adjacent structures, lack of exterior openings, awkward circulation system and narrow floor plate the reuse potential for it as a stand alone structure is nominal:

Site Location: Adjacent to the Rivers edge, this structure could have substantial reuse given its potential for views and river access.
Flood Plain: The structure's western most edge rest in the flood plain.
Building Layout: The narrow and long floor plate hinders reuse potential.
Opportunity to Change: Substantial work is required to bring the structure up to fire and life safety code including new exit stairs, hallways, restrooms, etc. Individually, this structure is hard to imagine as very good for reuse. Keeping in combination with Buildings 10, 11 and 7 would allow it to share exit functions, entry points and common areas and change its narrow footprint for better reuse potential.
New Use Potential: Combined with adjacent structures 10, 11 this could make an ideal retail cluster with strong floor plates, appropriate bay spacing and loading dock access under Building 7 (canopy).

CATEGORY A
STRUCTURAL EVALUATION

Building 9 "Mill D Warehouse" :

The Mill "D" Warehouse is a 2 story above grade, and 2 basements below grade concrete building that is approximately 40 feet by 120 feet. The floors and roof consist of a flat concrete slab supported by concrete beams and girders. The roof is sloped and has large skylights facing east. The interior of the building is supported by concrete columns and the exterior of the building has concrete walls with pilasters at the girders.

The concrete floors and columns are very robust and appear adequate to resist significant gravity loads. The structure appeared to be in generally good condition and would require minimal repair work for the gravity load resisting system. There has been some modification to the structure at the south end, near Building 13.

The lateral force resisting system for the building consists of the concrete walls at the exterior of the building, acting as shear walls. The concrete floors will act as effective diaphragms. Likely seismic upgrade work would include adding shear walls at the east and south, where there are no exterior walls currently.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
9	Mill "D" Warehouse	2 story + 2 basement Concrete	1	2	-2	-1	0

CATEGORY A
HISTORIC EVALUATION

Building 10
"Mill D Warehouse" [Middle Portion] (c1910-1916?) Eligible/Historic Contributing

The Mill D Warehouse complex consists of three separate structures of varied designs that are nested together to form a conjoined whole. Dating of original construction of the group may be as early as 1910 according to Oregon Historic Site Form (2012), and continued through the post-WWII period. This middle portion of Mill D, also referred to as the "No. 3 Finishing Room," is of wood frame construction, with some steel reinforcement and other modification. Additional modification is located at the northern end of the building where some modification, possibly to a former loading area, has been enclosed below an elevated roof area. Building 10 is of fairly typical open construction, with little to visually distinguish it from the adjacent portions of the Mill D Warehouse grouping.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
10	Mill D Warehouse (middle)	Frame, modified	2	1	1.5

Comment:
Evaluation of Building 10 is compounded by its location within the Mill D complex, which will likely link its ultimate future as part of the group, rather than as an independent single structure. Collectively, either in its entirety augmented by new condition, or with selected removal, this versatile space could be repurposed for a number of uses while still retaining and enhancing its historic qualities. The basement level connections of Building 10 may complicate its re-use but the structure could either be incorporated into some future occupancy of the Mill D Warehouse group or not. As an internal element of the Mill D Warehouse cluster, the contextual value of Building 10, while still positive, is reduced when compared to the adjacent structures from a historic standpoint. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 10 "Mill D Warehouse" [Middle Portion]

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
10	Mill D Warehouse (Middle)	Frame, Modified	1	1.5	1.25

Comment:

Building Condition (RU-B) Ranking Comments:

This building is sandwiched between buildings #9 & #11 connecting the two. Consisting of a combination of construction materials the building is in relatively good overall condition and gets a Rank of 1:

Shell: Building surround is stable and secure. Roofing and rainwater removal system requires replacement and/or improvement.

Interior: Interior walls are in fair condition. For structural components see structural evaluation. The windows in the raised clerestory are in fair condition and would require replacement.

Fire & Life Safety Systems: Existing exiting system of on-grade exits is adequate.

Connectivity: Attached at both the basement and first floor levels to adjacent buildings. The connection in the basement is open between structures and could make removing this building by itself difficult.

Building Reuse (RU-P) Ranking Comments:

Given Building 10's open wall to Building 11, exterior access from both ends of its long dimension and its straight forward floor plan suggest it has good reuse potential with a Rank of 1.5:

Site Location: Sandwiched between two other structures somewhat hinders reusing the building by itself.

Flood Plain: The building is not in the flood plain simplifying reuse scenarios.

Building Layout: The narrow and long floor plate has exterior access from both ends improving its reuse potential.

Opportunity to Change: Given the open floor plate, clerestory light and two sided exterior access, this structure could be modified for another use. Keeping it in combination with Buildings 11 and 7, or Buildings 9, 11 and 7 would allow it to share exit functions, entry points and common areas and change its narrow footprint for better reuse potential.

New Use Potential: Combined with adjacent structures 9 and 11 could make this a good retail cluster with its strong floor structure, large bay spacing and access under Building 7 (canopy).

CATEGORY A
STRUCTURAL EVALUATION

Building 10 – Mill "D" Warehouse

The building is 60 feet wide by 120 feet long. There is one floor above grade and a basement below. The roof structure consists of timber joists and girders supported by round steel columns. There is a roof pop-up area that is steel framed at the north end of the building. The first floor is a concrete slab supported by steel wide flange beams and steel columns. The concrete slab was formed and poured, with no metal deck. The first floor slab appears adequate to resist significant gravity loads.

For the lateral force resisting system, there is steel rod bracing at the perimeter of the structure on the north and south sides, above the door openings. No other lateral system is visible. The building is adjacent to and likely tied to Building 11. Likely seismic upgrade work would include strengthening the roof diaphragm, adding braced frames or shear walls, and adding miscellaneous straps and connectors to tie the building together.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
10	Mill "D" Warehouse	1 Story, 1 Basement, Wood, Steel and Concrete	0	1	-2	1	0

CATEGORY A
HISTORIC EVALUATION

Building 11
"Mill D Warehouse" [Eastern Portion] (c1945, possibly earlier?) Eligible/Historic Contributing

The Mill D Warehouse complex consists of three separate structures of varied designs that are nested together to form a conjoined whole. Dating of original construction of the group may be as early as 1910 according to Oregon Historic Site Form (2012), and continued through the post-WWII period. Building 11, dated as early as 1925, is of mixed concrete and steel construction with wood-framed roofing and steel support columns. It has been somewhat modified on the east elevation but nevertheless relates its historic functions and associations. Building 11 provides large, generally open, storage with connections to the north canopy and an important visual connection to Main Street.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
11	Mill D Warehouse (Eastern)	Large industrial structure	2	3	2.5

Comment:
Evaluation of Building 10 is compounded by its location within the Mill D complex, which will likely link its ultimate future as part of the group, rather than as an independent single structure. Collectively, either in its entirety augmented by new condition, or with selected removal, this versatile space could be repurposed for a number of uses while still retaining and enhancing its historic qualities. Building 11, although modified, is located at the front of the Mill D Warehouse cluster and of the entire Blue Heron site and as such it plays a significant role in establishing the overall visual character of the project. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 11 "Mill D Warehouse" [Eastern Portion]

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
11	Mill D Warehouse (Eastern)		1	1.5	1.25

Comment:

Building Condition (RU-B) Ranking Comments:

This building is the eastern most section of the Mill D Warehouse structure. Consisting of a composite structural system the building is in relatively good overall condition which leads to the Rank of 1:

Shell: Building surround is stable and secure. Roofing and rainwater removal system requires replacement and/or improvement.

Interior: Interior walls are in fair condition. For structural components see structural evaluation.

Fire & Life Safety Systems: Existing exiting system need updating for modification to another use.

Connectivity: This structure is anchored to those around it at both the basement and first floor levels. This connection in the basement is open between structures and could make removing this building by itself difficult.

Building Reuse (RU-P) Ranking Comments:

Given Building 11's open connection to Building 10, openings and access potential from three sides and rather simple circulation suggest it has good reuse potential with a Rank of 1.5:

Site Location: Adjacent to the major street connecting to downtown Oregon City gives this building good visibility and access.

Flood Plain: The building is not in the flood plain simplifying reuse scenarios.

Building Layout: Open plan with steel columns and three exterior walls.

Opportunity to Change: Given the open floor plan, three sides for exterior access and its main street location improves the potential for reuse. Its high ceilings and post and beam construction will allow for new electrical and HVAC installation. Keeping it in combination with Buildings 10 and 7, or Buildings 9, 10 and 7 would allow it to share exit functions, entry points and common areas and change its narrow footprint for better reuse potential.

New Use Potential: Combined with adjacent structures 9 and 11 could make this a good retail cluster with its strong floor structure, large bay spacing and access under Building 7 (canopy).

CATEGORY A
STRUCTURAL EVALUATION

Building 11 "Mill D Warehouse"

The building is 50 feet wide by 120 feet long. There is one floor above grade and a basement below. The roof structure consists of timber joists and girders supported by round steel columns. The first floor is a concrete slab supported by steel wide flange beams and steel columns. The concrete slab was formed and poured, with no metal deck. The first floor slab appears adequate to resist significant gravity loads.

For the lateral force resisting system, there is steel rod bracing at the perimeter of the structure on the north, east, and south sides, above the loading dock door openings. No other lateral system is visible. The building is adjacent to and likely tied to Building 10. Likely seismic upgrade work would include strengthening the roof diaphragm, adding braced frames or shear walls, and adding miscellaneous straps and connectors to tie the building together.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
11	Mill "D" Warehouse	1 Story, 1 Basement, Wood, Steel and Concrete	0	1	-2	1	0

CATEGORY A
HISTORIC EVALUATION

Building 12
Paper Machine No. 2 Site/Basement (1910, removed 1982), Non-Historic, Non-Contributing:

Paper Machine No 2 contains elements of earlier structures dating as early as the 1880s (Oregon Historic Site Form, 2012) within its basement levels, including extensive rock foundation walls and some of the earliest water-powered technology (turbines, etc.) on the property. The super-structure (above "grade") elements have been entirely removed, leaving an open "courtyard" sort of area bounded by the walls of adjacent structures on three sides and opening onto the 3rd Street canopy (Building 17) on the south. Without any above grade elements, this building was considered a "site" in the 2002 evaluation but would more appropriately have been considered "historic" for its below-slab character. The open, framed courtyard-type area, with exposed brick, concrete and other materials, effectively documents the industrial history of the property and adds significantly to the character of the site.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
12	Paper Machine No 2 Site	Below slab basement only	1	2	1.5

Comment:
This "basement" wasn't considered historic in May 2002 but does in fact contain areas and below slab elements that can be important in relating the early story of industrialization at the Blue Heron site. The "courtyard" has incredible visual character in a "shabby ruin" way, and thus might prove a valuable element in as part of any redevelopment of the adjacent structures. Although considered "non-historic" in 2002 and subject to certain integrity issues, Building 12 might, in connection with some larger project involving Paper Machine No. 3 be eligible for Certified Rehabilitation.

CATEGORY A
REUSE EVALUATION

Building 12
Paper Machine No. 2 Site/Basement

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
12	Paper Machine No 2 Site	Below slab basement only	0	2	1

Comment:
Building Condition (RU-B) Ranking Comments:
The building above grade was removed after a fire. The remaining slab and basement are in poor shape giving it a Rank of 0.

Shell: Building surround consists of the walls of adjacent structures and elements remaining from the fire which are in poor condition. The remaining first floor slab is in poor condition.
Interior: The basement remaining is in poor condition and exposed to weather through the slab.
Fire & Life Safety Systems: Existing basement exiting system is inadequate.
Connectivity: This structure is connected to those around it the basement level. This connection in the basement is open between structures and could make removing the building by itself difficult.

Building Reuse (RU-P) Ranking Comments:
The reuse potential of this area is highly adaptable as a site element giving it a Rank of 2.

Site Location: Open exterior space adjacent to street and surrounding structures gives it good accessibility
Flood Plain: The building is not in the flood plain simplifying reuse scenarios.
Building Layout: The open space provides for daylight and access potential into Buildings 10, 11 and 13 that surround it.
Opportunity to Change: Highly adaptable.
New Use Potential: The open space left by the fire has great potential as an outdoor organizing element in a reuse cluster of Buildings 9, 10, 11, 12 & 13.

CATEGORY A
STRUCTURAL EVALUATION

Building 12 – No. 2 Paper Machine

The No. 2 Paper Machine Building is a 1 story above grade and 1 basement below grade structure. Most of the structure above grade has burnt down, leaving a few partial exterior concrete walls. The first floor is concrete construction and has existing openings. There is a wood infill structure between Building 12 and Building 10 that is charred and in disrepair.

The below grade structure is concrete and has evidence of very old rubble stone walls as parts of the foundation and walls. The basement of the building could serve as a foundation for a new building, with some strengthening and repair. The first floor of the structure would need to be rebuilt as well.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
12	No. 2 Paper Machine	1 story concrete + 2 basement Concrete	N/A	N/A	N/A	N/A	N/A

CATEGORY A
HISTORIC EVALUATION

Building 13
Paper Machine No. 3 (1912-1912) Eligible/Historic Contributing

A large, multi-floor concrete structure comprised of multiple connected elements, Building 13 is located overlooking the river and connects the adjacent Mill D Warehouse to the 3rd Street canopy and Mill O structures to the south. The main floor level is a large open space that formerly held the paper machine, with lower levels containing a variety of related equipment and providing access to the lower levels of Building 12. This structure was built early in the 20th Century as part of the Hawley development and while somewhat modified retains high integrity, effectively relating its historic associations.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
13	Paper Machine No. 3	Large concrete facility	3	3	3.0

Comment:
Paper Machine No. 3 was a key element of the Hawley facility and has strong connections to the history of paper-making. Sited overlooking the river, the building appears to be of solid construction that could be repurposed to a wide variety of uses. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 13
Paper Machine No. 3

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
13	Paper Machine No. 3	Large concrete facility	0	0	0

Comment:
Building Condition (RU-B) Ranking Comments:
This building, in fair to poor condition, has been radically modified over the years and will require major repairs and massive renovation work:

Shell: Building surround is somewhat stable and secure. Overall condition is poor.
Interior: Interior is in poor condition. Multiple openings exist between floors. Basement levels are in bad condition.
Fire & Life Safety Systems: Existing exiting system is through adjacent Building 9 and at various on grade locations. Access between floors is inadequate.
Connectivity: Attached at both the basement and first floor levels to Building 9. The connection in the basement is open between structures and could make removing this building by itself difficult.

Building Reuse (RU-P) Ranking Comments:
Building 13's reuse potential is hampered by its open wall to Building 9, large interior open space, poor exterior condition and basement configurations.

Site Location: Adjacent to the Rivers edge, this structure could have substantial reuse given its potential for views and river access.
Flood Plain: The western edge of the structure is in the flood plain complicating reuse scenarios.
Building Layout: The large open building layout with inadequate vertical and horizontal circulation requires change for reuse.
Opportunity to Change: Given the open floor plate, large interior volume, and potential for exterior openings this structure could be modified for another use. Keeping it in combination with Buildings 9, 10 and 12 would allow it to share exit functions, entry points and common areas increasing its reuse potential.
New Use Potential: Due to its shape, height, site location and size, this structure could be modified for reuse as a large public cultural function.

CATEGORY A
STRUCTURAL EVALUATION

Building 13 – No. 3 Paper Machine

The No. 3 Paper Machine Building is a 1 story above grade and 2 basements below grade concrete building that is approximately 80 feet by 180 feet. The first floor and basement floors below consist of a flat concrete slab supported by concrete beams and girders. There are numerous large openings in the floor slab where the paper machines currently are. The north half of the roof structure consists of steel joists supported by tapered steel girders and columns. The roof decking is wood. The south half of the roof structure consists of steel joists supported by steel trusses. Within the building footprint there are portions of older concrete walls that align with the east and west walls of Building 9 to the north. These walls support some roof structure and continue to the basement below.

The lateral force resisting system for the above grade structure are steel moment frames in the east-west direction and angle cross bracing in the north-south direction. The roof diaphragm has angle cross bracing. The lateral system would most likely need to be strengthened with new shear walls or braced frames and the diaphragm strengthened as well. Below grade there are perimeter concrete walls that will act as shear walls. Some are retaining soil and some are exposed to other buildings or the exterior.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
13	No. 3 Paper Machine	1 story Steel + 2 basement Concrete	-2	-2	-3	-2	-2.25

CATEGORY A
HISTORIC EVALUATION

Building 18
Mill O [Oregon Woolen Mill] Annex (post-1911), Eligible/Historic Contributing

Mill O is a large and complex multi-story volume comprised of several components that include both wood frame and concrete construction. Likely begun to support the Oregon Woolen Mill, Building 18 is a large, multi-floor structure comprised of multiple connected elements. The wood frame portion may have had a central clerestory roof form, much like a barn, with a later concrete addition to the north forming the present asymmetrical plan. The interior is generally of wood framed warehouse-type spaces, with open roof framing. A long bank of windows along the north, in the concrete portion, overlooks the roof and provides classic early 20th century industrial daylighting. Siding is mixed, of wood and later steel, however the building is among the earliest on the site and, because of its scale, adds considerably to the overall character.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
18	Mill O Annex	Wood, concrete structure	3	3	3.0

Comment:
Of wood construction, Building 18 is the only standing structure on the site that is related to the Oregon Woolen Mill, one of the first industrial facilities on the property. Building 18 provides opportunities for a variety of potential uses that can maintain its basic, historic, industrial design. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 18
Mill O [Oregon Woolen Mill] Annex

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
18	Mill O Annex	Wood, concrete structure	-2	2.5	0.25

Comment:
Building Condition (RU-B) Ranking Comments:

While architecturally significant, this building is in relatively poor condition with areas of water damage, material deterioration and structural problems.

Shell: Water intrusion is evident throughout the building. Many of the original window openings are in poor shape, have been modified or are filled in and removed. Overall condition is poor.
Interior: Interior partitions and surfaces are in poor condition. Flooring services have been heavily used and are in poor condition. Basement levels are in bad condition.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems are inadequate and incomplete. Fully sprinklered facility.
Connectivity: The building is attached to an annex to the south and a roof canopy along the entire north façade. Removal of these appendages would not harm the reuse of the main structure.

Building Reuse (RU-P) Ranking Comments:

Building 18's reuse potential is better than average because it has great architectural character, floor plan layout and window openings.

Site Location: Adjacent to the Rivers edge, the west end of the structure could have substantial reuse given its potential for views and river access.
Flood Plain: The entire structure is in the flood plain complicating reuse scenarios.
Building Layout: The building and wood floor and roof framing will allow for easy modification for new vertical and horizontal circulation. Likewise the building shape and multiple large window openings make for an ideal reuse possibility.
Opportunity to Change: Given the open floor plate, building shape, large window areas, and potential for easy modification, this structure has a great potential for a new use.
New Use Potential: Due to its shape, height, site location and size, this structure could be repurposed for use as offices, housing or other mercantile uses.

CATEGORY A
STRUCTURAL EVALUATION

Building 18 – Mill "O"

Mill "O" is 2 story building with a partial third floor mezzanine and a split level roof. Additionally, there is a shallow basement that extends the full length and width of the building. The ground floor consists of a one-way concrete slab supported by substantial steel beams and columns. Foundations appeared to consist of conventional concrete spread footings. The second floor consists of 6 inch thick "car decking" supported by wood beams and steel columns. The steel columns appeared to be relatively new compared to the wood structure and were likely installed as part of a renovation. The third floor mezzanine is framed with 6 inch car decking supported by wood beams and wood columns. The roof is split into three levels with a low roof on the north and south side and a pop up gambrel roof in the center. The low roofs are framed with wood beams and wood car decking, and the upper roof is supported by wood trusses with wood decking. The perimeter of the building consists of concrete piers and spandrels with large windows, though some of the windows have been in-filled with CMU. The east end of the building has been renovated and the concrete pier and spandrel system has been replaced with steel columns and wood beams.

The concrete and steel framed first floor is very robust and appears adequate to resist significant gravity loads. Generally, this portion of the structure appeared to be in fair condition with minor cracking, spalling, and corrosion. The wood framed upper floors are far less robust and would require a detailed evaluation to determine their load carrying capacity. Additionally, the wood structure was in poor condition in many areas, showing signs of water damage and possible decay. The concrete perimeter walls appeared generally to be in fair condition, although there were some areas that had significant cracks and spalls. It appears that many areas would require repair work and it is possible that strengthening would be required depending on the future use and loading of the building.

The lateral force resisting system for the building would consist of the exterior concrete piers and spandrels acting as a moment frame, except at the east end where this wall has been removed. This structure has many seismic deficiencies including an incomplete load path, inadequate floor and roof diaphragms, inadequate connections of the diaphragms to the walls, and overstressed piers and spandrels. It is likely that the renovation work to correct these deficiencies would be fairly complicated due to the extents of the deficiencies and the partial floors with a split level roof.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
18	Mill "O"	3 story, concrete frame perimeter with wood framed interior.	-1	-1	-3	-2	-1.75

Building 23
Oregon City Woolen Mill Foundation Wall (North) (1865)

Building number 23 consists of the remnants of the original stone walls of the Oregon City Woolen Mill. This structure and Building number 25 are among the oldest remaining built resource on the property. The following tables combine the historic, reuse and structural evaluation. The metal structure above the stone walls was evaluated separately.

Historic

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
23	Oregon City Woolen Mill Walls (N)	Stone Foundation Walls	2	3	2.5

Reuse

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
23	Oregon City Woolen Mill Walls (N)	Stone Foundation Walls	1	3	2.0

Structural

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
23							n/a

Building 25
Oregon City Woolen Mill Foundation Wall (South) (1865)

Building number 25 consists of the remnants of the original stone walls of the Oregon City Woolen Mill. This structure and building number 23 are among the oldest remaining built resource on the property. The following tables combine the historic, reuse and structural evaluation. The metal structure above the stone walls was evaluated separately.

Historic

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
25	Oregon City Woolen Mill Walls (S)	Stone Foundation Walls	2	3	2.5

Reuse

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
25	Oregon City Woolen Mill Walls (S)	Stone Foundation Walls	1	3	2.0

Structural

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
25							n/a

CATEGORY A
HISTORIC EVALUATION

Building 32
Paper Machine No. 1 (1923), Eligible/Historic Contributing

A sturdy concrete structure, Building 32 is a long narrow volume that is located immediately west of Building 33, the Hawley Building. Constructed after a fire destroyed an earlier structure at this site, the building has been extended to the north and east (See Building 35), to form a roughly "ell" shaped volume.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
32	Paper Machine No 1	Narrow Rectangular volume	3	3	3.0

Comment:
A large open industrial space, Paper Machine No. 1 has a complex lower level as the result of the removal of the machine itself, but appears to retain high integrity and an ability to convey its original design and construction. Of generally solid construction that could be repurposed to a wide variety of uses either independently or in support of a Cluster-based redevelopment of Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 32
Paper Machine No. 1

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
32	Paper Machine No 1	Narrow Rectangular volume	0.5	2	1.25

Comment:
Building Condition (RU-B) Ranking Comments:
This single story building is in fair condition with areas of water damage and material deterioration.

Shell: Concrete structure in fair condition with openings on the north and south. Water intrusion is evident throughout the building.
Interior: Interior surfaces are in fair condition. Flooring surface has been heavily used and is in fair condition. Multiple basement levels are open to the main floor and are in poor condition.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems are inadequate and incomplete.
Connectivity: The building is attached to Building 33 (Hawley) to the east and Building 30 to the west. The basements are connected. This connection is open and could make removing this structure, or those attached, difficult.

Building Reuse (RU-P) Ranking Comments:
Building 32's reuse potential is better than average given its large open interior and connection to the lagoon to the south.

Site Location: Adjacent to the Lagoon and PGE's dam, the open structure connects the interior of the site to the water's edge.
Flood Plain: The entire structure is in the flood plain complicating reuse scenarios.
Building Layout: The building is a large single story open space which could make modification simple and straightforward. Openings on the north and south, and potential skylights, could fill it with natural light.
Opportunity to Change: The open floor plan, building shape, and potential for easy modification give this structure change potential. The flood plain compromises reuse; however, depending on the flood elevation, a second floor could be constructed within the footprint for a variety of uses.
New Use Potential: Due to its shape, height, site location and size, this structure could be repurposed for use as offices, retail atrium or other mercantile space. As a cluster with the adjacent Building 33 (Hawley), it could be used for shops and to provide horizontal circulation from the site's interior to the water's edge.

CATEGORY A
STRUCTURAL EVALUATION

Building 32 – No. 1 Paper Machine

The No. 1 Paper Machine Building is a one story building that is immediately adjacent and connected to the Hawley Building (Building # 33) and Mill "H" (Building # 30). The ground floor consists of a concrete slab that has significant openings/depressions in it to accommodate the paper machine. There is an extensive basement beneath the ground floor that is contiguous with the basement levels for the Hawley Building and the Mill "H" Building. The foundations consist of concrete piers that extend down to the rock layer. We would recommend a more detailed evaluation of the foundation system due to their complexity and how they interact with the foundations of the adjacent buildings. The roof is framed with wood decking spanning between steel beams. The steel beams clear span the structure and are supported by exterior concrete walls.

The foundations and ground floor slab appear to be rather substantial and capable of resisting significant gravity loads. We would recommend further study to confirm this, however, due to the limited nature of the observations we were able to complete. The ground floor showed significant "wear and tear" due to the industrial use of the building. The roof structure appeared to be in fair condition and likely to be adequate to resist code required gravity loads, however this should be verified with a more detailed evaluation.

The lateral force resisting system would consist of the exterior concrete walls acting as shear walls, though it is likely that they were not designed as such and would be overstressed. Additionally, the roof diaphragm would be inadequate to tie the building together and transfer loads to the exterior walls. Likely seismic renovation work would consist of adding new concrete shear walls, strengthening the roof diaphragm and its connection to the walls, and adding new foundation elements. Due to the fact that it is a single story building with a flat roof, we would anticipate that this renovation work would be relatively straight forward.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
32	No. 1 Paper Machine	1 Story Concrete Exterior Walls with Wood Roof Diaphragm	0	0	-2	0	-0.5

CATEGORY A
HISTORIC EVALUATION

Building 33 "Hawley Building" :
No 1 Finishing Room [Hawley Building] 1923, Eligible/Historic Contributing:

This four story concrete structure is prominently located at the base of the intake basin. With its iconic stepped parapets, painted signage and repetitive window bands it has long been a key visual element of the mill site and figures prominently in numerous pre- and post-WWII postcard images of Oregon City. The interior consists of multiple stories above grade and below, generally of large, open, industrial character with some connection to the adjoining structures to the west and north. Original or early-appearing industrial windows provide ample interior light and with simple concrete walls and floors accurately convey the historic industrial use. Building 33 retains very high integrity in design and materials.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
33	PM No. 1 Finishing (Hawley Bldg)	4-Story Concrete w/parapets	3	3	3.0

Comment:
Building 33 is considered one of the most important historic structures one the site, because of its design, prominent location, and strong connection to the Hawley Pulp & Paper Company use. A generally well built structure, it can be adapted to a variety of uses. Building 33, the Hawley Building could easily qualify for Certified Rehabilitation tax credits and can provide opportunity for a variety of potential uses that would maintain its basic, historic, industrial design.

CATEGORY A
REUSE EVALUATION

Building 33 "Hawley Building" :

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
33	PM No. 1 Finishing (Hawley Bldg)	4-story concrete w/ parapets	1	2.5	1.75

Comment:

Building Condition (RU-B) Ranking Comments:
This multiple story building is in fair condition with areas of water damage and material deterioration. Roofing and rainwater removal system requires replacement and/or improvement.

Shell: Concrete frame with large areas of windows. Windows are in poor condition and water intrusion is evident throughout the building.
Interior: Each floor is open with minimal interior partitions. Interior surfaces are in poor condition. Flooring surface has been heavily used and is in fair condition.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems do not exist.
Connectivity: The building is attached to Building 30 (No. 1 Paper Machine) to the west and Building 34a (Bleach Plant)to the north. The basements are connected. This connection is open and could make removing this structure, or those attached, difficult.

Building Reuse (RU-P) Ranking Comments:
Building 33's reuse potential is better than average given its site location, open floor plan and large expanse of windows.

Site Location: Adjacent to the Lagoon and PGE's dam, the Hawley Building is tall and prominent creating a great opportunity for re-use.
Flood Plain: The entire structure is in the flood plain complicating, at a minimum, reuse scenarios for the first floor.
Building Layout: The square building has a comfortable structural bay spacing and windows on multiple sides. Likewise the concrete floors contain multiple protrusions and curbs that will require removal. Floor to floor heights could allow for easy introduction of new electrical and HVAC systems.
Opportunity to Change: Due to the small floor plate, new vertical and horizontal circulation would occupy a large part of the rentable area.
New Use Potential: Due to its shape, height, site location and size, this structure could be repurposed for use as offices or other mercantile space. To maximize its reuse potential it could be clustered with the adjacent Building 32 and 34a, utilizing the former as entry and building access and the latter for elevator and stairs.

CATEGORY A
STRUCTURAL EVALUATION

Building 33 "Hawley Building"

The Hawley Building is a 4story concrete building that is square in plan, measuring approximately 76 feet by 76 feet. Typically, the floors consist of a flat concrete slab supported by concrete beams and girders. The roof is primarily framed with wood sheathing, and wood joists and beams. The exterior and interior of the building is supported by concrete columns, except that the interior columns supporting the roof are wood. The foundations appeared to consist of original concrete piers as well as newer concrete piers and girders that were added at a later date.

The concrete floors and columns are very robust and appear adequate to resist significant gravity loads. It is likely that the roof structure was not designed for current code required snow and wind loads and may need strengthening. We would recommend further study of the foundation system to verify that it is adequate for the anticipated loads. The structure appeared to be in generally good condition and would require minimal repair work for the gravity load resisting system.

The lateral force resisting system for the building would consist of the concrete columns and beams acting as a moment resisting frame, though it is likely that the frame was not designed as such and the members would be overstressed. The concrete floors will act as effective diaphragms, but it is likely that the wood roof diaphragm will not be adequate. Likely seismic upgrade work would include strengthening the roof diaphragm, adding concrete shear walls, adding foundation elements, bracing parapets, and adding miscellaneous straps and connectors to tie the building together.

BLDG ID	DESCRIPTION	COMMENT	Gravity System		Lateral System		AVG.
			SEC	SRP	SEC	SRP	
33	PM No. 1 Finishing (Hawley Bldg)	4-story Concrete – Moment Frames	2	2	-2	-1	0.25

CATEGORY A
HISTORIC EVALUATION

Building 42
Paper Machine No. 4 (1928), Eligible/Historic Contributing

Paper Machine No. 4 is among the most distinctive structures of the Hawley Pulp and Paper Company- era and visually dominates the eastern side of Main Street, serving a major element in defining the 20th century industrial character of the site. Strongly related to the historical significance of the site, the building is additionally significant for its design and generally high level integrity behind a series of unfortunate additions to the west façade (See Building 42B) that partially obscure the original design. Containing multiple levels, Paper Machine No. 4 is a large generally open volume built of reinforced concrete with large banks of industrial windows, many of which remain. It remains a key resource within the project area.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
42	Paper Machine No. 4	Large concrete volume	3	3	3.0

Comment:
Paper Machine No 4, along with building 42A and 49, form a street-wall along the east side of Main Street and more than any other structures on the site document the original "in-town" nature of this industrial site as part of Oregon City's 20th century history. The large floor plates and stout construction, coupled with the banked industrial windows and generally open character, make this building adaptable to a variety of new uses. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 42
Paper Machine No. 4

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
42	Paper Machine No. 4	Large concrete volume	1.5	2.5	2

Comment:
Building Condition (RU-B) Ranking Comments:
This multiple story building is in relatively good physical condition although it has been radically modified over its lifetime.

Shell: Concrete frame with large areas of windows. Windows openings have been filled in with glass block units and will require replacement. Water intrusion is evident throughout the building. Roofing and rainwater removal system requires replacement and/or improvement.
Interior: Each floor is open with minimal interior partitions. Interior surfaces are in poor condition. Flooring surface has been heavily used and is in fair condition.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems do exist but require updating to meet current requirements.
Connectivity: The building is attached to Building 42a (No. 4 Paper Machine Addition) to the south and Buildings 44-46 (No. 4 Finishing Room and Warehouse) to the east. This structure works fine as a stand alone building or connected to the adjacent buildings.

Building Reuse (RU-P) Ranking Comments:
Building 42's reuse potential is quite good given its site location, open floor plan and large openings for windows.

Site Location: Situated along the east edge of the property fronting the former Main Street, Building 42 is a very visible and easily accessed structure.
Flood Plain: The entire structure is out of the flood plain.
Building Layout: Consisting of a building grid defining a large open space, the building has a regular structural bay spacing and large west facing windows. Floor to floor heights could allow for easy introduction of new electrical and HVAC systems to accommodate new uses. The rectangular shape lends itself to partitioning into new uses.
Opportunity to Change: Multiple floors could be inserted in the volume of the building to create additional reuse opportunities. The open space should make it relatively easy to insert new stairs and elevator.
New Use Potential: Due to its shape, height, site location and size, this structure could be repurposed for use as housing, offices or other mercantile space. Retaining the attached adjacent structures does not add to the reuse potential of the building.

CATEGORY A
STRUCTURAL EVALUATION

Building 42 – No. 4 Paper Machine

The No. 4 paper machine building consists of a large, one story structure with a full basement. Additionally, there is a mezzanine level that extends along the full length of the east side. There has been an addition to the south end of the building (Building # 42A) and to the north end of the building (Building # 43). The ground floor consists of a concrete slab that has a large opening throughout to accommodate the paper machine. The roof framing consists of wood decking, steel purlins, and large steel trusses that clear span between the exterior walls. The exterior walls consist of concrete columns and spandrels with large window openings. The mezzanine is framed with concrete slabs, beams, and columns. Due to the additions, the walls on the south end and north end have been renovated to provide a connection between the structures. There is also a small wood framed pop-up portion of the roof at the northeast corner to accommodate a mechanical room.

The primary structure of the building is in fair condition and it appears likely that it would be adequate to resist code required gravity loads. The capacity and condition should be verified with further evaluation due to the limited nature of our observations. The ground floor slab showed considerable "wear and tear" from the industrial use of the building, but did not appear to have suffered any significant structural damage. Some minor corrosion, cracking, and spalling was noted at the underside of the ground floor slab and at the columns.

The lateral force resisting system for the building in the north/south direction would consist of the exterior columns and spandrels acting as a moment resisting frame, though it is likely that the frame was not designed as such and the members would be overstressed. At the north and south ends of the building where the walls were removed, steel braced frames were installed but it appears unlikely that the frames are adequate for current seismic loads. Likely seismic upgrade work would include adding new concrete shear walls (or steel braced frames), new foundation elements, strengthening the roof diaphragm, and providing a positive connection between the roof and the new shear walls.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
42	No. 4 Paper Machine	1 Story, concrete perimeter frame, steel roof trusses with wood decking	0	0	-2	-1	-0.75

CATEGORY A
HISTORIC EVALUATION

Building 42a
Paper Machine No. 4 (South Add) (post 1928?) Eligible/Historic Contributing

The exact history of this modified structure is unclear but was apparently constructed following the removal of the Oregon City Water Filtering & Pumping Plant that stood at this location in 1911. The 1925 Sanborn Map shows a "Pulp Factory No. 2, built of reinforced concrete. Historic photos document this as a smaller, slightly gabled, structure however it is likely that some portion of this building remains as the lower level of the current building. Building 42a was evaluated as an element of that structure in May 2002 and so is considered historic. Modified by the removal of at least one interior floor level and changes to the roof (n.d.), based on physical evidence, the structure partially wraps around the front (west-facing) elevation of Building 42 but remains generally intact.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
42A	Paper Machine 4, South Add	Concrete volume	2	3	2.5

Comment:
Although treated here as an independent element, this building is generally viewed as a continuation of Paper Machine No. 4 (Building 42) and plays an important role in establishing and maintaining the "Main Street" character on the east side of the project. While somewhat modified, the basic structure is that of a large open industrial volume. Appropriately-designed adaptive reuse of this building would be eligible for Certified Rehabilitation tax credits, supporting economic development that supports and enhances historic character.

CATEGORY A
REUSE EVALUATION

Building 42a
Paper Machine No. 4

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
42A	Paper Machine 4, South Add	Concrete volume	-1	2	.5

Comment:
Building Condition (RU-B) Ranking Comments:
This multiple story building is in poor physical condition lacking any inherent architectural character.

Shell: The exterior is in poor condition covered in an inappropriate building material that will require replacement. There are no windows. Multiple extensions for stairs, pipe raceways and exhaust stacks cover the exterior.
Interior: Consisting of a single story, the interior is one large space that provided room for the paper machine. The building had heavy use and shows in the poor to fair condition of the interior features.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems do exist but require updating to meet current requirements.
Connectivity: The building is attached to Building 42 (No. 4 Paper Machine) on the main floor and in the basement below and would not work well as a stand alone building.

Building Reuse (RU-P) Ranking Comments:
Due to its size and condition, Building 42a has limited reuse potential except in connection to Building 42.

Site Location: Situated along the east edge of the property fronting the former Main Street, Building 42a is a very visible and easily accessed structure.
Flood Plain: The entire structure is out of the flood plain.
Building Layout: This is a large open space with plenty of floor height to accommodate the installation of new electrical and HVAC systems to accommodate new uses.
Opportunity to Change: Given its condition the building would not be cost effective to renovate as a stand alone structure. In connection with the adjacent Building 42 it offers an opportunity to make a larger more efficient development. The open space should make it relatively easy to insert new stairs and elevator.
New Use Potential: This building has excellent reuse potential in connection with Building 42. Given its size and shape it could become the main entry and vertical circulation for a cluster of structures including Buildings 44, 45 and 46.

CATEGORY A
STRUCTURAL EVALUATION

Building 42A – No. 4 Paper Machine, South Addition

The south addition to the No. 4 paper machine consists of a large, one story structure that was extended off the south side of the original No. 4 paper machine building. It appears that the south wall of the original building was removed in order to connect the two structures. There is a basement that extends the full length and width of the structure and connects to the basement of the original building. The ground floor consists of a concrete slab that has a large opening throughout to accommodate the paper machine. The north part of the addition appears to extend over the roof of the original building. The roof framing consists of wood decking, steel purlins, and large steel trusses that clear span between the exterior walls. The exterior walls consist of concrete columns and spandrels and a corrugated siding product.

The primary structure of the building is in fair condition and it appears likely that it would be adequate to resist code required gravity loads. The capacity and condition should be verified with further evaluation due to the limited nature of our observations. The ground floor slab showed considerable "wear and tear" from the industrial use of the building, but did not appear to have suffered any significant structural damage. Some minor corrosion, cracking, and spalling was noted at the underside of the ground floor slab.

The building does not have a clear load path for resisting lateral loads. The exterior columns and beams would provide some moment frame action. However, due to the size and proportions of these members we do not believe this system would be very effective. It was also not clear how the roof diaphragm was connected to the exterior walls. A large steel braced frame was constructed on the west exterior wall, but it does not extend down to the foundations making its effectiveness questionable. Likely seismic renovation work would include adding new steel braced frames, new foundation elements, strengthening the roof diaphragm, and providing a positive connection of the roof to the new braced frames.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
42A	No. 4 Paper Machine, South Addition	1 Story, concrete perimeter frame, steel roof trusses with wood decking	0	0	-3	-1	-1.0

CATEGORY A
HISTORIC EVALUATION

Building 44
No. 4 Warehouse/ North Finishing Room (1928?) Eligible/Historic Contributing

Located immediately to the rear of PM #4 (Building 42), this southernmost warehouse portion is separated at grade level from that structure by an internal railroad siding. This structure was collectively included in the May 2002 evaluation as "No. 4 Warehouse." Building 44 is of concrete construction matched to the large window/cast concrete style of PM No. 4 and was built concurrently with that project. It is located abutting the main railroad line to the east. Building 44, along with similar additions to the north, add to the visual complexity of the site.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
44	PM No. 4, No. 4 Finishing Room	Concrete warehouse	2	3	2.5

Comment:
Building 44 visually creates an addition to PM No. 4 and adds considerably to the visual complexity of the site. Essentially consisting of large floor plates with industrial character, it can be adapted to future use to support PM No. 4. From a historic evaluation standpoint, as well as any future rehabilitation, Building 44 is seen less as a unique structure than as a component of the Paper Machine No. 4 "cluster." A historic resource, Building 44 would likely qualify for Certified Rehabilitation tax credits for an appropriately designed re-use.

CATEGORY A
REUSE EVALUATION

Building 44
No. 4 Warehouse/ North Finishing Room

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
44	PM No. 4, No. 4 Finishing Room	Concrete warehouse	0	1	.5

Comment:
Building Condition (RU-B) Ranking Comments:
This multiple story building is in fair physical condition with an interesting interior structural system of concrete columns and high floor to floor heights.

Shell: Building surround is stable and secure, constructed of concrete and in fair condition. There are minimal window openings. Roofing and rainwater removal system requires replacement and/or improvement.
Interior: The interior is in fair condition with areas of water intrusion and surfaces that show heavy use and damage. There are multiple tall concrete columns in the second floor space.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems are minimal and do not meet current requirements.
Connectivity: The building is attached to Building 42 (No. 4 Paper Machine) and Building 45 on the main floor and second floor.

Building Reuse (RU-P) Ranking Comments:
Due to its size and condition, this building has limited reuse potential except in connection to Building 42.

Site Location: Situated along the east edge of the property, the building is sandwiched between the railroad and Building 42 to the west. Access is via the adjacent structures, awkward and indirect.
Flood Plain: The entire structure is out of the flood plain.
Building Layout: The almost square shape of the building, lack of potential window openings and multiple interior columns impede an opportunity to reuse the structure easily. The installation of new electrical and HVAC systems to accommodate new uses could be readily achieved.
Opportunity to Change: As a wood structure it is rather easy to modify for new requirements. Given its condition, though, the building would not be cost effective to renovate as a stand alone structure.
New Use Potential: This building blocks the opportunity for windows along the east façade of Building 42 and therefore may not be beneficial to retain. It has limited opportunity for reuse on its own.

CATEGORY A
STRUCTURAL EVALUATION

Building 44 – No. 4 Finishing and Warehouse

The structure is a 2-story, concrete building. The floor framing is comprised of a one-way concrete slab, concrete joists and girders, and concrete columns. The roof framing is wood joists that span to steel beams that are supported by concrete columns. The decking is wood at the roof and the roof slopes down to the east. The second floor of Building 44 aligns with the second floor of Buildings 45 and 46, however the roof elevation is higher than the third level of the adjacent building. The first level is concrete slab on grade. There does not appear to be any tunnels below this building.

This building was used for warehouse storage. The columns are very large for the spacing and tributary area they support. It is likely that the roof structure was not designed for current snow and wind loads and may need strengthening. There is some visible spalling of the concrete at the interior face of the moment frame beams at the roof level and under level two. We would recommend further study of the foundation system to verify that it is adequate for the anticipated loads.

The north, east, and west exterior walls of the building have concrete beams and columns, which appear to be moment frames. There is some CMU at the perimeter walls as well, however it appears to be infill where windows were removed and not part of the lateral system. The floor to floor is very large at this building (approx. 18-20 feet), similar to Building 42. It also appears to be connected to Building 42, with no visible joint. The concrete floors will act as effective diaphragms, but it is likely that the wood roof diaphragm will not be adequate. Likely seismic upgrade work would include strengthen the roof diaphragm, adding concrete shear walls, and adding connectors to tie the building together.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
44	No. 4 Finishing and Warehouse	2 Story Concrete, Moment Frames	1	2	-2	-1	0

CATEGORY A
HISTORIC EVALUATION

Building 45
Paper Machine No. 4 Finishing Room/Central Warehouse (1911?) Eligible/Historic Contributing,

Located immediately to the rear of PM #4 (Building 42), this central portion of the warehouse is separated at grade level from that structure by an internal railroad siding. This structure was collectively included in the May 2002 evaluation as "No. 4 Warehouse." Building 45 is of mixed wood-frame construction with a large gable roof that visually rises above the surrounding structures and adds to the visual complexity of the site, especially from Highway 99.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
45	PM No. 4, Central Warehouse	Wood frame, gable roof	3	3	2.5

Comment:
Building 45 is an important visual element that extends from Paper Machine No. 4 to the railroad line. Although of mixed construction, the building visually creates an addition to PM No. 4 and adds considerably to the complexity of the site. Essentially consisting of large floor plates with industrial character, it can be adapted to future use to support PM No. 4. Building 45 is seen less as a unique structure than as a component of the Paper Machine No. 4 "cluster." A historic resource, Building 45 would likely qualify for Certified Rehabilitation tax credits for an appropriately designed re-use.

CATEGORY A
REUSE EVALUATION

Building 45
Paper Machine No. 4 Finishing Room/Central Warehouse

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
45	PM No. 4, Central Warehouse	Wood frame, gable roof	-1	0	-0.5

Comment:
Building Condition (RU-B) Ranking Comments:
This multiple story building is in poor condition.

Shell: Building exterior of wood and corrugated fiberglass is in stable but poor condition. Roofing and rainwater removal system requires replacement and/or improvement.
Interior: The wood interior is in poor condition with areas of water intrusion and surfaces that show heavy use and damage. The floor has had heavy use and shows multiple areas of damage and patching.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems are minimal and do not meet current requirements.
Connectivity: The building is attached to Building 42 (No. 4 Paper Machine) and Buildings 44 and 46 on the main floor and second floor.

Building Reuse (RU-P) Ranking Comments:
Due to its size and condition, this building has limited reuse potential except in connection to Building 42.

Site Location: Situated along the east edge of the property, the building is sandwiched between the railroad and Building 42 to the west. Access is via the adjacent structures, awkward and indirect.
Flood Plain: The entire structure is out of the flood plain.
Building Layout: The almost square shape of the building, lack of potential window openings and multiple interior columns impede an opportunity to reuse the structure easily. The installation of new electrical and HVAC systems to accommodate new uses could be readily achieved.
Opportunity to Change: As a wood structure it is rather easy to modify for new requirements. Given its condition, though, the building would not be cost effective to renovate as a stand alone structure.
New Use Potential: This building blocks the prospect for windows along the east façade of Building 42 and therefore may not be beneficial to retain. It has limited opportunity for reuse on its own.

CATEGORY A
STRUCTURAL EVALUATION

Building 45 – No. 4 Finishing and Warehouse

The structure is a 4 story, wood framed building built in approx. 1911. The typical floor framing is comprised of 4x16 rough sawn wood joists at approx. 16" oc spanning to timber girders. The timber girders run north-south in the building and are supported by timber columns. Each level of framing is framed on top of the ones below, columns are not continuous through the floor framing. Currently there is 2x decking over the floor joists with checker plating covering most of the decking. At the first level there are a few steel girders and columns that support a crane system. The east wall at the first level of the building is a concrete wall with buttresses, assumed to be retaining soil.
The roof is gabled for drainage and is built with a series of timber trusses on the column lines. The trusses are very lightly framed and do not follow typical truss geometry. They will need to be rebuilt or strengthened to support current snow load requirements.
Overall condition of the timber framing is good. The decking has some condition issues as seen from below. The checker plating covers the decking above. Many of the timber columns at the first level have been damaged, probably due to fork lift traffic in the space. The first floor columns may need replacing or strengthening to support anticipated loads.
There does not appear to be a lateral load resisting system. At the first level, the wood and steel columns appear to be embedded in the concrete, thus creating a "cantilevered column" system. However, none of the columns continue through the floor framing above. There is no apparent bracing at the exterior walls. Likely seismic upgrade would include adding braced frames or shear walls. The diaphragm will also need upgrading as well as strapping and continuity ties throughout the building.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
45	No. 4 Finishing and Warehouse	4 Story, Wood Framed	-1	-1	-3	-1	-1.5

CATEGORY A
HISTORIC EVALUATION

Building 46
Paper Machine No. 4 Finishing Room/North Warehouse (1925) Eligible/Historic Contributing,

Located immediately to the rear of PM #4 (Building 42), this northern portion of the warehouse is separated at grade level from that structure by an internal railroad siding. Building 46 was collectively included in the May 2002 evaluation as "No. 4 Warehouse." Building 46 is of wood framed construction with a cross-gable room (the ridge is at 90-degrees to the adjacent structures) and may be older than dated. A large open volume with multiple floors, this structure retains high integrity as an early example of industrial/warehouse construction and adds considerably to the visual complexity of the site, especially from Highway 99.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
46	PM No. 4 Warehouse/NORTH	Wood frame, gable volume	2	3	2.5

Comment:
Building 46 is an important visual element that extends from Paper Machine No. 4 to the railroad line. Although of mixed construction, the building visually creates an addition to PM No. 4 that supports the complexity of the site. Essentially consisting of large floor plates with industrial character, it can be adapted to future use to support PM No. 4. Building 46 is seen less as a unique structure than as a component of the Paper Machine No. 4 "cluster." A historic resource, Building 46 would likely qualify for Certified Rehabilitation tax credits for an appropriately designed re-use.

CATEGORY A
REUSE EVALUATION

Building 46
Paper Machine No. 4 Finishing Room/North Warehouse

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
46	PM No. 4 Warehouse/NORTH	Wood frame, gable volume	-1	0	-0.5

Comment:
Building Condition (RU-B) Ranking Comments:
This multiple story building is in poor condition.

Shell: Building exterior of wood and corrugated fiberglass is in stable but poor condition. Roofing and rainwater removal system requires replacement and/or improvement.
Interior: The wood interior is in poor condition with areas of water intrusion and surfaces that show heavy use and damage. The floor has had heavy use and shows multiple areas of damage and patching.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems are minimal and do not meet current requirements.
Connectivity: The building is attached to Building 45 on the main floor and second floor.

Building Reuse (RU-P) Ranking Comments:
Due to its size and condition, this building has limited reuse potential except in connection to Building 42.

Site Location: Situated along the east edge of the property, the building is sandwiched between the railroad and Building 42 to the west. Access is via the adjacent structures, awkward and indirect.
Flood Plain: The entire structure is out of the flood plain.
Building Layout: The almost square shape of the building, lack of potential window openings and multiple interior columns impede an opportunity to reuse the structure easily. The installation of new electrical and HVAC systems to accommodate new uses could be readily achieved.
Opportunity to Change: As a wood structure it is rather easy to modify for new requirements. Given its condition, though, the building would not be cost effective to renovate as a stand alone structure.
New Use Potential: This building blocks the prospect for windows along the east façade of Building 42 and therefore may not be beneficial to retain. It has limited opportunity for reuse on its own.

CATEGORY A
STRUCTURAL EVALUATION

Building 46 – No. 4 Finishing and Warehouse

The structure is a 4 story, wood framed building, adjacent to Building 45. The typical floor framing is comprised of 4x16 rough sawn wood joists at approx. 16" oc spanning to timber girders. The timber girders run north-south in the building and are supported by timber columns. Each level of framing is framed on top of the ones below, columns are not continuous through the floor framing. Currently there is 2x decking over the floor joists with checker plating covering most of the decking. At the first level there are a few steel girders and columns that support a crane system. The east wall at the first level of the building is a concrete wall with buttresses, assumed to be retaining soil.
The roof is gabled for drainage and is built with a series of timber trusses on the column lines. The trusses are very lightly framed and do not follow typical truss geometry. They will need to be rebuilt or strengthened to support current snow load requirements.
Overall condition of the timber framing is good. The decking has some condition issues as seen from below. The checker plating covers the decking above. Many of the timber columns at the first level have been damaged, probably due to fork lift traffic in the space. The first floor columns may need replacing or strengthening to support anticipated loads.
There does not appear to be a lateral load resisting system. At the first level, the wood and steel columns appear to be embedded in the concrete, thus creating a "cantilevered column" system. However, none of the columns continue through the floor framing above. There is no apparent bracing at the exterior walls. Likely seismic upgrade would include adding braced frames or shear walls. The diaphragm will also need upgrading as well as strapping and continuity ties throughout the building.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
46	No. 4 Finishing and Warehouse	4 Story, Wood Framed	-1	-1	-3	-1	-1.5

CATEGORY A
HISTORIC EVALUATION

Building 49
Mill B- DeInking (1928, Eligible/Historic Contributing):

This three+ story concrete structure was built as part of the Hawley 1928 expansion and with Paper Machine No. 4 (evaluated separately) combines to form an impressive industrial streetscape on the east side of Main Street. Various non-historic additions to the north, west and east are intrusive and partially obscure the original concrete and glass-block design.

BLDG ID	DESCRIPTION	COMMENT	HS-I	HS-C	AVG.
49	Mill B-DeInker	Multi-story concrete/glass block	3	3	3.0

Comment:
Although the original west and north-facing elevations of Mill B are obscured by non-historic steel frame additions, the original volume remains largely intact with high integrity. The rear addition, although non-historic, has little visual impact on overall character and might be repurposed to support future re-use. A glazed terra cotta tank at the front may be retained to add to character but is not considered historic and has not been individually evaluated.

CATEGORY A
REUSE EVALUATION

Building 49
Mill B- DeInking

BLDG ID	DESCRIPTION	COMMENT	RU-B	RU-P	AVG.
49	Mill B-DeInker	Multi-story concrete/glass block	1.5	2.5	2

Comment:
Building Condition (RU-B) Ranking Comments:
This multiple story building is in relatively good physical condition although it has been radically modified over its lifetime.

Shell: Concrete frame with large areas of windows. Windows openings have been filled in with glass block units and will require replacement. Water intrusion is evident throughout the building. Roofing and rainwater removal system requires replacement and/or improvement.
Interior: Each floor is open with minimal interior partitions. Interior surfaces are in poor condition. Flooring surface has been heavily used and is in fair condition.
Fire & Life Safety Systems: Vertical and horizontal ingress and egress systems do exist but require updating to meet current requirements.
Connectivity: The building is one of the few stand alone structures on the site although together with Building 42 defines Main Street's streetscape.

Building Reuse (RU-P) Ranking Comments:
Building 49's reuse potential is quite good given its site location, open floor plan and large openings for windows.

Site Location: Situated along the east edge of the property fronting the former Main Street, Building 49 is a very visible and easily accessed structure.
Flood Plain: The entire structure is out of the flood plain.
Building Layout: Consisting of a building grid defining a large open space, the building has a regular structural bay spacing and large west facing windows. Floor to floor heights could allow for easy introduction of new electrical and HVAC systems to accommodate new uses. The rectangular shape lends itself to partitioning into new uses.
Opportunity to Change: Multiple floors could be inserted in the volume of the building to create additional reuse opportunities. The open space should make it relatively easy to insert new stairs and elevator.
New Use Potential: Due to its shape, height, site location and size, this structure could be repurposed for use as housing, offices or other mercantile space.

CATEGORY A
STRUCTURAL EVALUATION

Building 49 – De-Ink / Pulper

The De-Ink / Pulper Building is rectangular in plan and contains a tall one story volume at the west side and a taller 3 story volume at the east side, creating a step in the roof. It is evident that a floor was removed at the west side to create the one story volume. The roof of the one story portion is framed with a one way concrete slab, concrete beams, and deep concrete girders that clear span the volume. The 3-story portion of the building is framed with concrete slabs, beams, and girders. The perimeter of the building consists of concrete columns and spandrels with large window openings at the upper portion. We assume the foundations consist of conventional concrete spread and strip footings.

The roof of the 1 story portion appeared to be in fair condition with only minor cracking, spalling, and corrosion. It also appears that this structure would be adequate to support code required gravity loads, however this should be confirmed with a more detailed evaluation. At the west wall where the intermediate floor was removed, it should be verified that the increase in the un-braced length of the columns does not result in those columns being overstressed. The second and third floor framing at the east side also appeared to be in fair condition with minor cracking, spalling, and corrosion. The roof in this area, however, is in very poor condition with large areas of cracked and spalled concrete and exposed reinforcing that is very corroded.

The lateral force resisting system for this building would consist of the concrete columns and beams acting as a moment frame, though it is likely that the frame was not designed as such and the members would be overstressed. The concrete floors and roofs will act as effective diaphragms, though it is likely that some additional straps and connectors may be required. Likely seismic upgrade work would include adding concrete shear walls, adding foundation elements, locally strengthening diaphragms, and adding miscellaneous straps and connectors.

Bldg ID	Description	Comment	Gravity System		Lateral System		Average
			SEC	SRP	SEC	SRP	
49	De-Ink / Pulper	1 story + 3 story concrete frame building.	0	0	-2	-1	-0.75

CATEGORY B BUILDINGS

BLUE HERON PAPER OFFICE BUILDING





BUILDING INFORMATION

Date built:	1932, renovated 1970s
Area:	19,500 +/- SF above ground
	6,500 +/- SF basement
Stories:	2+Basement
Historic:	Non-contributing

HISTORIC

Although inventoried as a significant remodel of an earlier structure, additional review has found no evidence that documents any surviving element of the 1932 Oregon City Post Office that stood on this site with the possible exception of the basement vault. While the office building has some limited architectural interest from a "Mid Century Modern" perspective, its prominent location at the entry point and non-compatible design is at odds with the overall historic character of the property.

STRUCTURAL

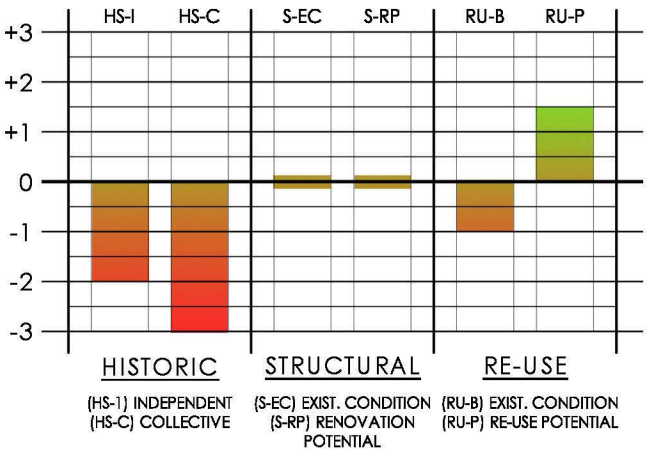
The Blue Heron Paper office building is a two story office building over a basement level constructed in the 1960's. The second floor at the east and north sides cantilever out substantially over the ground floor. The ground floor and second floor appeared to be a concrete pan-joist system. The roof was framed with manufactured wood-chord, steel web roof trusses.

It appears likely that the structure is adequate to resist code required gravity loads for its current use. However, it is unlikely that the structure would have adequate capacity to resist code required seismic loads.

RE-USE

Although an example of 'mid-century' modern architecture, this building shows years of deferred maintenance that has led to significant water intrusion. The interior plan is already that of an office building and could easily be reused. Sited at the main entrance, this building does not taking advantage of the prominent location.

BUILDING RATING





LOCATION MAP





BUILDING INFORMATION

Date built:	1954
Area:	14,000 +/- SF Footprint
Stories:	N/A
Historic:	Non-contributing

HISTORIC

A multi-story concrete and steel structure with a vertical element and a series of settling pools, this large structure was constructed in 1954 and later modified. Although an important element of the paper manufacturing process, the water filtration building has limited historic character and does not visually contribute to the site.

STRUCTURAL

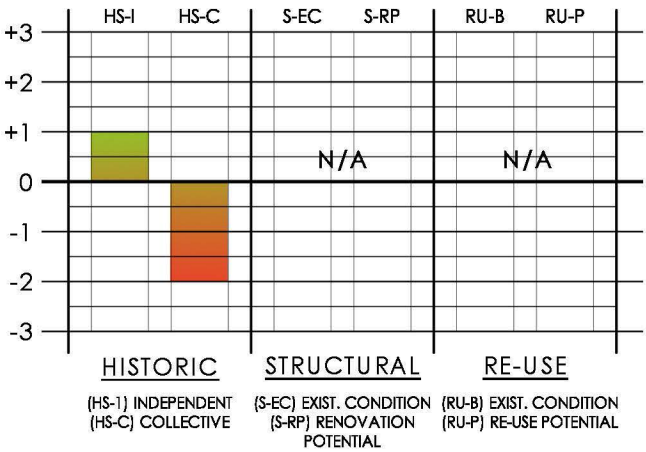
The filter plant is a large, two-story concrete structure. The second story contains large, open holding tanks to store water and concrete structured walkways between the tanks to provide access. The ground floor (beneath the tanks) is an open mechanical room. The framing consists of exterior concrete bearing walls and large concrete beams that clear span between the exterior walls to support the tank structures above. The concrete at the tanks and walkways was significantly deteriorated in some areas.

The gravity resisting system for this structure appeared to be fairly robust and capable of resisting significant loads. However, some remediation and repair work would be required due to the deterioration of the concrete. Due to the large and mostly uninterrupted concrete walls around the perimeter of the building, it is likely that the lateral force resisting system would be adequate to resist code required seismic loads.

RE-USE

Cast in place concrete structure with multiple concrete tanks. Although an integral part of the mill operation, this structure has little to no re-use potential.

BUILDING RATING





LOCATION MAP

WATER FILTRATION PLANT CONTROL TOWER





HISTORIC

A multi-story concrete and steel structure with a vertical element and a series of settling pools, this large structure was constructed in 1954 and later modified. Although an important element of the paper manufacturing process, the water filtration building has limited historic character and does not visually contribute to the site.

STRUCTURAL

The control tower is a three story structure located immediately adjacent to the filtration plant. The framing consists of steel columns and steel beams with concrete floor slabs at the second and third floor, and a metal deck at the roof. Typically the structure is clad with corrugated siding except for the second floor which was left open. Cross bracing consisting of a single steel angle is located throughout the building. Several areas of significantly deteriorated concrete was observed.

The gravity framing system for the building appeared to be in fairly good shape and capable of resisting typical gravity loads. Although the building does contain many bays of cross bracing, they would be significantly undersized to resist code required seismic forces.

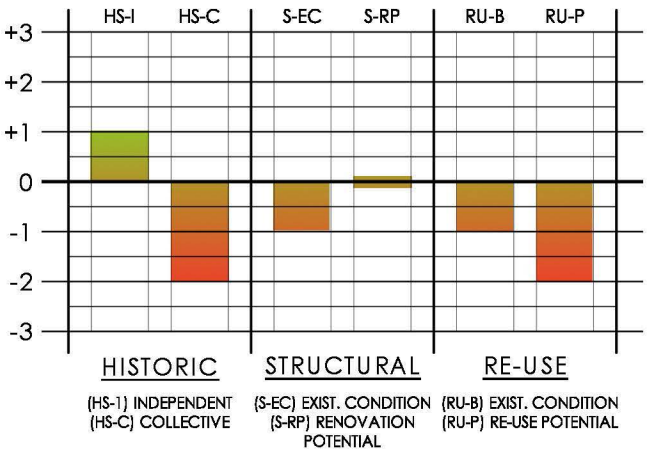
RE-USE

Although interesting as an 'industrial' form, it would require a significant renovation to the building's envelope and interiors to comply with current building and ADA codes. It currently occupies a part of the site that would be ideal for new development.

BUILDING INFORMATION

Date built:	1953
Area:	2,200 SF footprint
Stories:	3
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP





HISTORIC

This building has limited architectural character and does not add to or enhance the overall history of the site. Its placement partially obscures other historic structures.

STRUCTURAL

The fire station is a one story building located immediately adjacent to the filter plant and the control tower. This structure consists of exterior bearing CMU walls with manufactured wood roof trusses. It is assumed that the roof sheathing is plywood.

The CMU walls appeared to be in fair condition. It is likely that the roof trusses and plywood sheathing are adequate for required gravity loads, but this would have to be verified. Due to the large door openings in the CMU walls and lack of connections between the roof diaphragm and the walls, it is unlikely that the structure would be adequate to resist code required seismic loads.

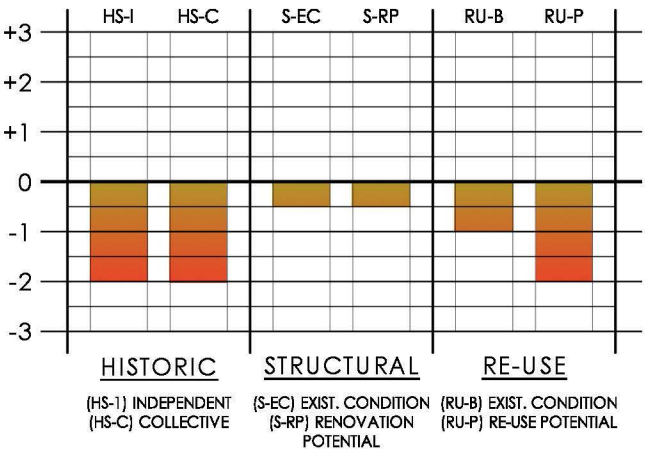
RE-USE

The building is in fair shape, but lacks any usable features beyond the large vehicular opening. With little effort, it does have limited reuse capabilites as a garage or an enclosed room.

BUILDING INFORMATION

Date built:	1955
Area:	1,650 SF footprint
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

05,06

OFFICE and GUARD SHACK





HISTORIC

This building has limited architectural character and does not add to or enhance the overall history of the site. Its placement partially obscures other historic structures.

STRUCTURAL

The office building is a one story structure located adjacent to the filtration plant control tower. The building consists of exterior CMU bearing walls and manufactured wood roof trusses. It is assumed that the roof is sheathed with plywood.

The CMU walls appeared to be in fair condition. It is likely that the roof trusses and plywood sheathing are adequate for required gravity loads, but this would have to be verified. Due to multiple door openings in the CMU walls and lack of connections between the roof diaphragm and the walls, it is unlikely that the structure would be adequate to resist code required seismic loads.

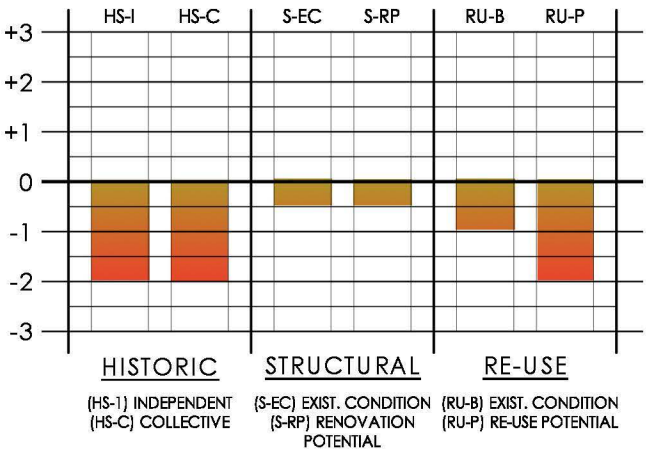
RE-USE

This building is in fair condition and would require a significant renovation to its interior. However their location obstructs site access and would be an ideal place for potential new development.

BUILDING INFORMATION

Date built:	1953
Area:	2,360 SF footprint
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

MILL 'D' CANOPY STRUCTURE





BUILDING INFORMATION

Date built:	1947
Area:	5,000 SF canopy
Historic:	Non-contributing

HISTORIC

This relatively undistinguished, non-historic, element of the Mill D "cluster" helps to strongly unify the three Mill D Warehouse buildings into a whole and significantly supports the visual character of the industrial use of the site. It would logically provide added value as outdoor protection for any re-use of the Mill D structures. Located at an entry-point view from the north, it additionally serves as an important element in establishing the historic industrial character of the site.

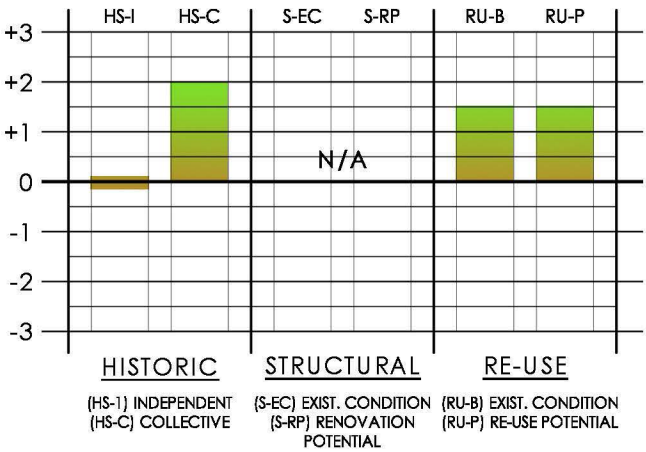
STRUCTURAL

The building is 28 feet wide by 178 feet long. The roof structure consists of steel joists, varying depth, supported by Buildings 9, 10, and 11 on the South and wide flange columns on the North. The roof is corrugated metal deck over the steel joists. The first level is concrete slab on grade. There does not appear to be any tunnels below this building. The south 8 feet are elevated at the warehouse elevation, then it drops 4 feet to grade. There are railroad tracks at the road level. There is no lateral system in the east-west direction. In the north-south direction, the building is tied to Buildings 9, 10, and 11.

RE-USE

This structured canopy is in satisfactory condition and would not take much effort for it to be restored. Only if buildings 9, 10, & 11 are retained, this canopy could serve as an 'industrial' portico partially covering 4th Street and serving the potential entrances to the adjacent buildings. However because of its lack of height and translucency, a dark tunnel effect is created along those buildings.

BUILDING RATING





LOCATION MAP

MILL 'D' CANOPY STRUCTURE





HISTORIC

This open-sided metal covering over 4th Street is of recent construction and has no historic value. Its scale and construction visually impacts adjacent historic resources.

STRUCTURAL

The Mill D canopy and covered area is a one story, open roof structure. The framing consists of steel posts, steel beams, manufactured steel roof trusses, and a metal roof deck. The structure is open, with no cladding on any of the four sides. One side of the building contained tension rod bracing.

The structure appeared to be in fair condition, but it is unlikely that it would meet code requirements for gravity and lateral loads.

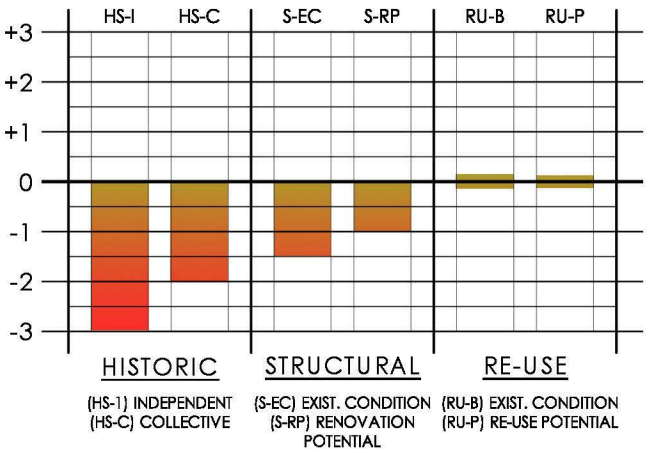
RE-USE

This structured canopy is in satisfactory condition and could be retained. For future development however, it serves little purpose. It visually impacts views down 4th street and across the river.

BUILDING INFORMATION

Date built:	unkown
Area:	1,300 SF canopy
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

WEST ADDITION TO #3 PAPER MACHINE



HISTORIC
This is a non-historic addition to an identified resource. It has no historic value and, hidden behind PM #3, it has limited visual impact on the site due to location.

STRUCTURAL
The West Addition of the No. 3 Paper Machine Building is a 2 story structure. The upper floor aligns with the ground level of the No. 3 Paper Machine Building with one level below, aligning with the basement of the No. 3 Paper Machine Building. The floor structure is a combination of robust steel and wood framing supported by steel and concrete columns. Most of the exterior walls are open or have minimal metal siding.

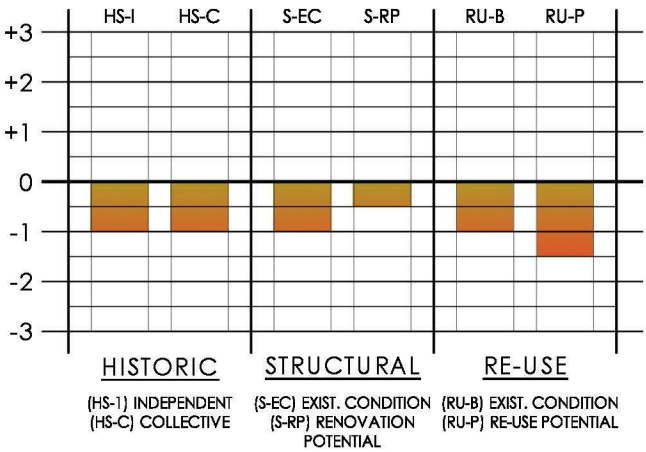
The exterior grade in this area slopes down significantly towards the river to the west and the lowest structured floor is significantly higher than grade. The foundation of the building is a concrete column and piers system on rock below. There is also a concrete dam below the structure.

RE-USE
For future re-use, this small building would require a significant renovation just to meet building and ADA codes, yet yields such a small potential for meaningful repurposing.

BUILDING INFORMATION

Date built:	unknown
Area:	5,000 SF Footprint
Stories:	2
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP





HISTORIC

This building built circa 1970 has limited architectural character and due to its prominent location on Main Street significantly detracts from the character of adjacent historic structures.

STRUCTURAL

The Butler Building is a one story, pre-fabricated steel structure. The roof consists of a metal deck, steel purlins, and manufactured steel bents that clear span the space. Foundations are assumed to be conventional concrete spread footings. Lateral resistance is provided by moment frame action in the direction of the bents, and by steel cross bracing in the opposite direction. It is likely that the structure is adequate for gravity loads, but not for seismic loads.

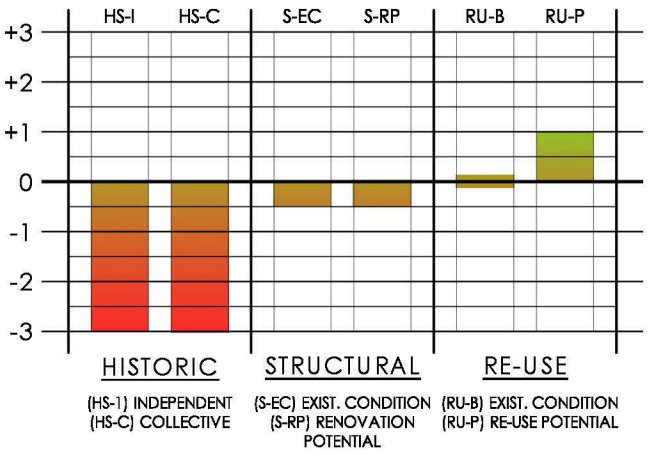
RE-USE

The Butler Building is in fair condition and would need some repairs to the roofing and siding for reuse. The repurposing of this building is versatile individually, but disrupts the reuse potential of some of the adjacent buildings.

BUILDING INFORMATION

Date built:	1970s
Area:	6,400 SF Footprint
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

WEST ROOF STRUCTURE OVER 3RD STREET



HISTORIC

This is a cantilevered, single-slope roof, metal canopy that lines much of Mill O and connects it with PM #3 and the PM #2 site. While not identified as a historic element but possibly older, it protects the loading dock area of Mill O and adds to the overall historic character of the site.

STRUCTURAL

The roof structure over 3rd street (west) is a covered area that extends between the Mill O building and the No. 2 and No. 3 paper machine buildings. The structure consists of steel beams, steel purlins, and a metal roof deck with skylights. On the south side, the beams frame into the concrete walls that are part of the Mill O building. On the north side the building is supported by a combination of steel columns and connections to the No. 3 paper machine buildings.

For gravity loads, it appears likely that the structure would be adequate for code required loads. Due to the fact that the structure is rigidly connected to two separate structures which would move independently in a seismic event, the framing would have to be modified to accommodate this differential movement. It is also likely that the metal roof deck may need some strengthening to meet code required seismic loads.

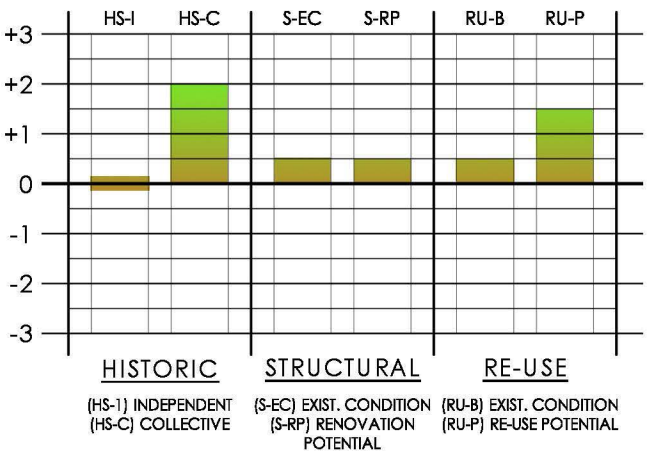
RE-USE

This protective steel canopy could offer a large covered outdoor space for future uses installed in the Mill O structure it's attached to. However, it blocks light into the Mill O building and is so high that a smaller canopy would do a better job of protecting pedestrians at the ground level. Given its structural and overall condition, the cost to improve this structure would likely outweigh any reuse potential.

BUILDING INFORMATION

Date built:	unknown
Area:	7,500 SF
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

EAST ROOF STRUCTURE OVER 3RD STREET





HISTORIC

This is a largely free-standing metal gable roof above 3rd Street that extends beyond Mill O to Main Street. Appearing of more recent construction, this feature interrupts Main Street and obscures the character of adjacent historic resources.

STRUCTURAL

The roof structure over 3rd street is a one story manufactured steel building (commonly known as a "Butler Building"). The structure consists of steel bents supporting steel purlins and a metal roof deck with two rows of skylights. The sides of the building are open with no cladding. The lateral system consists of the steel bents acting as moment frames in the transverse direction, and tension rod bracing between the bents in the longitudinal direction. Several of the steel bents had been modified such that they were supported by secondary steel structure rather than extending down to the foundations. These conditions appeared questionable and likely were not properly designed.

It appears unlikely that the structure would be adequate to resist code required gravity and lateral loads.

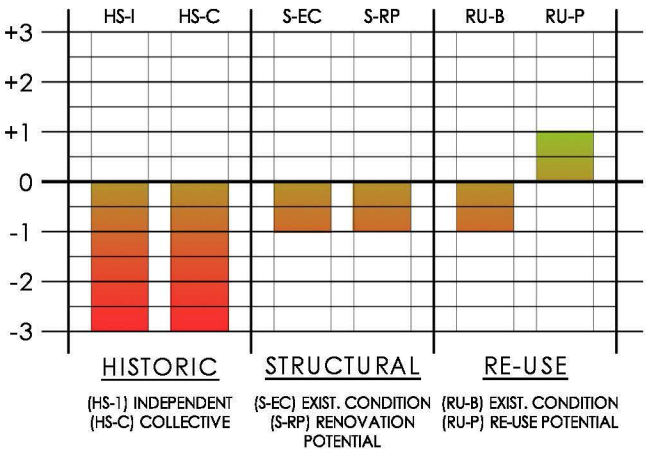
RE-USE

This protective steel canopy could offer a large covered outdoor space for future uses installed in Mill O, Building 18, the structure it's attached to. However, it covers 3rd street reducing pedestrian and auto access to Mill O, and blocks views into the southern part of the site. On the whole, this structure has minimal reuse potential.

BUILDING INFORMATION

Date built:	unknown
Area:	5,000 SF
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP





HISTORIC

Although evaluated as Non-historic in 2003, interior inspection of this building documents it as an early wood-frame volume the likely dates to the early 20th century, perhaps an element of the Woolen Mill operation. While some interior structural character remains, the exterior has been completely modified, obscuring its original design and limiting its historic integrity. In its entirety, or just through salvaged materials, portions of the Carpenter Shop could support the a Mill O rehabilitation scenario however the Carpenter Shop is not considered sufficiently intact to qualify as historic. It's location adds to the complexity of the site, however its lack of visual integrity on the exterior does not support or reflect its historic character.

STRUCTURAL

The carpenter shop is located immediately adjacent to the Mill O building. It is one story above grade and one story below grade. The framing consists of heavy timber wood columns, wood beams, and wood "car decking." The ground floor slab is concrete which was likely poured over the original wood floor. The exterior of the building is clad with metal siding.

The building appears to be in fair condition, although some of the wood framing showed signs of deterioration. We would recommend a more detailed evaluation to determine the gravity load adequacy of the building. The structure does not have a recognized lateral force resisting system and would not be able to resist code required seismic forces.

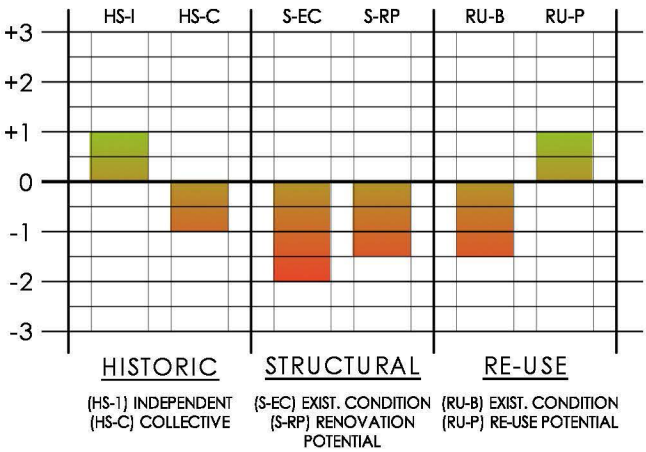
BUILDING INFORMATION

Date built:	pre-1911
Area:	6,800 SF Footprint
Stories:	1
Historic:	Non-contributing

RE-USE

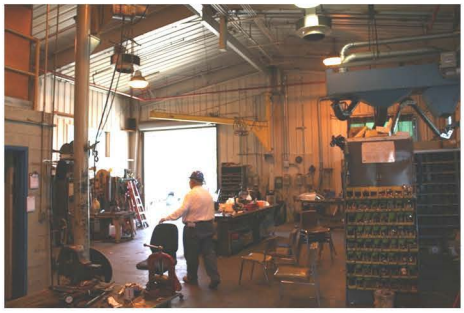
While the interior of this building is in fair condition, the modified exterior would have to be completely replaced to reuse this building in any meaningful way. Removing the building shell, but retaining the wood structure, open to the elements, could create a large pergola that could add to the historic character of the site.

BUILDING RATING





LOCATION MAP





HISTORIC

Metal framed and sided building located above the pipe chase. This non-historic modern building has limited architectural value and, although peripheral, detracts from the historic character of the site.

STRUCTURAL

The pipe shop is a one story manufactured steel building (commonly known as a "Butler Building"). The structure consists of steel bents supporting steel purlins and a metal roof deck. The sides of the building are clad with a corrugated metal siding. The lateral system consists of the steel bents acting as moment frames in the transverse direction, and tension rod bracing between the bents in the longitudinal direction. There is a covered area that extends off of the east side of the building. A portion of this structure appears to be an original part of the steel bents, and the other portion appears to have been added on at a later date.

The primary structure appeared to be in fair condition with minor areas of distress. It is likely that the structure is adequate to resist required gravity loads. However, it is likely that the structure is not adequate to resist code required lateral loads.

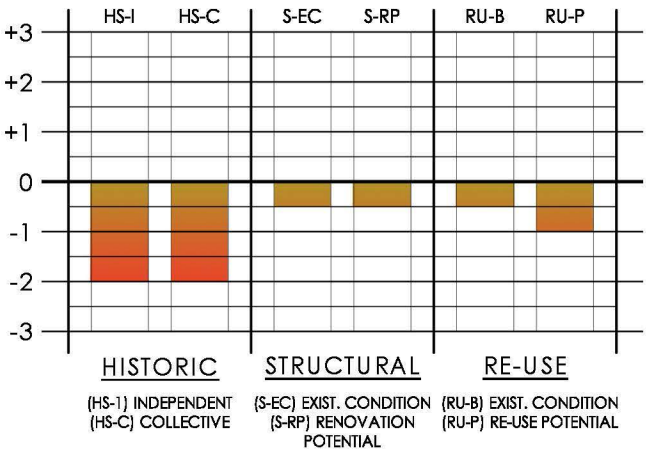
RE-USE

The pipe shop is a simple butler building in fair condition. Its reuse potential is limited to its current use as a storage building. Its location within the site is detrimental to site/river access and obstructs southern views towards the waterfall.

BUILDING INFORMATION

Date built:	1960s
Area:	3,000 SF Footprint
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP



HISTORIC

The large metal clad building is not historic. It has limited architectural character and detracts from the character of the site.

STRUCTURAL

The millwright shop is a one story manufactured steel building (commonly known as a "Butler Building"). The structure consists of steel bents supporting steel purlins and a metal roof deck with several skylights. The sides of the building are clad with a corrugated metal siding. The lateral system consists of the steel bents acting as moment frames in the transverse direction, and tension rod bracing between the bents in the longitudinal direction.

The primary structure appeared to be in fair condition with minor areas of distress. It is likely that the structure is adequate to resist code required gravity loads. However, it is unlikely that the structure would be adequate to resist code required seismic loads.

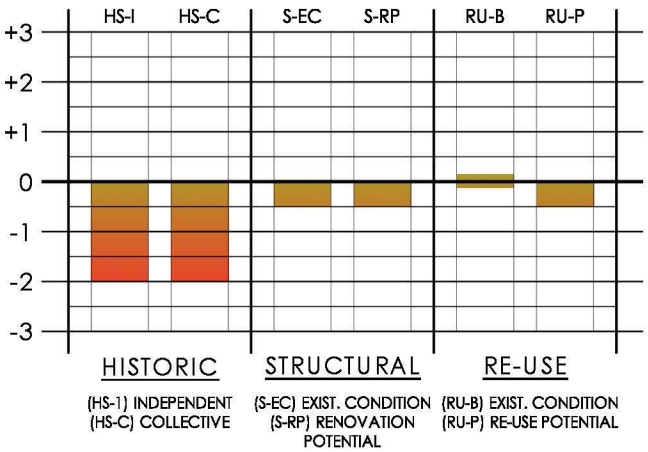
RE-USE

The millwright shop shop is a simple pre-engineered building in fair condition. Its reuse potential is limited to its current use as a storage building. Its location within the site is detrimental to site/river access.

BUILDING INFORMATION

Date built:	1960s
Area:	4,400 SF
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP





BUILDING INFORMATION

Date built:	1960s
Area:	2,500 SF
Stories:	1
Historic:	Non-contributing

HISTORIC

This building contains some earlier-appearing structural elements in its manufactured trusses and may be older than assumed in 2003. However it has limited architectural character and, because of its location and lack of connection, does add to the industrial character of the site.

STRUCTURAL

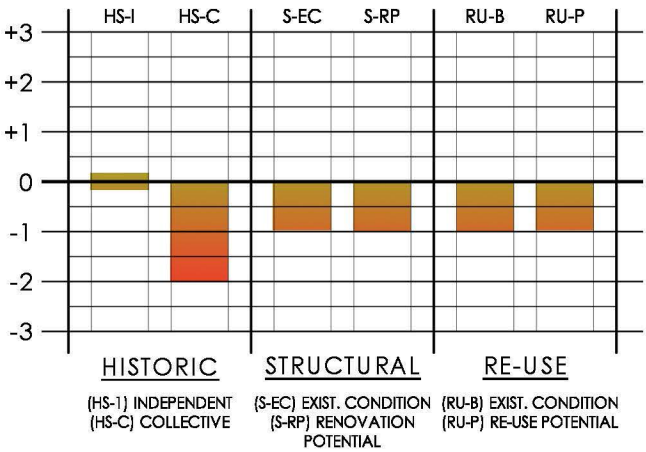
The auto shop is an early version of a manufactured steel building (now commonly known as a "Butler Building"). The structure consists of steel bents supporting steel purlins and a metal roof deck with skylights. Unlike modern Butler Buildings which use solid steel plates welded together to create a structural section, the bents of the auto shop were constructed out of pipe sections welded together to form a truss. The sides of the building are clad with a corrugated metal siding. The lateral system consists of the steel bents acting as moment frames in the transverse direction. In the longitudinal direction, there is no discernible lateral system.

The primary structure appeared to be in fair condition with minor areas of distress. It is unlikely that the structure would be adequate for code required gravity or lateral loads.

RE-USE

The auto shop is a simple pre-engineered building in fair condition. Many of the translucent panels would have to be replaced. Its reuse potential is limited to its current use as a storage building. Its location within the site is detrimental to site/river access.

BUILDING RATING





LOCATION MAP

NORTH WOOLEN MILLS WALLS/FOUNDATION





BUILDING INFORMATION

Date built:	pre 1888
Area:	8,600 SF footprint
Stories:	N/A
Historic:	Contributing

HISTORIC

Although essentially remnants, the stone foundation walls of the Oregon Woolen Mill could be valuable and interesting features in a future use of the site. Their individual historic eligibility has not been determined. All or portions of the stone could be incorporated into a number of interpretive or artistic features. They could be repurposed as isolated landscape elements either in their original location (preferred) or disassembled, relocated and re-used as interpretative elements elsewhere on-site. The walls might also be incorporated into some new construction project as an interior or exterior element, such as a non-bearing interior wall as part of a larger structure. Given the nature of this resource, it is unlikely that independent reuse would qualify for tax credit under the Certified Rehabilitation program but a creative interpretive use either free-standing or as part of new construction might well qualify for other forms of grant assistance through entities such as the Oregon Arts or Heritage commissions, through 1% for the Arts, or other grant funding.

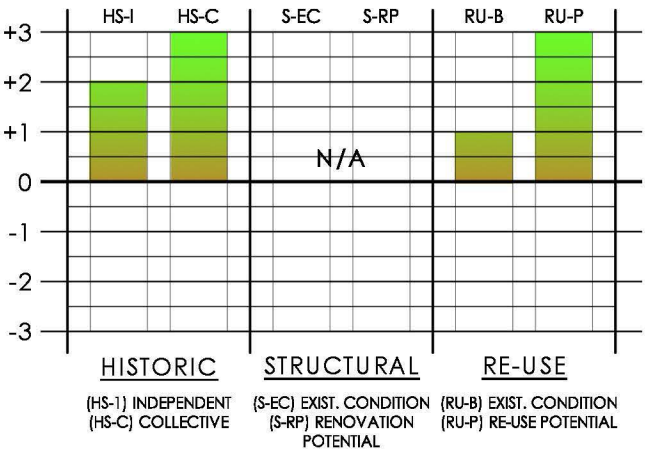
STRUCTURAL

Building number 23 consists of the original stone walls of the Woolen Mill. The remaining structure no longer exists and the stone walls cantilever up from their foundations. It appears that at the east side, the walls are retaining several feet of soil. There were also several areas observed where original openings had been in-filled with CMU.
The stone walls would not be suitable for supporting new loads, either gravity or lateral. If the walls are to remain in place, renovation work would be required to make them stable during a seismic event.

RE-USE

These stone walls, a wonderful historic remnant, could make a delightful outdoor space within any future development. The cost of the work required to make them safe would need to be weighed against the quality of outdoor space they would frame.

BUILDING RATING





LOCATION MAP

NORTH WOOLEN MILLS ROOF STRUCTURE

HISTORIC

This metal supported roof element projects above the eastern portion of the open foundation of Building 23. Although this feature may provide some modest weather protection to the exposed interior stone foundation walls, it has no historic value and generally detracts from the character of the site.

STRUCTURAL

Building Number 24 is a shed roof that sits inboard of the stone walls that comprise the woolen mill (Building Number 25). The east side of the structure bears on the original stone walls. The west side is supported by new steel posts. The roof framing consists of steel beams, steel purlins, and a metal roof deck. It is unlikely that the structure is adequate to resist code required gravity or lateral loads.

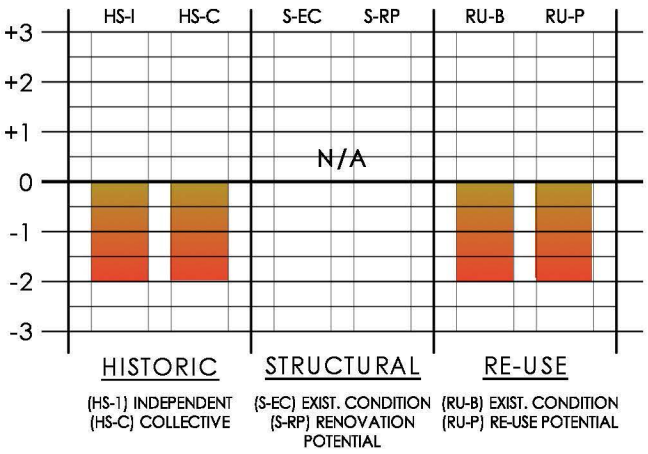
RE-USE

This roof structure's quality of construction together with its size and condition mean that it has little value and minimal reuse potential.

BUILDING INFORMATION

Date built:	unknown
Area:	3,800 SF
Historic:	Non-contributing

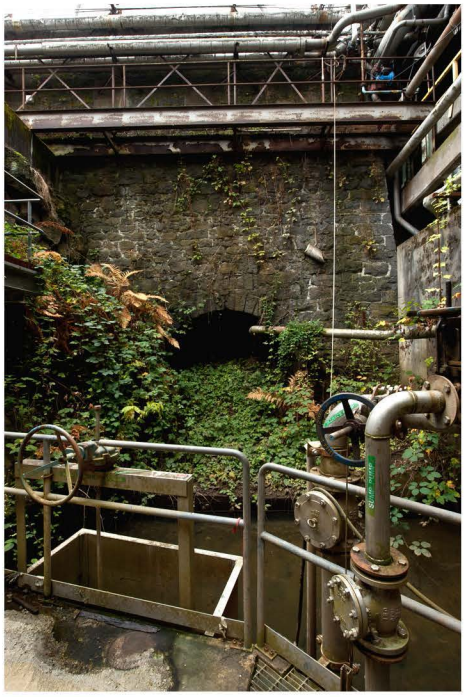
BUILDING RATING





LOCATION MAP

SOUTH WOOLEN MILLS WALLS/FOUNDATION



HISTORIC

One of the oldest built elements on site, the stone foundation walls of the Oregon Woolen Mill would be valuable elements in some future construction, either as isolated landscape elements (either in their original location (preferred) or relocated and re-used as interpretative elements elsewhere on-site), or might be incorporated into some new construction project as a decorative interior or exterior element. Their individual historic eligibility has not been determined and, given the nature of the resource, it is unlikely that any use would qualify for tax credit under the Certified Rehabilitation program but a creative interpretive use either free-standing or as part of new construction might well qualify for other forms of grant assistance through entities such as the Oregon Arts or Heritage commissions, through 1% for the Arts, or other grant funding.

STRUCTURAL

Building number 25 consists of the original stone walls of the Woolen Mill. The remaining structure no longer exists and the stone walls cantilever up from their foundations. It appears that at the east side, the walls are retaining several feet of soil. There were also several areas observed where original openings had been in-filled with CMU. At the southwest corner, the stone walls transition into unreinforced masonry (URM) walls.

The stone walls and URM walls would not be suitable for supporting new loads, either gravity or lateral. If the walls are to remain in place, renovation work would be required to make them stable during a seismic event.

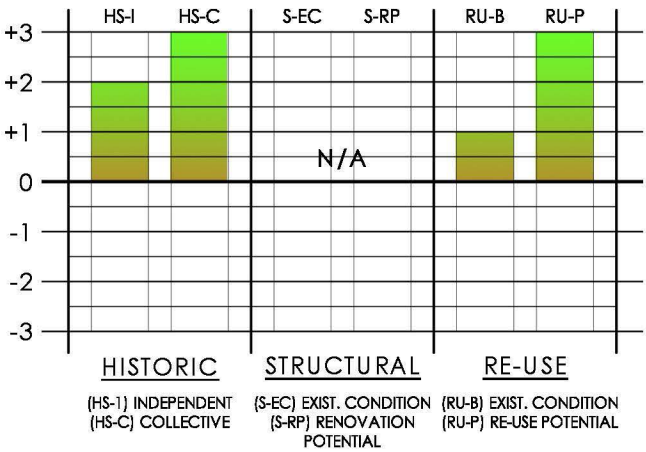
BUILDING INFORMATION

Date built:	pre 1892
Area:	varied footprint
Stories:	N/A
Historic:	Contributing

RE-USE

These stone walls, a wonderful part of the history of the site, could frame an outdoor terrace or garden within any future development. Additionally, this could be used as a landscaped area that is a part of the site's stormwater retention and mediation system.

BUILDING RATING





LOCATION MAP

SOUTH WOOLEN MILLS ROOF STRUCTURE



HISTORIC

This steel structure completely covers the south stone foundation area of Building 25. It was called "Covered Parking" in the May 2002 evaluation and treated as an element of the combined foundation wall resource.

While this roof logically provides some protection to the exposed interior stone foundation walls it has no historic value and significantly detracts from and obscures the character of the site.

STRUCTURAL

Building Number 26 is a manufactured steel building (commonly known as a "Butler Building) that sits directly inboard of the old stone walls that were part of the woolen mill (Building number 25). The structure consists of steel bents, steel purlins, and a metal roof deck. Lateral forces are resisted by moment frame action of the steel bents in the transverse direction, and steel tension rod bracing in the longitudinal direction. It is unlikely that the structure is adequate to resist code required gravity and lateral loads.

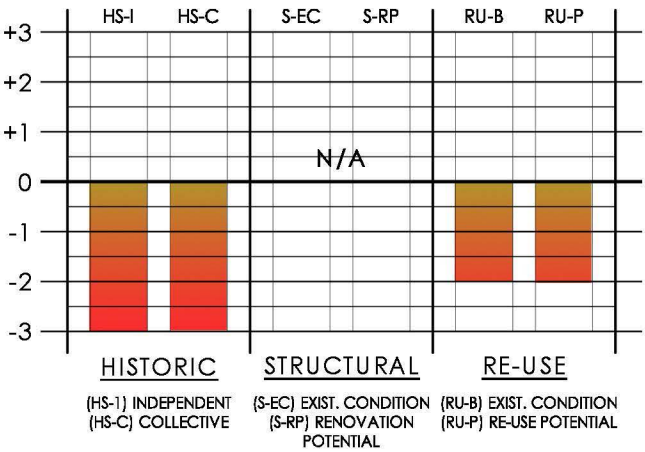
RE-USE

This roof structure's quality of construction together with its size and condition mean that it has little value and minimal reuse potential.

BUILDING INFORMATION

Date built:	unknown
Area:	6,800 SF
Stories:	N/A
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

RECOVERY BOILER AND BOILER PLANT



HISTORIC

Built in 1955-56, this structure is essentially a Transite-clad steel framework to protect multiple cast-iron boilers. The building or cladding is not historic and has little architectural value however the multiple projecting vertical elements (stacks) provide some visual interest that supports the industrial history of the site. Retention of some portion of these vertical elements, if possible, benefit the overall character of the site.

STRUCTURAL

The focus of the evaluation for the boiler buildings was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads if the structure above was removed.

The buildings housing the boilers are steel framed structures with corrugated siding. The foundations below Main Street level were a combination of steel columns and concrete piers supported on conventional concrete footings that bear directly on rock. The structures appear to share foundations for the pipe chase at the west side.

In general, the foundations appeared to be in good condition, with only minor corrosion or other deterioration noted. The foundation structure appeared quite robust and capable of supporting significant gravity loads. It is likely that the foundations could support a new low to mid rise building if the boiler buildings were removed. It should be noted that the foundation structure did not contain a lateral force resisting system and some level of retrofit work would be required to provide a system that could transmit lateral forces down to the rock layer.

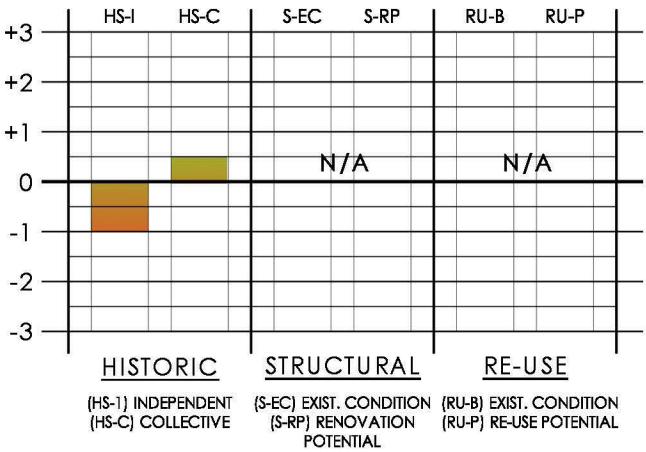
BUILDING INFORMATION

Date built:	1950s
Area:	11,200 SF footprint
Historic:	Non-contributing

RE-USE

These two structures have very little reuse potential and would be very difficult to renovate in order to inhabit.

BUILDING RATING





LOCATION MAP



BUILDING INFORMATION

Date built:	1955-1956
Historic:	Non-contributing

HISTORIC

Built in 1955-56, this structure is essentially a Transite-clad steel framework around a series of concrete floor plates. The building is not historic and minimal architectural value but due to location has little impact on adjacent resources.

STRUCTURAL

The focus of the evaluation for the Mill H building was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads if the structure above was removed.

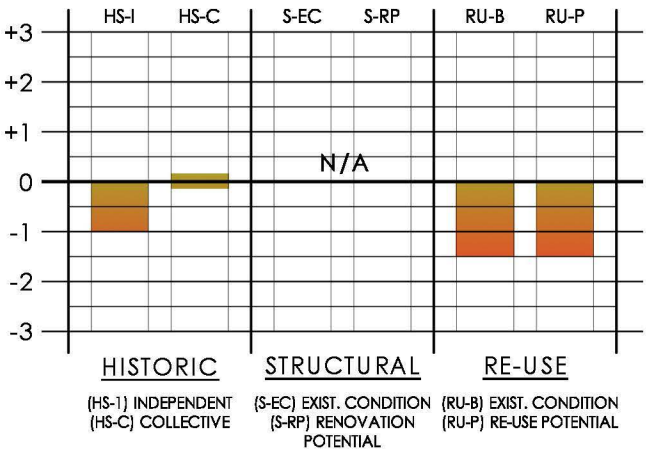
The Mill H building is a steel framed structure with a concrete roof slab and corrugated siding. The foundations below Main Street level consist of large concrete piers supported on conventional concrete footings that bear directly on rock. The piers ranged in size from approximately 24-inch diameter to approximately 36-inch diameter, though some significantly larger piers were also observed. The basement level below Main Street is primarily a concrete framed structure with concrete columns, beams, and slabs. Some areas of steel framing were also observed which appeared to be part of previous renovation work.

In general, the foundations and basement structure appeared to be in good condition, with only minor corrosion or other deterioration noted. The structure appeared quite robust and capable of supporting significant gravity loads. It is likely that the foundations could support a new low to mid rise building if the Mill H building was removed. It should be noted that the foundation structure did not contain a lateral force resisting system and some level of retrofit work would be required to provide a system that could transmit lateral forces down to the rock layer.

RE-USE

Mill 'H' is in poor condition. Restoration of the building would be very difficult. Its location within the site is detrimental to site/river access.

BUILDING RATING





LOCATION MAP





BUILDING INFORMATION

Date built:	1955-56
Historic:	Non-contributing

HISTORIC

Built in 1955-56, this structure is essentially a Transite-clad steel framework around a series of concrete floor plates. The building is not historic and minimal architectural value but due to location has little impact on adjacent resources.

STRUCTURAL

The focus of the evaluation for the Mill H THP Reject building was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads if the structure above was removed.

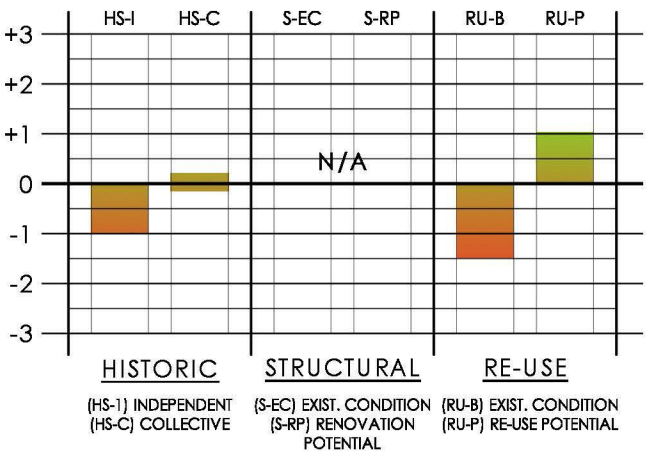
The Mill H THP Reject building is a steel framed structure with a concrete roof slab and corrugated siding. The foundations below Main Street level consist of large concrete piers supported on conventional concrete footings that bear directly on rock. The piers ranged in size from approximately 24-inch diameter to approximately 36-inch diameter, though some significantly larger piers were also observed. The basement level below Main Street is primarily a concrete framed structure with concrete columns, beams, and slabs. Some areas of steel framing were also observed which appeared to be part of previous renovation work.

In general, the foundations and basement structure appeared to be in good condition, with only minor corrosion or other deterioration noted. The structure appeared quite robust and capable of supporting significant gravity loads. It is likely that the foundations could support a new low to mid rise building if the Mill H THP Reject building was removed. It should be noted that the foundation structure did not contain a lateral force resisting system and some level of retrofit work would be required to provide a system that could transmit lateral forces down to the rock layer.

RE-USE

The building is covered in transite panels and would have to be remediated. However, its location and plan proportions do have opportunities for future development, albeit with much effort.

BUILDING RATING





LOCATION MAP

NO. 1 PAPER MACHINE - BLEACH PLANT



HISTORIC

This is a fairly modern non-historic steel volume with concrete floor plates that was built immediately north of Building 33. Clad with corrugated siding, it was not individually evaluated in May 2002 but considered a portion of Building 32.

Building 34A has no internal historic significance and, due to location, partially obscures the historic character of The Hawley Building, Building 32. It may, however, provide some ancillary function in a future adaptive reuse and is minimally supportive of the complex multi- building complexity of the site.

STRUCTURAL

The bleach plant is a three story structure that is adjacent to, and ties into, the Hawley Building. The structure consists of steel columns and beams with concrete floors. The roof is framed with steel beams with wood decking. Significant corrosion was noted in some areas, but these areas were fairly limited. There were a significant number of steel braced frames located throughout the building, however, these frames did not appear to conform to current code levels and detailing requirements.

Except for the localized areas of corrosion, the primary structure appeared to be in fair condition. The gravity system appears to be robust and likely can support significant loads. Although there are steel braced frames located throughout the building, it is likely that the structure would still require some amount of retrofit work to resist code required seismic loads.

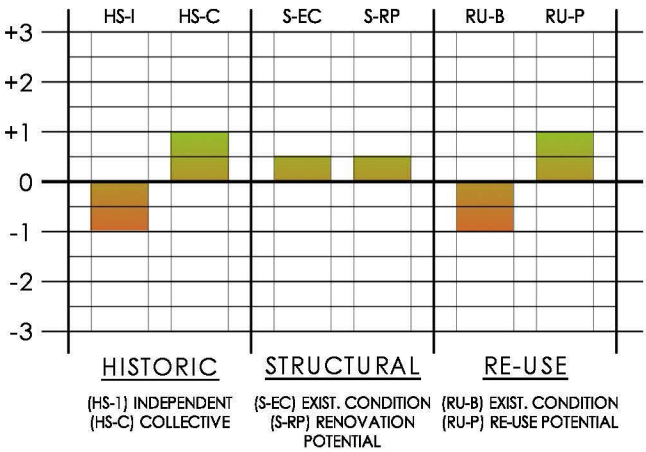
BUILDING INFORMATION

Date built:	1960
Area:	8,020 SF
Stories:	3
Historic:	Non-contributing

RE-USE

Currently leaking water through the roof and walls, the Bleach Plant could be repaired and reused as a stair and elevator tower to serve the adaptive reuse of the adjacent Hawley Building, Building 32. Its stout structural frame and height lend it to vertical circulation to feed the adjacent structures.

BUILDING RATING





LOCATION MAP

NO. 1 PAPER MACHINE - REWIND +



HISTORIC

This is a small concrete and steel volume that extends from the NE corner of Paper Machine No. 1 and extends east, with loading-bay sort of access point on the grade level. Although included as part of a historic resource in the May 2002 evaluation, the portion of the structure does not appear to have any inherent historic significance.

Building 35 has no internal historic significance and, due to location, partially obscures the historic character of The Hawley Building, Building 32. It may, however, provide some ancillary function in a future adaptive reuse and is minimally supportive of the complex multi-building complexity of the site.

STRUCTURAL

N/A

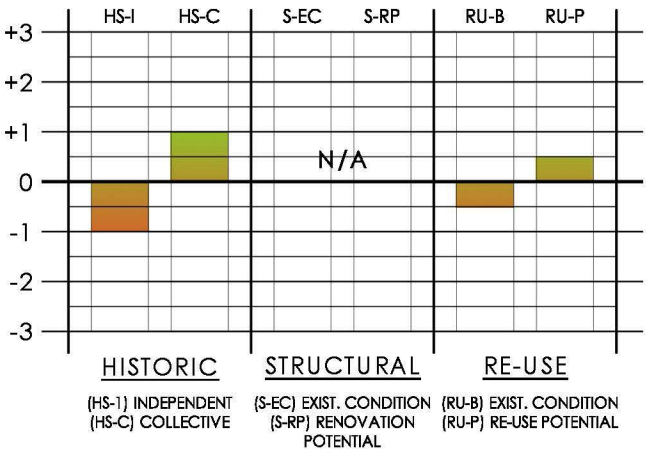
RE-USE

Like Building 34, the Bleach Plant, this structure may be useful to house ancillary functions such as stairways, mechanical shafts, and the like for the adjacent Hawley Building, Building 32

BUILDING INFORMATION

Date built:	1962
Area:	4,775 SF
Stories:	2
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP



HISTORIC

Although considered historic but not contributing due to lack of integrity in 2003, this portion of Mill E is in fact of newer construction, with a steel frame and exterior. It is not historic and does not relate or support the history of the site. It is, however, largely isolated and adds minimally to the complex character of the site.

STRUCTURAL

The focus of the evaluation for the Mill E Main Building was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads if the structure above was removed.

The Mill E Main Building is a two story steel framed structure. The building is founded at grade at the east side, and partially projects into the intake basing at the west side. No basement level was observed. It is assumed that the building is supported by conventional spread footings at the east side and by the concrete walls that form the intake basin at the west side.

It appears likely that the foundations would be adequate to support a new low rise building if the Mill E Main Building was removed.

RE-USE

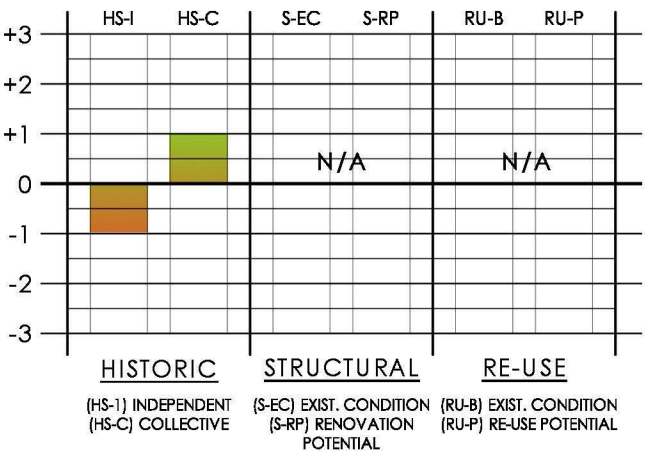
N/A

BUILDING INFORMATION

Date built: 1944

Historic: Non-contributing

BUILDING RATING





LOCATION MAP





HISTORIC

Although built during the historic period, this structure has been so significantly modified that it no longer reflects its original character or support the history of the site. It is, however, largely isolated and adds minimally to the complex character of the site.

STRUCTURAL

The focus of the evaluation for the Mill E West Addition was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads if the structure above was removed.

The Mill E West Addition is a three story steel framed structure. The building partially projects into the intake basin. No basement level was observed. It appears that the structure is supported by the concrete walls that form the intake basin at the perimeter. It is assumed that the interior foundations consist of conventional spread footings It appears likely that the foundations would be adequate to support a new low rise building if the Mill E West Addition was removed.

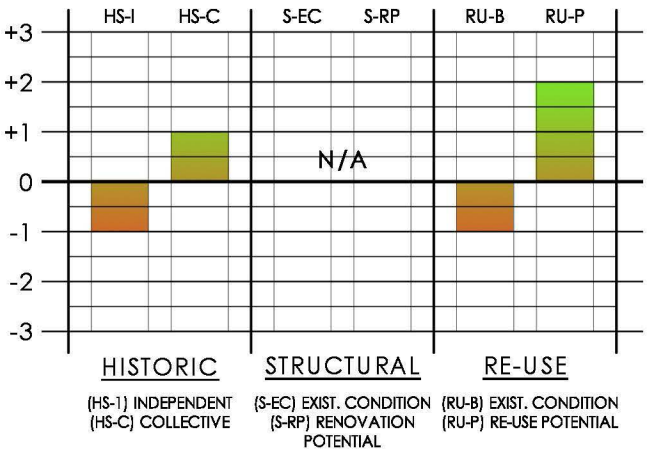
RE-USE

This building is in fair condition, but has great reuse potential. The building's exterior would need to be completely upgraded to include larger window openings. However the building's location is very unique with water on three sides allowing unobstructed views around, including views of the falls. The plan proportions and dimensions are nearly ideal for a variety of uses, including office space, housing, or hospitality.

BUILDING INFORMATION

Date built:	1944-45; 1970s
Area:	10,000 SF footprint
Stories:	3
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP



HISTORIC

This is a more recent addition to an identified resource that does not support the history of the site. It is, however, largely isolated and has limited visual impact on historic resources. It is, however, largely isolated and adds minimally to the complex character of the site.

STRUCTURAL

The weld shop is a one story manufactured steel building (commonly known as a "Butler Building"). The structure consists of steel bents supporting steel purlins and a metal roof deck. The sides of the building are clad with a corrugated metal siding. The lateral system consists of the steel bents acting as moment frames in the transverse direction, and tension rod bracing between the bents in the longitudinal direction.

The primary structure appeared to be in fair condition. It is likely that the structure is adequate to resist code required gravity loads. However, it is unlikely that the structure is adequate to resist code required seismic loads.

RE-USE

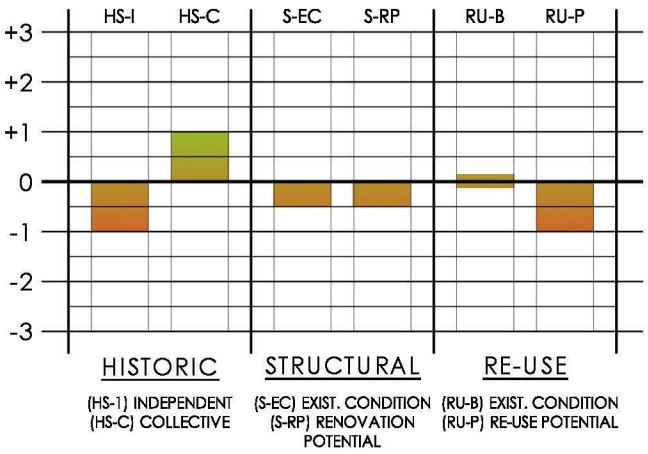
Thsi building is a simple pre-engineered metal building in fair condition. Its reuse potential is limited to its current use as a storage building. Its location within the site is detrimental to site/river access and obstructs southern views towards the waterfall.

BUILDING INFORMATION

Date built: 1970s

Historic: Non-contributing

BUILDING RATING





LOCATION MAP



HISTORIC

The southern portion of this building is known as the sulfite plant and was probably built about 1916, making it one of the earliest paper-related structures on the site. Significantly modified in the 1950s, the shell is now essentially a Transite-clad framework with limited exterior character. Although a historic resource with strong association to the Hawley Company and the paper-making/industrial history of the site, this portion of the Mill C complex has little remaining integrity to its historic character or design.

STRUCTURAL

The sulphite plant is a tall steel structure that primarily houses large storage tanks. The framing consists of steel columns, steel beams, and concrete floors. The majority of the interior of the structure is open and consists of tanks, catwalks, and other working platforms. The building is clad in corrugated siding.

The structure appeared to be in fair condition with some areas of corrosion and deterioration. It appears that significant renovation work would be required to convert the structure to a different use.

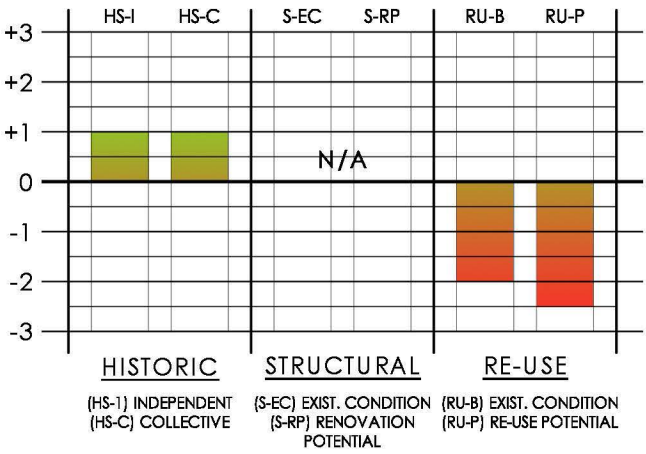
RE-USE

These two structures (39 & 40) are in very poor condition and lack any resemblance of what could be considered a building, as they are a large open steel frame clad with transite panels. Although an interesting part of the 'industrial' story of this site, to reuse these as anything other than a large enclosed open space would be very complex.

BUILDING INFORMATION

Date built:	1890; 1910
Historic:	Contributing

BUILDING RATING





LOCATION MAP



HISTORIC

Although a historic resource with strong association to the Hawley company and the paper-making/industrial history of the site, the Mill C complex is a small-footprint vertical volume that presents large challenges for any future use or activity. Without much interior structure beyond catwalks, reuse or adaptation is considered impractical. Retention on-site as a visual feature, while possible, is probably not economically feasible. The massive digesters, character-defining interior elements, should they survive the salvage process, could support site interpretation in the future.

STRUCTURAL

The digester is a tall steel structure that primarily houses large storage tanks. The framing consists of steel columns, steel beams, and concrete floors. In some areas, wood framed floor areas were also observed. The majority of the interior of the structure is open and consists of tanks, catwalks, and other working platforms. The building is clad in corrugated siding. A limited amount of steel cross bracing was observed at the exterior of the building.

The structure appeared to be in fair condition with some areas of corrosion and deterioration. It appears that significant renovation work would be required to convert the structure to a different use

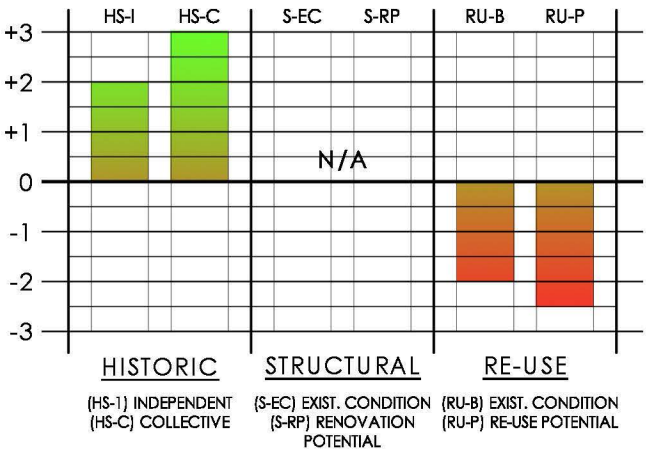
RE-USE

These two structures (39 & 40) are in very poor condition and lack any resemblance of what could be considered a building, as they are a large open steel frame clad with transite panels. Although an interesting part of the 'industrial' story of this site, to reuse these as anything other than a large enclosed open space would be very complex.

BUILDING INFORMATION

Date built:	1890; 1910
Historic:	Contributing

BUILDING RATING





LOCATION MAP



HISTORIC

This is a small building sitting atop a large vat or tank. It was not specifically documented in 2003 but does not appear to be historic.

STRUCTURAL

RE-USE

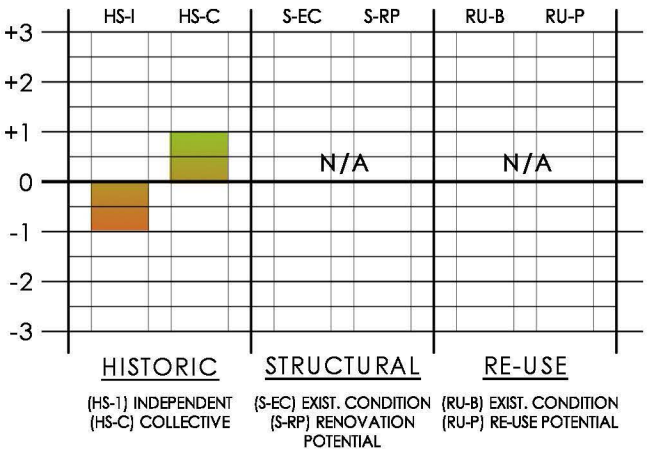
This structure has no purpose for any future site redevelopment.

BUILDING INFORMATION

Date built: unknown

Historic: Non-contributing

BUILDING RATING





LOCATION MAP

NO. 4 PAPER MACHINE NORTH ADDITION



HISTORIC

This is a steel-framed warehouse addition to the north end of Paper Machine No. 4. Although not individually identified in the May 2002 evaluation, Building 43 was treated as a component of Building 42. It is considered to have no historic significance in design or association. It's placement almost entirely obscures the north-facing elevation of Paper Machine No. 4.
This building obscures Paper Machine No. 4 and significantly detracts from its character.

STRUCTURAL

The north addition of the No. 4 paper machine consists of a tall, one story structure over a daylight basement that extends to the north of the original No. 4 paper machine. The roof and floor levels align with the No. 4 paper machine building. The basement is framed with concrete bearing walls that support a concrete beam and slab system at the ground floor. Above the ground floor, the structure is framed with steel and contains several steel braced frames at the north wall. There is a small mezzanine level that cantilevers off of the west side of the building. The cantilever is supported by diagonal steel kickers that extend down to the ground floor level.
The primary structure appears to be in fair condition, with some minor deterioration observed. The gravity resisting system appears to be robust and capable of supporting significant loads. However, it is unlikely that the lateral force resisting system would be adequate to resist code required seismic loads.

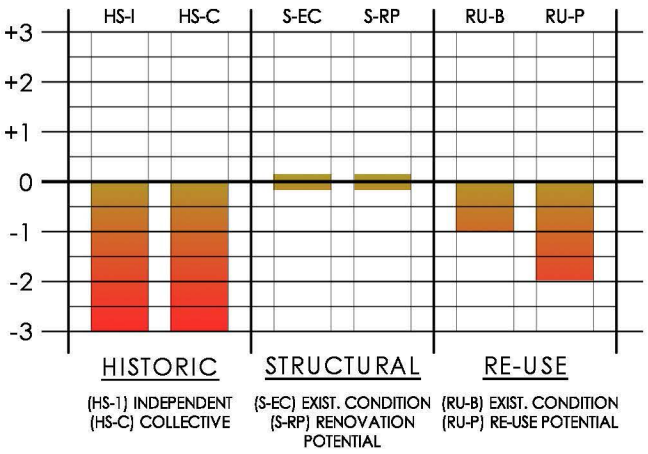
RE-USE

This steel framed addition is in fair condition, but its location is detrimental to site access, specifically blocking 3rd street, and obscures No. 4 paper machine (building 42) significantly.

BUILDING INFORMATION

Date built:	Unknown
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP





HISTORIC

A steel-framed warehouse addition to the north end of Paper Machine No. 4. This structure was not individually identified in May 2002 but was treated as a component of Building 42. Of non-historic construction and design, it obscures the original exterior of Paper Machine No. 4

STRUCTURAL

The No. 4 warehouse and shipping shed is a one story structure that is open on three sides and abuts the No. 4 paper machine north addition on the fourth side. The structure consists of steel columns, steel beams and trusses, and steel purlins supporting a metal roof deck. The east side of the structure is supported on a large concrete retaining wall.

The primary structure is in poor condition. Several areas of bent or otherwise damaged steel members were observed as well as what appeared to be modifications that were not properly designed. It does not appear that the structure would be adequate to resist code required gravity or seismic loads.

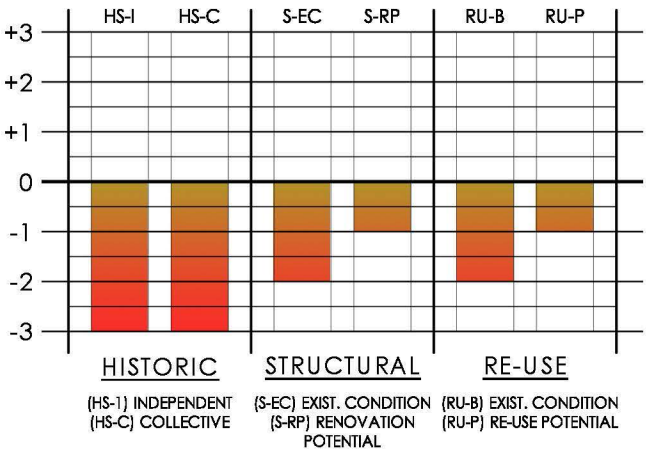
RE-USE

The shipping shed is in fair to poor condition. Its reuse potential is limited to its current use as a storage shed open on three sides. Its location within the site is detrimental to site vehicular/ pedestrian access and obstructs portions of building 42.

BUILDING INFORMATION

Date built:	1977
Area:	4,770 SF
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

NORTH SUBSTATION





BUILDING INFORMATION

Date built: 1927
Historic: Non-contributing

HISTORIC

This steel framed structure was added to the rear of Mill B c1980s and holds electrical equipment for the site. It was not specifically included in the May 2003 inventory but is considered a non-historic element of an identified historic structure. Structurally independent, this building is in good condition and because of its location has little impact on the historic character of Building 49 or the site.

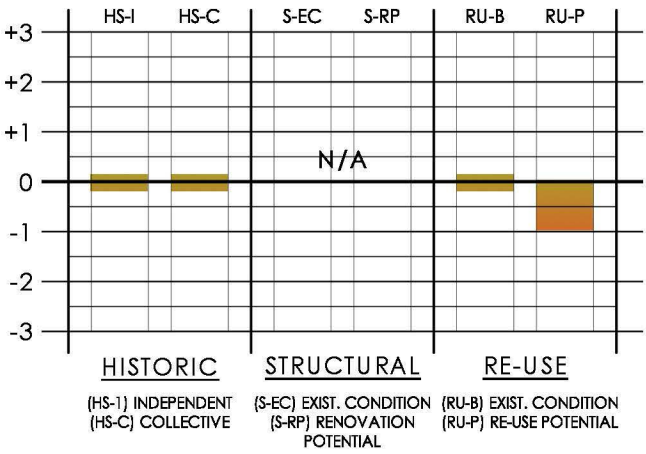
STRUCTURAL

N/A

RE-USE

This building is in fairly good condition, but the exterior siding should be replaced. Its reuse potential is limited to its current use or storage. It does however obstruct and limit Building 49's daylighting capabilites.

BUILDING RATING





LOCATION MAP

50,51

DE-INK ONP REPULPER





HISTORIC

This steel frame, steel sided, structure was constructed at the north-facing elevation of Mill B. Although dated 1953, it appears to be of newer construction. Because of its placement on Main Street and the north side of Building 49, this steel frame structure encumbers and obscures the adjacent historic resource and severely impacts the character of the site.

STRUCTURAL

The Deink ONP Re-Pulper – North is a large one story manufactured steel building (commonly known as a "Butler Building"). The structure consists of large steel bents supporting steel purlins and a metal roof deck. The sides of the building are clad with a corrugated metal siding. The lateral system consists of the steel bents acting as moment frames in the transverse direction, and tension rod bracing between the bents in the longitudinal direction. The steel bents are supported by partial height concrete walls that are approximately 3 feet tall at the east side and approximately 15 feet tall on the west side. Additionally, there are several free standing, partial height concrete walls at the interior of the building.

The primary structure appeared to be in fair condition with minor areas of corrosion and distress. The roofing and siding appeared to be in poor condition in many areas. It is likely that the structure is not adequate to resist code required gravity and lateral loads.

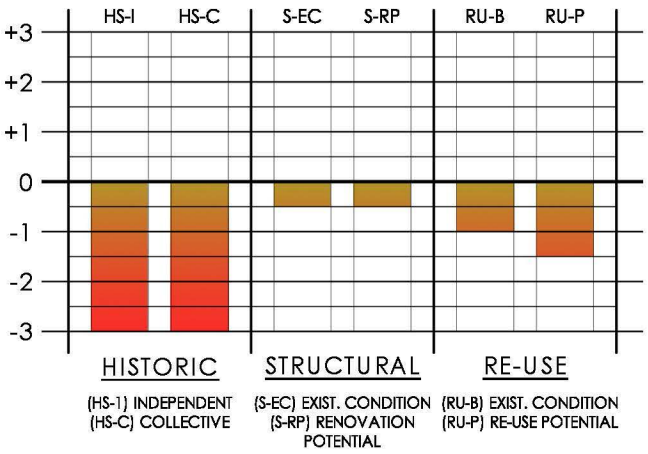
RE-USE

The building is in poor condition and would require a significant renovation to the building envelope and interior. Its reuse potential is negated by its severe impact to the character of building 49.

BUILDING INFORMATION

Date built:	1953; 1960s
Area:	17,400+ SF
Stories:	1
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP





HISTORIC

Located across the main channel of the Willamette River, the present Willamette Falls Dam is the latest in a series of such structures in this location dating back to the mid-19th century. Owned and operated by Portland General Electric, this dam wraps around the southern end of the Blue Heron Paper site, creating the log pond, an area bounded on the west by the foundations of Mill A and the former Hawley Power House. Although outside the project boundary and control, portions of the PGE dam appear to function as the foundation walls of several buildings facing the Intake Basin or log pond.

STRUCTURAL

N/A

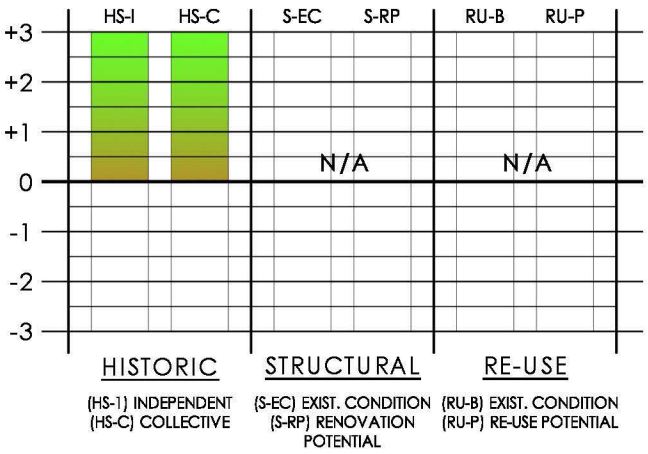
RE-USE

N/A

BUILDING INFORMATION

Date built: Last update 1943

BUILDING RATING





LOCATION MAP





HISTORIC

Building 53 is a long narrow structure built in 1967 as part of the water management process, this is not a historic element but has virtually no impact on the historic character of the site due to its location.

STRUCTURAL

The focus of the evaluation for the pipe tunnel was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads.

The pipe tunnel is a long concrete structure located immediately adjacent to the river. It contains water holding tanks and a catwalk system that supports several large pipes. The concrete walls that form the east side of the structure bear directly on the rock layer. The concrete walls at the west side of the structure do not continue all the way down to the rock layer and are supported on approximately 24-inch diameter concrete piers. The concrete slab that forms the bottom of the tanks appears to bear directly on rock at the east side, and is a suspended slab supported by the concrete wall at the west side.

In general, the foundations and pipe tunnel structure appeared to be in good condition, with only minor corrosion or other deterioration noted. The structure appeared quite robust and capable of supporting significant gravity loads. It is very likely that the structure could function as a public walkway or support the construction of a new low to mid rise structure.

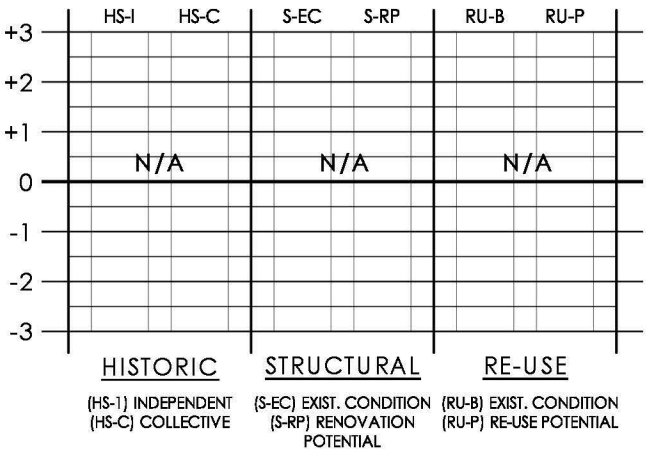
RE-USE

This structure has no reuse potential beyond that of a platform with views of the river and falls.

BUILDING INFORMATION

Date built:	1967
Historic:	Non-contributing

BUILDING RATING





LOCATION MAP

54,55

CLARIFIER AND CLARIFIER CONTROL STRUCTURE





BUILDING INFORMATION

Date built:	1967
Historic:	Non-contributing

HISTORIC

Located south of the log pond and built in 1967, this structure (clarifier) is not historic. Due to placement and design, this low-lying structure has little impact on the site internally but creates a modern intrusion from other viewpoints. A small flat roofed structure (building 54) located adjacent to the Clarifier. This is not a historic element and has little if any additional impact, appearing as a portion of the clarifier.

STRUCTURAL

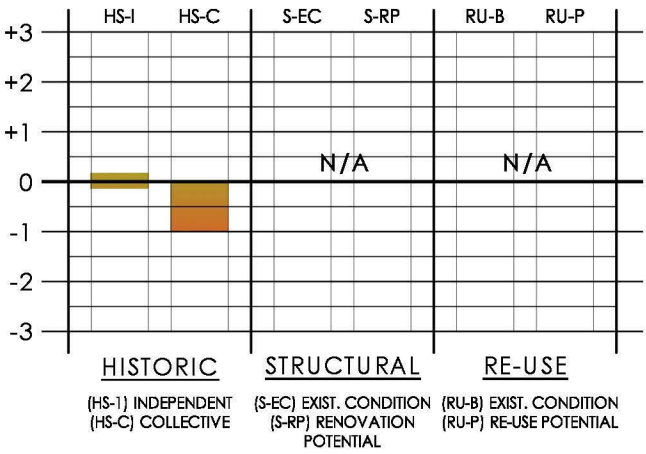
The focus of the evaluation for the clarifier was to study the structure below Main Street level and the foundations to assess the ability of this part of the existing structure to carry future loads.

The clarifier is a large open concrete tank used for holding and treating water. A catwalk system extends from the edge of the tank to the center of the tank to provide access to the equipment contained in the tank. The sides of the tank are large, thick concrete walls. It appears that the clarifier was cast directly on the rock layer. In general, the clarifier structure appeared to be in good condition, with only minor corrosion or other deterioration noted. The structure appeared quite robust and capable of supporting significant gravity loads. Due to the large diameter of the tank, it is likely that additional foundation and pier elements would be required inside the tank in order to provide new structural framing over the tank. The existing walls and foundation can very likely support new loads from a new low to mid rise building.

RE-USE

This large concrete tank is quite the intrusion to the site's potential. As it is, it has no reuse potential beyond that of a large holding tank. With additional structure, it could become a platform or small building with 360 degree views.

BUILDING RATING





LOCATION MAP

APPENDIX D
SHPO DETERMINATION OF ELIGIBILITY

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
(503) 986-0671
Fax (503) 986-0793
www.oregonheritage.org

September 20, 2012

Ms. Christina Robertson-Gardiner
City of Oregon City Planning
PO Box 3040
Oregon City, OR 97045-0304

RE: SHPO Case No. 12-0225
Blue Heron Mill Site
Updated Determination of Eligibility
Oregon City, Clackamas County

Dear Christina,

Thank you for submitting the updated survey data for the buildings at the former Blue Heron Paper Mill site at Willamette Falls in Oregon City. Our comments are detailed below:

Overall, it appears there is no eligible historic district at the site. While a district approach to eligibility would normally make the most sense for a property like this, it is difficult for the site to convey the historic paper-making processes because there have been so many additions and alterations over time to accommodate modern products and technologies. For this reason, we assessed each building and structure for individual eligibility, and based our concurrences on the information received by your office in February 2012.

All properties are located at 419 Main Street, Oregon City. National Register status codes are as follows:

Eligible/Significant = ES
Not Eligible/Non-Contributing = NC
Not Eligible/Out of Period = NP
Undetermined/Lack of Info = UN

- No. 4 Paper Machine Building - ES
- Mill "H" - NP
- Mill "D" Warehouse - ES
- Blue Heron Paper Office Building - UN
- Security/First Aid Building - NP
- Butler Building - NC
- No. 3 Paper Machine Building – ES

- Mill "O" – ES
- Carpentry Shop - ES
- Pipe Shop - NC
- Millwright Shop - NC
- Auto Shop - NC
- Woolen Mill Foundation - ES
- Water Filtration Plant - ES
- Mill "G" Boilers - ES
- No. 1 Paper Machine Building - ES
- Mill #1 Finishing Room - ES
- Mill "E" - NC
- Sulphite Plant - ES
- No. 4 Paper Machine Warehouse - ES
- Digesters - ES
- North Substation - NC
- South Substation - NC
- Mill "B " – ES
- De-ink ONP Repulper – NC
- Clarifier – NP
- Willamette Falls Dam – ES
- No. 2 Paper Machine Site – ES

Future investigations may reveal additional information about the properties listed above. If that happens we can always adjust the concurrences if necessary. For now, though, this is our assessment of the structures on the Blue Heron site, which matches up pretty well with your findings, with a few exceptions. Please give me a call if you have any questions or comments. Otherwise, I'm sure we will be in touch as we move toward a treatment plan or agreement document.

All best,

Chrissy Curran
Associate Deputy SHPO
(503) 986-0684
chrissy.curran@state.or.us

APPENDIX E
NATIONAL PARK SERVICE, SEVEN ASPECTS OF INTEGRITY

NATIONAL REGISTER BULLETIN

GUIDELINES FOR EVALUATING AND DOCUMENTING HISTORIC AIDS TO NAVIGATION TO THE NATIONAL REGISTER OF HISTORIC PLACES

U.S. Department of the Interior, National Park Service

INTEGRITY

The National Register traditionally recognizes a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. These qualities should also be discussed under the Statement of Significance, Section 8 of the registration form.

Location

Location is the place where the historic property was constructed or the place where the historic event took place. Integrity of location refers to whether the property has been moved or relocated since its construction. A property is considered to have integrity of location if it was moved before or during its period of significance. Relocation of an aid during its active career if the move enhanced or continued its function is not a significant loss of integrity. For example, in 1877, the 1855-built Point Bonita Light was relocated from a high bluff to a rocky promontory to improve its visibility to mariners. Aids to navigation relocated to serve new purposes after being decommissioned suffer a serious loss of integrity of location, but are not automatically precluded from listing.

Design

Design is the composition of elements that constitute the form, plan, space, structure, and style of a property. But properties change through time. Lighthouses may be raised or shortened; buildings may be added or removed from a light station; sound signal equipment and optics may change to reflect advancing technology. Changes made to continue the function of the aid during its career may acquire significance in their own right. These changes do not necessarily constitute a loss of integrity of design. However, the removal of equipment that served as the actual aid to navigation--a fog signal, lens and lamp, or the distinctive daymarkings on a tower--has a considerable impact on the property. Removal of an optic from a lighthouse, a fog horn or bell from its building, or painting over a historic lighthouse's pattern has a serious adverse effect on its design integrity. The design integrity

of light stations is reflected by the survival of ancillary buildings and structures. The decision to nominate a station should include an assessment of the design integrity of the property as a complex. The loss or substantial alteration of ancillary resources, such as keeper's quarters, oil houses, cisterns, and tramways, for example, may constitute a significant loss of design integrity.

Setting

Setting is the physical environment of a historic property that illustrates the character of the place. Integrity of setting remains when the surroundings of an aid to navigation have not been subjected to radical change. Integrity of setting of an isolated lighthouse would be compromised, for example, if it were now completely surrounded by modern development.

Materials

Materials are the physical elements combined in a particular pattern or configuration to form the aid during a period in the past. Integrity of materials determines whether or not an authentic historic resource still exists.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period of history. Workmanship is important because it can furnish evidence of the technology of the craft, illustrate the aesthetic principles of a historic period, and reveal individual, local, regional, or national applications of both technological practices and aesthetic principles.

Feeling

Feeling is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time. Although it is itself intangible, feeling is dependent upon the aid's significant physical characteristics that convey its historic qualities. Integrity of feeling is enhanced by the continued use of an historic optic or sound signal at a light station. The characteristic flashing signal of a light adds to its integrity. While sounds themselves, such as the "Bee-oooohhhh" of a diaphone, cannot be nominated to the National Register, they enhance the integrity of feeling. The mournful call of fog horns on San Francisco Bay is an integral part of experiencing life there.

Association

Association is the direct link between a property and the event or person for which the property is significant. A period appearance or setting for a historic aid to navigation is desirable; integrity of setting, location, design, workmanship, materials, and feeling combine to convey integrity of association.

APPENDIX F
HISTORIC ASSESSMENT MEMO

KRAMER & COMPANY
Historic Preservation Consultants

386 NORTH LAUREL
ASHLAND, OREGON 97520

LETTER REPORT: 120301.01

DATE: NOVEMBER 20, 2012

SUBJECT: WILLAMETTE FALLS LEGACY PROJECT
SITE STABILIZATION AND BUILDING ASSESSMENT
HISTORIC ASSESSMENT MEMO

1. INTRODUCTION:

The assessment of historic resources located at the former Blue Heron Paper Mill site was prepared at the request of the Partners and is an element of a multi-disciplinary evaluation of the property. Historic significance of the site was first acknowledged by Oregon SHPO in 2003 as a component of the Willamette Falls Industrial Area, which was evaluated as a potential National Register historic district. Any future development or modification will likely require review under ORS 358.653 and Section 106 of the National Historic Preservation Act of 1996 (36 CFR 800 et. seq) for potential impacts on historic resources.

Prepared under contract, findings related to historic resources are based upon both on-site and documentary evaluation that began in May 2012. This analysis is inherently limited by the lack of specific planning for the future of the site, including any targeted uses or master development plan. Primarily intended to help guide decision-making, this historic assessment therefore takes a broad view of likely opportunities and issues based on site conditions and the physical characteristics of identified resources.

Based on the information provided, including the four adopted Partner values [History/Culture, Economics, Public Access, and Habitat Restoration], and the qualities of the site and its structures, the historic assessment process began with certain assumptions. These are;

1. Not all buildings on the site are of historic value or utility.
2. Some buildings, though historic, are intrinsically difficult or impractical to reuse.
3. Major buildings and structures can be salvaged and repurposed to other uses ranging from housing to retail.
4. A mixture of public access/habitat and public/private building rehabilitation is a logical strategy to meet partner goals.

5. Future use opportunities at this point, by design, must be general in nature and will remain so until a master plan is developed.

Based on the above assumptions and in association with the other members of the assessment team, all built resources on the project site were evaluated using standard practice for significance and integrity. The specific focus was largely on individual potential for listing on the National Register of Historic Places and future opportunities for adaptive reuse, although some value in the collective character of the site was incorporated into the process.

2. PRIOR WILLAMETTE FALLS EXPERIENCE:

Kramer & Company first evaluated the Blue Heron Paper Mill project site as part of the Portland General Electric (PGE) Company's relicensing process. Initial studies were undertaken in 1997-1998, with the intent of determining the potential historic significance of the T. W. Sullivan Hydroelectric Plant, located at West Linn, along with identifying any other historic resources within the Area of Potential Effect. PGE and its multiple predecessor companies dating back to the 1860s Oregon Steam Navigation Company and the development of the Willamette Falls Locks have a long association with the development on both sides of the river at the Willamette Falls.

After completion of that initial study, documentation continued as a part of PGE's formal Federal Energy Regulatory Commission [FERC] licensing process. Research into the development of the paper operations at the Falls included specific study of the Blue Heron plant as it relates to the former Hawley Powerhouse (later known as the Smurfit Powerhouse). Smurfit had transferred ownership of the powerhouse to PGE and its operation (and eventual closure) was included as part of FERC relicensing. Our role in the FERC process culminated in the preparation of a "Request for Determination of Eligibility" or DOE, on the Willamette Falls Industrial Area. This was the first academic effort to catalog all of the individual built resources lining the Willamette River between the dam and the Oregon City bridge. That document, based on research conducted on-site and in the archives of the Smurfit (Blue Heron) and West Linn paper companies, as well as PGE's own archive, was completed in 2002. The DOE was formally approved by the Oregon State Historic Preservation Office in 2003 and has served as the baseline document for all subsequent historic evaluation of the Blue Heron property.

Other work at the Falls has included numerous review and compliance documentation for PGE, relating to their operation and modification of the dam and the Sullivan plant, historical background and analysis for the West Linn Paper Company, and the revision and expansion of the National Register of Historic Places documentation on the Willamette Falls Locks, for the Willamette Falls Heritage Foundation.

3. SITE HISTORY

Located at a natural up and downstream stopping point on the river, the area around the Willamette Falls was a natural locale for Native American trade and fishing activity centuries before the arrival of Euro-Americans in the early 19th century. Settlement, and industrial development began here in 1829 when what was almost certainly the first permanent water-powered sawmill in the Oregon Territory was established by Dr. John McLaughlin. The need to portage around the falls and the availability of waterpower they offered made the site logical for settlement. Oregon City, later to become the Territorial Capital, was founded in 1829. As the "end" of the Oregon Trail, the city was incorporated in 1844. By the mid-19th century what is now the Willamette Falls Legacy Project Site lined both sides of the main commercial corridor, Main Street, in Oregon City, leading to various water-powered industrial facilities including saw and flour mills, that were powered by small timber dams and millraces cut into bedrock. Among these early industries, most significantly for this study, was the Oregon City Woolen Mill, established in 1865. By the turn of the century the giant three-story woolen mill, along with other smaller industrial users, lined Main Street west of 4th Street extending out to the enlarged Willamette Falls Dam, constructed 1889-1890 to power hydroelectric development. Throughout the late 19th and early 20th centuries, large-scale industrial users co-existed with typical "Main Street" businesses, including grocery stores, barbers, hotels, saloons, and banks, lining Main Street within what is now the Willamette Falls Legacy Project Site.

Paper manufacturing, which began across the river in West Linn, expanded to Oregon City in 1908 when Willard P. Hawley, formerly the plant manager at West Linn, purchased several water rights and established his own manufacturing plant at the base of the dam, on the site of the old Portland Flouring Mill. The Hawley Pulp and Paper Company grew significantly and by the mid-1920s occupied large portions of Main Street on either side of the Woolen Mill and across the street, on the east side, flanking the railroad/trolley line that still ran down this block of Main Street.

Continued expansion saw the Hawley company, and then later Publishers Paper and others, completely absorb all of Main Street south of 4th Street, resulting in the closure of the public right of way. The original plat, with Main Street and the numbered cross-streets, was vacated within the mill site. Despite the property's location, immediately adjacent to the downtown core of Oregon City, public access and any direct connection to the site, and to the falls, was almost entirely eliminated in favor of the industrial development. Expansion and new industrial construction associated with the paper mill, including water management and treatment facilities, continued into the 1970s. The Blue Heron Paper Company remained in operation until early 2011. Its closure ended more than a century of paper-making activity in Oregon City.

4. EXISTING DESIGNATION STATUS

As the result of its long association with the development of industry and its role in the history of both Oregon and Oregon City, the area bordering the Willamette River at the Willamette Falls has been previously evaluated for historic significance. Portions of the property, as discussed below, have been "Determined Eligible" for listing on the National Register. Any future development that constitutes a Federal undertaking, including federal funding, permit, or other activity, will require formal project review under Section 106 of the National Historic Preservation Act of 1966 (36 CRF 800 et. seq.). For more information see www.achp.gov/106 summary.html). Activity effecting historic resources, as per the Memorandum of Agreement between the City of Oregon City and Oregon SHPO, are additionally subject to review under ORS 358.653.

1. NR-STATUS: As the result of the DOE process, undertaken as part of the PGE FERC relicensing, the Willamette Falls Industrial Area was first "Determined Eligible" for listing as a "historic district" on the National Register in May 2003. That document identified forty-six (46) built resources on both sides of the river, including twenty-three (23) located on the Oregon City side, within the project area. Within the Willamette Falls Legacy Project Site itself the 2003 DOE request identified thirteen (13) resources as "Historic Contributing" within the District and thus considered "eligible" for listing on the NRHP.

It is important to understand that the DOE process, by design, was comparatively superficial, looking largely at the associative values of the structures with less attention to their physical/structural character.

Resources that are physically connected, which constitutes the bulk of the project, were typically evaluated as a group, rather than as individual components. For example, the Mill D Warehouse, evaluated as a single resource in May 2003, is now better understood to consist of multiple independent elements, identified in the current project as Buildings 7, 8, 9, 10, and 11, not all of which are appropriately considered historic or significant. Similarly Paper Machine No. 4, identified as a single resource in 2003, is now understood to contain buildings numbered 42a, 42, 43, 44, 45, 46 and 47. This is not to say that the DOE is in error, merely that the finer focus of the current project has allowed both internal inspection of these structures as well as a more detailed analysis of their development history and serial construction.

2. SHPO-Oregon City Agreement: Given that the Willamette Falls Industrial Area determination looked at a larger area, including both the Oregon City and West Linn properties above the Willamette Falls, as well as the Willamette Falls Dam itself, the entire Willamette Falls Industrial Area covered by the DOE was evaluated for listing on the National Register as a "Historic District." The reduced study area of Willamette Falls Legacy Project Site, limited to the Oregon City portion of the Willamette Falls Industrial Area, logically brought the concept of eligibility for a historic "district" for the former Blue Heron site into question. Accordingly, the City of Oregon City re-evaluated the site in February 2011 and completed an updated survey in May 2012. SHPO and Oregon City concluded that the Willamette Falls Legacy Project Site was not eligible for listing as a National Register *District*. They agreed, however, that multiple structures within the project area were eligible for such designation *individually*. Sixteen built resources were determined Eligible/Significant, including all the previously evaluation "contributing" buildings. The Blue Heron Paper Office Building (Building No., 1), was evaluated as "undetermined" due to lack of information and the remaining buildings and structures on the site were found either Not Eligible/Not Contributing or Not Eligible/Out of Period.

5. LEGACY PROJECT PROCESS AND FINDINGS (2012)

As part of the current study, the history and character of all built resources at the Willamette Falls Legacy Project Site was again reviewed and re-evaluated, to

inform the multi-disciplinary approach of the Project. This included cursory archival review, building upon the May 2003 DOE designations and the additional data developed by Partner staff prior to our involvement. Team field visits allowed a far greater understanding of individual resource character and integrity to original design than had previously been the case. Three separate field visits in May and June, 2012 informed the evaluation process.

All structures and most of the associated elements thereof were given names and numerical identification by Partner staff, providing the organizational structure for the Project evaluation process. While somewhat variable, as elements were either identified or combined, this system provided a baseline of fifty-seven (57) individual resources subject to evaluation. In consultation with Diloreto (reuse) and KPFF (structural), it was determined that the most beneficial method of evaluation was to create three individual categories (Historic, Reuse, Structural) each of which was divided into two non-combined component parts, to assess issues related to the particular discipline. Each component part allowed for a six-point range (+3 to -3) reflecting both positive and negative aspects (see Appendix C, "Building and Evaluation Criteria and Assessment"). NO qualitative value was included between the disciplines (i.e. a "3" in historic did not cancel or trump a "-(3)" in structural or reuse).

The overall team intent was to provide an accurate assessment, from multiple viewpoints, as to the inherent strengths and deficits of each individual building or structure. It is acknowledged that in general numerical evaluation of historic significance result in problematic "grey area" assessments and that standard industry practice requires that no *historic resource* is considered "more historic" or "less historic" than any other. The use of value-based evaluation here is simply meant to provide some guidance *within the project* as to the comparative individual and collective role specific structures play in forming and supporting character. In other words, all identified resources otherwise meeting NR evaluation standards for both integrity and significance are assumed to be historically significant and considered eligible for listing at either the local or national levels. Project evaluations, while taking into account that status, look more closely at the role, or potential role, historic character might play in a future development opportunity.

HS-I evaluations of individual significance, from a National Register standard, document the relative potential for listing in our professional opinion. In addition to association with the significant industrial activities, the evaluation

process included an assessment of integrity (retention of those qualities that accurately relate the significant association). Integrity is not an analog for "condition" (i.e. a building with a poor roof and foundation, is in poor condition, but may still be entirely intact and so retain high integrity). **HS-C** evaluations attempt to capture the comparative value of individual resources *within the character of the site*. This is considered to be an important element in maintaining the historic industrial character for whatever future uses are determined appropriate.

As the evaluation criteria informed the design of the project scenarios, all aspects (Historic, Reuse, Structural) of an individual resource were considered equally. This naturally resulted in historically significant resources being eliminated from both scenarios. This was not to ignore their acknowledged historic significance, but rather a assessment of their lack of reuse potential or structural/design characteristics that complicate any logical future. An example is Building 40, the Digesters, which although among the oldest elements of the Hawley plant to survive, are inherently difficult to repurpose due to a narrow footprint and limited structural system. Building 40 is therefore, despite its historic significance, was not included in either Scenario 1 or 2. Conversely a non-historic structure like Building 7, the metal canopy over 4th Street, is in and of itself of little historic value but has the potential to add character and complexity to adjacent historic resources 09-11. This resulted in its retention in Scenario 2. And finally, it should be noted that inclusion, or exclusion, from either scenario neither assures a building's retention or removal. Those decisions will await a plan, and developer, for the future of the Willamette Falls Legacy Project Site.

6. COLLECTIVE/SITE CONTEXT

Although analysis of resources at Willamette Falls Legacy Project Site is, in general, individually focused and the potential for "District" designation was not considered integral as the result of the SHPO-Oregon City Programmatic Agreement, the collective nature of the site was nevertheless recognized and is considered a potentially valuable asset in maintaining historic setting for any future use. The complex, multi-component nature of the built resources at the Willamette Falls Legacy Project Site site support and reinforce the site's history by relating two elements of its history as described below;

Main Street: The linear placement of structures aligned to Main Street and the numerical cross-streets (3rd and 4th) reinforce the important and idiosyncratic development concepts associated with the history of industrial development

within Oregon City's downtown commercial core. The "street wall" formed by the vertical facades of Paper Machine No. 4 and the Mill B DeInker/Pulper (Building Nos. 42 and 49, respectively, including 42a), fronting along the Main Street right-of-way and rail track reflect and reinforce that history. So too do the loading docks lining buildings 9, 10 and 11, beneath the non-historic canopy, Resource No. 7.

Industrial Character: A second and less obvious element of the site's history is reflected by the complex inter-related nature of its structures from both a functional and visual standpoint. Functionally, occupied spaces flow together through multiple levels of connectivity internally, with connected floors, basements and spaces serving an internal connections and equipment corridors. Visually the additive, serial, construction that characterizes many of the resources partially obscures their individual character through appendage and attachment. This effect is even further compounded by extraneous surface-mounted mechanical equipment, including piping, conduits, filters, tanks, and vertical towers that project and connect walls and roof-levels into a shaggy, rough-edged, amalgam that reduces the individual visual impact or prominence of any particular element. That can be either positive, in the case of multiple historic structures joined into a whole, or negative, as in the case of a non-historic structure that is scaled, and located, in such a way as to completely obscure a historic structure. An example of this effect is evident in the relationship between Building 50 (Repulper) and Building 49 (DeInker), the latter of which is largely hidden by the much larger volume of the non-historic construction (Building 50) to its north.

7. INCENTIVES TO SUPPORT ADAPTIVE REUSE

Given the historic character and the potential benefit that the history of the site might bring to any future redevelopment, the availability of multiple benefits to support that reuse have been considered for all building evaluations. While history and culture have been identified as one of the four key values of the Partners, and while the history of the site is important in both the development of Oregon and Oregon City, there are concrete economic values available to support the retention and reuse of designated historic resources that cannot be captured by non-historically based development. These economic incentives include;

1. Certified Rehabilitation: Creates a 20% Investment Tax Credit against Federal income tax liability for approved rehabilitation that meets the Secretary of the Interior's Standards, as reviewed by the National Park Service. Cert Rehab credits have supported billions of dollars in rehab work nationwide, with notable examples in Portland including the Brewery Blocks and the White Stag Block. Cert Rehab can be a key element in supporting adaptive reuse in that the credit may be taken for a wide variety of costs associated with converting spaces to new uses. This includes costs associated with mechanical systems, electrical and plumbing, structural upgrades, ADA-compliant access, and many other costs that are outside what is typically considered "restoration." More information is available at the following website.
http://cms.oregon.gov/oprd/HCD/SHPO/docs/hpti_09_brochure.pdf

2. Oregon Special Assessment for Historic Properties: An Oregon-only benefit, Special Assessment creates a reduced basis for the calculation of local property taxes during a ten-year period following enrollment. Essentially the value of a qualified property is "frozen" prior to the beginning of an approved rehabilitation plan and then the property is taxed at the unimproved basis for the decade following the work. While the value of the Special Assessment benefit has been somewhat reduced by other changes in Oregon tax policy, the program remains a valuable tool for large scale rehabilitation work, especially when used in tandem with the Federal Certified Rehabilitation benefit. More information is available at the following website.
http://cms.oregon.gov/OPRD/HCD/SHPO/Pages/tax_assessment.aspx

3. Code Relief: Under the Oregon Structural Specialty Code, buildings that are "designated" as historic resources (i.e. listed on the National Register of Historic Places) may be eligible for waiver of certain building code requirements in the interest of retaining or preserving the qualities of the property that make it historic. Such waivers do not allow for reduced fire/life/safety or any other aspect related to public safety, but can often allow for reduced development costs by avoiding some costly construction changes. (See Oregon Specialty Code Section 3409.1, "Historic Buildings").

4. Environmental Benefits: In addition to its potential economic positives, historic preservation, the reuse and purposing of existing structures, has been shown to be a sustainable, environmentally sound, method of

development. This is a process that can summed up in the popular catch phrase "The greenest building is the one that is already standing." Often energy use calculations look only at *operating* costs, the amount of energy a building will require for heating, cooling, lighting and other mechanical processes during its lifetime. This entirely ignores the energy that is required to build (or to demolish) an existing, often reusable, structure. In short, an existing building reflects or contains the considerable energy that was required to create it. Its demolition will require even more energy, while additionally adding to the growing issues of solid waste management. Conversely, the reuse of buildings conserves all of that *embodied energy* and avoids, or significantly reduces, the energy impact of demolition. Rehabilitation can typically improve the energy performance of existing structures and so bring operating expenses into line with new energy-efficient construction. This is especially true when it involves masonry structures and often, as in the case of the large industrial volumes at the Willamette Falls Legacy Project Site, can be accomplished in highly cost-effective way.

> *Every building is a storehouse of non-recoverable energy. This is the energy that has been spent in its construction, as well as the manufacture and transportation of materials. A "teardown" not only discards the embodied energy of the existing building, but spends that energy again (and likely more, as teardowns average over double the square footage of the structure being replaced) on a new home or other building. If you're building green, embodied energy analysis begs the question: where is the energy savings?* (www.thegreenestbuilding.com)

The environment benefit of historically-based development also brings significant economic value. According to www.thegreenestbuilding.com, a typical 100,000 square foot industrial structure contains 97,000,000 MBTU of embodied energy and its demolition would require more than 1,200,000,000 MBTU to raze and haul away the debris. This is equivalent to the energy of approximately 850,000 gallons of gasoline or, at current gas prices ($4 per gallon), about 3.4 million dollars.

For more information on embodied energy and the environment benefits of historic preservation, see http://www.planetizen.com/node/36253, http://earth911.com/news/2009/02/23/the-greenest-building/ or http://www.eco-structure.com/historic-preservation/reconciling-preservation-and-sustainability.aspx.

5. Intangible Benefits: Cultural tourism, relying on the inherent draw of historic places, provides a marketable asset that can serve to strongly differentiate and enhance a project when compared with all-new construction. The National Trust's "Main Street" program provides nationwide examples of historic preservation as a successful economic development model (See www.MainStreet.org). The re-use of industrial and non-retail commercial facilities such as those at Willamette Falls Legacy Project Site offer unique opportunities and a high degree of flexibility due to large scale and structural design. Similar industrial structures have been successfully repurposed for everything from housing and retail, to restaurants, performance/civic spaces, and more. Northwest examples include the Brewery Block in Portland, Pier 56 in Seattle, and, most especially, the Steam Plant Square project, in Spokane, Washington, where a former generation facility has been repurposed into retail shops, a brewpub/restaurant and meeting spaces while retaining a high degree of its industrial character (http://www.steamplantsquare.com/).

5. SUMMARY:

The Willamette Falls Legacy Project Site, located on the bank of the Willamette River downstream from the Willamette Falls, is among the most historic spots in Oregon history. In addition to its long and significant role in Native American tradition, the site was settled by Dr. John McLaughlin, the "Father of Oregon" and served as the birthplace of industry in the Oregon Territory. When Andrew Jackson was serving as the seventh President of the United States, water-powered industry was underway on the project site. Today, many of the built resources on the property date from the Hawley Pulp and Paper Company or earlier, with a strong and significant association to Oregon's industrial history. Many of these resources are considered eligible for listing on the National Register.

The future of the Willamette Falls Legacy Project Site is unclear, as is whether the Metro partners or some other entity will assume ownership during its next phase of history. Whatever that future looks like, and under whatever auspices, the site's built resources and history are valuable assets from a cultural, economic and environmentally sustainable development standpoint. A repurposed Willamette Falls Legacy Project Site, retaining a strong connection to its past and creatively transformed to new uses can continue the important role this property has played in Oregon City, and in the state, for more than 180 years.

APPENDIX G
REUSE MEMORANDUM

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Willamette Falls Legacy Project 9.21.12

Reuse Memorandum

1. Introduction

At the request of the Partners and in cooperation with a diverse range of consultants, the site, structures, and historic resources located at the Willamette Falls Legacy Project site in Oregon City, Oregon were evaluated to create the 'Willamette Falls Building Assessment Report' as an introductory phase to The Willamette Falls Legacy Project.

DiLoreto Architecture has 30 years of adaptive reuse experience ranging from small improvements to existing buildings to the complete repurposing of complex structures and sites. It is our shared belief that creatively re-imagining new uses for existing buildings reinforces our shared history, connects us to our past, and makes for better communities and cities.

The Willamette Falls Legacy Project site is currently a chaotic arrangement of concrete, stone, metal, and glass due to its vast industrial history. The falls of the Willamette River is a natural wonder that made possible centuries of Native American traditions and the creation of water powered industry including sawmills, flour mills, and most recently the Blue Heron Paper mill; which led to the establishment of Oregon City and the state of Oregon. Even with this site's significance, the public has little access to even view the great falls, let alone, experience it. Because of the amount of land area, its location along the Willamette River and proximity to the falls, and a few of the built historic resources on the site, it presents a tremendous opportunity to re-purpose the site.

Due to the complex nature of the site and the cursory review of each structure, the reuse portion of this report began with several assumptions as follows:

1. The use of the site was not returning to its current industrial purpose.
2. Portions of the site will be returned to their pre-industrial (natural) state to meet the Partner goals.

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3. All buildings and structures are potential marketable assets for future redevelopment. This allowed an objective view towards all structures on the site.
4. Oregon City's future re-zoning and development standards for this specific site would allow, and even promote, a variety of uses, building types and densities.
5. All of the buildings will need structural improvement.
6. Existing buildings and platforms within the flood plain would be allowed to be redeveloped. The use of floor levels below the flood plain would be determined in a future comprehensive assessment.
7. Existing buildings and platforms within the flood plain have adequate foundations, or can be modified, in order to withstand future flooding events.
8. Fire fighting access is accommodated with existing roadways.

Fifty-seven individual structures were evaluated to identify opportunities that could integrate the Partner goals and redevelopment potential, albeit without the consideration of comprehensive planning, specific intended uses, or market feasibility. This report is a compilation of those evaluations to inform Metro of the inherent value of these individual structures; and recommendations of potential opportunities concealed within the site.

2. DiLoreto Architecture Reuse History

Due to the architectural and historic importance of the Willamette Falls Legacy Project site, it is essential that the analysis of this site's potential help inform future decisions regarding reclamation, restoration, and redevelopment. Diloreto Architecture has successfully completed over twenty building renovations and adaptive reuse projects since our founding, including several National Register properties and several large early 1900s industrial buildings in Portland, Oregon. These large industrial buildings required quick assessments and creative solutions to adapt them from early industrial to a broad range of uses including flex office space, light industrial, housing, and performance areas. Although every building was a challenge, they each provided their own unique opportunities and better informed DiLoreto Architecture on the important characteristic required for a successful adaptive reuse project. A few of these successful projects are The Hazelwood Building, now called the Leftbank project; The Eastbank Commerce Center; Rejuvenation Hardware, Inc.; and the Wonder Ballroom.

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Members of DiLoreto Architecture have also been involved in large scale planning efforts initiated by the Portland Development Commission. A few of these include the 2004 "Lloyd Crossing - Sustainable Urban Design Plan and Catalyst Project" and the 2006 "Oregon Convention Center Area Development Plan". This experience with large planning projects, working with multiple stake holders and consultants, gives DiLoreto Architecture a better understanding of the issues and organizations involved to assess and examine the complex Willamette Falls Legacy Project site.

3. Evaluation Process and Findings

Opening the assessment process, Metro provided a matrix extracting and numerically labeling individual buildings and structures with their general description, previous use, and date of construction. Due to the complexity of the Willamette Falls Legacy Project site, this established a position from which to start, and to better communicate amongst the team members about specific structures. The review of existing structures was based on visual inspections only, by all of the consultants involved, carried out over a period of three months involving multiple tours of the site. With the visual inspections and the matrix, the consultant team identified and then designated buildings with the greatest potential for reuse as Category "A" buildings. These buildings were given a higher priority and studied more thoroughly. Small pre-engineered metal buildings (Butler buildings), structures associated with the mill's water treatment facilities (Clarifier, Pipe Tunnel, and Filter Plant), structures that were built solely to house industrial equipment (Sulphite plant and Digester), and any structure that was indiscriminately added to increase usable area to an existing Category "A" building were all given a lower priority and designated as Category "B".

Each of the three building consultants, Kramer & Company, KPFF Engineers, and DiLoreto Architecture evaluated each category "A" building according to their expertise; historic, structural, and reuse potential, respectively. Knowing that there is an inherent expectation of historic preservation on this particular site, it proved helpful to provide accurate assessments from multiple perspectives of the individual structures. Without emphasizing a specific discipline, each consultant created an equivalent rating system that objectively assessed each structure. While some structures may have rated high in the Historic categories, they may have rated low on either structural integrity, reuse potential, or both. These assessments

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from multiple perspectives generated conclusions regarding the potential retention or removal of existing buildings.

Although the category "B" buildings also received rankings, they were given a remedial cursory review. These rankings were based on current building use, building condition, site location, and/or the complexity of re-purposing required. A few of the category "B" buildings could easily be reused, specifically the pre-engineered metal buildings, but they were deficient in an individual historical ranking and/or the structure's site location was potentially detrimental to future redevelopment. Several structures, including the Sulphite Plant (#39) and the Digester (#40), are enclosed in asbestos laden transite panels, in poor condition, and would require a complicated abatement regulated by the Oregon Department of Environmental Quality. Even with an exterior renovation, these two structures lack any assemblance of what is considered a building; they are large open steel structures that housed industrial equipment without floors or circulation systems. While the Water Filter Plant (building #02) or the Clarifier (building #55) could potentially be reused, the inherent complexities involved, due to their current use and construction, would required a comprehensive analysis to determine if they could be restored to function as part of a new water treatment facility, or if they could be re-purposed for an alternative use. With this quick analysis, it was determined that many of the category "B" buildings could not be repurposed without major effort and ultimately would not be worth the effort involved to retain.

Concerning category "A" buildings, DiLoreto Architecture assessed only the building elements specific for reuse potential to develop an understanding of the building condition (RU-B) and reuse potential (RU-P); utilizing a check list of elements including: a) Fire and Life Safety, b) Building Envelope Condition, c) Interior Condition, d) Adaptability, and e) Site Characteristics.

a. Fire and Life Safety

DiLoreto Architecture gathered information concerning the building's basics including type of construction, plan dimensions, the total estimated area, number of stories, existing vertical circulation, and means of exiting. None of the buildings on the site had adequate or compliant vertical circulation or means of exiting, but it is assumed they would be designed and built according to their future uses. The key Category "A"

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buildings in Scenario 1 were all multiple stories with open regular floor plans and a concrete exterior. The type of construction of any existing building helps determine its potential future use. Because most of the category "A" buildings are constructed of concrete, steel, or both, there are more options concerning allowable uses. Wood structured and clad buildings offer less flexibility due to limits in the allowable number of floors and total building area. Both wood structured buildings – No. 4 Finishing and Warehouse (#45 & #46) - become more difficult to reuse than the other Category "A" buildings; they are currently four stories where only three, at most, is allowed by code. There are a variety of options available to make these wood structures adaptable, but requires more investigation. Flexibility is imperative when repurposing existing buildings because unknown market forces can quickly change previous intentions.

b. Building Envelope Condition

For the purpose of reuse, all of the retained buildings will need further examination regarding potential water intrusions issues including roof condition, exterior material condition, flashings, and window and door openings. The key Category "A" buildings were in relatively good condition as the facades were all constructed of concrete or masonry. However many of the wood or aluminum exterior materials, doors, windows, and roofs have outlived their useable lifespan. As a result, water intrusion is an issue in most of these buildings requiring major envelope renovations including new roofs, doors, all flashings, and restoration of most, if not all, of the windows.

c. Interior Condition

For the purpose of adaptive reuse, all of the buildings lacked proper electrical, plumbing, mechanical, and lighting systems. It was assumed that whatever future use in any of these buildings, complete new systems would have to be built according to current building codes. However most of these buildings did have a fire suppression system, and it is assumed they are in working order and met current regulations. In many cases, buildings with approved fire suppression systems are allowed more flexibility regarding future occupants, number of stories, and associated floor areas.

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d. Adaptability potential

Subjectivity came into play when analyzing the adaptability potential. Analyzing the floor plan configuration and dimensions led to appropriate conclusions. The key Category "A" buildings had rectangular floor plans providing flexibility in their future usability; and regular and repeating structural bays allowing for multiple tenant demising options. Also investigated was the vertical and horizontal circulation systems that were absent in most of these structures, and determined the potential ease of inserting, adapting, or construction these required elements within the confines of the building shell.

e. Site Location

Opening up the site with the removal of many of the Category "B" buildings, most of these remaining key buildings offer great views of the river, the falls, the downtown area of Oregon City, and the hills on either side of the river; and allows for great solar access which can be incorporated into future planning solutions. These key buildings are surrounded by additional category "A" buildings, creating the previously discussed clusters, and could help supply many of the accessory uses required for a successful project, including circulation, parking, and utilities.

As a specific example, none of the assessed buildings had proper egress circulation or exiting systems. However the ratings for exiting systems in individual buildings were wide-ranging. Knowing that every building more than one story, with few exceptions, must have multiple vertical stair towers a certain distance away from each other, DiLoreto Architecture drew conclusions based on the potential ease of constructing these enclosed vertical egress systems. Existing spatial volumes, real and potential floor plate dimensions, potential horizontal entry/exit locations, existing building materials, and building site location and adjacencies were all quickly examined to determine this potential. Paper Machine No. 4 (Building #42), with its large volume, rectilinear floor plan, and Main Street facing façade, inserting an exiting system within the building shell would be relatively easy, thus scoring relatively high. Whereas No. 4 Finishing building (#45) is completely surrounded by buildings 42, 44, 46, and the railroad to the east; a unique egress solution would be required. It would seem logical that buildings 45 and 46 could share exiting systems, but due to the building materials, existing number of floors with large areas, and lack of access to existing public right

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of ways, constructing an entire egress component would be challenging. This is not to say it should be viewed as a deterrent, but it is completely dependent on potential use and market appeal. Because of the ease of inserting a working egress system, Paper Maching No. 4 (#42) received a much higher rating for reuse potential than did No. 4 Finishing building (#45).

After completing the review of the site and existing conditions, a pattern emerged highlighting a number of structures with clear reuse possibilities. These specific structures were further reviewed and incorporated into two site scenario suggestions as an approach to establishing building retention opportunities. It is understood however that any adaptive reuse opportunities will ultimately be determined by market forces outside the scope of this study.

4. Site Considerations

Beyond assessing individual buildings, it is worth mentioning site wide reuse and design considerations. These are a few general thoughts as to the potential opportunities in consideration of the proposed scenarios.

a. Connectivity

Opening up the site affords an excellent opportunity to reconnect downtown Oregon City to the Willamette River and the Falls. Likewise, removing structures with minimal historic value and low reuse possibilities will open views between the River, the site and downtown. This historic connection, severed for years by the total overbuilding on the site, will once again tie downtown Oregon City to the river. As an activity center reconnecting Main Street through the site will provide an opportunity for public activity with pedestrian and vehicle access that will strengthen the City's core.

b. Reuse Development

Category "A" buildings offer an opportunity for a true mixed use redevelopment. Each could be a stand alone development linked to one another by pedestrian walks and roadways. Removing some of the structures would allow portions of the site to be returned to a more natural state, make physical and visual connections with the river and open Main Street for street front activity. These potential site amenities should entice future development by creating a more attractive environment.

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c. New Development

Areas left open by building removal offer the chance to supplement the existing with new structures. Careful site planning would allow new structures to complement the retained buildings. They could reinforce building connections, provide access points and create shared courtyards and other outdoor spaces that enhance the historic nature of the site. To that end, a mix of housing and commercial or institutional uses could be inserted and help offset costs of renovating the existing Category A structures.

5. Conclusion

Clearly further study is required. This evaluation is simply the first step in a process that should involve a broad range of stakeholders in a thorough visioning and planning process. We would encourage further review including:

- visioning with stakeholders, community members and elected officials
- more in depth review of the Category "A" structures with optional reuse layouts
- better understanding of site conditions and topography
- more thorough building code, zoning and flood plane understanding
- historic building review
- site master planning with future development possibilities
- market analysis and financial feasibility study
- graphic images of reuse scenarios

The Willamette Falls Legacy Project site offers a great opportunity to envision a new future for Oregon City. It offers many opportunities to reinforce our shared history, reconnect with nature and provide economic benefits to the community. Even though how the site will be reused is not clear, now is the time to plan for what could take place here. The future of the site is unknown, but a complete re-imagining of this site offers many historic and economic opportunities reinforcing our shared history, creating a stronger Oregon City community, and connecting people to this important facet in Oregon history.

APPENDIX H
OREGON CITY OVERLAY DISTRICTS MEMO

OREGON CITY

Community Development Department

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

M E M O R A N D U M

To: Willamette Falls Legacy Project Team
From: Tony Konkol – Community Development Director
Re: Oregon City Overlay Districts on the Blue Heron property
Date: September 27, 2012

As part of the site investigations and due diligence for the Blue Heron property, the City has prepared the following information to explain the land use overlay districts that currently exist on the property and the development standards associated with each of the districts. Each of these overlay districts are regulated through the Oregon City Municipal Code and would be applicable when a land use application for development on the site is submitted. The property is located within the following overlay districts:

- Flood Management Overlay District (OCMC 17.42)
- Geologic Hazards (OCMC 17.44)
- Willamette River Greenway Overlay District (OCMC 17.48)
- Natural Resource Overlay District (OCMC 17.49)

This memorandum assumes that the site will not be demolished to bedrock and that the existing building basements and pilings will remain on the site. Redevelopment on the existing basements and pilings will be required to comply with all applicable building codes for structure and seismic upgrades to support the proposed uses and those requirements are currently unknown and are not addressed in this memorandum.

Flood Management Overlay District

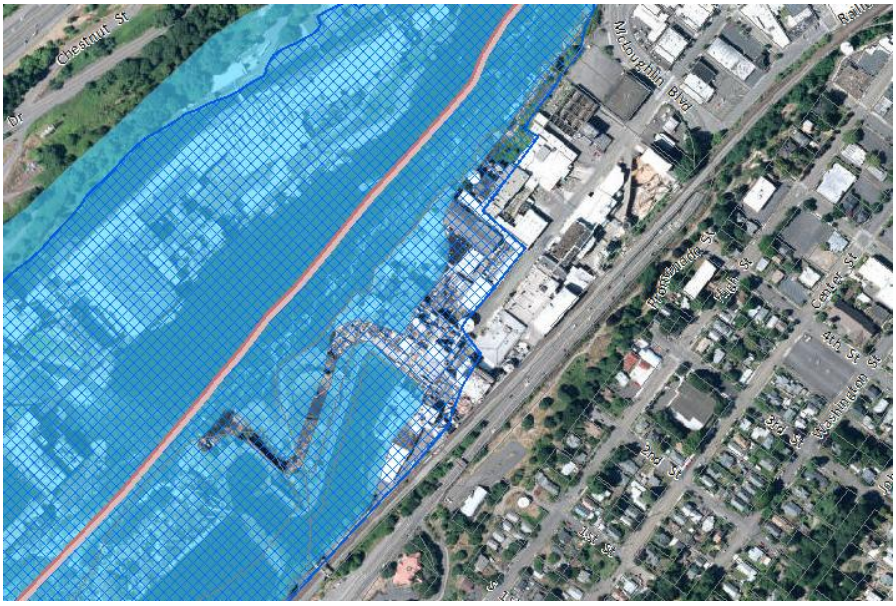
The Flood Management Overlay District (FMOD) is an overlay zone classification defining areas subject to periodic flooding or inundation which can result in property harm or loss, disruption of public services, hazards for public health, or added expense for public services. Land within the 1996 flood inundation area and the 100 – year flood plain are subject to this chapter. The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and

engineering report entitled "The Flood Insurance Study for Clackamas County, Oregon and Incorporated Areas," dated June 17, 2008, with accompanying flood insurance maps is adopted by reference and declared to be a part of this chapter. The Base Flood Elevation (BFE) for Oregon City is 50.7 feet.

The standards of the FMOD allow all uses in the base zone to occur within the overlay district, provided the standards of the code are met. The standards generally require that new construction and substantial improvements of any residential structure shall have the lowest floor elevation, including basements, elevated at least one foot above the BFE. New construction and substantial improvements of any commercial, industrial or other non-residential structure shall have the lowest floor elevation, including the basement, elevated to at least one foot above the BFE.

For both residential and non-residential use, if a fully enclosed area below the lowest floor elevation is subject to flooding, it shall be flood proofed (which raises challenges due to the balanced cut and fill requirements) or designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. In all cases, the design must be certified by a registered professional engineer or architect. The FMOD also requires that any fill on the site below the BFE be balanced by an equal cut to ensure that there is no net fill in the floodplain.

A significant portion of the southern half of the site is within the Oregon City Flood Overlay District. All new construction or substantial upgrades to buildings located within the overlay district are required to meet all applicable sections of the overlay district. However, variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register or identified as a locally designated historic structure and when a standard causes an unreasonable hardship.



Flood Management Overlay District

Redevelopment Implications

Preliminary elevations based on markings from employees on the site indicate that the 1996 flood elevation on the site was between 50.69 feet and 51.31 feet. Based on preliminary elevations of the main floor of Mill O (52.49 – 53.01 feet), Paper Machine 1 (63.53 – 63.59 feet) and the Hawley Building (63.64 – 63.69 feet), these buildings are above the 50.7 base flood elevation. Ariel photos of the 1996 flood event in Oregon City show that much of the site above the adopted BFE was inundated, but it is unknown at this time how deep the inundation was or the cause of the flooding event on the site.

It will be very problematic to rehabilitate/reuse portions of non-historic buildings located within the flood management area that are below the 50.7 foot BFE. New construction and substantial rehabilitation to non-historic structures in the flood area will be required to meet the FMOD standards, which require all new habitable sections of the building be one foot above the base flood elevation level unless a variance from the standards is approved.

While the proposed scenarios do not identify the removal of the existing building basements and pilings to the bedrock within the FMOD, if this were to occur, it would be extremely difficult to

redevelop these areas, assuming that they are below the 50.7 foot BFE, at a later date under the existing OCMC standards.

Due to the complexity of the site and the relationship between the site, the river above and below the falls and the seawall and dam, additional analysis is required to determine the developable area within the FMOD that is above 50.7 feet. To remedy this discrepancy, a hydrologic analysis of the event and detailed existing site topography will be required to determine if an alternative BFE for the site is required. The OCMC does authorize the use of alternative base flood elevation data obtained from any source. In addition to the hydrologic analysis of the event, additional study is needed to determine the impacts of flooding on the existing basements and pilings that are to remain and would potentially provide the foundation for development on the site. Areas of the site determined to be above the alternative BFE, or where it can be demonstrated that the structure or area was not inundated by the flooding event, would potentially be considered developable.

Geologic Hazards

The City's geologic hazards overlay district regulates development on or near unstable or steep slopes. The geologic review is intended to ensure that activities in the overlay district are designed based on detailed knowledge of the site conditions in order to reduce the risk of private and public losses and to prevent undue hazards to property and the health, welfare and safety of the public. A permit is required for any development of land, construction, reconstruction, structural alteration, relocation or enlargement of any building or structure with in the overlay district.

The geologic hazards code regulates the size, location and design of walls, infrastructure and fill allowed within the overlay district. For slopes in excess of 25%, the density allowed on the site is restricted to two units per acre for slopes between 25% and 35% and prohibits development on slopes in excess of 35%.



Geologic Hazards Overlay District

Redevelopment Implications

Redevelopment on the site would be required to demonstrate that the existing building basements and pilings are designed and constructed appropriately on the natural basalt and can support the proposed uses of the site.[1] The site does not appear to be susceptible to land slides or ground movement, which would be verified through a detailed site geologic stability assessment of the nature and distribution of the underlying geology, the physical and chemical properties of existing soils and groundwater.

Willamette River Greenway Overlay District

The City's greenway regulations apply to all development, changes of use or intensification of use in an area within the Willamette River Greenway Overlay District (WRG).[2] The purpose of the code

[1] Where residential development for needed housing is proposed, state law limits local governments to apply only "clear and objective standards." ORS 197.307(4). Compliance with this statute as well as regulations requiring, for example, "appropriate construction" or directing development away from the river "to the greatest extent possible" may be difficult.

[2] The Oregon Supreme Court is currently considering the extent to which local governments can regulate activities or development under Goal 15 that does not rise to the level of a "change" or "intensification" of a use. A "change of use" means "making a different use of the land or water than that which existed on December 6, 1975." However, a "change of use" does not include changes that do not

is to protect the natural, economic, recreational and scenic qualities of the Willamette River and enhance water quality and fish and wildlife habitats. The entire property is located within the WRG and would be subject to the overlay district development standards.



Willamette River Greenway Overlay District

While properties located in the WRG must demonstrate compliance with the development standards of the overlay district, the underlying zoning district determines the allowable uses on a property; the WRG does not restrict the type of uses on a property.

The WRG sets out development standards that are to be considered when reviewing a land use application within the district; including: the City Comprehensive Plan for fish and wildlife habitat and scenic views, Goal 15 for recreational uses, adequate public access, protection and safety of public and private property, protection and enhancement of vegetation along the Willamette River, directing development away from the river and establishment of a greenway setback.[3]

"substantially alter or affect the land upon which the use is situated." An "intensification" means "additional which increase ore expand the area or amount of an existing use or the level of activity." Building new commercial or residential structures upon existing foundations previously used for industrial purposes likely qualifies as both a "change" and an "intensification" of a use and thus WRG limitations will likely apply in any event. However, the extent to which the court may limit the reach of Goal 15 is not yet known. *Gunderson v. City of Portland,* 243 Or.App. 612, 259 P.3d 1007 (2011), *rev. allowed* 351 Or. 586, 274 P.3d 857 (2012).

[3] See note 1, above.

For all areas within 150 feet of the ordinary low-water line of the Willamette River, the Planning Commission must make additional findings that:

1) to the greatest extent possible, the development provides the maximum possible landscaped area, open space or vegetation between the activity and the river; and
2) to the greatest degree possible, necessary public access is provided to and along the Willamette River.

The following are prohibited with the Willamette River Greenway:

1) any main or accessory residential structure exceeding a height of thirty-five feet; and
2) structural bank protection, except rip rap or a channelization used as an emergency measure to protect existing structures.

The development standards for the WRG requires that development shall be directed away from the Willamette River to the greatest possible degree, provided that lands committed to urban uses within the Greenway may continue as urban uses, subject to the non-conforming provisions of the OCMC. Reuse of the existing foundations would be a factor in considering the location of the setbacks and the extent to which development must be directed away from the Willamette River, but as written, new structures constructed on the site would not be exempt from complying with these standards.

For each application, the Greenway setback is established by the Planning Commission to separate development from the river and shall protect, maintain, preserve and enhance the natural, scenic, historic and recreational qualities of the Willamette River.

Redevelopment Implications

As part of the master planning of the site, a greenway setback will need to be established on the property. The setback would be determined based on the proposed uses of the site and by demonstrating that the development standards of the WRG are being met to the maximum extent possible. As the property is located within the city limits of Oregon City and has been developed, it would be considered committed to urban uses, and this would be a factor in determining the greenway setback.

The current proposal to remove some or all of the buildings to the "main street" level, while leaving in place the building basements and pilings would result in a site that could be found to be committed to urban uses. The setbacks for the construction of new buildings on the existing building basements and pilings would be determined through the land use process, though it is expected that a setback from the edge of the river would be required in order to demonstrate compliance with the development standards of the WRG, specifically public access. For those building retained on the site, they would be considered committed urban uses and would be allowed to redevelop through the non-conforming use section of the OCMC.

Depending on the location of the proposed uses on the site, the prohibition of any main or accessory residential structure exceeding a height of thirty-five feet may be problematic. If a new residential use in excess of thirty five feet is proposed, a legislative text amendment to the WRG section of the OCMC would be necessary.

Natural Resource Overlay District

The Natural Resource Overlay District designation provides a framework for protection of Metro Titles 3 and 13 lands, and Statewide Planning Goal 5 resources within Oregon City. The Natural Resource Overlay District (NROD) implements the Oregon City Comprehensive Plan Natural Resource Goals and Policies, as well as Federal Clean Water Act requirements for shading of streams and reduction of water temperatures, and the recommendations of the Metro ESEE Analysis. The NROD ecological functions are planned for integration within existing neighborhoods and new residential and commercial developments. The NROD provisions do not affect existing uses and development or the normal maintenance of existing structures. New public facilities such as recreation trails, planned road and utility line crossings and storm water facilities are allowed within the overlay district under prescribed conditions. This chapter does not regulate the development within the identified water resource, separate permits from the Division of State Lands and the Army Corp of Engineers would be required for work within the Willamette River.

The NROD district utilizes a 200 foot buffer from the ordinary high water line for land abutting the Willamette River. Any new development (new impervious surfaces on existing pervious land) within the buffer, or if a regulated NROD use cannot meet one or more of the applicable standards, then an adjustment from the standards may be requested and will be processed through a Type III Planning Commission decision. Please note that very little pervious land exists on the property.

Development that involves construction on existing impervious area within the NROD would be considered exempt from the overlay district as it would be considered an onsite replacement of existing structures. The OCMC allows an exemption for the "Replacement, additions, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased." The NROD also exempts the planting of native vegetation and the removal of non-native, invasive vegetation and removal of refuse and fill from requiring a permit, provided that all work is done with hand-held equipment, no existing native vegetation is disturbed and all the work occurs outside the wetlands and the top-of-bank of streams.



Natural Resource Overlay District

Redevelopment Implications

It is recommended that any demolition scenario create no new pervious surfaces. While, it may be possible to achieve a buffer reduction through an adjustment/mitigation proposal with the Planning Commission, keeping the site impervious through the preservation of the existing building basements and pilings prior to Master Plan approval, reduces the complexity of the proposal and provides the most flexibility for the redevelopment of the site.

Conclusion

The existing developed condition of the site and the proposal to retain the existing building basements and pilings as a platform for redevelopment provides the greatest flexibility for master planning the site with the maximum availability of potentially useable acreage. While there remain unknowns concerning the exact location of the Willamette River Greenway setback and the Natural Resource Overlay District Boundary, there is an identified land use process to address the standards and request adjustments through the master planning of the property.

As the site moves south from 99E, the natural topography of the historic shoreline begins to fall away. The extent of the area below the "Main Street" basement and piling system that may serve as the platform for the redevelopment of the site and the integrity of this existing infrastructure will impact the redevelopment potential of the site. Demonstrating that the retained building basements and pilings comply, or can be upgraded to comply with the Geologic Hazards standards and that they are designed to support the proposed uses on the site will impact the developable acreage of the property.

The discrepancy between the 50.7 foot base flood elevation appropriate for areas below the falls and the 1996 flood inundation that occurred on the site as a result of overflow coming from above the falls, remains an unknown that impacts approximately 8 acres of the site that is currently developed with industrial buildings. Understanding the flood event hydrology from above the falls, through the property, and returning the Willamette River below the falls in relation to the existing elevations on the site is necessary to determine the developable acreage within the FMOD. The retention and designation of those buildings within the FMOD that are eligible for the National

Register and any areas above the alternative BFE, or where it can be demonstrated that the structure or area was not inundated by the flooding event, would potentially be areas for development.

APPENDIX I
RAPID VISUAL SCREENINGS, CATEGORY A

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

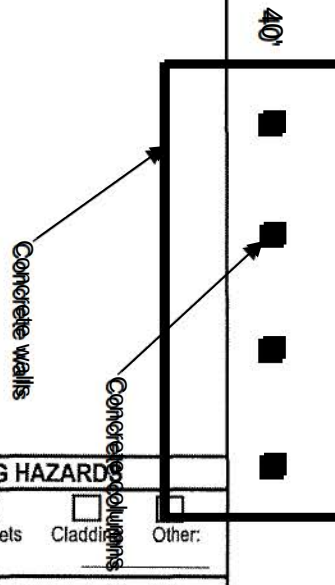
Building Name _____

Use _____

Scale: 1:8 = Inadequate. (A value of 2.0 or greater has been assumed to be adequate)

4 story concrete frame building, 2 of which are below grade at the east side of the building. Floors and roof structure consist of a flat slab, concrete beams, and concrete girders. Generally in good condition. Lateral system would consist of the concrete walls at the perimeter of the building. Many of the exterior windows had been filled in with CMU. Some foundations were observed which consisted of concrete piers and beams, but would require further evaluation.

PHOTOGRAPH



OCCUPANCY			SOIL		TYPE						FALLING HAZARD			
Assembly	Office		Number of Persons		A	B	C	D	E	F	☐	☐	☐	☐
Commercial	Residential		0 – 10	11 – 100	Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:
Emer. Services	Industrial	School	101-1000	1000+										

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8						
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0						
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5						
Pre-Code	0.6	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1.0						
Post-Benchmark	+2.0	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8						
FINAL SCORE, *S*															

COMMENTS:



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

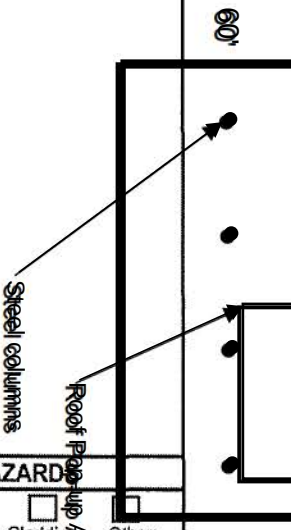
Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

PHOTOGRAPH



1 story wood and steel structure with 1 story basement below. The roof structure is wood supported by steel columns. There is minor steel lateral bracing at the exterior walls, but not adequate. The roof is concrete over steel beams.

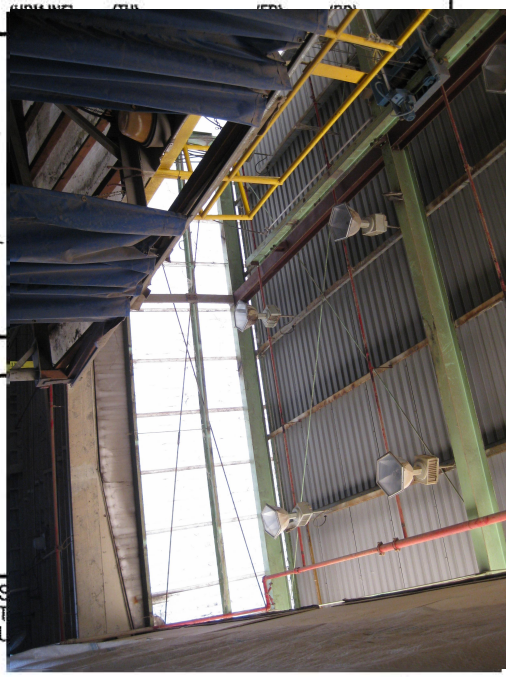
-0.2 = Inadequate. (A value of +0.2 or greater has been assumed to be adequate.)

OCCUPANCY	SOIL	TYPE	FALLING HAZARD
Assembly, Commercial, Emer. Services, Gov't, Hist., Industrial, Office, Residential, School	Number of Persons: 0 – 10, 11 – 100, 101-1000, 1000+	A Hard Rock, B Avg. Rock, C Dense Soil, D Stiff Soil, E Soft Soil, F Poor Soil	☐ Unreinforced Chimneys, ☐ Parapets, ☐ Cladding, ☐ Other:

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8						
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0						
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5						
Pre-Code	0.5	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1.0						
Post-Benchmark	+2.5	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8						
FINAL SCORE, *S*															

COMMENTS



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

PHOTOGRAPH

50'

Steel columns

Loading Doors

1 story wood and steel structure with 1 story basement below. The roof structure is wood supported by steel columns. There is minor steel lateral bracing at the exterior walls, but not adequate. The floor is concrete over steel beams.

-0.2 = Inadequate. (A value of +0.2 or greater has been assumed to be adequate)

OCCUPANCY	SOIL	TYPE	FALLING HAZARDS
Assembly, Commercial, Emer. Services, Gov., Hist., Industrial, Office, Residential, School	Number of Persons: 0 – 10, 11 – 100, 101-1000, 1000+	A Hard Rock, B Avg. Rock, C Dense Soil, D Stiff Soil, E Soft Soil, F Poor Soil	☐ Unreinforced Chimneys, ☐ Parapets, ☐ Cladding, ☐ Other:

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8						
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0						
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5						
Pre-Code	0.6	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1.0						
Post-Benchmark	+2.5	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8						
FINAL SCORE, *S*															

COMMENTS



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

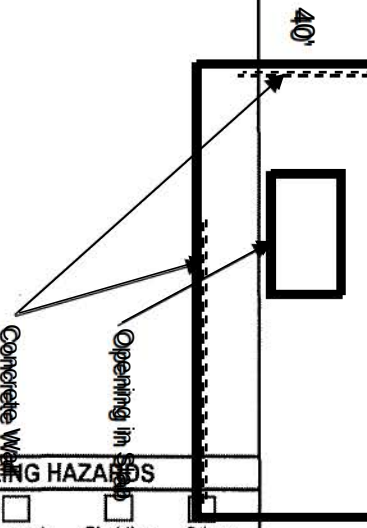
Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

PHOTOGRAPH



OCCUPANCY			SOIL			TYPE						FALLING HAZARDS			
Assembly	Government	Office	Number of Persons			A	B	C	D	E	F	☐	☐	☐	☐
Commercial	Historic	Residential	0 – 10	11 – 100		Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:
Emer. Services	Industrial	School	101-1000	1000+											

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8						
Vertical Irregularity	-2.0	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0						
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5						
Pre-Code	0.6	-1.0	-1.0	-0.6	-0.6	-0.8	-0.2	-1.2	-1.0						
Post-Benchmark	+2.0	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8						

FINAL SCORE, *S*

COMMENTS

The structure above grade has burnt down, except for two perimeter concrete walls. There is a below grade concrete basement with some older rubble walls, as part of the walls and foundation.

-0.1 = Inadequate. (A value of 0.0 or greater has been assumed to be adequate)



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

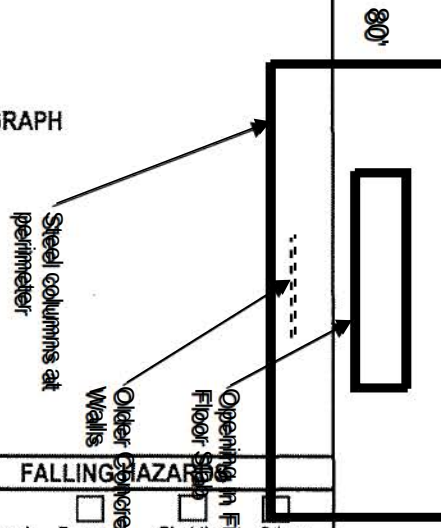
Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

PHOTOGRAPH



OCCUPANCY	SOIL	TYPE	FALLING HAZARD
Assembly, Commercial, Emer. Services, Gov., Hist., Industrial, Office, Residential, School	Number of Persons: 0 – 10, 11 – 100, 101-1000, 1000+	A Hard Rock, B Avg. Rock, C Dense Soil, D Stiff Soil, E Soft Soil, F Poor Soil	☐ Unreinforced Chimneys, ☐ Parapets, ☐ Cladding, ☐ Other:

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8						
Vertical Irregularity	-2.0	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0						
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5						
Pre-Code	0.6	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1.0						
Post-Benchmark	+2.0	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8						

FINAL SCORE, *S*

COMMENTS

-0.1 = Inadequate. (A value of 2.0 or greater has been assumed to be adequate)

The structure above grade is steel framed, below grade is concrete structure. Some of the above grade structure is supported off of older concrete walls that continue to the subgrade. There are large openings in the first floor slab where the paper machine is.



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

PHOTOGRAPH

220'

No Lateral Force System on this side of building

North

Industrial

Exterior concrete walls have some windows with in filled CMU. Ground floor concrete with heavy beams and columns in the basement level supporting the concrete slab. Basement floor has concrete on the east side and dirt on the west. 2nd floor has wood beams and car decking (2x6's). N) steel columns. 3rd floor mezzanine has wood beams and car decking. Wood beams for the roof above the mezzanine. Site is spalding concrete over exterior windows.

-0.6 = Inadequate. (A value of +0.6 or greater has been assumed to be adequate)

OCCUPANCY	SOIL	TYPE	FALLING HAZARDS
Assembly Commercial Emer. Services	Office Residential School Industrial	Number of Persons 0 – 10 11 – 100 101-1000 1000+	A Hard Rock B Avg. Rock C Dense Soil D Stiff Soil E Soft Soil F Poor Soil	☐ Reinforced Chimneys ☐ Parapets ☐ Cladding ☐ Other:

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.9	N/A	+0.8	+0.8	+0.6	+0						
Vertical Irregularity	-2.0	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1						
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0						
Pre-Code	0.6	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1						
Post-Benchmark	+2.	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0						

FINAL SCORE

COMMENT



* = Estimated, subjective, or unreliable data
DNK = Do Not Know

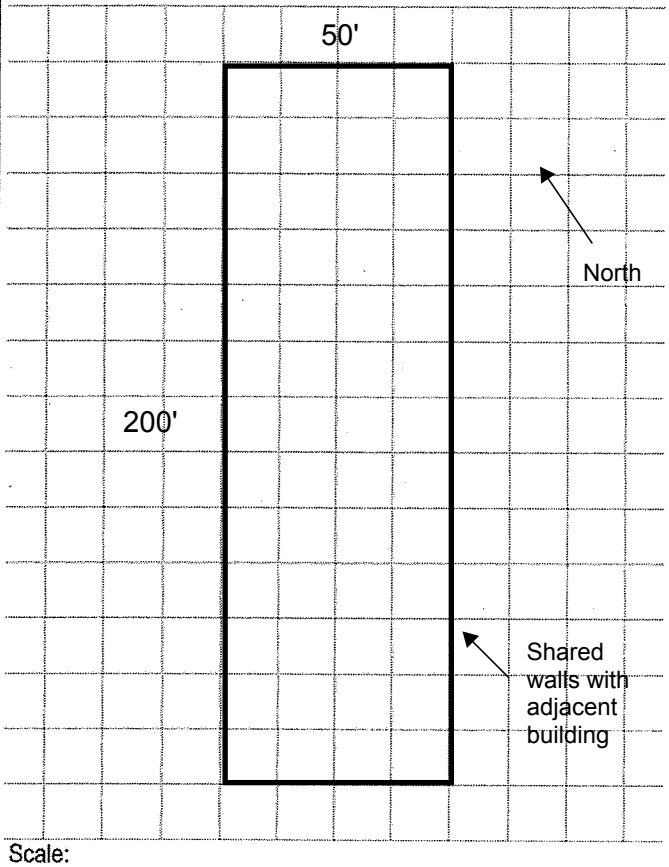
BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting fram
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity



Scale:

Address: Blue Heron Paper Mill
Oregon City **Zip**
Other Identifiers #32 - No. 1 Paper Machine
No. Stories 1 **Year Built** 1917
Screener MWT **Date** 7/13/2012
Total Floor Area (sq. ft.) Approx. 10,000
Building Name No. 1 Paper Machine
Use Industrial



OCCUPANCY

Assembly, Commercial, Emer. Services, Govt, Historic, (Industrial), Office, Residential, School

Number of Persons: 0 – 10, (11 – 100), 101-1000, 1000+

SOIL TYPE

A Hard Rock, B Avg. Rock, (C Dense Soil), D Stiff Soil, E Soft Soil, F Poor Soil

FALLING HAZARDS

☐ Unreinforced Chimneys ☐ Parapets ☐ Cladding ☐ Other:

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	(C2) (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	RM2 (RD)	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8	1.6	2.6	2.4	2.8	2.8	1.8
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4	+0.2	N/A	+0.2	+0.4	+0.4	0.0
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8	+0.3	N/A	+0.4	N/A	+0.6	N/A
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0	-1.0	N/A	-1.0	-1.0	-1.0	-1.0
Plan Irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Pre-Code	0.0	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	(-1.0)	-0.2	-0.8	-0.8	-1.0	-0.8	-0.2
Post-Benchmark	+2.4	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4	N/A	+2.4	N/A	+2.8	+2.6	N/A
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	(-0.4)	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6	-0.4	-0.6	-0.6	-0.6	-0.6	-0.6
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8	-0.8	-0.4	-1.2	-0.4	-0.6	-0.8

FINAL SCORE, *S* 1.4 = Inadequate. (A value of 2.0 or greater has been assumed to be adequate)

COMMENTS

1 story building with a concrete slab floor at grade level. The exterior walls are concrete with pilasters. The roof consists of steel beams clear spanning from wall to wall. Wood deck spans between steel roof beams. Shares a wall on the east side with # 33 Hawley Building.

Detailed Evaluation Required

(YES) NO

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

SW = Shear wall
TU = Tilt up
URM INF = Unreinforced masonry infill

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

1:3 = Inadequate. (A value of 2.0 or greater has been assumed to be adequate)

4 story concrete frame building. Floors consist of a flat slab, concrete beams, and concrete girders. The roof is framed with wood beams, joists, and sheathing. Generally, in good condition. Lateral system would consist of the concrete beams and columns acting as a moment frame, though it was likely not designed this way. Many of the exterior windows had been filled in with CMU. Some foundations were observed where deconsisted or concrete piers and beams, but would require further evaluation.

PHOTOGRAPH

Concrete columns and spandrels.

Concrete columns

76'

OCCUPANCY		SOIL			TYPE						FALLING HAZARDS			
Assembly	Govt	Office	Number of Persons		A	B	C	D	E	F	☐	☐	☐	☐
Commercial	Historic	Residential	0 – 10	11 – 100	Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:
Emer. Services	Industrial	School	101-1000	1000+										

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5							
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4							
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6							
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5							
Plan Irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5							
Pre-Code	0.6	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2							
Post-Benchmark	+2.0	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4							
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4							
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6							
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2							

FINAL SCORE, *S*

COMMENTS:



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting fra
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Large, 1 story concrete building over a basement with mezzanine space. Large roof girders clear span between exterior building frames. Lateral system would consist of moment frame action in the exterior concrete pier / spandrel system.

0.9 = Inadequate. (A value of 1.2 or greater has been assumed to be adequate)

Concrete exterior walls

PHOTOGRAPH

200'

Scale:

OCCUPANCY			SOIL		TYPE					FALLING HAZARDS			
Assembly	Government	Office	Number of Persons		A	B	C	D	E	F			
Commercial	Historic	Residential	0 – 10	11 – 100	Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:
Emer. Services	Industrial	School	101-1000	1000+										

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5							
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4							
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6							
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5							
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5							
Pre-Code	0.9	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2							
Post-Benchmark	+2.4	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4							
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4							
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6							
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2							
FINAL SCORE, *S*															

COMMENTS



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting fr
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

PHOTOGRAPH

120'

Concrete columns and spandrels.

Large, 1 story volume over a basement. Large steel trusses clear span to exterior concrete frames. Roof is wood decking supported by steel purlins. The lateral system would consist of moment frame action in the exterior pier // spandrel system. Roof diaphragm is not positively connected to the exterior frames.

0.9 = Inadequate. (A value of 1.2 or greater has been assumed to be adequate)

OCCUPANCY		SOIL		TYPE						FALLING HAZARDS			
Assembly	Office	Number of Persons		A	B	C	D	E	F	☐	☐	☐	☐
Commercial	Residential	0 – 10	11 – 100	Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:
Emer. Services	School	101-1000	1000+										
Industrial													

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0.4						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0.8						
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.0						
Plan Irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5						
Pre-Code	0.0	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1.0						
Post-Benchmark	+2.5	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2.4						
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4						
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.6						
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.8						
FINAL SCORE, *S*															

COMMENTS



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

2 story concrete frame building. Floors consist of a metal slab, concrete beams, and concrete girders. The roof is framed with steel beams, joists, and wood sheathing. Generally in good condition. Lateral system would consist of the concrete beams and columns acting as a moment frame, though it was likely not designed this way. The concrete beams at the roof only occur at the south and east exterior walls. Many of the exterior windows had been filled in with CMU.

0.4 = Inadequate. (A value of 2.0 or greater has been assumed to be adequate)

PHOTOGRAPH

North

Bldg. 45

Bldg. 42

75'

Concrete columns

Warehouse

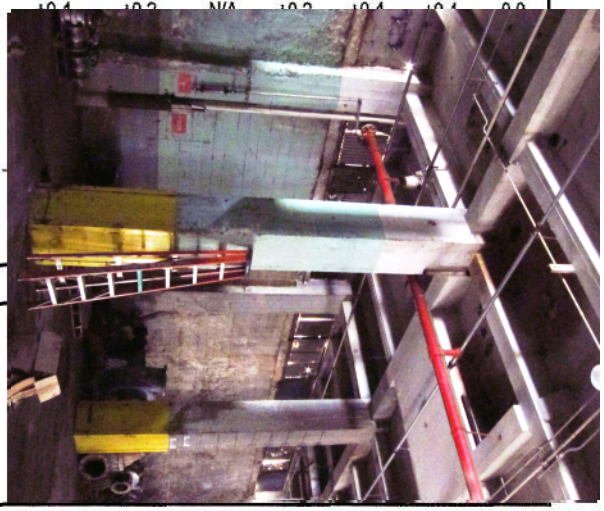
OCCUPANCY		SOIL		TYPE						FALLING HAZARDS			
Assembly	Office	Number of Persons		A	B	C	D	E	F	☐	☐	☐	☐
Commercial	Residential	0 – 10	11 – 100	Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:
Emer. Services	School	101-1000	1000+										

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (SW)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	RM2 (RD)	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.8	1.6	2.6	2.4	2.8	2.8	1.8
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4							
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6							
Vertical Irregularity	-2.0	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5							
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5							
Pre-Code	0.4	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2							
Post-Benchmark	+2.0	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4							
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4							
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6							
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2							

FINAL SCORE

COMMENTS



* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting frame
RC = Reinforced concrete
RD = Rigid diaphragm

SW = Shear wall
TU = Tilt up
URM INF = Unreinforced masonry infill

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

4 story timber framed building. Floors consist of wood joists, timber beams and timber columns. The roof is framed with wood trusses and wood sheathing. Generally in good condition. There is no apparent lateral system. At the first level, the columns are embedded into the concrete. There is a large freight elevator at the west side of the building.

-0.1 = Inadequate. (A value of 2.0 or greater has been assumed to be adequate)

PHOTOGRAPH

North

Bldg. 46

Bldg. 42

Bldg. 44

60'

Timber columns

OCCUPANCY		SOIL		TYPE						FALLING HAZARDS				
Assembly	Office	Number of Persons		A	B	C	D	E	F	☐	☐	☐	☐	
Commercial	Residential	0 – 10	11 – 100	Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:	
Emer. Services	School	101-1000	1000+											

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	RM2 (RD)	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5							
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4							
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6							
Vertical Irregularity	-2.5	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5							
Plan irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5							
Pre-Code	0.6	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2							
Post-Benchmark	+2.4	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4							
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4							
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6							
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2							

FINAL SCORE

COMMENTS



Warehouse and Finishing

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resistin
RC = Reinforced concre
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

_____ Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

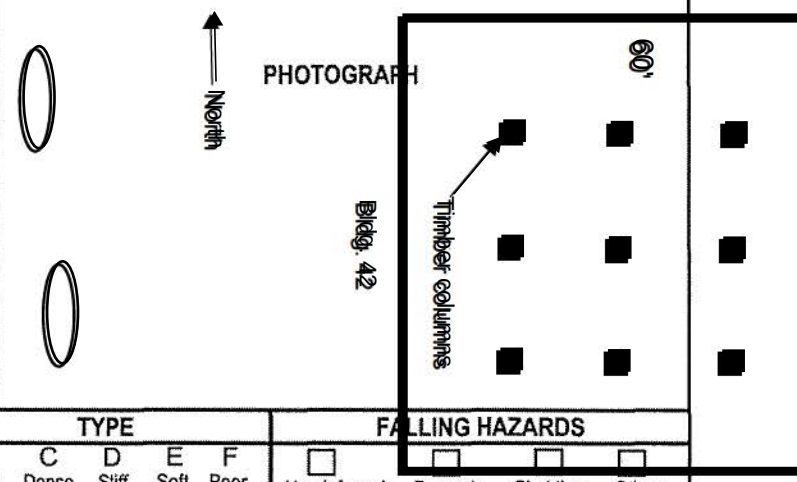
Building Name _____

Use _____

Scale:

4 story timber framed building. Floors consist of wood joists, timber beams and timber columns. The roof is framed with wood trusses and wood sheathing. Generally in good condition. There is no apparent lateral system. At the first level, there are cranes on rails supported by steel framing covering approx. half of the footprint of the building.

-0.1 = Inadequate. (A value of +2.0 or greater has been assumed to be adequate)



OCCUPANCY	SOIL	TYPE	FALLING HAZARDS
Assembly Commercial Emer. Services Industrial	Office Residential School	Number of Persons 0 – 10 11 – 100 101-1000 1000+	A Hard Rock B Avg. Rock C Dense Soil D Stiff Soil E Soft Soil F Poor Soil	☐ Unreinforced Chimneys ☐ Parapets ☐ Cladding ☐ Other:

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	RM2 (RD)	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5							
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4							
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6							
Vertical Irregularity	-2.0	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5							
Plan Irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5							
Pre-Code	0.0	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2							
Post-Benchmark	+2.0	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4							
Soil Type C	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4							
Soil Type D	0.0	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6							
Soil Type E	0.0	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2							

FINAL SCORE

COMMENTS



Warehouse and Finishing

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resistin
RC = Reinforced concre
RD = Rigid diaphragm

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA-154 Data Collection Form

HIGH Seismicity

Address: _____

Zip _____

Other Identifiers _____

No. Stories _____ Year Built _____

Screener _____ Date _____

Total Floor Area (sq. ft.) _____

Building Name _____

Use _____

Scale:

Concrete columns and spandrels.

140'

PHOTOGRAPH

1 Story Portion

3 Story Portion

1 Story at the west side, 3 story at the east side. Full basement. Roof at west side consist of deep concrete girders that clear span to the exterior walls. East sides framed with concrete beams, girders, and slabs. Lateral system would consist of moment frame action of the exterior piers // spandrels, and the interior beams // columns.

0.9 = Inadequate. (A value of 1.2 or greater has been assumed to be adequate)

OCCUPANCY			SOIL			TYPE						FALLING HAZARDS				
Assembly	Office		Number of Persons			A	B	C	D	E	F	☐	☐	☐	☐	
Commercial	Residential		0 – 10	11 – 100		Hard Rock	Avg. Rock	Dense Soil	Stiff Soil	Soft Soil	Poor Soil	Unreinforced Chimneys	Parapets	Cladding	Other:	
Emer. Services	Industrial	School	101-1000	1000+												

BASIC SCORE, MODIFIERS, AND FINAL SCORE, *S*

BUILDING TYPE	W1	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3	PC1	PC2	RM1	RM2	URM
Basic Score	4.4	3.8	2.8	3.0	3.2	2.8	2.0	2.5	2.						
Mid Rise (4 to 7 stories)	N/A	N/A	+0.2	+0.4	N/A	+0.4	+0.4	+0.4	+0						
High Rise (> 7 stories)	N/A	N/A	+0.6	+0.8	N/A	+0.8	+0.8	+0.6	+0						
Vertical Irregularity	-2.	-2.0	-1.0	-1.5	N/A	-1.0	-1.0	-1.5	-1.						
Plan irregularity	-0.	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.						
Pre-Code	0.	-1.0	-1.0	-0.8	-0.6	-0.8	-0.2	-1.2	-1.						
Post-Benchmark	+2.	+2.4	+1.4	+1.4	N/A	+1.6	N/A	+1.4	+2						
Soil Type C	0.	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.						
Soil Type D	0.	-0.8	-0.6	-0.6	-0.6	-0.6	-0.4	-0.6	-0.						
Soil Type E	0.	-0.8	-1.2	-1.2	-1.0	-1.2	-0.8	-1.2	-0.						

FINAL SCORE

COMMENTS



Industrial

* = Estimated, subjective, or unreliable data
DNK = Do Not Know

BR = Braced frame
FD = Flexible diaphragm
LM = Light metal

MRF = Moment-resisting fram
RC = Reinforced concrete
RD = Rigid diaphragm

APPENDIX J
BOILERS REVIEW MEMO

Memorandum

Environmental Resources Management

1215 3rd Avenue
Suite 1412
Seattle, WA 98101
(425) 462-8591
(425) 455-3573 (fax)

To: Hope Whitney
Building Assessment Team, Metro

From: Greg Menen, ERM

Date: 27 June 2012

Project No. 0148954.03

Subject: Willamette Falls Legacy Project
Boilers Review

DIRECTIVE

Currently, the Willamette Falls Legacy Project Review Team is conducting a survey of the structures located on the former Blue Heron Site to determine not only their historic values and significance, but also the potential costs associated with removal and management of structures that do not meet the given criteria. As a result, Metro has retained ERM-West, Inc. (ERM) to develop a technical memorandum that reviews the options and issues associated with either removing the existing boilers located in Buildings 28 and 29 or leaving them in place. Due to potential contamination issues, it is highly probable that all boilers located within Buildings 28 and 29 will remain in place and not be removed as part of the equipment salvage operation currently being undertaken at the Blue Heron Site by NRI Global.

HISTORY

Currently, there are eight boilers located in Buildings 28 and 29, all constructed circa the 1940's. In addition, all the boilers have similar construction and will therefore be considered as *similar and like* for the purposes of the information contained within this memorandum.

The existing boilers are low pressure steam producing boilers. They were used for multiple purposes, including power generation and heat. It appears the boilers at some point where run with bunker fuel and were later converted to a natural gas system. In all cases the boilers were used to produce steam by means of introducing water in tubes and heating the water to a boiling temperature. The construction of these boilers is comprised of five main components:

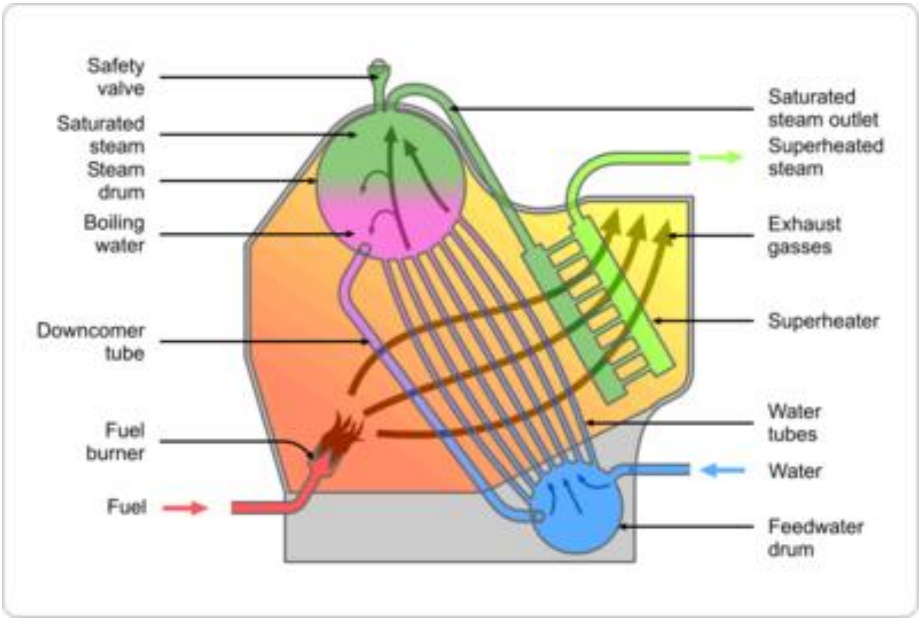
- Pressure or steam drum;

- Feedwater drum;
- Water tubes;
- Boiler body; and
- Exhaust stack.

To produce the steam, water was fed from the feedwater drum through the water tubes, which were subjected to a fire burning within the boiler body. This heated water to the boiling point, introducing steam to the pressure or steam drum. To maintain heat within the boiler, it was lined with brick or refractory. To help maintain heat within the steam drum, it was generally lined with a hard insulation. Heat that was not maintained within the boiler was then vented through the boiler's exhaust and out the existing stack.

A cross-sectional view of a typical boiler system is shown below in Figure 1.

Figure 1 Boiler System Sectional View



OPTIONS

Option #1: Remove and Demolish Boilers

During demolition operations, all hazardous materials are required to be removed prior to the start of work. If the boilers test positive for any or all of the following materials, asbestos, heavy metals, arsenic or lead based paint, these hazardous materials, for purposes of demolition of the boilers, would require specific removal and management. As prescribed by law, the removal of these materials would require specific methods to contain and dispose of the subject materials. These operations include, but are not limited to, creating a full containment around each of the boilers for the removal of the hazardous waste. The containment would consist of staging various types of platforms and scaffolding to surround the boiler as well as to utilize the existing catwalks and platforms. A containment sheet would be installed creating an airtight room surrounding the boiler. The containment is generally installed with the use of a plastic shrink wrap material and supplemented with a 6 mil poly plastic. The creation of full containment includes various entry and exit points for access of personnel and needed equipment. It also typically contains an exit location and an additional room that is used for the management and handling of the hazardous waste materials.

The hazardous removal operation will include the removal of the brick or refractory within the boiler body, the stripping of the insulation from the steam drum, removal of any gasket materials, and management of any lead-based paint chips. The removal of these materials varies based on the contractor completing the operation; however, in general, the methodology is as follows:

1. Contain entire boiler.
2. Remove the base of boiler body.
3. Strip boiler body of exterior steel skin.
4. Direct all refractory or brick to the interior of the boiler body allowing collection of material at the base.
5. Collect brick or refractory and place in 6 mil poly bags.
6. Remove insulation from boiler body skin or deposit as whole pieces to base for disposal.
7. Remove insulation from steam drum and place materials into asbestos bags and transport material to base area for disposal.
8. Remove all gasket materials.
9. Collect any paint chips.

10. Wipe or wash down all exposed surfaces located within the contained area.
11. Breakdown containment.
12. Dispose of all materials generated as a result of the operation.

The following information describes the materials associated with the methodology as well as a summary of considerations for demolition.

Asbestos

Asbestos is a naturally occurring silicate mineral used commercially for its desirable physical properties. It was very common among manufacturers and builders in the late 19th century up to 1980 because of its sound absorption; resistance to fire, heat, electrical, and chemical damage; and affordability. It was used in applications such as building insulation. When asbestos is used for its resistance to fire or heat, the fibers are often mixed with cement or woven into fabric or mats.

Asbestos is generally characterized as friable or non-friable. The friable asbestos material is the most dangerous, easily releasing fibers into the air and posing a significant health risk to anyone nearby. The non-friable asbestos is less likely to release fibers and can be found in roofing mastic and cementitious siding. A non-friable asbestos-containing material (ACM) is generally bound or locked into place but can still be made friable if damaged or altered.

The two types of asbestos are dealt with differently, so it is important to determine if ACMs are friable or non-friable prior to any abatement procedures, demolitions, or renovation activities, as this dictates which removal procedures, asbestos disposal techniques, and safety methods will be used, as regulated by the United States Environmental Protection Agency (USEPA).

The configuration of the boilers located in Buildings 28 and 29 indicate a high probability that asbestos is present within the boiler body as part of a thin insulation lining between the refractory or brick and the boiler body metal lining. ACM can also generally be expected within the insulation surrounding the steam drum and associated external pipe. In some cases, ACM can also be located within or as part of the refractory or brick, insulation within the exhaust stack, gasket linings at door openings, and around the steam transfer lines.

The existing ACMs will be friable in the majority of cases with boilers of this type and age. As a regulated hazardous waste, this material will require special handling and management for any removal operation. The specific guidelines and requirements for the handling and removal of friable asbestos materials can be found in the USEPA guidelines *Title 1 - Control of Toxic Substances - § 2605. Regulation of hazardous chemical substances and mixtures* and the *Code of Federal Regulation 40 CFR Part 763 – Asbestos.*

The removal and management of both friable and non-friable ACMs will be in accordance with the numbered disposal steps outlined above in Option #1 items 1 through 12.

Lead Paint

Lead paint securely adhered to metal surfaces as a whole may be recycled. However, the paint creates an environmental and personnel hazard when being handled or burned with a torch. When lead paint is heated, it becomes airborne and creates a potentially hazardous atmosphere for the person who is managing the torch, as well as anyone within the subject area. In addition, once the airborne metal settles to the surface, it then remains in place as a dust which can then be picked up by others and transported by touch or foot traffic, or can simply become airborne once again with the right amount of forced air.

The Occupational Safety and Health Administration (OSHA) requires certain protective actions be taken when lead levels are above 30 micrograms per cubic meter of air to ensure workers are not harmed by lead exposure. As such, during the course of demolition and hazardous materials abatement, steps will need to be taken to guard against these potential exposures and will require monitoring to determine the extent of potential exposure and the necessary personal protective equipment (PPE). Based on the number of days required to complete the work, this can include blood sampling, air sampling, and wipe sampling. The sampling results will indicate the levels of exposure at any given time and will dictate the safety precautions prescribed by OSHA that will need to be taken for the current levels. These requirements can be found in Code of Federal Regulations (CFR) 1926.62 and CFR 1910.1025. While the hazardous materials removal work is underway, any lead will be contained within the enclosure but will need to be monitored similarly to the asbestos material. All paint chips collected during the time of the abatement work would need to be placed in drums and then properly disposed of.

Heavy Metals

As a result of heating by use of gas and fuel, heavy metals have the potential to build-up and collect on the brick of the boiler body. During heat production, the refractory or brick may collect metals such as lead, chromium, and arsenic at levels that test positive for hazardous waste. In these cases, the boiler refractory or brick will be required to be handled as hazardous waste. The removal work then requires the collecting all the associated refractory and brick, packing it into poly bags, and disposing of it at a landfill that will accept the waste at the characterized levels. This operation is generally completed in containment during the asbestos abatement operations.

Recycling and Salvage

Once the hazardous materials have been removed from a boiler, the tubes, pressure and water drums, and structural frame of the boiler are all that will remain. With the hazardous materials removed, the remaining materials can be recycled as a scrap metal. The scrap metal's value will be based on current and local market conditions, as well as on its prepared state.

Demolition

Once a boiler has all hazardous materials removed, it is generally demolished as part of the overall structure enclosing the boilers. However, prior to this operation, for safety purposes, it is recommended that the remaining steam drum be torch-cut into smaller and lighter pieces to prevent any unexpected damage from a heavy load falling from a significant elevation during the removal work. In some cases, in order to maintain the boiler building structure, the remaining boiler unit can be removed without building demolition. In these cases, the removal operation requires selective removal operations requiring specialty equipment to manage a dismantling operation completed with heavy lifting equipment such as cranes and chain falls. Special care should be taken during this process to assure no structural members associated with the building structure will be removed as part of the dismantling process. It is recommended that a structural engineer remain onsite during this type of operation.

Option #2: Leave Boilers, Repair and Maintain

Option #2 is to leave the boilers in place and repair and maintain as necessary. Although it is expected that the existing boilers contain asbestos, as well as a potential for waste from the existing brick or refractory, the structures and body of the boilers remain in a condition that would not appear to pose an immediate concern for significant exposure.

The current condition of the boilers appears to be adequate for maintaining and minimizing exposure of the asbestos and heavy metals, but will require particular actions to repair and maintain the boilers to assure all containments are secured.

Currently, the boilers appear to be structurally sound; however, a detailed inspection would need to be completed to identify any potential areas of concern. The immediate issues associated with the boilers are:

- Lead based paint;
- Intrusive sample locations;
- Body panel removals;
- Asbestos insulation; and
- Weather infiltration.

Lead Based Paint

The presence of lead paint at the site has not been confirmed. However, based on the age of the boilers, their existing paint is expected to be lead-based.

As described above in Option #1 "*Lead Paint*", lead chips can be considered hazardous waste and lead dust generated by the painted surfaces can be transferred by means of touch as well as by walking into the area, creating both cross contamination and the potential for ingestion. In addition, there are specific guidelines mandated for any work being completed on a lead painted surface for the protection of workers, as stated in CFR 1926.62. The management and recommendations for the handling of the coatings currently on the boilers should be reviewed by a licensed and bonded painting contractor familiar with all rules and regulations concerning lead based paint. If the boilers will remain in place, consideration should be given to abating the existing paint and applying a new coating of paint or assuring the existing paint is fully encapsulated.

Intrusive Sample Locations

As a means of sampling for hazardous waste materials, intrusive sampling has already been conducted on the boiler assumed to have been completed by NRI Global. These sample locations are distinguished as areas where a portion of the boiler body has been removed to obtain internal materials for sampling purposes. Currently, these locations have been left open to allow exposure to the internal refractory and insulation material of the boiler. ERM recommends that all these sample locations be properly repaired and sealed to eliminate potential exposure.

Body Panel Removal

In addition to the intrusive sample locations, access to the internal boiler body was made by removing various panels making up the external body of the boiler. These panels are held in place with multiple bolts located around the perimeter of the panel, which also appears to have a gasket material for sealing purposes. Currently, these panels have been left completely off of the various boilers or have been mildly secured in place by partially threading the perimeter bolts back in place. The potential exposure to the boilers insulation and refractory or brick is significant. All panels previously removed and placed next to the boilers should be replaced and properly secured with all bolts fully tightened.

Care should be taken during any panel replacement in order to protect worker safety by minimizing the potential for exposure to hazardous waste and to avoid cross-contamination issues.

Asbestos Insulation

Without confirmation, it is assumed that ACM exists on the boiler system's steam or pressure drum. This insulation is known as thermal system insulation (TSI). Typically, TSI is considered a friable material and, as such, it is also considered a hazardous waste, as noted previously in this report (Option #1 for Asbestos). Undisturbed, this insulation does not pose an immediate concern, but over time will require maintenance to maintain its integrity. In addition, the TSI is a form of insulation that can be readily broken down by accidental forces created by hand tools or long term handling. Once the external encasement is broken, repair is required to eliminate the release and exposure of friable asbestos. ERM recommends that, if the material is to remain in place, additional

encapsulation be provided or access to the asbestos material be restricted to authorized personnel only.

Weather

Consideration should be given to weather effects if the boilers are left in place. Assuming the boilers would remain with the building structure and would remain non-operational, the external stacks and exhaust system should be covered to eliminate the build-up of water within the system via rain infiltration.

If the existing structure surrounding the boilers is removed and the boilers are to be exposed to the elements, proper steps should be taken to maintain the integrity of the boiler body and minimize the potential release and exposure to hazardous materials. This includes, but is not limited to, encapsulation or removal of lead based paint, removal or full encapsulation of all TSI, weather proofing and sealing any openings to the remaining boilers, and creation of a regular inspection program to ensure no breakdown of the structures occurs, which could release the internal makings of the boilers.

BUDGET ESTIMATES

Option #1 – Budget Estimate

Option #1 will require the full encapsulation of each boiler for the abatement operations assuming the following materials are present:

- Lead based paint;
- Asbestos; and
- Heavy metals.

Using these assumptions the budgetary cost to remove the hazardous waste is approximately $1,000,000.

This budget is for hazardous waste removal only and does not include any costs for demolition and removal of the remaining skeletal structure after abatement procedures have been completed.

Option #2 – Budget Estimate

Option #2 requires additional inspections to generate a full scope of the maintenance and repair work that may be required. Based on limited information, the budget for this work may range from approximately $50,000 to $250,000, not including any additional costs for long term regular maintenance and assuming the existing paint will not be removed.

SUMMARY

As the boilers currently reside, there is a substantial risk of inheriting the potential hazardous wastes that exist as part of the boilers. Although the boilers have a fair amount of recoverable assets through the existing steel, the costs for the removal of the hazardous waste will far exceed any return on scrap metal salvaging. In this case, the hazardous waste removal work could exceed $1,000,000 while the salvage of the existing steel may return $150,000. Option #2 offers the alternative of leaving and maintaining the boilers in place. While this substantially reduces the immediate cost of abatement, there are risks and maintenance costs associated with this option. The structural integrity of the boilers is uncertain and it is not clear if the boiler structures comply with current earthquake standards. It is also unclear what steps would be needed to manage the existing painted surfaces. A careful and thorough inspection will be required to generate a clear list of the services that will be needed prior to accepting the responsibility of long-term maintenance and care to the existing boiler units. Once this is done, a clearer picture can then be developed to determine the potential costs associated with maintaining the boilers.

APPENDIX K
DEMOLITION TO MAIN STREET LEVEL

Environmental Resources Management

1218 3rd Avenue
Suite 1412
Seattle, WA 98101
(425) 462-8591
(425) 455-3573 (fax)
www.erm.com

MEMO

"Willamette Falls Legacy Project" Scope of Work

Greg Menen

9 October 2012

Prepared for:
Partners
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Portland, OR 97232-2736
503-797-1661
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SCOPE OF WORK

for

Demolition to "Main Street Level"
Willamette Falls Legacy Project
Oregon City, OR

Date: 9 October 2012

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EXHIBIT "A"

I. OBJECTIVE

The objective of the project is to demolish the vacant buildings, structures, and remaining equipment on the grounds of the Former Blue Heron Paper Mill site to an elevation equal to the main streets used at the site or to the first floor elevation of the building structures. Upon completion of this scope of work, all site structures will be removed, leaving only the first floor slabs, decks, pits, and associated basements in place.

II. PROJECT BUDGET

A. DEMOLITION COST ESTIMATE

The Demolition Cost Estimate for this project will be based on the subject scope of work and the assumptions and clarifications as submitted.

III. PROJECT SITE LOCATION & BUILDING IDENTIFICATION

A. PROJECT SITE ADDRESS

The location of the project site is:

Willamette Falls Legacy Project
419 Main Street
Oregon City, OR 97045

B. BUILDING IDENTIFICATION

The project site buildings and structures will be identified by the site plan referenced as:
BUILDING KEY PLAN – Dated August 24, 2012

See **Exhibit "A"** for the project site plan.

IV. PROJECT INFORMATION

A. BACKGROUND

In early 2010, the Blue Heron Facility ceased operations and was permanently closed. As part of the recovery process, the assets of the facility were sold in place to be removed by NRI. The asset recovery work included the removal of all equipment, materials, and utility support for the facility while leaving the building structures, equipment and tank pads, and minimal utility lines to support a small amount of lighting and necessary pumps to maintain the current facility. The power source for these necessary items will be a string of temporary power poles and dropped lines, allowing for the complete removal of the existing substations.

It is also expected that various pieces of equipment and materials will remain in place, as the cost of the removal would exceed the value of the material. The majority of this material will be located within the basement areas and lower sections of the facility considered hard to reach. In addition, based on the high cost of remedial action, it is expected that the existing boilers will remain in place, as well.

V. SCOPE OF WORK

A. GENERAL REQUIREMENTS

1. Building Demolition

Using Exhibit "A" as a reference, buildings and structures numbered 1 through 55 will be demolished to a level even with Main Street and its associated corridors, street ways, and passages. The intent of the building demolition is to remove said structures to their first floor level, while keeping in place and intact the existing decks and floors that make use of the first level. At the conclusion of the demolition operations, the site will be left in a condition where the existing building walls and foundations will match the level of the existing streets, corridors, and passages that allow entrance to the main floor of the structure.

2. Equipment Demolition

As described in the background information, NRI has purchased and is removing the assets of the facility, which include the existing equipment. It is expected that the majority of the equipment will be removed; however, since the existing building structures must remain in place, certain equipment and materials are expected to remain in place, as well, and will need to be removed as part of the building demolition operations. The pieces of equipment or materials expected to remain will be the boilers in buildings 28 and 29, various piping located throughout the facility and basement areas, and tanks whose effort to remove is greater than asset value.

B. SPECIFIC DEMOLITION REQUIREMENTS

1. Structural Condition Analysis

Because various forms of demolition and equipment removal work will have been completed under unknown conditions, it is expected that a full evaluation of the integrity of structures scheduled for demolition will be made prior to any demolition operation. In addition it is also expected that a full engineering survey will be completed on each building as well as the site and equipment to determine all and any potential hazards that exist. This information will then be used to determine and generate a safety program that will be used for the duration of the given project.

2. Leading Edges and Floor Openings

The design and construction of the existing buildings were made to accommodate specific machinery and equipment for generating paper products. As a standard practice, these pieces of equipment were located between multiple floors; as a result, this equipment, when removed, will leave a substantial opening in the main deck area potential extending to multiple levels below. In addition to these openings, multiple leading edges will also be expected, as a large portion of equipment was located in pits and will have been removed or will be removed as part of the demolition. Also, the building foundations extend below the first floor and street level in many cases, and will leave a leading edge to the basement below when the building structure is removed.

As part of the demolition operations, a cable-and-post system will be installed to protect against all leading edges. To help accommodate this, steel beams, where they

can be used, will be cut to a height to accommodate a top rail cable of 42 inches. A second cable will also be installed halfway between the top cable and the floor. The cable will be 3/8 inches diameter or larger and will be made taut and supported every 10 feet with steel poles mounted around the perimeter of the opening. The mounting will be capable of withstanding a vertical and horizontal force of 200 pounds.

This protection system will be installed whenever a leading edge is developed as a result of the demolition operations.

3. Cleanup and Hazardous Building Materials

a. Asbestos-Containing Materials

Multiple forms of asbestos-containing materials (ACM) exist on and within the building structures. Prior to demolition operations, this ACM will be removed and disposed of properly. The removal of all ACM will be verified and the building or structure will receive written clearance to begin demolition work.

b. Lead-Based Paint

LBP exists throughout the project site, on structural members, painted siding, materials, and equipment. The demolition personnel will take this into account and follow all rules and regulations as dictated by the state and, at a minimum, the Federal Occupational Safety and Health Administration standards as set forth in Section 1926.62, Lead in Construction Standards, of the Code of Federal Regulations.

c. Machine Waste and Residual

Equipment use at the Blue Heron facility generated a buildup of grease and oil residual during active operation. This residual and buildup will be located throughout the facility complex. Prior to the start of demolition operations, a general cleanup of this residual material will be completed and will consist of hand-removing three-dimensional materials and completing a single pass of high-pressure washing. The material generated from this operation will be collected and disposed of properly.

d. Universal Waste

It is anticipated that various forms of equipment may be left behind that still contain oil or other forms of liquid. In addition, four elevators still remain on the project site, and are controlled by hydraulics and a piston. Prior to the start of demolition, these oils and any associated reservoirs will be drained and all liquids and oils will be collected and disposed of properly.

e. Sludge and Silts

Blue Heron's operations included a wastewater treatment plant and clarifier. Both operations generated a silt and sludge material that still remains within the structures. As part of the demolition operation, this material will be collected separately from the demolition work and will be contained in staged roll-off bins and disposed of as a manifested non-hazardous waste product.

4. Sanitary Sewer

Demolition work will not allow future use of any sanitary sewers systems within the structures. At the conclusion of each building demolition operation, the sanitary sewer locations will be sealed with a concrete patch and plug. This will include toilet, urinal, and sink locations. In some cases, where plugging at the surface level is impractical, the sewer lateral exiting the building structure will be excavated and capped with a rubber plug.

5. Limits of Demolition

Demolition work will be to the level of the street or the first floor deck. As buildings and structures are demolished, the existing foundations will be broken to these levels in a rough-cut manner. All protruding rebar from concrete separations will be cut flush with the remaining walls and foundations. In addition, all material fractured or loosened as a result of the demolition and separation work will be removed. Any protruding materials, metals, or items that may pose a hazard will be removed.

6. Residual Equipment and Materials in Basement

It is expected that various pieces of equipment, pipes, and materials will be left within the basement areas. Demolition work within these areas is not part of the work scope and the removal of these items will not be completed unless needed to facilitate the demolition operations of the upper level structures. The equipment will be cleaned and

managed as noted in items 3c and 3d above. However, any and all equipment or materials that enters the basement area as a result of the upper level demolition work will be removed.

7. Concrete, Brick, and Asphalt

All concrete, brick, and asphalt generated as a result of the demolition operations will be stockpiled on-site at a single location. The concrete will be prepared at the location of the demolition operation to a size of 2'x3' or smaller or prepared at the stockpile location. At a coordinated time prior to the completion of the demolition work which produces this material a mobile crushing unit will be brought and staged on-site. The concrete, asphalt and brick material will be fed through the crushing unit where it will generate a 1 inch minus usable base material. This material will remain on-site to be used for any backfill purposes around the property or for any other designated uses off the project site as directed by the partners.

8. Recycling

a. **Metals** - The demolition operations are expected to generate a significant amount of recyclable materials, including but not limited to steel, stainless steel, copper, and aluminum. All material generated as a result of the demolition operations will be segregated and delivered to the proper recycling facility.

b. **Wood –** The demolition operations will also generate a significant amount of wood in the form of timbers, planking and possibly plywood. Where salvable wood can be saved for sale purposes it will segregated for such purpose. In cases where the wood becomes broken or the cost of salvage exceed its disposal costs the wood will be segregated to allow for disposal at a green waste facility where it will be processed into a mulch or like material.

9. Equipment and Tank Pads

The Blue Heron site has multiple tank and equipment pads located throughout. These pads and foundations do pose an issue and will remain in place. Some pads have been broken and have exposed rebar and base material. In these cases, the rebar will be cut flush to the concrete and base material that has spilled out will be collected and

removed to the on-site stockpile location.

10. Upper Railroad Tracks/Security

The east side of the Blue Heron site is bordered by an active railroad line. During the course of the demolition work and building removal, leading edges will be developed between the railroad tracks and the facility property line. As a means of protection and delineation, a 6-foot-tall chain-link fence will be installed along the property line. For security purposes, the fence will have posts set in concrete and will include three strands of barbed wire along the top of the fence.

11. Best Management Practices – Storm Water

Demolition operations will generate particulates of dust and debris, which will be managed for storm water run-off. During demolition work, steps will be taken to install best management practices to prevent the infiltration of this debris into the storm water system. This will include items such as silt fabrics, straw waddles, and sandbags, as needed. These best management practices will be left in place during the course of the work and will be managed on a regular basis to ensure active measures are taken to keep any material from entering the storm water system.

12. Building Protection

Many of the existing buildings and structures play a role in managing floods within the area. To prevent flooding, changes will not be made to the dimensions and makeup of the buildings' water-holding capacities. To ensure these changes do not occur, demolition operations will be designed to manage the material being taken down to the deck level. This work may include but not be limited to the use of cranes and heavy equipment with specialty attachments.

Special care will also be taken to accommodate any building structures with wooden decks that must remain intact. Concrete-framed buildings with decks that must remain in place will be demolished with crusher attachments, thereby limiting damage created by large concrete pieces.

13. Specialty Buildings and Structures

a. Buildings 28 and 29 - Boilers

Buildings 28 and 29 have existing boilers that will be removed as part of the demolition operations. These boilers will have all ACM and hazardous wastes removed prior to demolition. The existing buildings have a concrete deck that will remain in place, and the buildings will be dismantled in a systematic fashion to protect the decks.

b. Pipe Tunnel

The existing pipe tunnel will remain in place throughout the demolition effort.

c. Clarifier

The existing clarifier, identified as #55, will be demolished as part of this scope of work; this demolition will be completed from the Willamette River due to limited accessibility. This work will be completed using a barge to transfer equipment to the land side. The demolished material will also be transferred from land to the staged barge. The concrete generated will be deposited at the on-site stockpile location, all metals will go to a scrap yard, and any remaining silt and sludge within the clarifier will be managed as noted in item 3e above.

d. Additional Structures

Although the majority of buildings and structures are noted on Exhibit "A" (Building Key Plan), the following additional structures have not been noted and will also be removed as part of this scope of work:

White Material Storage Tank on the South Side of Building 44
DEINK HI-D Storage Tank
TMP HI-D Storage Tank

Demolition of the above structures will be to the top of each existing foundation. While the storage tank located south of Building #44 and the DEINK HI-D tanks will be demolished with the use of heavy equipment, the TMP HI-D tank is located at the edge of the Willamette River and will be demolished using staged equipment, scaffolding, and selective removal operations.

All concrete generated as a part of these operations will be stockpiled on site for crushing.

14. Utility Isolation

Existing utilities currently servicing the Blue Heron site will be cut, capped, and/or isolated. These utilities may include any remaining gas lines, city water, fire water, telephone, and electrical services.

C. PROJECT REQUIREMENTS

1. Site Access

Access to the site will be gained and controlled from Main Street. In some cases, it may be required to access building structures from the Willamette River. This will be the case for the demolition and removal of the existing clarifier.

2. Project Coordination

During the course of demolition and abatement work, steps will be taken to coordinate with regulators and owners associated with the abatement and demolition operations.

3. Documentation

As a means of documenting the changes on site, a field drawing will be used to manage notes and items of concern. This drawing will be maintained throughout demolition work and will be turned over to the owner at the completion of the demolition operations.

4. Construction Trailer

During the course of work, a temporary construction trailer will be mobilized to the site and used for the duration of the project. It will be located at the Main Street entrance and will serve as a means for controlling traffic and safety for entry to the project site.

VI. PERMITS & APPROVALS

A. REGULATORY AGENCY PERMITS

The demolition of the subject buildings will require permits and notifications. These will include:

1. Demolition Permits

Demolition permits to complete the demolition operations will be obtained from the Building Department for Oregon City.

2. Sewer-Capping Permits

A sewer-capping permit will be obtained to allow for the capping and closing of various sanitary sewer laterals associated with the building structures.

3. Notification to the Air Quality Board for Asbestos Abatement

Prior to the start of asbestos abatement operations, a 14-day notification and payment of fees will be made to the local air quality board.

4. Construction Trailer Permit

The necessary permits will be obtained to allow for power hookups required during the construction trailer installation.

VII. ASSUMPTIONS & CLARIFICATIONS

In order to generate this scope of work, certain assumptions were made. In addition to the assumptions, clarifications have been added to help fully understand the scope of work.

Assumptions

1. The majority of equipment, including the existing digesters, has been removed by NRI.
2. ACM is only present in the form of transite paneling and tile flooring at selective locations.
3. The boilers contain asbestos and heavy metals and must be contained as part of the removal operation.
4. No engineering work will be required for the existing dam and retaining wall supporting the active railroad line on the east side of the property.

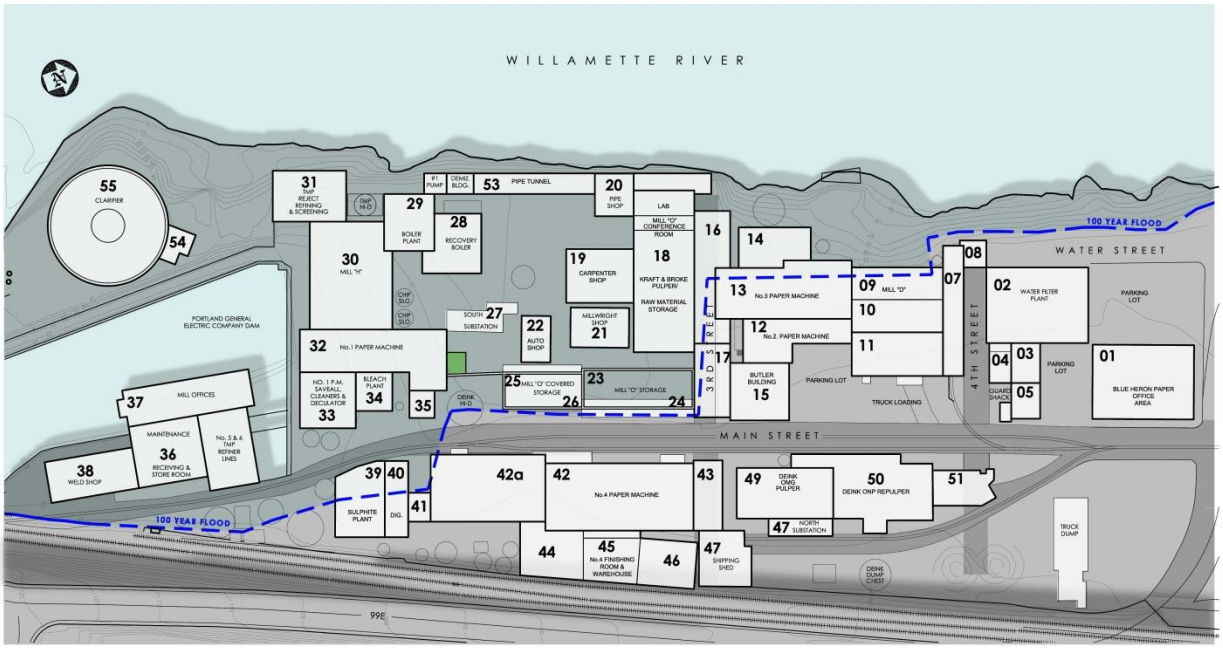
5. All removed concrete is free of hazardous materials and can be disposed of at a local recycling facility.

Clarifications

1. The asbestos removal is a general estimate only and will require a full report that includes estimated quantities and types of material to establish a defined cost for the removal work.
2. The handling, removal, and disposal of all remaining oils, grease, sludge, or materials that require special handling is based on a general assumption only.
3. The costs of permits and fees and the requirements are based on a general assumption only.

VIII. EXHIBITS

EXHIBIT "A"



BUILDING KEY PLAN

di loretoARCHITECTURE

Due to the possibility of unintended variances of digital images and electronic equipment, this information is considered in DRAFT form and is NOT FINAL.

Willamette Falls Legacy Project

Oregon City, Oregon

August 24rd, 2012

APPENDIX L
"SCENARIO 2" DEMOLITION

Environmental Resources Management

1218 3rd Avenue
Suite 1412
Seattle, WA 98101
(425) 462-8591
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MEMO

Willamette Falls Legacy Project "Scenario 2"Demolition Amendment

Greg Menen

August 22, 2012

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Description for "Scenario 2"

Based on an email received on 15 August 2012 with an attached pdf file titled "Scenario 2" a revised demolition estimate was developed to follow the Scope of Work generated for demolition of all structures at the Blue Heron site to "Street Level" as submitted on 16 August 2012.

Attached is a completed estimate which reflects the demolition of the structures at Blue Heron except those structures as highlighted in the "Scenario 2" site plan and referenced as 7, 9,10,11, 12, 13, 16, 18, 23, 24, 25, 26, 32, 33, 34, 35, 42A, 42, 44, 45, 46 and 49.

Costs associated with the separation efforts to maintain the structures indicated above have been reflected in the supplied estimate as well as the reduction in time to complete the subject work.

All other aspects remain as in the "Street Level" demolition Scope of Work.

WILLAMETTE RIVER

LAB

MILL "O" CONFERENCE ROOM

18

KRAFT & BROKE PULPER/

RAW MATERIAL STORAGE

16

13 No.3 PAPER MACHINE

09 MILL "D"

10

11

12 No.2. PAPER MACHINE

07

32 No.1 PAPER MACHINE

NO. 1 P.M. SAVEALL, CLEANERS & DECULATOR

33

BLEACH PLANT

DEINK HI-D

25 MILL "O" COVERED STORAGE

23 MILL "O" STORAGE

PORTLAND GENERAL ELECTRIC COMPANY DAM

100 YEAR FLOOD

WATER STREET

4TH STREET

PARKING LOT

PARKING LOT

PARKING LOT

42a

42 No.4 PAPER MACHINE

44

45 No.4 FINISHING ROOM & WAREHOUSE

46

49 DEINK OMG PULPER

DEINK DUMP CHEST

TRUCK DUMP

GAS STATION

100 YEAR FLOOD

SCENARIO 2 - SITE PLAN

SCALE: 1"=100'

di loretoARCHITECTURE

Willamette Falls Legacy Project

Oregon City, Oregon

August 2nd, 2012

Due to the possibility of unintended variances of digital images and electronic equipment, this information is considered in DRAFT form and is NOT FINAL.

Final

WILLAMETTE FALLS LEGACY PROJECT

Habitat and Water Resources Opportunities

Prepared for
Metro
Regional Services

October 2012

ESA



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Opportunities for Water Resources and Fish & Wildlife Habitat

Metro is determining the potential of the Willamette Falls Legacy Project (Project) site in providing four values that are important to the partners involved in the purchase and redevelopment:

1. Economic Development
2. Cultural and Historic Values
3. Public access to the Willamette River and Falls
4. Water Quality and Wildlife Habitat Values

This technical memo is focused on identifying water quality and wildlife habitat values, keeping in mind the other three values identified by the partners. Existing conditions are described for habitat areas to set context and provide decision-makers with key information to decide how to approach and prioritize restoration and enhancement activities. Then, opportunities for improving water resources and fish and wildlife habitat are discussed, including descriptions of potential benefits to site users. We conclude with a brief statement to the Project on how building reuse scenarios currently being considered may influence habitat opportunities on this site.

Currently, habitats on the Project site are relatively small and fragmented in part due to the presence of major highways along the river (I-205 and SR 99E), the railroad, and urban development on the shores. Habitat types identified on this site include: Willamette River shoreline, tailraces, lagoon, grotto, and the developed area (Figures 1 and 2). The shoreline is comprised of two sections - the shoreline downstream of the falls and the shoreline upstream of both the falls and lagoon. The lagoon is connected to the Willamette River and is part of the shoreline; however, it is described separately because it has a different water regime and restoration potential.

Restoration and enhancement opportunities for improving fish and wildlife habitat can also provide improvements for water resources, including stormwater treatment and water quality. Opportunities were identified through review of existing documents, site reconnaissance, familiarity with other habitats in the river, and discussion with Metro employees about site potential. Those opportunities identified here are potential actions that can be begun or completed in the near-term. Detailed plans or costs associated with actions are not identified at this stage. Additional opportunities are provided for the shoreline that may be more extensive or not considered until redevelopment planning occurs. Key recommendations include:

- Expose and restore historical shoreline
    - Diversify shoreline habitat for salmonids, lamprey and shorebirds
    - Restore of the ends of tailraces to provide diverse habitat
    - Revegetate shoreline
- Provide stormwater treatment along the shoreline and in the grotto
- Increase circulation in the lagoon to improve water quality
- Diversify lagoon habitat
- Establish vegetated buffer upslope

Additional opportunities are discussed that may be more intensive or considered at a later time when redevelopment plans are underway. Specific recommendations are provided below.

Regional Setting

Geology and Soils

The Blue Heron site is located on the right bank of the Willamette River immediately downstream of Willamette Falls. The falls demarcate a topographic break in the Willamette River, where it cuts across a resistant bedrock outcropping and drops 30-40 feet (height varying seasonally). The site is mostly underlain with basalt bedrock similar to the falls. Small waterfalls and channels cross the southern portions of the site. A narrow terrace runs along the river between steep bluffs 80-100 feet tall. At the top of the bluff is a second terrace approximately 3,000-4,000 feet wide. Historically, the shoreline was nearly vertical with alcoves.

Soils on the terrace below the Blue Heron Mill on the downstream end of the site consist of fine sandy loam of the Newberg series, a common soil along rivers in the Willamette Valley. Newberg soils are deep and well drained, and subject to inundation during flooding, slow runoff, and becoming droughty in the summer (Soil Survey Staff 2012). It is a common soil for agriculture and pasture, supporting native vegetation such as Oregon ash, Oregon white oak, Douglas-fir, willows, and numerous shrubs and grasses. Soils on the steep basalt slopes surrounding the site and overlaying the rocky outcroppings consists of Witzel very stony silt loam (Soil Survey Staff 2012). Witzel soils are also well drained, but shallow and generally support vegetation associated with drier conditions such as Douglas-fir, poison-oak, snowberry, baldhip rose and other shrubs and grasses.

Hydrology and Water Quality

Historically, the Willamette River regularly flooded due to rain-on-snow events. Construction of dams and reservoirs upstream of the project site, river straightening, and wood removal have altered the frequency, magnitude, and duration of flooding experienced on the site. Willamette River flow rates downstream of the project site (which includes Clackamas River) ranges from an average of 8,350 cfs in August to 73,200 cfs in December (PGE 2004; USGS Station 14211720). However, high flows can exceed 150,000 cfs, generally between November and February. Winter and spring flooding can overwhelm the falls, even transforming them into rapids. High water can also inundate the project site, as was demonstrated during the 100-year flood event that occurred in 1996. The river below the falls is tidally influenced, with an average change in water level of approximately 3 to 4 feet twice each day (PGE 2004).

Settlers used the river as a transportation corridor and as the population grew the river was used for industrial processes and waste discharge (PGE 2004). By the beginning of the twentieth century, most of the dense industrial development at the site or along the river had already occurred. During the 1960s and 1970s, the Environmental Protection Agency (EPA) started a clean-up program to reduce point source pollution, improve water quality, and protect beneficial uses of the river. Currently, the Willamette River is 303(d) listed for biological criteria, aldrin, dieldrin, DDT/DDE, iron, and PCBs (ODEQ 2010).

In addition to characterizing water quality some of these studies have also evaluated potential influences of the dam and PGE facilities. These studies indicate that water passing by the project site has increased pH and high concentrations of sodium and dissolved oxygen (DO) (PGE 2004). Dams and flashboards likely reduce sediment transport through the reach, some of which may be contaminated (PGE 2004). Dams and flashboards may also affect water temperature, DO and dissolved gas supersaturation above and below the falls, which could be affecting the presence of algal blooms and fish diseases (PGE and Smurfit 1998). However, low biochemical demand for oxygen in the river has been indicated since the 1950s, which may be due in part to decomposition of organic matter within bottom sediment where there are higher concentrations of mud and silt (PGE and Smurfit 1998, PGE 2004).

Fish and Wildlife Habitat

Pre-settlement, tribal groups fished at the Willamette Falls (Photo 1). In the vicinity of the project area, a large variety of fish species occur including at least six federally listed, threatened, endangered, or sensitive species. Historically, Willamette Falls has been a natural barrier to upstream migration during summer and fall low flows. Higher flows in the winter decreased the height of the falls, allowing some anadromous fish to move upstream. Now with the PGE dams in place, fish passage is provided by a fish ladder operated and maintained by Oregon Department of Fish and Wildlife (ODFW). Anadromous fish present in the Willamette River include: spring and fall run Chinook salmon (*Oncorhynchus tshawytscha*), summer and winter steelhead (*O. mykiss)*, coastal cutthroat trout (*O. clarkia*), Coho salmon (*O. kisutch*), white sturgeon (*Acipenser transmontanus*), Pacific lamprey (*Entosphenus tridentatus*), and bull trout (*Salvelinus confluentus*). Fall run Chinook and summer steelhead are two runs of non-endemic salmonids introduced into the upper Willamette River. The majority of smolts migrate down past the falls from February to June, including wild spring Chinook salmon, hatchery and wild steelhead, coho salmon, fall Chinook salmon, and Pacific lamprey. There is a second peak of wild spring Chinook salmon smolts in October and November. Gulls, mergansers, cormorants, and great blue herons congregate in the spring and fall to feed on out-migrating juvenile salmon at the falls (Normandeau Associates 2011). Besides native migratory species, 23 introduced species are found within the lower Willamette River, including sockeye salmon (*O. nerka*), brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), American shad (*Alosa sapidissima*), and multiple warm water game fish such as bass (*Micropterus* spp.), crappie (*Pomoxis* spp.) and catfish (*Ictalurus* and *Americus* spp).

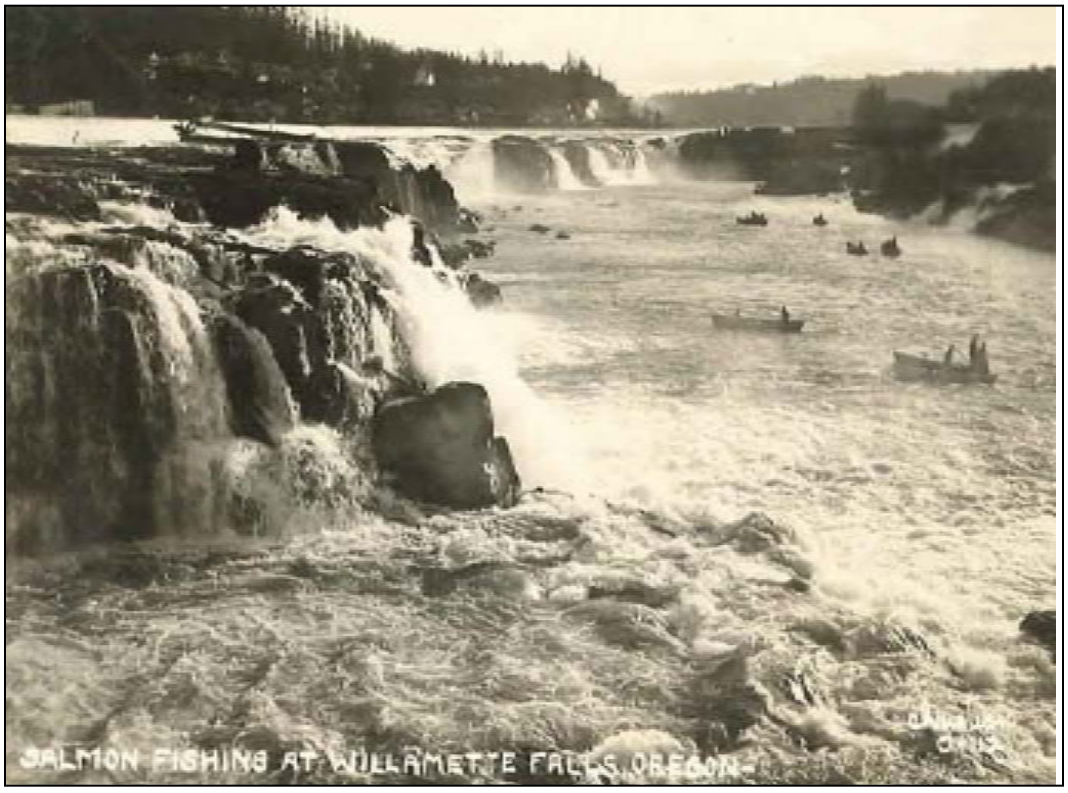


Photo 1. Postcard showing historic picture of tribal use of Willamette Falls (postcard dated 1952, date of photo unknown).

Stranding of adult salmonids and adult Pacific lamprey can happen in the large scour pools below the falls, especially when flashboards are installed on the dam and flows stop for a short period (PGE 2004). These fish are attracted to the natural pools in the tailwater of the falls and the no longer active man-made fish ladder pools

created in the 1880s. Changes to the amount of spill over the falls also can strand fish in the pools. Pacific lamprey, spring Chinook salmon, and summer steelhead have the greatest stranding potential due to the timing of their migration with flashboard installation (Chinook migration done by July 31, summer steelhead all summer and early fall, Pacific lamprey summer and early fall) (PGE 2004).

Significant reductions in wildlife use have been occurring in this site for over a century due to habitat losses associated with conversion of forests to agricultural use in the early 1800s, followed by increasing development through the 19th and 20th centuries (Hazra 2000). Riparian forests in the project vicinity have been disturbed to varying degrees by historic and/or current management of adjacent lands. Dominant species in nearby riparian forests include red alder (*Alnus rubra*), black cottonwood (*Populus trichocarpa*), Oregon ash (*Fraxinus latifolia*), and big-leaf maple (*Acer macrophyllum*). Douglas-fir (*Pseudotsuga menziesii*) and Oregon white oak (*Quercus garryana*) are also present on drier sites. Understory species vary with red-osier dogwood (*Cornus stolonifera*), willows (*Salix* spp.), and salmonberry (*Rubus spectabilis*) along the river margin and Armenisan blackberry (*Rubus armeniacus*) thickets occur along roadways and in sunny openings. Ocean spray (*Holodiscus discolor*), snowberry (*Symphoricarpos albus*), and rose (*Rosa* spp.) are common where soils are drier. Hazelnut (*Corylus cornuta*) and Douglas hawthorn (*Crataegus douglasii*) are scattered.

In a landscape context, the habitat areas currently found on-site, though relatively small in size and fragmented with low structural and species diversity, still provide some habitat functions in the region (PGE 2004). Because of the small size and fragmentation, these habitats are subject to edge effects (i.e. influence from recreation, residential and industrial use) as well as island effects. Habitats with a high edge to interior ratio are generally occupied by species with small home ranges, broad habitat requirements, and a relatively high tolerance to human activity. Several studies demonstrate that species breeding in small habitat patches have lower reproductive success than species in larger habitat patches due to higher rates of predation and disturbance from adjacent human activities. Riverside habitat is extremely important to birds, even small patches, due to the relative scarcity in the region. Without small connector patches, connectivitiy along the river, a critical migratory bird corridor, is lost.

Shoreline and Tailraces

Existing Conditions

Hydrology and Water Quality

The Blue Heron site occupies approximately 4,500 feet (0.85 miles) of shoreline on the right bank of the Willamette River (Photo 2). Five outfalls and three tailraces emerge at the shoreline. Much of the naturally steep shoreline has been modified by years of development and industrial uses and is now lined with fill, pipes, and other structures.



Photo 2. Looking downstream at the rocky shoreline and adjacent structures (08/03/2012).

Three tailraces exist onsite – Tailrace H, Tailrace #1 and Tailrace #2 (Figure 2). Historically, an alcove existed where Tailrace #1 exited into the Willamette River and all three were likely old flow channels of the Willamette River that were activated during high flows. During the early industrial activity at the site, these tailraces were used to channel water for industrial use. Over time, all three tailraces were filled in with mixed rock and in some cases walled in with brick and concrete. Using part or all of the previously existing tailrace locations, water was originally routed through the site from Intake 2, 3, 4 using wooden flumes. Flumes were replaced with pipes and water that entered Intake 2, 3, 4, was routed through the site and exited at the shoreline.

Fish & Wildlife

Development close to the shoreline on this site in combination with development of the left bank of the Willamette River across from the project site, provides limited opportunities for fish resting in this reach of the river and no connectivity of habitat along the shoreline (Photos 2 & 3). Resting places are important for migrating fish as fatigue is one of the major stressors affecting pre-spawning mortality. Having resting places below major passage challenges, such as the Willamette Falls, could help reduce fatigue. Some fish use of the shoreline for resting during migration may be expected during the out-migration of smolts in the spring and fall. With the exception of the backwater lagoon, there are few side channels or alcoves in this reach of the river that could serve as refugia for juvenile salmon during high flows in the mainstem. Downstream passage is provided at the T.W. Sullivan development and used to be provided at the Blue Heron Paper Company (BHPC) powerhouse over 16 weeks of the peak outmigration period when BHPC shut down its turbines. BHPC sometimes shut the turbine down in the fall as well.



Photo 3. View of left bank of Willamette River across from project area (08/03/2012).

Currently, the proximity of tall buildings and the vertical slopes of portions of the shoreline limit wildlife use. Despite development and lack of significant vegetation in and around the project area, several wildlife species are expected to use the shoreline either seasonally or year-round including: shorebirds, wading birds, gulls, ducks, geese, and diving birds. Wading birds and other water birds would likely use the rocky shoreline during migration to wintering grounds. An example of a shorebird species that would use the rocky shoreline and that would benefit from restoration of the shore (i.e. removal of existing buildings to expose underlying bedrock) is the spotted sandpiper. The spotted sandpiper, often seen singly, forages for invertebrates in shallow water as well as among rocks and cobbles along the shoreline. The spotted sandpiper breeds in oreon and is commonly seen along the Willamette River as well as other freshwater shorelines of Oregon. Undisturbed shoreline habitat suitable for shorebirdsis becoming increasingly rare. Further, the Willamette Valley south of the project site is considered important wintering habitat for waterfowl and shorebirds (USGS 2006).

Other wildlife that may use the site includes songbirds and small to medium size mammals. A few common songbird species and non-native bird species such as European starling and house sparrow are expected to forage and roost on-site. Breeding opportunities are limited on-site for native songbirds, but non-native starlings and house sparrows will nest in crevices and nooks of structures. Species such as river otter, muskrat, long-tailed weasel, raccoon and other mammals are expected to use the site for foraging or loafing as they move through the Willamette Basin and into tributary drainages.

Upstream of the falls, the shoreline in the project area consists of a strip of shrubs, saplings and occasional mature trees, such as big-leaf maple and red alder, on the riverbank down slope of an access road and the railroad tracks (Figure 1, Photo 4). The limited riparian vegetation on site is part of the Willamette greenway and provides a linkage to riparian forests upstream of the project area. At this location, riparian vegetation is expected to provide some perching habitat for piscivorous birds including the belted kingfisher, osprey and bald eagle, as well as

limited foraging and perching habitat for songbirds and woodpeckers. Osprey and bald eagle breed in the project vicinity but no suitable nesting habitat is located on the Blue Heron project site due to the lack of large trees. At least two osprey nests are documented within one mile of the project area (PGE 2004). Osprey will nest on channel markers or open platforms over the water whereas bald eagles typically construct nests at the tops of tall trees with a commanding view of the surrounding landscape.



Photo 4. Looking southeast at the shoreline upstream of the dam (08/03/2012).

The shoreline downstream of the falls is a narrow band of riprap, rock, concrete, and natural basalt cliffs in between the water's edge and industrial buildings (Photo 1). The basalt cliffs have potential for cliff swallow nesting habitat and are possibly used by peregrine falcons. During low water, pockets of sand and mud are exposed at the base of the steep banks. Riparian vegetation is absent in some areas and patchy in others with a few clusters of shrubs, saplings, and occasional trees at the top of the banks. Weedy herbs and forbs also occur in patches along the shoreline. Invasive plants, such as Armenian blackberry, morning glory, and English ivy were observed in small pockets along the shoreline.

The basalt outcrops and rocky substrate along the shoreline contribute to the mosaic of rocky habitats located to the north and south of the project site in and along the Willamette River (Photo 5). Historically, they would have served as look-out sites for large mammalian predators or as perching habitat for birds of prey. Denning sites for furbearers are limited along the cliffs and rocky shore, although some avian species may be able to nest in some of the cliff faces including swallows and possibly the belted kingfisher. Native herbs and forbs adapted to rocky, dry conditions would have grown in the crevices and pockets in the cliff faces. Native plant diversity is relatively high on some of the undeveloped rock islands in the area upstream of the site, which support drought-tolerant species such as Oregon white oak, Pacific madrone as well as native wildflowers and other herbaceous plants including *Delphinium,* sedums, and *Brodiaea* (Houck and Cody 2000).



Photo 5. Rocky outcroppings between Building 31 and the clarifier (08/03/2012).

Tailraces would have historically been habitat for shorebirds and fish. However, due to the heavy industrial impacts and small dams that direct water on the tailraces, they no longer support wildlife.

Opportunities

Opportunities identified below are potential actions that can be initiated or completed in the near-term.

Hydrology and Water Quality

Provide Stormwater Treatment Along Shoreline – There are multiple opportunities on the project site for treating stormwater to improve water quality discharging from the site that may also be beneficial to wildlife by restoring and enhancing the shoreline. Stormwater generated on-site can be routed to passive stormwater treatment facilities located along the shoreline (ESA 2012). These facilities can be constructed at grade or in vertical structures, which can mimic historic basalt bricks and mortar. Some of these facilities, such as vegetated swales and rain gardens can also provide habitat for macroinvertebrates, amphibians, and pollinators. The treatment facilities can discharge to the Willamette River via the existing trailraces or seep out to the natural riparian and rock areas following treatment.

Much of the natural bank habitat along some areas of the Willamette have been replaced by artificial habitats including riprap, which previous studies have shown to decrease aquatic species richness and diversity in the middle Willamette River (Friesen 2005). In addition, some studies concluded larval and juvenile salmonid densities were lower at some sites in the Willamette River as a result of unfavorable conditions created by riprapped banks. Riprap and concrete should be removed where feasible, especially in locations where soils exist over bedrock and infiltration could be encouraged. Revegetating with native trees, such as red alder, big-leaf maple, black cottonwood, and native shrubs such as red-osier dogwood, salmonberry, or Douglas hawthorn can

reduce impervious surface area on the site, provide a place for localized stormwater infiltration, and provide shade along the bank. Additionally, the presence of a vegetated buffer along the upper shoreline will provide a barrier (sound and visual) to the site from passing trains.

Any stormwater treatment provided that could remove currently untreated stormwater discharges to the Willamette River would be beneficial to all native fish species. In particular, stormwater runoff from roadways is known to result in increased dissolved copper and zinc loading within receiving waters as well as increased loading of petroleum hydrocarbons, which at varying concentrations can have both immediate and long-term adverse effects such as pre-spawn mortality, reduced respiration, and behavioral effects.

Fish & Wildlife

Expose and Restore Historic Shoreline – Restoration and enhancement of existing shoreline habitat could best be achieved by making available as much of the historic shoreline as possible and restoring the riparian community along the shoreline (Figure 3). By removing buildings and platforms along the shoreline, valuable shoreline habitat would be exposed below the falls for fish, invertebrates, small mammals and birds. Buildings that could be removed to help achieve that goal include the clarifier, Building 31, the Boiler Plant (29) and Recovery Boiler (28), Pump #1, the Pipe Tunnel (53) and associated structures, Pipe Shop and Building 14.

Removal of the clarifier would restore unique basalt rock outcroppings along the falls (Photos 5 & 6). With removal of industrial structures, there may be opportunities to promote shorebird habitat and local native wildflower species diversity on the outcroppings. Birds would be provided with undisturbed habitat. Invasive plant species found on the site, such as Armenian blackberry and English ivy should be removed and replaced with native plants with a higher habitat value.



Photo 6. Rocky shoreline habitat between the clarifier and dam taken from upstream of the clarifier looking downstream (08/03/2012).

Shoreline habitat between the PGE dam and the clarifier could be enhanced through the removal of industrial remains, and utilization of the remaining historic dam and pipeworks to create resting zones for fish (Photo 6). Water trickles over the spillway in the summer, providing fresh water to the pools below. Shallow water present at this location may promote macroinvertebrates and the shorebirds that feed on them, such as sandpipers. Stranding is a possibility in shallow pools below the falls; therefore, steps should also be taken to discourage stranding.

Under Building 31 is a unique rocky outcropping and the end of Tailrace H (Photo 7). Daylighting the end of the tailrace provides additional habitat for fish as well as opportunities for infiltration with the addition of a swale. Depending on the amount of water traveling through the tailrace and daylighting plans, the type of swale or channel created at the end of the tailrace, and protection needed from destabilizing the shoreline will vary. If some of the fill at the end of the tailrace is excavated, exposing a short length of channel, it would provide an alcove from the main channel and diversify the shoreline.



Photo 7. Tailrace H, where it exits the site at the shoreline (08/03/2012).

Removal of the pipe tunnel and associated buildings, as well as the boilers, would enhance shoreline habitat connectivity between tailraces and downstream of the project site (Photo 8). Further, Tailrace #1 emerges at the shoreline under these buildings and could be daylighted without extensive fill removal near shore. However, due to the expense and challenges with removing the retaining wall behind the pipe tunnel and fill behind the wall, exposing a narrower band of shoreline may be the only feasible short-term opportunity for restoring the historic shoreline.



Photo 8. Shoreline showing pipe tunnel and associated buildings, looking downstream (08/03/2012).

Removal of Building 14 would allow for the daylighting of Tailrace #2 back from the shoreline and the establishment of a riparian community and swale at the end of the tailrace. Tailrace #2 is already the location of a small alcove, which can be enhanced to provide resting places for fish, as well as habitat for small mammals, amphibians, and invertebrates (Photo 9).



Photo 9. Small alcove at the end of Tailrace #2 (08/03/2012).

Where buildings and riprap are removed, large wood habitat structures can be placed and the banks can be revegetated to promote more diverse habitat along the shoreline and refugia for migrating fish such as salmonids and lamprey. Any riparian vegetation improvements, especially planting of native conifers will benefit salmonids and other species by providing shade by helping to maintain an appropriate localized thermal regime, increasing cover, organic input, and to some extent increasing the food or prey base of aquatic species by providing a source of terrestrial prey (insects). Large wood plays an important role in development of complex stream habitats through creation of pools, retention of spawning gravels, velocity breaks, and increased cover.

Revegetate Shoreline Upstream of Falls – Upstream of the falls, the narrow band of shoreline vegetation can be widened where possible, with non-natives removed and a native shrub layer encouraged (Figure 3, Photo 10). Industrial trash should be removed and pavement disassembled. Opportunities for improving future raptor habitat are available on-site and include installing native trees along the upper shoreline or erecting a nesting platform for use by osprey. Increasing the shrub and tree layer along the shoreline would also improve foraging and stop-over habitat for songbirds such as Wilson's warbler, yellow warbler, evening grosbeak, and western tanagers.



Photo 10. Shoreline upstream of the lagoon, looking upstream (08/03/2012).

Additional Opportunities

Opportunities identified below are potential actions that can be begun or completed once redevelopment planning occurs. Both opportunities require more knowledge of how the site will be used in the future.

Daylight Tailrace #1 – To promote fish passage through the site around the PGE dam, Tailrace #1 could be daylighted through the site, past the grotto and up to the lagoon. Historically, the shoreline reached up past the grotto (Figure 3). Daylighting can consist of creating a step-cascade feature from the dam past the grotto. Depending on which buildings remain, water can be routed to the top of the historic Tailrace #1 through a channel or flume routed around the buildings.

One of the challenges to daylighting Tailrace #1 is that the tailrace between the grotto and the Pipe Tunnel has been filled in with mixed rock. Contamination levels of the fill are unknown, though plans are being discussed to test the tailrace sediment. The upper part of the tailrace from Intake 2, 3, 4 to the grotto was not significantly filled, though buildings are above at least part of the tailrace.

An alternative to daylighting the entire tailrace would be to daylight up to the grotto. Upstream of the grotto, provide underground pipe flow or flow through a flume. Though this would not provide fish passage, it would open up habitat opportunities to fish, connect the grotto to the river, and provide a water feature through the site.



Photo 11. Recreational opportunities due to interest in the falls, looking upstream towards the falls (08/03/2012).

Lagoon

Existing Conditions

Hydrology and Water Quality

An approximately 14.7 acre settling lagoon is located on the upstream end of the project site (Figure 1). Historically, the lagoon was constructed for and used to collect logs for floating downriver. More recently, Blue Heron used the lagoon for mill operations by opening Intake 2, 3, 4. Additionally, water flows over the dam spillway. Depths are estimated to be approximately 5-6 feet and there is not significant circulation of flows. Shallow depths leading to warm temperatures and use by waterfowl may be responsible for algae blooms in the lagoon (Photo 12).

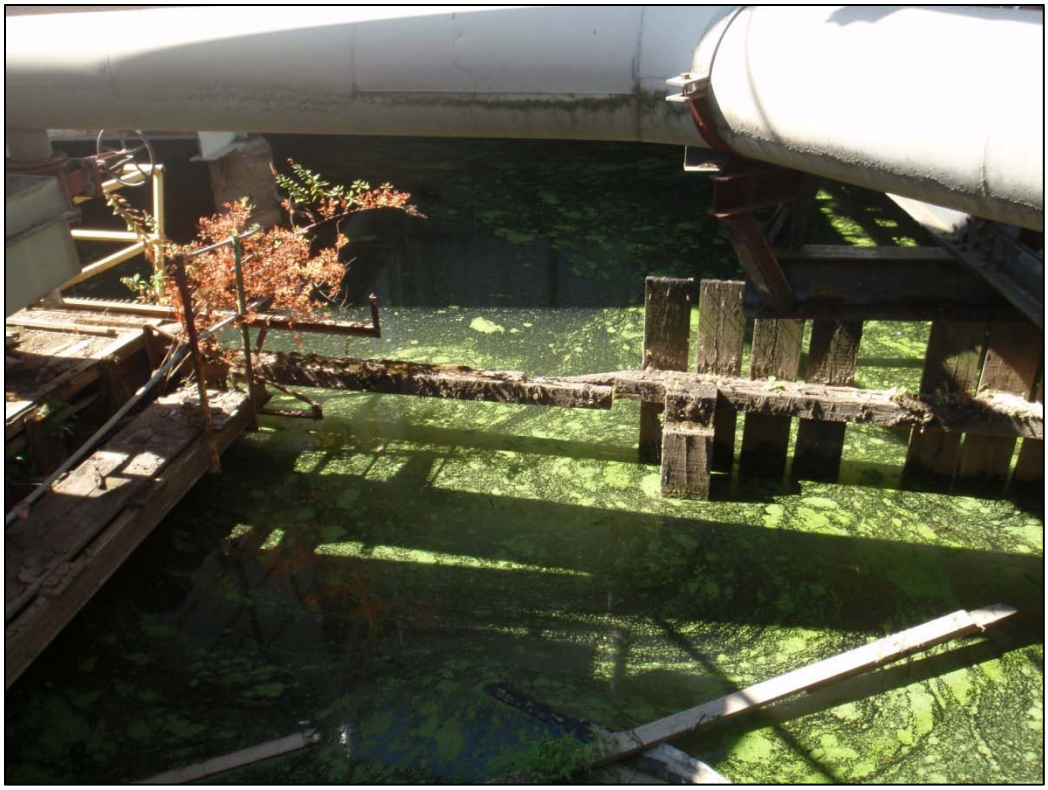


Photo 12. Algae in lagoon viewed from downstream end of PGE dam (08/03/2012).

Fish & Wildlife

The lagoon provides slow-moving, open-water habitat for ducks, geese and other waterbirds (Photos 13 & 14). Clusters of wood and debris as well as tufts of vegetation are scattered along the periphery of the lagoon. Vegetation covers an estimated 5 to 10 percent of the lagoon and is a mix of floating aquatic plants, algae, and weedy herbs and forbs along the fringes as well as a few shrubs and saplings growing out of a berm in the lagoon. A dense mat of vegetation has formed at the north end of the lagoon and consists of marsh pennyroyal (*Hydrocotyle ranuncuuloides),* an introduced aquatic perennial; water-parsley (*Oenanthe sarmentosa*), a semi-aquatic plant; bitter nightshade (*Solanum dulcamara*), an invasive plant; and yellow touch-me-not (*Impatiens Capensis*).



Photo 13. Lagoon, looking downstream, with partially submerged logs (08/03/2012).



Photo 14. Lagoon, looking upstream at partially submerged wood, spit of land extending in to lagoon, and trees along shoreline at upstream end (08/03/2012).

Dabbling ducks, geese, great blue heron, green heron, and a few diving-ducks are expected to forage and loaf in the lagoon. These species include the common mallard, Canada goose, wigeon, common merganser, and double-crested cormorant are expected to forage in the lagoon. Migrating waterfowl would likely use the lagoon in small numbers. The slow-moving, open water provides foraging habitat for aerial insectivores such as swallows and bats. The size and configuration of the lagoon as well as the low species richness of aquatic plants and shoreline diversity limit the habitat value of the area for waterbirds and semi-aquatic mammals such as river otter and muskrat. The lagoon is not expected to provide suitable breeding habitat for native amphibians due to the vertical, manmade shoreline of the lagoon and current lack of oviposition sites (i.e. sedges, rushes). Native pond turtles are not expected to occur in the lagoon in significant numbers due to the relative isolation of the lagoon and developed surroundings; however some basking sites are currently present. The American bullfrog, an introduced species, may be present in the lagoon and would further lower the quality of habitat for native amphibians through displacement and predation.

The lagoon is expected to provide refugia for juvenile salmon and steelhead during high flows, but is not expected to provide suitable rearing habitat during the warm summer months. Introduced, warm-water fish species are likely present in the lagoon throughout the year, such as bass and crappie. These species are present in the pool above the dam, as are catfish and walleye (*Sander vitreus*) (PGE 2004). Native resident fish that are documented in the mainstem channel and that are likely present in the lagoon include species with broad habitat requirements: northern pikeminnow (*Ptychocheilus oregonensis*), redside shiner (*Richardsonius balteatus*), peamouth (*Mylocheilus caurinus*), and chiselmouth (*Acrocheilus alutaceus*) (PGE 2004).

Opportunities

Opportunities identified below are potential actions that can be begun or completed in the near-term.

Hydrology and Water Quality

Stormwater generated along Highway 99 is currently routed over the railroad tracks and into the lagoon. The stormwater basin is relatively small in size and could be routed into a swale placed in the wide landing west of Buildings 36, 37, and other associated structures (Figure 3).

Lagoon Overflow - Algae blooms and stagnant water in the lagoon can be addressed by providing more circulation of water through the lagoon (Figure 3). Blue Heron mill used 50 cfs for process water from the lagoon. This flow rate is more water than necessary for returning the lagoon to a flow-through backwater instead of a pond-like water body; therefore calculation of turnover rate and residence time of water could provide an estimate of the amount of flow needed to enhance circulation through the lagoon. The flashboard weir on the dam can be incrementally lowered to spill water and increase movement of water through the lagoon (Photo 15). A study of the water turnover rates in the lagoon would be necessary to determine how much water would need to be spilled to promote adequate circulation of water. Spilled water from the dam would also provide flow over the rocky outcroppings below (Photo 4).



Photo 15. Flashboard weir on the PGE dam (08/03/2012).

Though spilling over the flashboard weir will promote movement of water, the primary build-up of algae is between the dam on the downstream end of the lagoon and Buildings 36, 37 and other associated structures. If buildings are not to be removed, circulation can be promoted in this part of the lagoon by releasing water into Intake 2, 3, 4 at the dam. This water would be routed down one of the tailraces, such as Tailrace #1 and can flow through the grotto or otherwise down the tailrace. Though the majority of migratory fish do not use the lagoon, the entrance to Intake 2, 3, 4 should be properly screened to prevent fish passage.

Fish & Wildlife

Enhance Wildlife Habitat in Lagoon – To enhance the lagoon to promote fish and wildlife, effort can be made to remove invasive plants and promote riparian and aquatic plant communities. To improve water quality conditions and promote macroinvertebrate and bird habitat, native riparian trees and shrubs such as those described above, can be planted along the shoreline. Woody plants along the edge of the lagoon will provide shade, organic input, and structural diversity for resident or migratory passerines and raptors. Significant plantings along the shoreline may in time somewhat decrease habitat suitability for waterfowl which prefer wide expanses of open-water; however, large numbers of waterfowl are not anticipated to be using the lagoon due to its small size. Adding large wood along the shoreline or at key places, such as along the spit of land running through the center of the lagoon, can diversify habitat and provide roosting sites for birds and additional basking sites for turtles. Native aquatic plants could be promoted along the margins of the lagoon, including cattail, grasses and sedges. Enhancement of the aquatic plant community would increase shoreline structure and foraging opportunities for waterfowl. Aquatic plants such as bulrushes, sedges, and some native *Polygonum* species have high food value for waterbirds.

Grotto

Existing Conditions

Hydrology and Water Quality

Adjacent to Tailrace #1, there remains a grotto with shallow standing water at the base, approximately 20 feet x 20 feet in shape (Photo 16). The grotto remains in place likely acting as stormwater catchment, with drainage piped to the shoreline. Information is lacking on the water quality and accumulated sediments of the grotto. Given its location along natural drainage flow lines, the grotto could be retrofitted to provide water quality treatment. This option is explored further in ESA's Interim Stormwater Management Plan.



Photo 16. Looking down at grotto from street level (05/14/2012).

Fish & Wildlife

The grotto is a biological island within the project site, approximately 200 feet from the shoreline or lagoon. This site is not used by fish, but may have limited use by macroinvertebrates or birds. Due to the steep descent into the grotto, mammalian use is expected to be negligible or non-existent. Native ferns and Armenian blackberry are growing on the stone walls at the grotto opening.

Opportunities

Opportunities identified below are potential actions that can be begun or completed in the near-term.

Hydrology and Water Quality

Enhance Grotto to Provide Stormwater Treatment – The grotto can be enhanced to provide microhabitat for invertebrates and native cliff-dwelling plants as well as a historically significant viewpoint. Because of its proximity to Tailrace #1 and low elevation it may also be incorporated into the stormwater management plan for the site. Adjacent to the grotto is the skeleton of a building sometimes referred to as the Roman Ruins (Photos 16 & 17). The grotto can be converted into a rain garden to provide localized treatment of stormwater. The grotto provides easy access to a stormwater treatment site for visitors and can be a good location to provide educational signage and information about urban stormwater treatment.



Photo 17. Historic building foundations adjacent to the grotto (08/03/2012).

Developed Area

Existing Conditions

Hydrology and Water Quality & Fish and Wildlife Habitat

Very little native vegetation is present in the developed area, thus it provides low quality habitat due to the lack of significant amounts of food or cover. Where pockets of soil have developed or cracks have appeared in the pavement, vegetation is primarily weedy forbs and grasses. Buildings, bridges and other structures can contribute elements of structural diversity. They provide cover, resting and/or nesting opportunities primarily for non-native birds such as European starlings, house sparrow and rock dove (pigeon), but also provide habitat for native species including swifts, swallows, crows, gulls and bats. For piscivorous or insectivorous species that forage in or over water, proximity of structures to water increases its value as habitat because the distance from cover to foraging opportunities is relatively short.

Opportunities

Opportunities identified below are potential actions that can be begun or completed once redevelopment planning occurs. Both opportunities require more knowledge of how the site will be used in the future.

Hydrology, Water Quality, Fish and Wildlife Habitat

Establish Upslope Vegetation Buffer By Oregon City – In some cases buildings are immediately adjacent to the railroad tracks, however with removal or redevelopment there may be limited opportunities to create a vegetation buffer between the site and the tracks (Figures 1,2, and 3). At this location from the river, an Oregon white oak community would provide a visual and sound barrier from highway and railroad traffic, as well as resources for birds. Further, it would provide some vegetated connection between the riparian corridor and urban habitat.

Onsite Re-greening – Once redevelopment planning is underway, we encourage the planting of native trees and shrubs throughout the site to promote connectivity of habitat for birds and insects. Vegetated buffers along roadways, parking lots, buildings, and the edges of the project area reduce impervious surface and promote infiltration of stormwater. Further, vegetation can provide sound and visual barriers from highway and railroad traffic while also enhancing habitat connectivity along the river.

Summary

Existing habitat conditions on the project site are limited by development of the site and surrounding area. Salmonids and lamprey are known to pass through this part of the Willamette River, but don't currently have adequate resting habitat before attempting to pass through the falls. Shorebirds have also been observed using the falls and adjacent lands, but access to rocky outcroppings has been limited compared to the historical extent.

Redevelopment of the site under Metro's project objectives presents opportunities to integrate the cultural and historical features of the industrial site with natural and historic functions. Removal of select shoreline buildings will expose historic buildings to the waterfront and views of the Willamette Falls. Meanwhile, restoration and enhancement of the shoreline, tailraces, and lagoon would provide essential shoreline habitat otherwise missing from this stretch of the Willamette River. Providing wildlife habitat can also provide improvements for water resources, including stormwater treatment and water quality issues associated with the lagoon.

Conclusions for WFLP

Fish and wildlife habitat opportunities will not be greatly influenced by the two scenarios being described by the Willamette Falls Legacy Project Team (Appendix A). Key historic buildings are not located within the historic shoreline, therefore keeping historic buildings in place would not influence opportunities to enhance and restore the shoreline. If clusters of buildings are selected to remain, but the clusters are focused around the key historic buildings, the same situation is true. Neither scenario would impact enhancement of the lagoon or grotto.

Depending on scenario selected and redevelopment plans, there may be some impacts on the re-greening efforts of the site and stormwater drainage, thus stormwater treatment plans. Any future effort to daylight Tailrace #1 would be impacted by Scenario 2, where by keeping a cluster of buildings around key historic structures, a length of Tailrace #1 near the grotto would remain under Building 32.

References

Environmental Service Associates (ESA). 2012. Blue Heron Existing Hydrologic Site Characterization. Prepared for the Willamette Falls Legacy Project.

Environmental Service Associates (ESA). 2012. Interim Stormwater Management Plan. Prepared for the Willamette Falls Legacy Project. *In prep.*

Friesen, Thomas A., 2005. Biology, Behavior, and Resources of Resident and Anadromous Fish in the Lower Willamette River. Final Report of Research 2000-2004.

Harza Engineering Company and Smayda Environmental Associates, Inc. 2000. Draft Rare Plant Survey Report. Willamette Falls Hydroelectric Project No. 2233. Prepared for Portland General Electric Company and Blue Heron Paper Company, Portland, Oregon.

Houck, M. C., and M. J. Cody. 2000. Wild in the City – A guide to Portland's Natural Areas. Oregon Historical Society Press. Portland, Oregon

Normandeau Associates. 2011. Summary of Fish Passage Studies Conducted at the Willamette Falls Project in Support of License Compliance (2007-2010). Prepared for Portland General Electric Company, Portland, Oregon.

Oregon Department of Environmental Quality (ODEQ). 2010. Oregon's 2010 Integrated Report Water Bodies on the 2010 303d list.

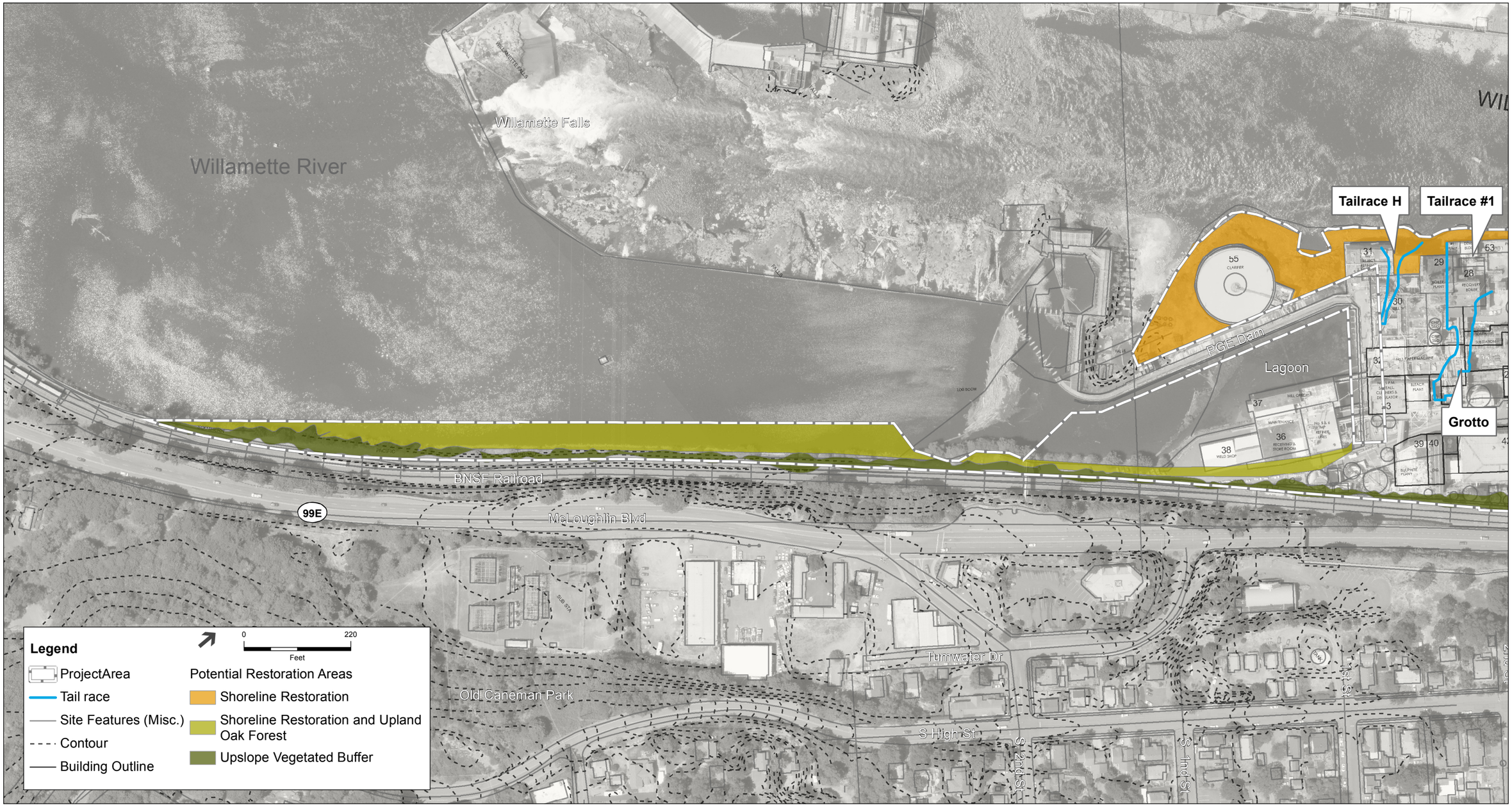
Portland General Electric (PGE). 2004. Final Environmental Assessment.

Portland General Electric (PGE) and Smurfit Newsprint Corporation. 1998. Initial Information Package for the Willamette Falls Hydroelectric Project. FERC No. 2233 T.W. Sullivan Development and Smurfit Development.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available online at http://soils.usda.gov/technical/classification/osd/index.html. Accessed [8/2012].

USGS 2006. Importance of Willamette Valley Farmlands to Wintering Shorebirds.

Figures

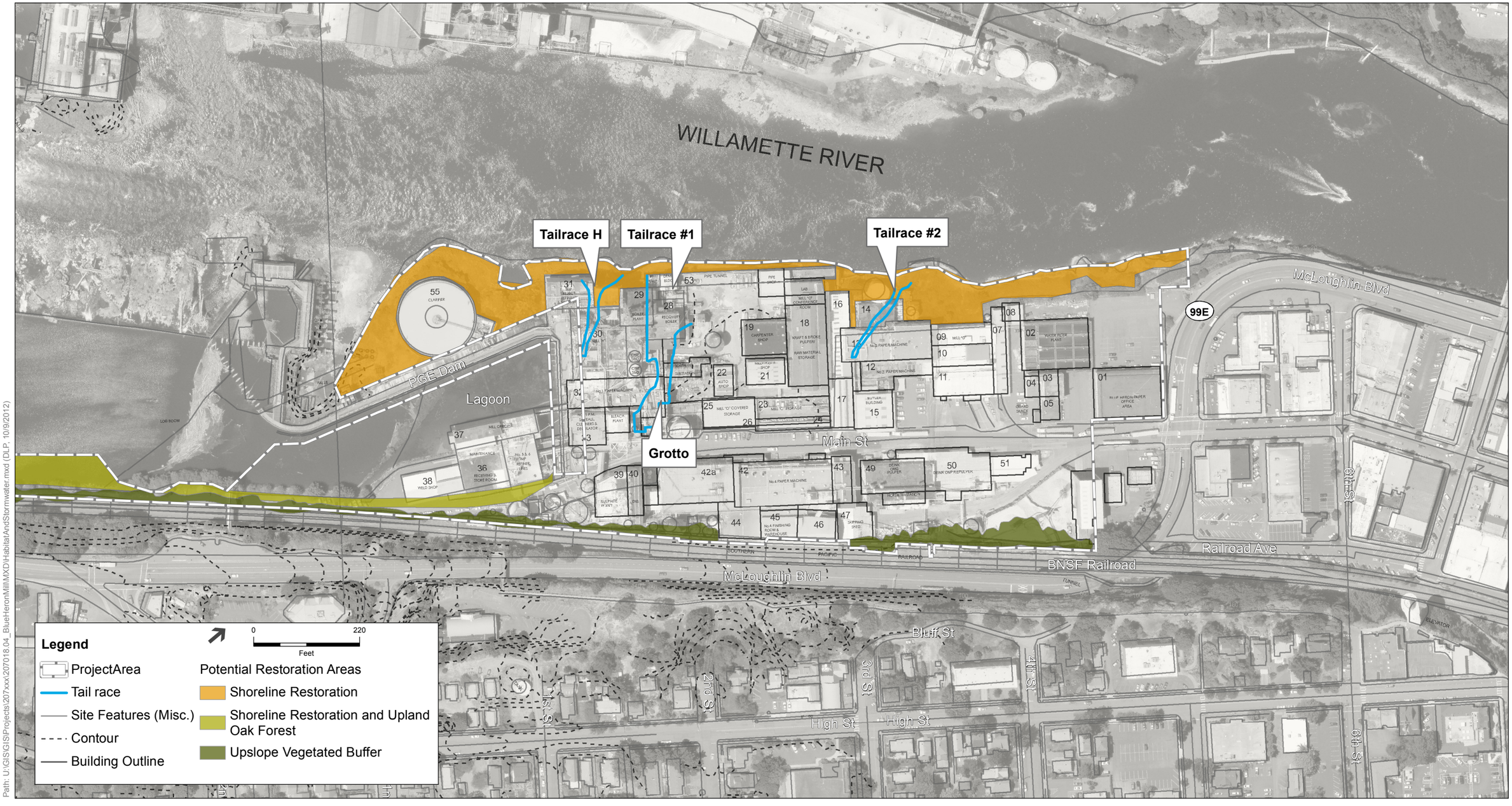


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SOURCE: ESA, 2012; Sanborn Maps 1888-1900, Oregon City CAD, Aerial (USGS, 2010)

Blue Heron Mill . 207018.04

Figure 1
Habitat Restoration Opportunities
Southern Project Area
Oregon City, Oregon



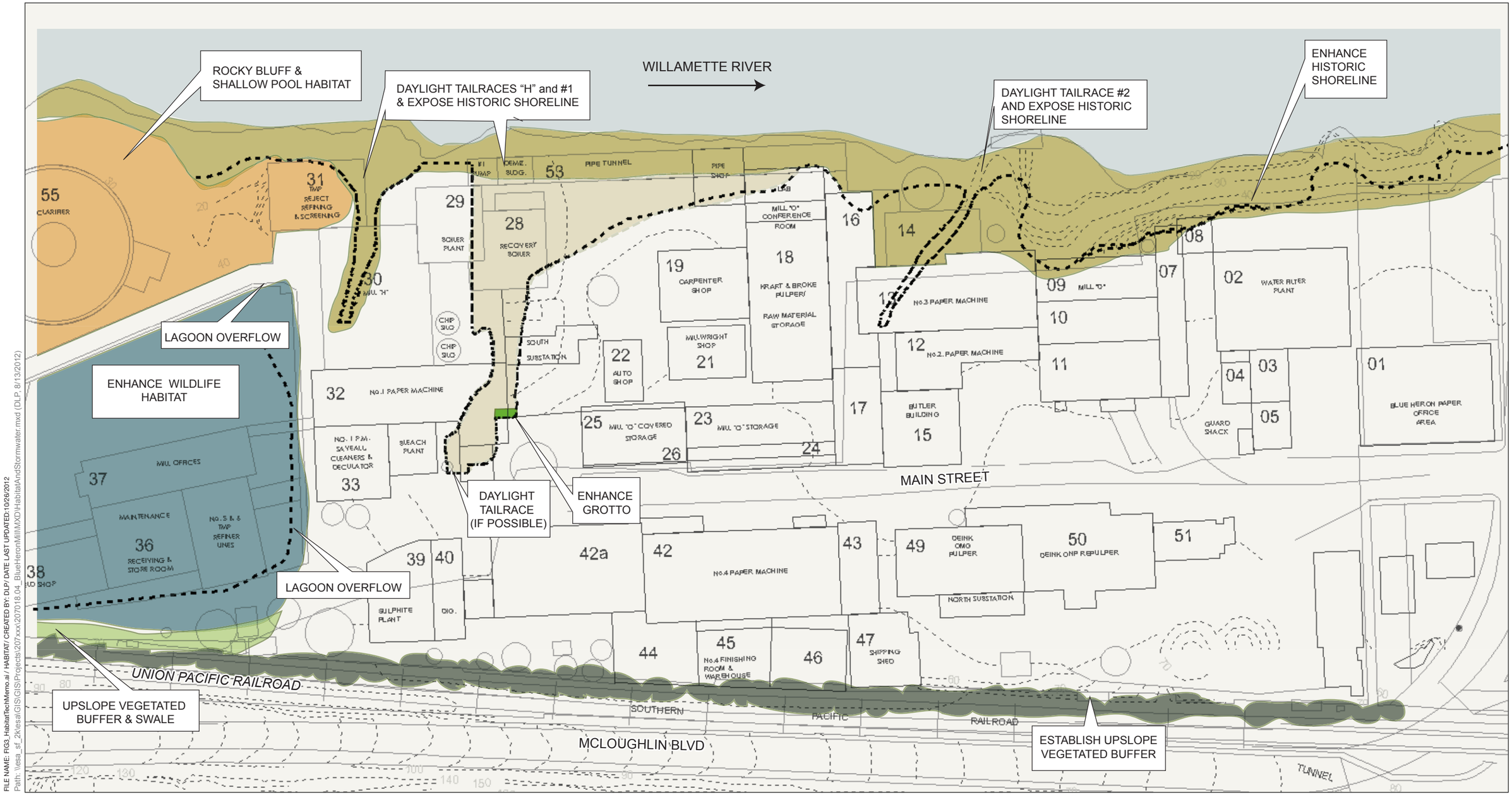
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SOURCE: ESA, 2012; Sanborn Maps 1888-1900, Oregon City CAD, Aerial (USGS, 2010)

Blue Heron Mill . 207018.04

Figure 2

Habitat Restoration Opportunities
Northern Project Area
Oregon City, Oregon



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SOURCE: Sanborn Maps 1888-1900, Oregon City CAD, Aerial (USGS, 2010)

Legend

- Tail race
- 1900 Shoreline
- Buildings

Habitat Restoration Opportunities

- Shoreline
- Rocky Bluff & Shallow Pool Habitat
- Upslope Vegetated Buffer
- Upslope Vegetated Buffer & Swale
- Backwater Lagoon

Blue Heron Mill . 207018.04

Figure 3

Habitat Restoration Opportunities
Oregon City, Oregon

0 100
Feet

Technical Memorandum

Environmental Resources Management

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(503) 488-5142 (fax)

To:	Hope Whitney / Metro
From:	Matthew Mudge, R.G. / ERM Erik Ipsen, P.E. / ERM
Date:	January 3, 2013
Subject:	Phase II Environmental Site Assessment Results and Recommendations, Blue Heron Mill, Oregon City, Oregon

This memorandum summarizes the Phase II Environmental Site Assessment (ESA) activities undertaken at the Blue Heron Mill in Oregon City, Oregon, (the Site) in accordance with the ERM-West (ERM) proposal to Metro dated 18 April 2012 and scope of work identified in the Work Order for Phase II ESA services dated 5 September 2012. This document presents the assessment results and provides recommendations for Metro's consideration.

The Phase II ESA sampling rationale and approach were presented to, and discussed with, Metro and the Oregon Department of Environmental Quality (ODEQ) in a 23 July 2012 meeting/conference call held at ERM's Portland office. Follow-up email correspondence provided responses to agency comments and additional clarification regarding details of the proposed sampling locations and collection methods, analytical testing methods, laboratory reporting limits, and potentially applicable screening criteria (E. Ipsen [ERM] to M. Romero [ODEQ] on 24 August, and 12 September, 2012). The scope of work was modified to incorporate several of ODEQ's comments. The presentation and email correspondence is included in Appendix A.

All work activities were completed in compliance with the Environmental Consultant Personal Services Agreement between ERM and Metro (Metro Contract No. 931306).

INTRODUCTION AND BACKGROUND

Project Description

Metro is considering acquisition of the Blue Heron Mill property, a former paper mill located in Oregon City, Oregon. ERM has been engaged by Metro to provide advice and environmental consulting services while Metro contemplates acquisition of the property, negotiates environmental

agreements, and pursues closure of the acquisition, if applicable. As part of its environmental due diligence, Metro contracted ERM to perform historical research and a Phase II ESA of the subject site[1]. This memorandum has been prepared to provide results of Phase II ESA activities.

Purpose

Environmental due diligence is a recommended, and often required, component of property transaction evaluation in order to adequately assess potential or perceived environmental concerns or liability associated with a subject property. Previous studies of the subject site, or areas within the subject site, including a Phase I ESA, have identified several Recognized Environmental Conditions (RECs), as defined in ASTM E 1527-05, in conjunction with areas at the Site. Many of these are based on the facility operations where hazardous materials were used or stored as well as the historical nature of long-term industrial use. As such, these RECs may reflect general practices rather than specific or certain events or conditions that may have occurred at the Site. Completion of site reconnaissance, with collection and analysis of environmental samples from precise areas with perceived or potential impacts from past land use and operations, allows for a comprehensive and reasonable assessment of environmental risk.

Background

The Blue Heron Mill is the site of a former paper manufacturing facility located in the northern area of the Oregon City business/industrial area. The Site is on the southwest bank of the Willamette River, immediately downstream of Willamette Falls (Figure 1). The falls are located at approximately river mile (RM) 26.5, with an approximate 40-foot drop in the river elevation. The Blue Heron Mill facility is comprised of an approximate 23- acre parcel of land situated on a relatively flat area between the Willamette River and a basalt bluff to the south/southeast. The facility is bounded by the Willamette River to the west/northwest, Oregon City's business district to the northeast, and a railroad line and McLoughlin Boulevard (US Route 99E), followed by a basalt bluff, to the south and southeast.

[1] A formal Phase I ESA has not been prepared by ERM for the subject site on behalf of Metro. However, many of the historical research activities usually performed as part of a Phase I ESA have been performed and the results of those activities are presented in this memorandum.

The Site includes up to 40 buildings associated with paper manufacturing such as process buildings; storage buildings; a boiler plant; maintenance, auto, welding, carpentry, and millwright shops; and offices. Other Site features include a wastewater primary clarifier, holding tanks for various process chemicals and paper stock, wood chip silos, and power substations. An active rail line and various spurs are present at the Site. The majority of the Site is covered by buildings or asphalt/concrete surfaces. The current site layout is shown in Figure 2.

The Site is directly underlain by basalt bedrock with areas of historical grading and filling completed to facilitate the large, flat property parcel. Groundwater is relatively shallow across much of the Site with an inferred flow to the northwest based on the local topography and adjacent surface water body.

Dating back to the early to mid-1800s, the Site was developed with residences, commercial buildings, and industrial businesses. Industrial uses included a paper mill, saw mill, flour mill, and woolen mill. Construction of the first paper mill in Oregon at the Site was begun in 1866 near the current Mill #2 and Mill #3 buildings on the Site. For over a century, paper mill operations continued at the Site with supporting property acquisitions and infrastructure improvements. From 1908 through 1932, Hawley Pulp and Paper operated wood pulping and paper manufacturing activities at the Site. The company was sold twice, in 1932 and 1948, but continued to operate under the Hawley name. In 1961, the owner, Times Mirror Corporation, changed the company name to Publishers Paper. It operated as Publishers Paper from 1961 through 1986 when it was purchased by the Jefferson Smurfit Corporation (Smurfit). Smurfit owned and operated the mill from 1986 through 2000. Blue Heron Paper Company purchased the Site in 2000 and operated from May 2000 until February 2011, when it ceased operations.

Significant process operations carried out at the Site historically included: paper manufacturing, pulp manufacturing, pulp bleaching, steam plant operations, wastewater handling, and storm water management.

Currently, salvaging operations are being undertaken at the site to extract salvageable equipment and materials.

Based on the Site's use as a large-scale heavy industrial facility with a significant time period of operations, a thorough review of available information was completed in order to adequately assess and identify potential environmental concerns necessitating further evaluation. A list of the documents reviewed by ERM is provided in Appendix B. The scope of work for the Phase II ESA activities was defined based on this

information as well as discussions and correspondence with Metro and the ODEQ. The presentation and email correspondence presenting the sampling rationale and approach including details of the proposed sampling locations and collection methods, analytical testing methods, laboratory reporting limits, and potentially applicable screening criteria are included in Appendix A.

The storm water system for the facility drains to the two pump stations before being pumped to the pipe tunnel and then to the clarifier. Water is then pumped from the clarifier to the off-site treatment lagoon (on the opposite bank of the Willamette River at an upstream property currently not included in the Site or Phase II ESA) before discharging to the Willamette River.

SCOPE OF WORK

The scope of work included sampling of several types of media and specific areas of interest. The conceptual sampling strategy is illustrated in Figure 3. Sampling within the various areas depended upon the individual area's historical operations and associated suspected or known contaminants. Table 1 identifies areas of potential environmental concern based on a review of available information and Table 2 depicts the sampling rationale and approach and provides a summary of site media/feature, type of sample, purpose, constituents of interest (COIs), specific sampling locations, and additional notes. Sampling locations are shown on Figure 4 and the scope of work and rationale for each of the areas is summarized in the following sections. The conceptual sampling strategy and approach, sampling locations, and corresponding laboratory analyses have been reviewed by the ODEQ and the sampling scope was modified to incorporate several of ODEQ's comments.

A limited screening for asbestos was completed to assess possible impacts of ongoing salvage and demolition activities occurring at the Site; this included analytical testing of samples collected from the storm water system and tailrace solids. This assessment did not include a hazardous building materials survey of any of the facility structures. Additionally, the scope of services did not include an assessment of indoor air quality, outdoor air emissions, radon, lead paint, mold, building materials survey for asbestos containing material (ACM), PCB ballast, or wetlands.

Upland Soil, Water, and Solids Sampling

Upland soil, water, storm water solids, and tailrace solids samples were collected for laboratory analysis of contaminants. Sample locations are

presented in Figure 4. A sampling matrix summarizing the samples and analyses performed is presented in Table 3. Activities performed as part of this task included:

- Drilling 11 boreholes and collecting one soil sample from each borehole;
- Collection of four water and four solids samples from the storm water system;
- Collection of three water and five solids samples from the tailraces. Shallow solids samples from Tailrace 2 were composited prior to laboratory analysis;
- Collection of two groundwater samples from boreholes and three seep water samples; and
- Laboratory analysis of the samples for the constituents listed in Table 3.

Intake Basin Sediment Sampling

Sediment samples from the Intake Basin were collected for laboratory analysis of contaminants. Sample locations are presented in Figure 4. A sampling matrix summarizing the samples and analyses performed is presented in Table 3. Activities performed as part of this task included:

- Collection of three surface sediment samples (0 to 0.5 feet below sediment surface [bss], i.e. below mudline) and three sediment cores with collection of four subsurface sediment samples to a maximum depth of 3.0 feet bss; and
- Laboratory analysis of the samples for the constituents listed in Table 3.

FIELD INVESTIGATION

The investigation was performed in accordance with applicable regulations and generally accepted environmental science and engineering practices. This section describes the field methods used during the investigation.

Preliminary Planning

ERM prepared a site-specific Health and Safety Plan (HASP) for field personnel as required by the Occupational Safety and Health Administration (OSHA) for personnel performing work associated with hazardous substances. The HASP was designed to protect personnel from potential and known hazards at the Site during field activities.

ERM and Metro identified the areas of potential concern during preliminary conversations and site visits.

Before drilling, a One-Call Utilities Notification was conducted and a private utility locator assessed each proposed boring location for buried utilities. A few proposed locations were in close proximity to identified underground utilities and, as such, were relocated.

Sampling Activities

Specific soil sampling locations were selected during a previous site reconnaissance. Each location was screened for buried utilities in accordance with ERM's standard subsurface clearance (SSC) procedures. This included 'clearing' the first four feet below ground surface (bgs) with a hand auger. Soil borings were advanced using a hand auger and a direct push drill rig (below 4 feet bgs). Storm water and tailrace solids were collected with hand tools. Surface sediment samples were collected from the Intake Basin using a ponar-type grab sampler and sediment cores were advanced using a vibracore deployed from a marine research vessel equipped for scientific sampling. Sampling locations are shown on Figure 4.

On 7 and 15 September 2012, under the supervision of ERM, 11 soil borings were completed at the Site to depths ranging from 1.5 to 17.5 feet bgs. Two of the borings (F38-01 and TD-01) encountered groundwater and were advanced so that representative groundwater samples were obtained. Cascade Drilling L.P. of Clackamas, Oregon was contracted to advance the borings using direct push drilling technology.

The borings were advanced using a truck-mounted direct push drilling rig equipped with a 5-foot long, 2-inch outside diameter (OD) Macrocore sampler and hydraulically-driven steel rods. The soil boring installations, soil types encountered, and field screening results observed are summarized on Table 4. Boring logs are provided in Appendix C.

The boring installation work was performed by an Oregon-bonded and licensed monitoring well contractor. The boring installations were completed in accordance with the Oregon Groundwater Law (Oregon

Revised Statute [ORS] Chapter 537) and the Rules for Construction and Maintenance of Monitoring Wells and Other Holes in Oregon (Oregon Administrative Rules [OAR] Chapter 690, Division 240).

Following completion of the drilling activities, the borings were backfilled with bentonite chips to within 6-inches of the ground surface. The bentonite chips were then hydrated by adding potable water and were allowed to set up. Additional bentonite chips and water were added as needed. The borings were then finished to grade with asphalt or concrete to match the surrounding ground surface.

Storm water and tailrace solids samples were collected using decontaminated hand tools. Multiple aliquots were collected at each sample location in order to provide sufficient volume of material for analysis. One tailrace solid sample was composited in accordance with Table 3 (the 0 to 0.5 foot bgs interval collected at TR2-02 and TR2-03).

On 14 September 2012, under the supervision of ERM, three surface sediment samples (0 to 0.5 feet bss) and three sediment cores were advanced in the Intake Basin to depths ranging from 3.1 to 3.3 feet bss. Gravity Environmental L.L.C. of Fall City, Washington was contracted to advance and collect the sediment cores using a marine research vessel.

Soil, Solids, and Sediment Sample Collection and Screening Procedures

Soil, solids, and sediment samples were field screened for evidence of possible contamination with discrete samples collected from each core or grab sample for potential laboratory analysis based on the prescribed sampling approach, the results of field screening, or changes in subsurface conditions (i.e. lithologic contacts or depth with respect to the groundwater interface). Shallow soil samples from the boreholes were collected using a decontaminated hand auger (from 0-4 feet bgs). Deeper soil and subsurface sediment samples were collected in disposable acrylic or acetate core sleeves and storm water and tailrace solids were collected with decontaminated hand tools. Surface sediment samples from the Intake Basin were collected with a decontaminated ponar-type grab sampler.

Upon collection, each sample was immediately placed in clean, laboratory provided 8-ounce glass sample jars and capped with a Teflon-lined lid. The sample jars were then labeled and transferred to a chilled container for shipment to the analytical laboratory. Standard sampling protocols, including the use of chain-of-custody documentation, were followed for the sampling procedures.

The soil samples were classified according to the Unified Soil Classification System (USCS) and field-screened for the presence of potential contamination by visual, olfactory, sheen test, and headspace vapor methods. Screening for the presence of organic vapors was conducted by the headspace method using a photo-ionization detector (PID) equipped with a 10.6 ev lamp. Immediately following collection of the sample, approximately five grams of disaggregated soil was placed into a sealed plastic bag. The sample was then agitated to break up any large pieces of soil. After an approximate 10-minute stabilization time, the PID probe was inserted into the bag and a measurement was then recorded. The results of the headspace screening are recorded in parts per million (ppm) on the boring logs (Appendix C) and summarized on Table 4. The headspace method results should be considered a qualitative indicator of possible contamination and should be used for relative comparison purposes only.

The types of subsurface soils beneath the Site were highly variable, likely due to the historical grading that has occurred at the facility during its development and operation. Subsurface materials encountered were predominantly fill material underlain by shallow basalt bedrock.

Water Sample Collection Procedures

Groundwater samples were collected from two of the borings (F38-01 and TD-01) with a temporary well point installed in the borehole. The samples were collected using a disposable 1-inch diameter 0.010-inch slotted PVC screen and casing. The screen intervals for borings F38-01 and TD-01 were each set at depths of 5 to 10 feet bgs and 3 to 8 feet bgs, respectively.

Upon installation, the temporary well points were allowed to equilibrate for approximately 10 minutes. Then the depth to water inside the well casing was gauged relative to the ground surface using a water level probe. Groundwater was observed at depths ranging from 5 to 6 feet bgs. The measured depth to groundwater at each location is included on the boring logs in Appendix C.

Groundwater purging and sampling was conducted using a peristaltic pump and new, dedicated polyethylene tubing. Prior to sample collection, the well point was purged until turbidity decreased (approximately 1-liter).

Grab samples of seep water, storm water, and tailrace surface water were collected directly into sample containers.

Volatile organic compound (VOC) sample containers were completely filled such that no headspace was present that would allow for the loss of volatiles. The sample containers were then labeled and transferred to a chilled container for shipment to the analytical laboratory. Standard sampling protocols, including the use of chain-of-custody documentation, were followed for the sampling procedures.

Decontamination Procedures

Soil and groundwater samples were collected using a combination of dedicated, single-use equipment and decontaminated, reusable equipment. Dedicated, single-use sampling equipment included nitrile gloves, laboratory-provided sample jars, new acrylic or acetate sleeves for soil and sediment cores, PVC well screen and casing, and new polyethylene tubing for groundwater samples. Reusable sampling equipment included drilling rods and a Macrocore sampler. The reusable equipment was decontaminated using a steam pressure washer with potable water prior to use, and between boring locations, to prevent cross-contamination.

Investigation Derived Waste

Soil cuttings and water generated from the drilling and sampling activities were placed in Department of Transportation (DOT) approved 55-gallon drums, labeled, and stored in a secure location on site. Disposal of investigation derived waste (IDW) at an approved facility has not yet occurred.

ANALYTICAL TESTING

The soil, solids, sediment, and water samples collected during the investigation were submitted to ALS Laboratories, Inc. (ALS) located in Kelso, Washington for analysis. Chain-of-custody procedures were followed from sample collection to sample analysis.

Analytical Methods

Chemical analyses varied depending on the Site feature, associated COIs, media type, and sample location. The conceptual sampling strategy and sampling rationale and approach for the Phase II ESA are shown on Figure 1 and Table 2, respectively, with a detailed sampling matrix presented on Table 3. The samples were analyzed by the following methods, in accordance with Table 3:

- Total Metals by EPA Method 6000/7000 Series
- Total Petroleum Hydrocarbons (TPH) by NW Methods
- Volatile Organic Compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260C
- Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082A
- Asbestos by Polarized Light Microscopy (PLM) ALS ENV004

Analytical Results

Results of the analytical testing are summarized in Tables 5 through 13, separated by the different media sampled. The laboratory analytical reports and chain-of-custody documentation for the sampling activities are included in Appendix D. The sampled media and corresponding analytical data results summary tables are identified below.

- Upland Soil - Tables 5 and 6
- Storm Water and Tailrace Solids - Tables 7 and 8
- Storm Water and Tailrace Water - Tables 9 and 10
- Groundwater and Seep Water - Table 11
- Intake Basin Sediment - Tables 12 and 13

ERM performed a limited data quality and any necessary qualifiers were applied following the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* October 1999, the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* October 2004, and the *USEPA National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs)*, September 2005. The data validation memorandum is included in Appendix E.

No data were determined to be unusable. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically-defensible documents.

SCREENING CRITERIA EVALUATION

The analytical results from sampling were compared with screening criteria appropriate for use in evaluating properties for human health and ecological risk in this region of the U.S. These criteria are used for site "screening" to help identify areas, contaminants, and conditions at a site that may require further evaluation. Screening criteria are not de facto cleanup standards and should not be applied as such. Detected concentrations above screening criteria may warrant additional evaluation of the potential risks to human or ecological health by contaminants depending on the intended use of the subject property.

Based on the Site's current and historical land use as an industrial property, and for the purposes of this Phase II ESA, continued industrial or commercial land use was assumed. Assumed current and future receptors include occupational workers, construction workers, and excavation workers. Additionally, due to the low potential yield, groundwater was assumed to not be used for beneficial use (i.e. human consumption).

Residential screening values were not used in this evaluation. Typical risk pathways included in residential screening values include consumption of groundwater, incidental ingestion of soil, and indoor air vapor intrusion. Based on ERM's understanding of potential future residential development of the property, none of these risk pathways are potentially complete for the following reasons:

- As discussed above, beneficial use of groundwater is not likely to include consumption due to low yield of the water bearing zone;
- ERM understands that potential future on-site residences (if constructed) would be unlikely to include ground level gardens or yards, making ingestion of soil an incomplete pathway; and
- ERM understands that potential future on-site residences (if constructed) would not be constructed at ground level, making vapor intrusion an incomplete pathway.

The Intake Basin sediments, storm water, and tailrace water do have the potential to impact aquatic organisms; therefore, ecological risk and applicable human health risk screening criteria were included for these media.

The screening criteria used in this screening evaluation include the following:

- ODEQ Risk-Based Concentrations (RBCs) from the Risk-Based Decision Making (RBDM) for the Remediation of Petroleum-Contaminated Sites (ODEQ, 2003) and RBC Table Update, June 2012, for Occupational, Construction Worker, and Excavation Worker receptors.
    - Exposure pathways applied include:
        - Soil - Soil Ingestion/Dermal Contact/Inhalation, Volatilization to Outdoor Air, Vapor Intrusion to Buildings;
        - Groundwater - Volatilization to Outdoor Air, Vapor Intrusion to Buildings, and Groundwater in Excavations.
- National Recommended Water Quality Criterion (NRWQC), Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.
    - This includes both human health risk through consumption of organisms, and freshwater Ambient Water Quality Criteria (AWQC) (acute and chronic exposure).
- Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated 3 April 2007.
    - Receptors include:
        - Birds, mammals, and fish (as individual and population);
        - Humans (general, and subsistence).

The detections of metals in soil, and storm water and tailrace solids samples were also compared to the ODEQ default background concentrations for metals in Oregon (ODEQ, 2002). Metals concentrations detected in Intake Basin sediment were compared to the freshwater background levels provided in the Sediment Bioaccumulation Guidance (ODEQ, 2007). Screening criteria are not considered exceeded when detected concentrations are equal to or below established regional background levels.

Each of the analytical data summary tables listed above in Section 4.2 show the most stringent of the applicable screening criteria, as well as

available background levels, to allow for a conservative screening of detected constituents.

If constituents were detected at concentrations exceeding the most stringent screening level value (SLV), they are highlighted orange in Tables 5 through 13. Exceeding constituents are then compared to the specific exposure pathways/scenarios/receptors identified above in a separate table. This allows for a more detailed understanding of site risk and should be coupled with an understanding of the Site's potential exposure pathway conceptual site model. Additionally, screening level exceedance quotients (EQs) were calculated to aid in qualifying, or prioritizing, areas with detected constituents above the referenced screening criteria. Screening level EQs are calculated using the following equation:

$$Screening\ Level\ EQ = \frac{Detected\ Constituent\ Concentration}{Screening\ Criteria}$$

There is no stead-fast rule or guidance in qualifying detected concentrations using screening level EQs. Knowledge of the contaminant properties, site conditions, frequency of detection, background levels, typical industrial concentrations, and other lines of evidence need to be considered as well.

The screening results by constituent suite, grouped by the sample media are presented in the following sections below.

Upland Soil, Storm Water Solids, and Tailrace Solids

Tables 5 and 7 summarize the upland soil and storm water and tailrace solids analytical data, respectively. Samples with orange highlighting have detections exceeding the lowest SLV, and these concentrations are further evaluated in Tables 6 and 8 (for upland soil and storm water and tailrace solids, respectively).

During collection of storm water and tailrace solids samples, floating oil was observed in several of the storm water features and tailraces.

Metals

Figure 5 shows the analytical results for metals in upland soil, and storm water and tailrace solids. Arsenic was detected at concentrations above SLVs at three upland soil sampling locations (F18-01, F38-01 and F42-01) and two tailrace solids locations (TR1-01 and TR2-02/03 [composite]). The regional background concentration for arsenic is 7 milligrams per kilogram (mg/kg). The concentration of arsenic in all soil and solids

samples can be reasonably considered within background levels, with the exception of three samples.

The sample from F18-01(near Building 18 Mill O) contained an arsenic concentration of 50.2 mg/kg and a screening level EQ of 29.5.

Solids samples from Tailraces 1 and H also contained arsenic at concentrations above the most stringent SLVs. Samples TR01-1 and TR2-02/03 (composite) resulted in concentrations of 17.9 (EQ of 10.5) and 7.6 mg/kg (EQ of 4.5), respectively.

Two locations detected elevated concentrations of lead above the SLVs: F21-01 (Building 22/Millwright Shop, near a former fuel storage area) at a concentration of 1,480 mg/kg (EQ = 1.9), and F38-01 (Building 38 /Welding Shop, near a former fuel UST) at a concentration of 3,300 mg/kg (EQ = 4.1).

TPH

Figure 6 shows the analytical results for TPH in upland soil, and storm water and tailrace solids. There were no detected concentrations above the screening criteria.

VOCs

Figure 7 shows the analytical results for VOCs in upland soil, and storm water and tailrace solids. There were no detected concentrations above the screening criteria.

SVOCs

Figure 8 shows the analytical results for SVOCs in upland soil, and storm water and tailrace solids. One sample, F07-01 (near the 4th Street rail spur), contained concentrations of three polycyclic aromatic hydrocarbon (PAH) constituents above the SLVs. These were benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene at concentrations of 11, 2.9, and 5.2 mg/kg, respectively. The highest screening level EQ was for benzo(a)pyrene at 10.7.

Benzo(a)pyrene was also detected in one of the tailrace solids samples (TR-02) above screening criteria. The concentration was 0.46 mg/kg (EQ = 1.7). Tailrace 2 is located between two rail spurs.

PCBs

Figure 9 shows the analytical results for PCBs in upland soil, and storm water and tailrace solids. Two storm water system solids samples contained concentrations of total PCBs above the most stringent SLV: Pump Station 2 (PS2-01) and the Pipe Tunnel (F53-01) has PCB concentrations of 2.9 (EQ = 4.1) and 0.89 mg/kg (EQ = 1.3), respectively.

Dioxins/Furans

Figure 10 shows the analytical results for dioxins / furans in upland soil, and storm water and tailrace solids. Dioxins and furans were detected at all of the storm water and tailrace solids locations sampled. All but two samples exceeded the screening criteria with calculated 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalency quotients (TEQs) for the locations with SLV exceedances ranging from 18.63 (EQ = 1.2) to 84.04 nanograms per kilogram (ng/kg) (EQ = 5.6). The highest concentrations were located in Tailrace 2 (at sample TR2-02) and the Pipe Tunnel (sample F53-01); both are locations where there is potential for contaminant accumulation in the solids.

Asbestos

One upland soil sample location and all solids samples collected within the storm water system and tailraces were analyzed for the presence of asbestos. The upland location, F18-01 (Building 18 Mill O), and storm water and tailrace solids analyzed did not have detectable concentrations of asbestos.

Storm Water, Tailrace Water, Groundwater and Seeps

Table 9 summarizes the storm water and tailrace water analytical data and provides the initial screening of detected concentrations to the most conservative applicable SLV. Samples with orange highlighting have detections exceeding the lowest SLV and these results are further evaluated in Table 10.

Table 11 summarizes the groundwater and seep analytical data and provides the initial screening of detected concentrations to the most conservative applicable SLV. There were no detected concentrations of constituents above the screening criteria in any groundwater or seep water samples.

During groundwater sampling, a sheen was observed on the purge water from TD-01, no abnormal odors or sheen were observed at F-38-01.

Additionally, during collection of storm water and tailrace water samples, floating oil was observed in several of the storm water features and tailraces.

Metals

Figure 11 shows the analytical results for metals in storm water, tailrace water, groundwater and seeps. Several metals were detected in storm water and tailrace water at concentrations above the most stringent screening criteria, including arsenic, cadmium, copper, and zinc. Arsenic was detected in surface water collected from Tailrace 2 (sample TR2-02) at a concentration of 3.5 micrograms per Liter (µg/L) (EQ = 1.7). The detected concentration of cadmium in this sample was 1.14 µg/L (EQ = 1.0). Copper was detected at concentrations above the most stringent screening criteria at the Pipe Tunnel, Pump Stations 1 and 2, and Tailraces 2 and H. The concentrations at these locations ranged from 20.8 (EQ = 1.2) to 84.6 µg/L (EQ = 7.1) (Pump Station 2).

Samples from the Pipe Tunnel (sample F53-01) and Pump Station 2 (sample PS2-01) revealed concentrations of zinc in water above the most stringent SLV. The sample collected from Pump Station 2 contained a concentration of 119 µg/L (EQ = 1.1) and the duplicate sample collected at the Pipe Tunnel had a concentration of 833 µg/L (EQ = 7.6).

TPH

Figure 12 shows the analytical results for TPH in storm water, tailrace water, groundwater and seeps. There were no detected concentrations above the screening criteria.

VOCs

Figure 13 shows the analytical results for VOCs in storm water, tailrace water, groundwater and seeps. There were no detected concentrations above the screening criteria.

SVOCs

Figure 14 shows the analytical results for SVOCs in storm water, tailrace water, groundwater and seeps. There were no detected concentrations above the screening criteria.

Intake Basin Sediment

Table 12 summarizes the Intake Basin sediment analytical data and provides the initial screening of detected concentrations to the most conservative applicable SLV. Samples with orange highlighting have detections exceeding the lowest SLV and these concentrations are further evaluated in Table 13.

Metals

Figure 15 shows the analytical results for metals in Intake Basin sediments. There were no detected concentrations above the screening criteria.

SVOCs

Figure 16 shows the analytical results for SVOCs in Intake Basin sediments. There were no detected concentrations above the screening criteria.

PCBs

Figure 17 shows the analytical results for PCBs in Intake Basin sediments. There were no detected concentrations above the screening criteria.

Dioxins/Furans

Figure 18 shows the analytical results for dioxins/ furans in Intake Basin sediments. Dioxins/furans were detected at all of the Intake Basin sediment sampling locations. All sediment samples contained calculated TCDD TEQ concentrations exceeding the most stringent screening criteria. Table 13 provides a detailed summary of the resulting TEQ values for each sediment sample location and compares these to human health and ecological screening values. Calculated TEQs range from 0.211 to 6.78 ng/kg. For human health, screening level EQs ranged from 23.2 to 6,162. For ecological health, screening level EQs ranged from 1.0 to 130.4.

Reporting Limits

For some of the chemicals analyzed, the laboratory reporting limits (RLs) or method detection limits (MDLs) were higher than the screening criteria. These occurrences are highlighted grey in the tables; these are only presented in the summary tables when the constituent was detected in other samples within the media group, otherwise they are not presented in the tables. Reasons for laboratory RLs or MDLs above the screening

criteria include: the limits of the selected analytical methods, sample matrix interference, high concentrations of target or non-target compounds, and laboratory equipment calibration. This does not necessarily indicate a screening criterion exceedance. The analytical methods selected were typical for conducting environmental site assessments and were previously reviewed by the ODEQ.

CONCLUSIONS AND RECOMMENDATIONS

The previous sections of this memorandum present the findings of this Phase II ESA of the Site. Conclusions from this ESA are presented below:

Upland Soil

In general, while there are a few specific areas with contaminants detected at concentrations above applicable SLVs, the upland soils at the Site appear to pose low risk to human health, assuming a future use of the site for commercial or industrial purposes.

Arsenic concentrations detected at F18-01(near Building 18 Mill O) resulted in a screening level EQs of 29.5 and are slightly elevated from background[2] (7 mg/kg). This sample was collected from the crawl space below Building 18 and consisted of fill material that appeared to be demolition debris, containing bricks and pieces of metal. Given the limited extent of this fill material and the lack of apparent source of arsenic, this result does not appear to merit additional investigation at this time.

Lead concentrations exceeding the SLVs were observed at F21-01 (Building 22/Millwright Shop, near a former fuel storage area) and F38-01 (Building 38 /Welding Shop, near a former fuel UST). The screening level EQs for these samples are 1.9 and 4.1, respectively. These observed lead concentrations may be associated with the historical use of these areas for fuel storage. However, the TPH concentrations in these samples were below the applicable screening criteria, indicating that potential impacts of historical petroleum releases, if any, from these former fuel storage areas are limited. Based on the low screening criteria EQs and limited potential source areas, the concentrations of lead in soil do not appear to merit additional investigation at this time.

Several PAHs were detected above SLVs at F07-01 (near the 4th Street rail spur). The highest screening level EQ was for benzo(a)pyrene at 10.7. PAHs are commonly associated with treated railroad ties and other rail activity. If rail use is planned in the future use of the Site, and this rail spur is to remain intact, the presence of these compounds at these concentrations likely does not necessitate further assessment.

One upland soil sample, F18-01 (Building 18 Mill O), was analyzed for the presence of asbestos to evaluate possible impacts related to ongoing

[2] Default Background Concentrations for Metals in Oregon Soils: ODEQ, 2002. Memo from Toxicology Workgroup.

salvage and demolition activities. Asbestos was not detected in this sample.

Soil and groundwater samples collected from the Truck Dump area (TD-01 and TD-02) contained TPH at concentrations slightly below the screening criteria. During the sampling activities significant soil staining and sheen on the groundwater were observed. The detected TPH may be a result of historical release(s) from the former fuel and oil storage in this area. Due to the limited number of sampling locations (two) and significant depth of soil, there is a potential that impacted soil and groundwater may be present at concentrations exceeding applicable screening criteria within this area.

Storm Water and Tailrace Water and Solids

In general, the characterization of associated solids and water detected common industrial storm water contaminants and while some of these were above SLVs, none were at concentrations indicating significant concern.

Arsenic was detected in Tailraces 1 and H solids at concentrations above the most stringent SLVs and slightly above the regional background concentration (7 mg/kg). The highest screening level EQ of 10.5 was at Tailrace 1. Due to the low screening level EQs and low exceedance of background, these results do not appear to merit additional investigation at this time.

One PAH (Benzo[a]pyrene) was detected in one of the tailrace solids samples above screening criteria at TR2-02. The corresponding screening level EQ was 1.7. Tailrace 2 is situated between two rail spurs and this contaminant may be present due to the presence of treated rail ties or the presence of asphalt throughout the facility. Due to the low screening level EQ, this detected concentration does not necessitate additional assessment.

PCBs were detected in two storm water system solids samples above the most stringent SLVs: Pump Station 2 (sample PS2-01) and the Pipe Tunnel (sample F53-01) with screening level EQs of 4.1 and 1.3, respectively. Floating oil was observed in several of the storm water features and tailraces during sample collection activities. The PCB impacts may be due to historical releases of PCB-containing oil from electrical infrastructure at the site, or the recently reported release of oils to the storm water system during current salvage operations. The detected concentrations are low and do not appear to warrant additional investigation at this time.

Dioxins/furans were detected in storm water and tailrace samples at concentrations above the SLVs, but within typical background ranges. A September 2011 Washington Department of Ecology study of urban surface soil from various Seattle neighborhoods found calculated TCDD TEQ concentrations in urban soils ranged from 1.66 to 114.65 ng/kg with an average concentration of 19.08 ng/kg[3]. The TCDD TEQ results for storm water and tailrace solids ranged from 1.79 to 84.0 ng/kg and are within the range of background concentrations. These concentrations present a low risk given the ubiquitous nature of these persistent contaminants in the environment. There are numerous regional sources of dioxins/furans and the concentrations found may be the result of atmospheric deposition.

Samples of solids collected from the storm water system and tailraces were analyzed for the presence of asbestos to evaluate if ongoing salvage and demolition activities may be causing impacts to the Site. Asbestos was not detected in the storm water and tailrace solids samples.

Arsenic and cadmium concentrations detected in tailrace water have low screening level EQs and do not appear to warrant additional assessment.

Copper and zinc were detected in the storm water and tailrace water samples with screening level EQs ranging from 1.1 to 7.6. The metals are found in typical roofing materials which may be in use at the site and are commonly identified in industrial storm water systems. Additionally, it was noted during water sample collection that metal cuttings/shavings from salvaging operations were present in the storm water system structures. These metals cuttings/shavings could be contributing to detected metals concentrations. Due to the low screening level EQs, common source materials, and potential contributions from metal debris in the sampling locations, the detected concentrations of copper and zinc in storm water and tailrace water do not appear to warrant additional assessment.

Groundwater and Seeps

Groundwater and seep sampling at the site did not indicate any detected concentrations above applicable SLVs for the analyzed constituents.

[3] Urban Seattle Area Soil Dioxin and PAH Concentrations Initial Summary Report, Washington Department of Ecology, Publication no. 11-09-049, September 2011.

Intake Basin Sediment

All constituents analyzed in the Intake Basin sediment samples were either not detected, or detected at concentrations below the applicable SLVs except for dioxins/furans. Dioxins/ furans were detected at all of the Intake Basin sediment sampling locations with calculated TCDD TEQs ranging from 0.211 to 6.78 ng/kg. A 2008 study undertaken in Puget Sound was completed to assess non-urban background concentrations of dioxins/furans in surface sediment to support the Dredged Material Management Program (DMMP). Results of the study found calculated TEQ concentrations in surface sediment ranged from 0.01 to 11.90 ng/kg[4]. As part of the 2008 EPA Site Inspection (SI) completed by Ecology and Environment, sediment samples were collected downstream, adjacent to, and upstream of the Site in order to evaluate possible impacts to the river from Site operations. The results of dioxin/ furan analysis indicated calculated TEQs ranging up to 2.16 ng/k g. Concentrations of dioxins/ furans detected in Intake Basin sediment are considered within background ranges.

As discussed above, there are numerous regional sources of dioxins/furans and the concentrations detected in Intake Basin sediment may be the result of atmospheric deposition and upstream sources. Since this area of the Site was used to channel water for operational use, and the facility has not discharged waste water or storm water to this area, it is unlikely the Site is the source of these contaminants in sediment.

Recommendations

Based on the preceding information, ERM recommends the following:

- Development of a conceptual site model (CSM) to support future development plans for the Site. This will identify relevant exposure pathways and exposure scenarios and will further assist in defining areas and conditions of potential risk to future human health and ecological receptors.

- Removal and proper management of accumulated solids from the storm water system, tailraces, and other site features prior to acquiring the property. Best management practices (BMPs) for maintenance of storm water conveyance systems should be followed including catch basin and line cleaning.

[4] Puget Sound Sediment PCB and Dioxin 2008 Survey, Dredged Material Management Program (DMMP), September 11, 2008.

- Work with ODEQ to ensure ongoing salvaging activities are completed following industry BMPs to reduce the potential for impacts to the environment (i.e. releases of contaminants to upland soil, the storm water system, tailraces, surface water, or adjacent sediments).

- Additional investigation, including soil and groundwater sampling, in the area near the Truck Dump to confirm that former fuel and oil storage activities have not impacted the Site.

- Development of a Soil Management Plan (SMP) for the site. A SMP will provide information to site managers and developers regarding the management of soil during and after site development. The SMP will also identify procedures if contaminated soil is encountered during future site development activities, including material handling (segregating, stockpiling, covering), characterization, and disposal or reuse options.

Upon completion of a conceptual site model, areas with detected contaminants should be screened against criteria applicable to the proposed or intended land use. Additionally the limits of contamination in shallow soils should be further defined to aid the evaluation of potential land use and/or limit the amount of material that may need to be removed and disposed of off-site. These tasks may help alleviate potential schedule delays and limit costs associated with Site development.

FIGURES

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Figure 2 Site Layout

Figure 3 Conceptual Sampling Strategy

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Figure 6 TPH Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids

Figure 7 VOC Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids

Figure 8 SVOC Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids

Figure 9 PCB Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids

Figure 10 Dioxin/Furan Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids

Figure 11 Metals Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps

Figure 12 TPH Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps

Figure 13 VOC Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps

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Figure 16 SVOC Concentrations in Intake Basin Sediments

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Table 11 Groundwater and Seep Analytical Results

Table 12 Intake Basin Sediment Analytical Results

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APPENDICES

Appendix A – Phase II ESA Conceptual Approach

Appendix B – Reference Documents

Appendix C – Boring Logs

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Appendix E – Data Validation Report

Figures

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 01 Site Location.mxd Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

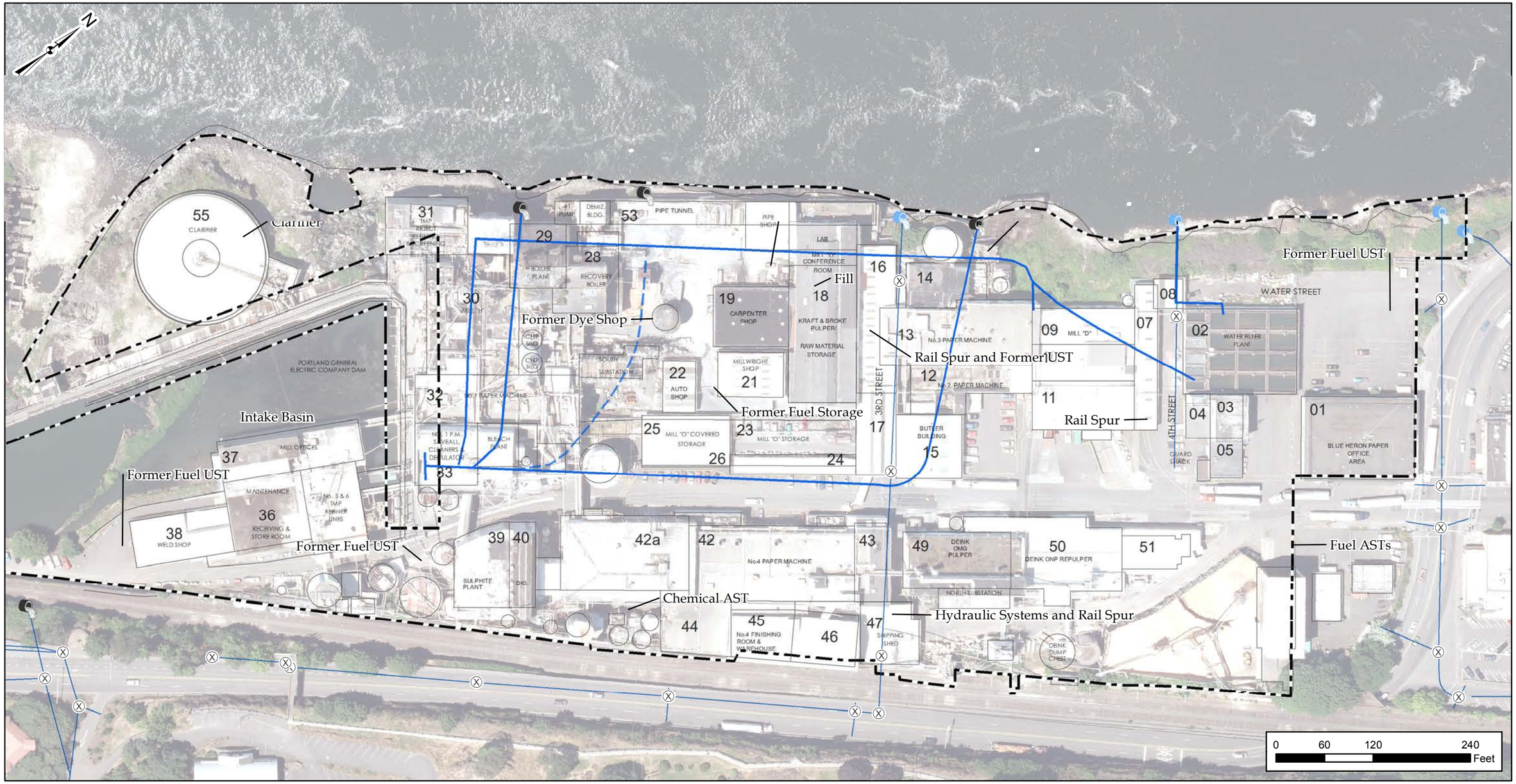
Blue Heron Site Boundary

Figure 1
Site Location
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 02 Site Layout.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



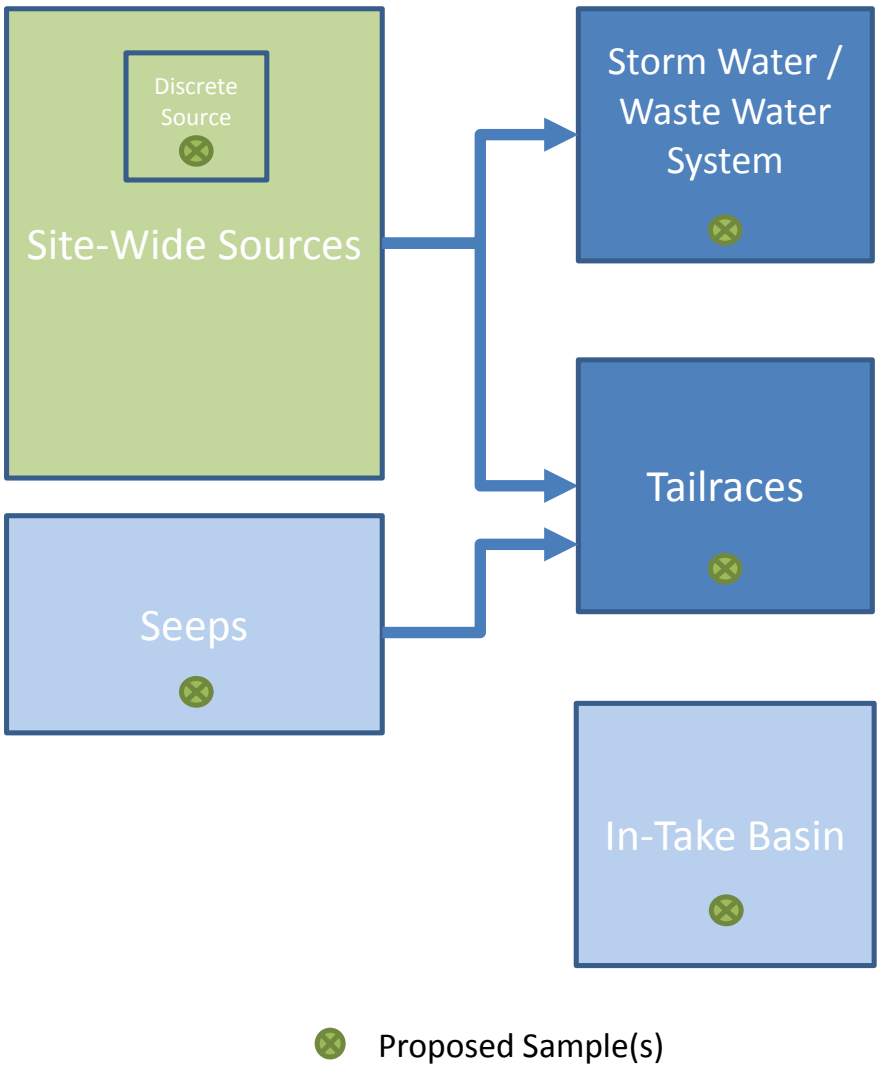
Legend

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Oregon City Outfall (active)
- Outfall (abandoned)
- Tailrace (Approximate)

Figure 2
Site Layout
Phase II ESA
Blue Heron Site
Oregon City, Oregon

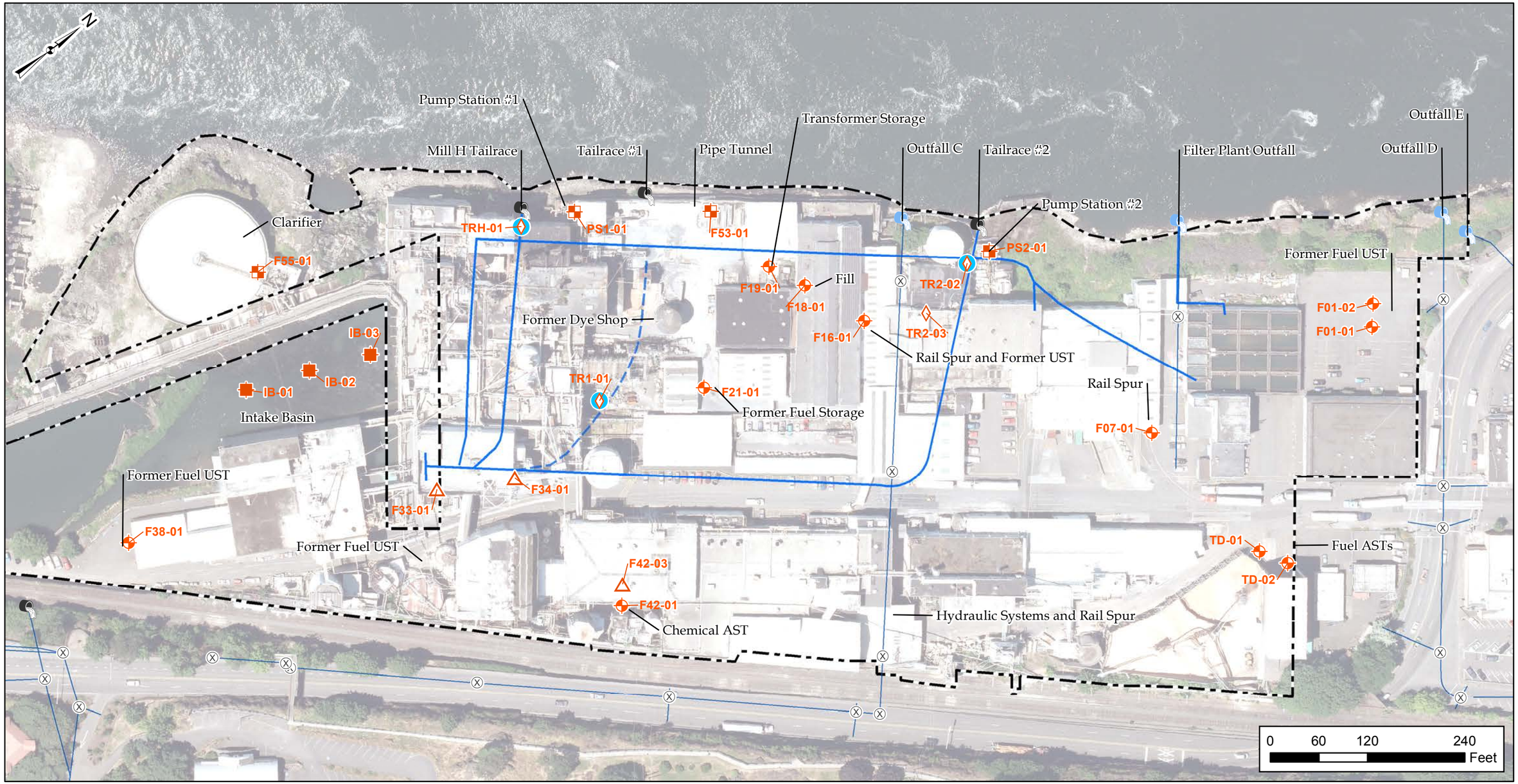
Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204

Figure 3
Conceptual Sampling Strategy
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building



File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 04 Sample Location.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Phase II ESA Sample Locations

- Soil, Fill, and Groundwater (if present)
- Seep
- Stormwater and Solids
- Intake Basin
- Tailrace Solid Locaiton for Compositing
- Tailrace Solid and Water Location
- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Oregon City Outfall (active)
- Outfall (abandoned)
- Tailrace (Approximate)

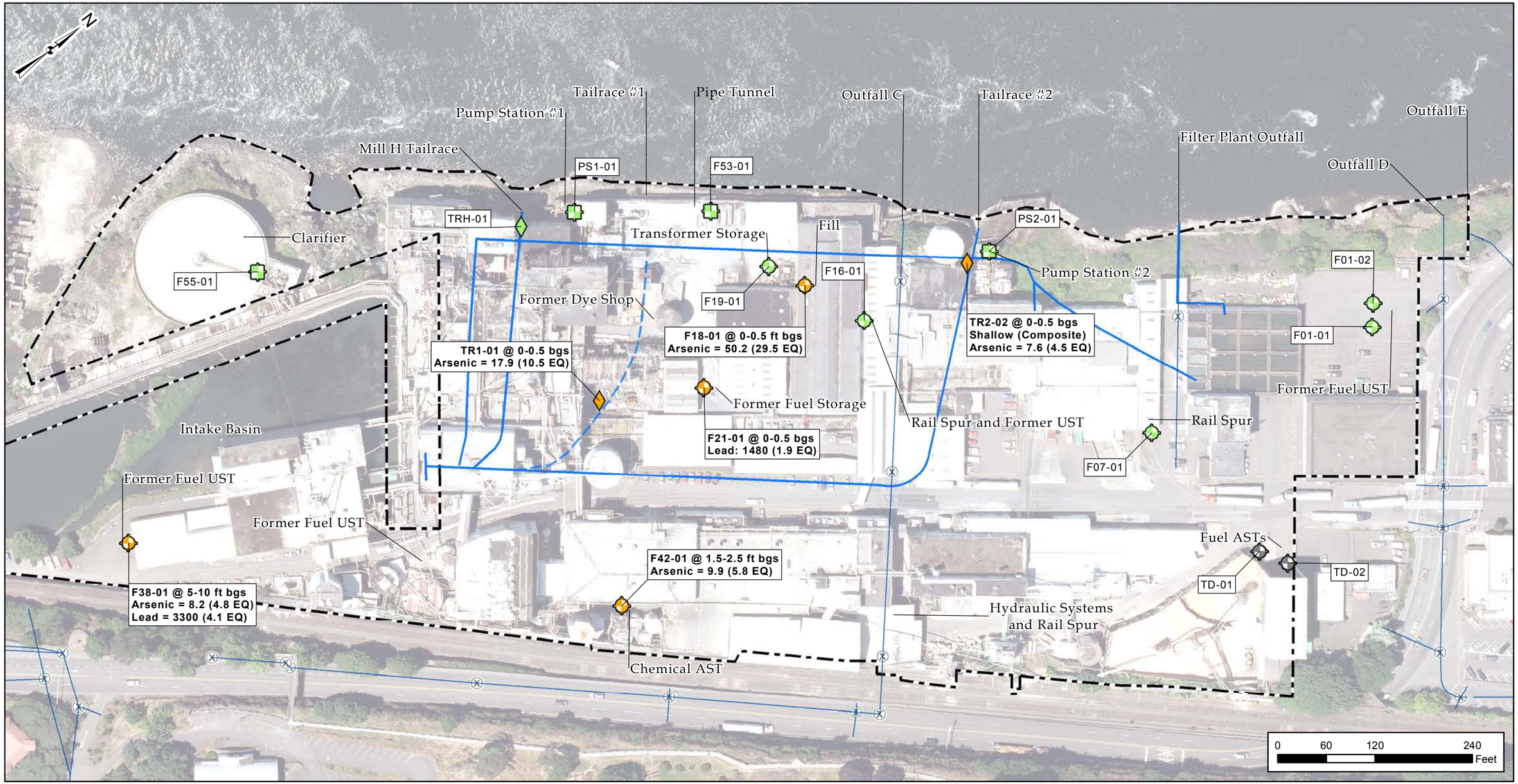
Figure 4

Phase II Sample Locations
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
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Portland, Oregon 97204
ERM.

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 05 Soil Metals.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Metals Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Soil Sample
- Storm Water Solids Sample
- Tailrace Solids Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in mg/kg.
- Result shown for only samples with exceedance of SLV.
- Screening criteria are derived from the Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational, Construction Worker, and Excavation Worker receptors.
- Screening criteria are not considered exceeded when results are equal to or below established regional background levels.
- EQ = Exceedance Quotient
- SLV = Screening Level Value
- bgs = Below ground surface

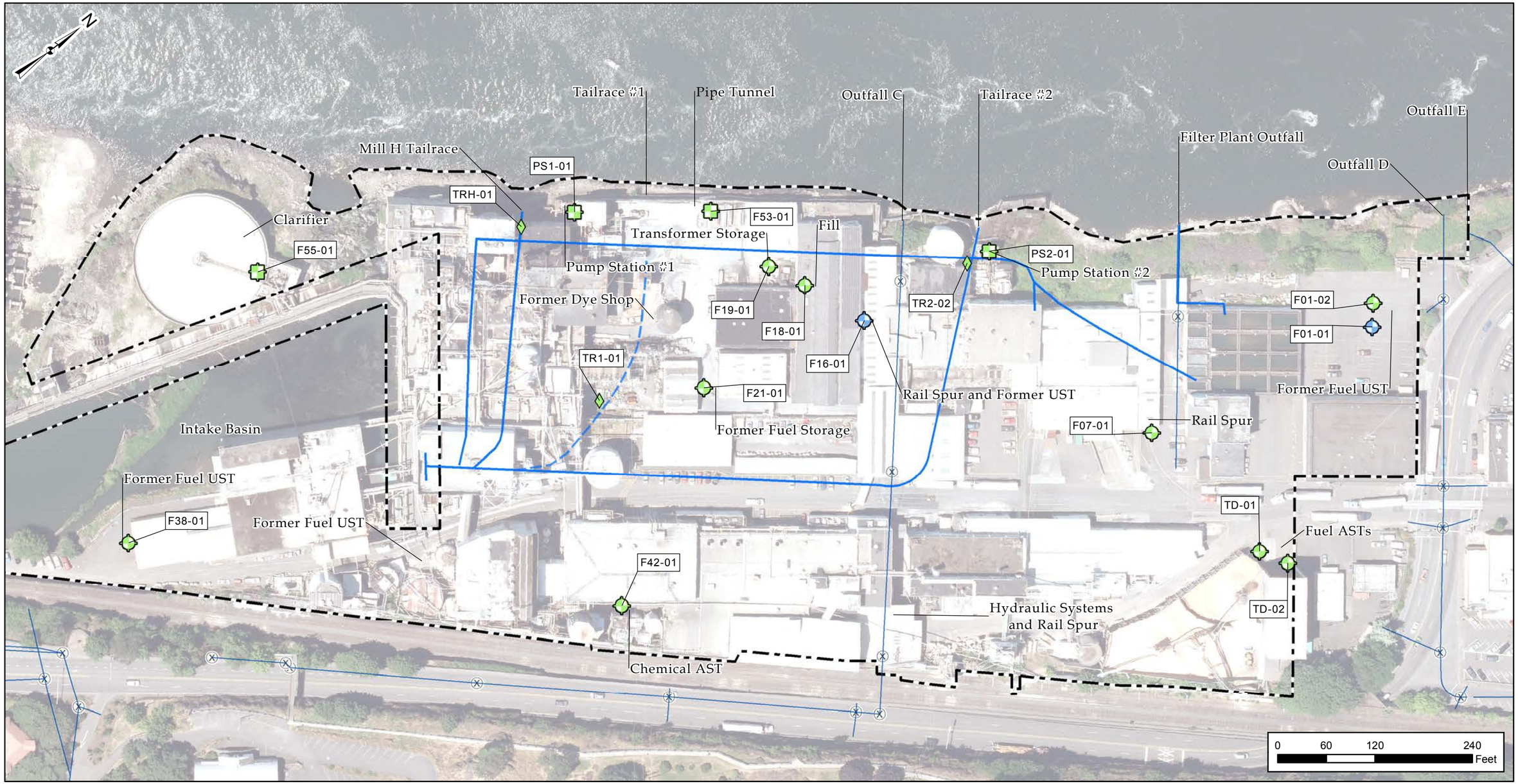
Figure 5

Metals Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids
Phase II ESA
Blue Heron Site
Oregon City, Oregon

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File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 06 Soil TPH.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

TPH Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Soil Sample
- Storm Water Solids Sample
- Tailrace Solids Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in mg/kg.
- Result shown for only samples with exceedance of SLV.
- Screening criteria are derived from the Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational, Construction Worker, and Excavation Worker receptors.
- TPH = Total Petroleum Hydrocarbons
- SLV = Screening Level Value

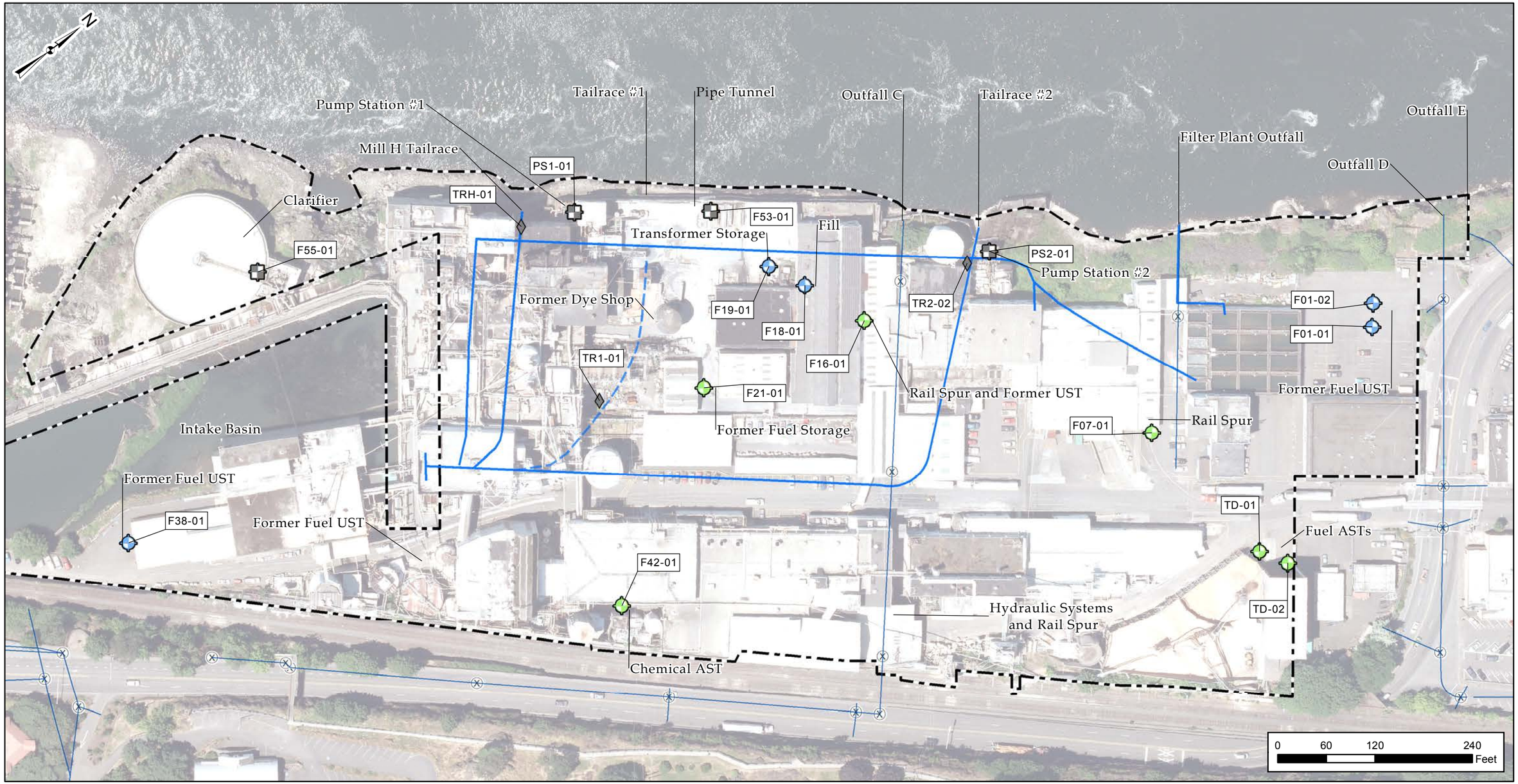
Figure 6

TPH Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids
Phase II ESA
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File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 07 Soil VOCs.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

VOC Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Soil Sample
- Storm Water Solids Sample
- Tailrace Solids Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

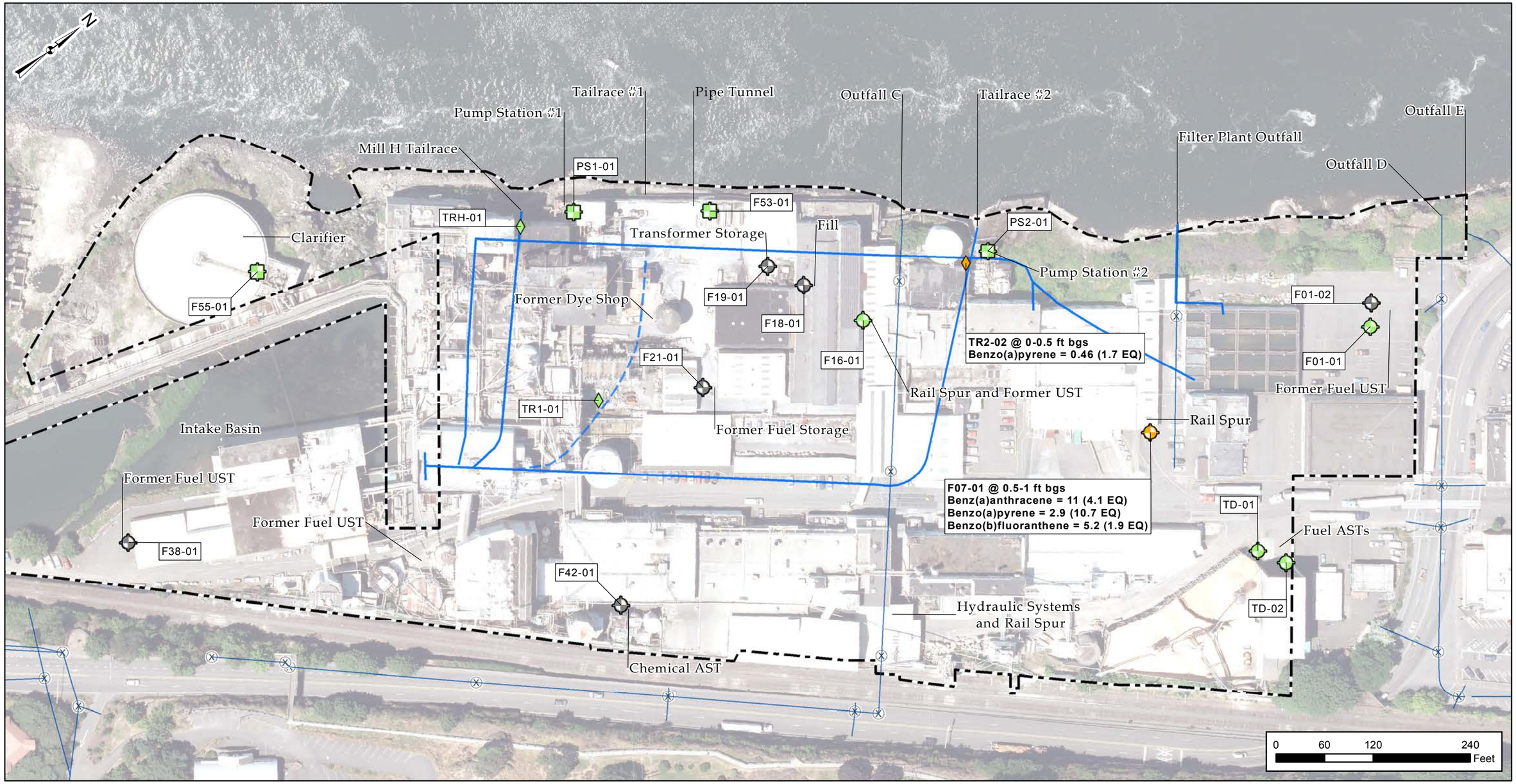
Notes:

- All results given in mg/kg.
- Result shown for only samples with exceedance of SLV.
- Screening criteria are derived from the Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational, Construction Worker, and Excavation Worker receptors.
- VOC = Volatile Organic Compound
- SLV = Screening Level Value

Figure 7

VOC Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids
Phase II ESA
Blue Heron Site
Oregon City, Oregon

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Portland, Oregon 97204



Legend

SVOC Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Soil Sample
- Storm Water Solids Sample
- Tailrace Solids Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in mg/kg.
- Result shown for only samples with exceedance of SLV.
- Screening criteria are derived from the Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational, Construction Worker, and Excavation Worker receptors.
- SVOC = Semivolatile Organic Compound
- EQ = Exceedance Quotient
- bgs = Below ground surface
- SLV = Screening Level Value

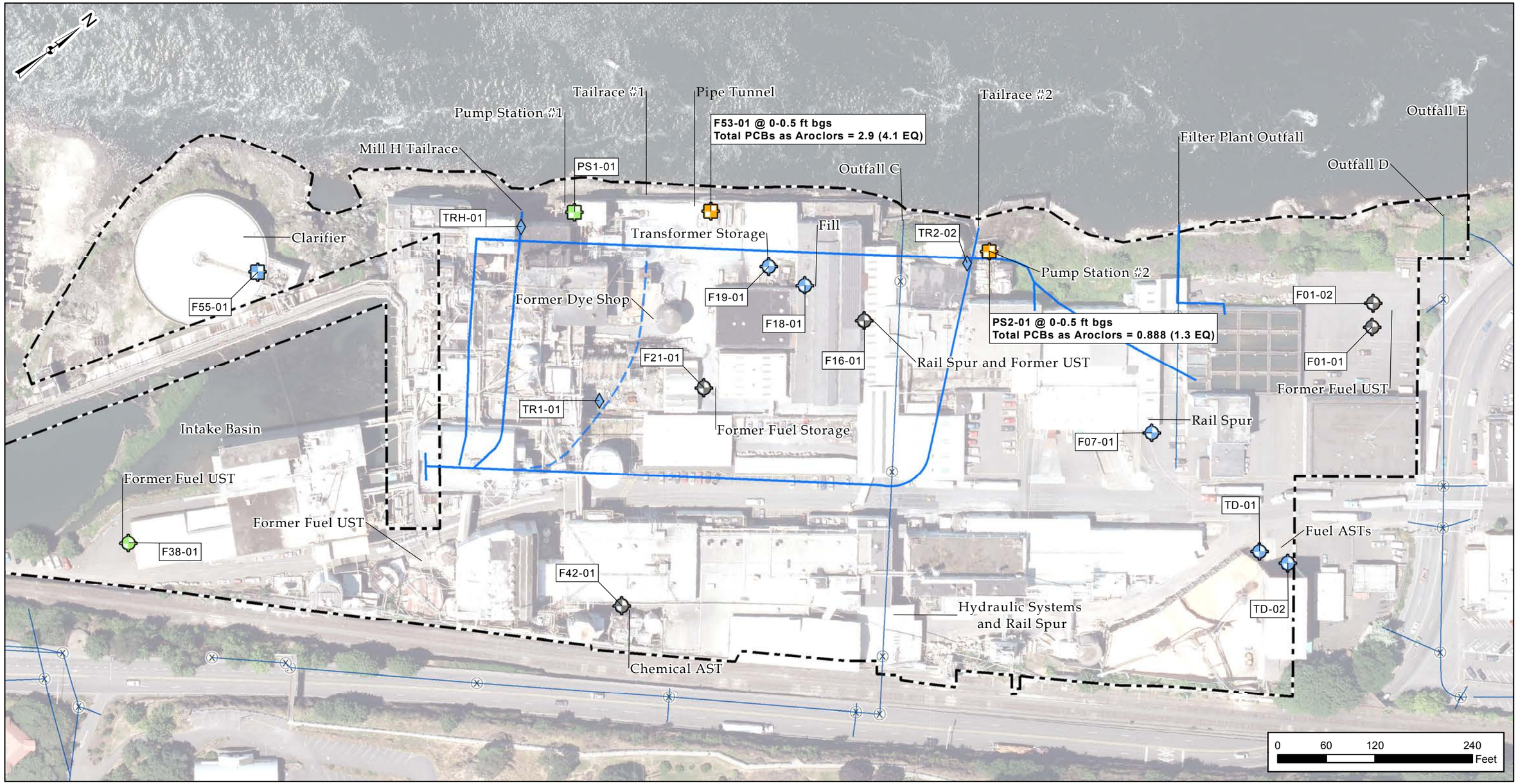
Figure 8

SVOC Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids
Phase II ESA
Blue Heron Site
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File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 09 Soil PCBs.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

PCB Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Soil Sample
- Storm Water Solids Sample
- Tailrace Solids Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in mg/kg.
- Result shown for only samples with exceedance of SLV.
- Screening criteria are derived from the Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational, Construction Worker, and Excavation Worker receptors.
- PCB = Polychlorinated Biphenyl
- EQ = Exceedance Quotient
- bgs = Below ground surface
- SLV = Screening Level Value

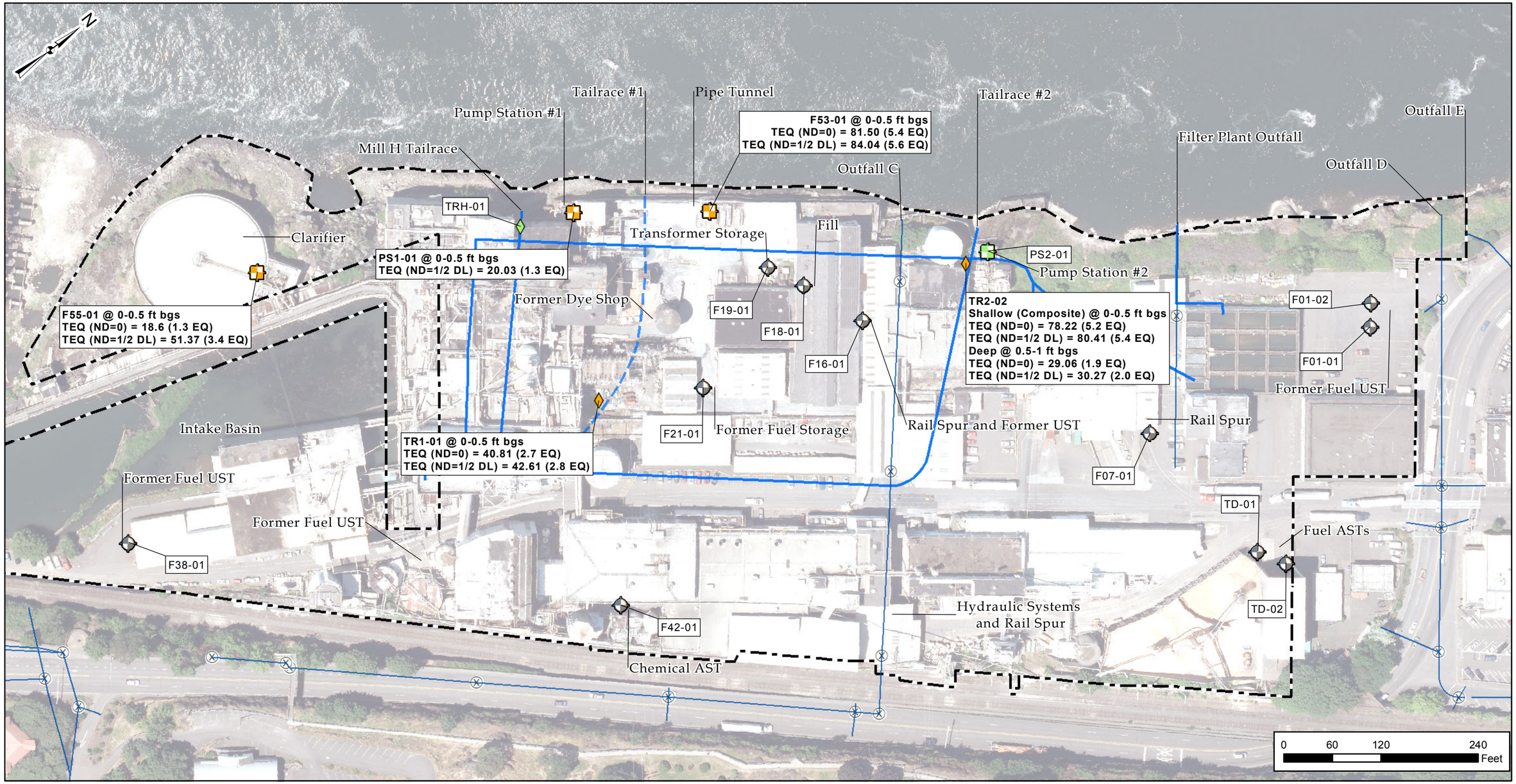
Figure 9

PCB Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids
Phase II ESA
Blue Heron Site
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File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 10 Soil Dioxins-Furans.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Dioxins and Furans Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Soil Sample
- Storm Water Solids Sample
- Tailrace Solids Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in ng/kg.
- Result shown for only samples with exceedance of SLV.
- Screening criteria are derived from the Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational, Construction Worker, and Excavation Worker receptors.
- TEQ (ND=0) = Calculated toxic equivalency quotient, not detected isomer concentrations equal to 0.
- TEQ (ND=1/2 DL) = Calculated toxic equivalency quotient, not detected isomer concentrations equal to half the detection limit.
- EQ = Exceedance Quotient
- bgs = Below ground surface
- SLV = Screening Level Value

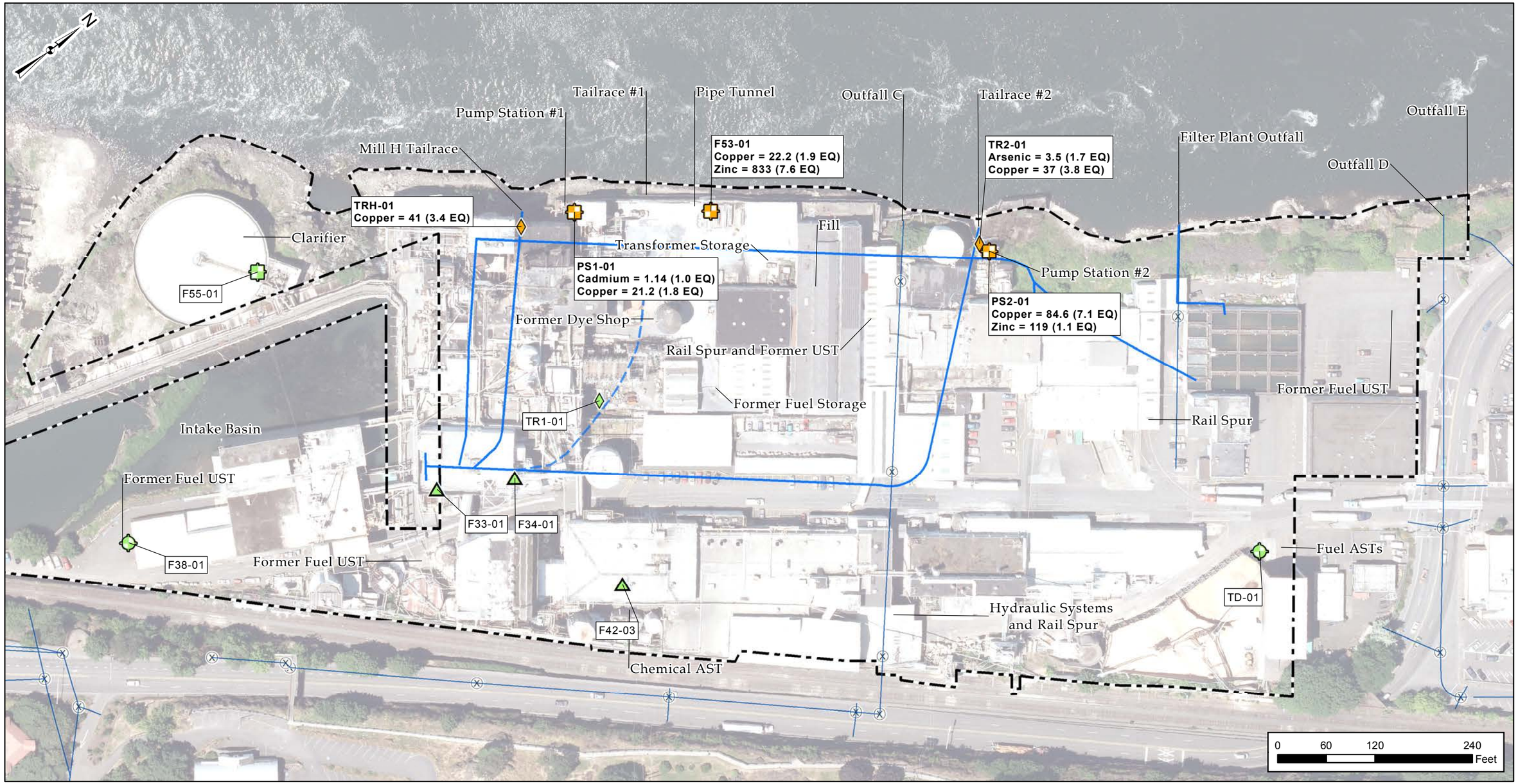
Figure 10

Dioxin/Furan Concentrations in Upland Soil, Storm Water Solids, and Tailrace Solids
Phase II ESA
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File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 11 Water Metals.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Metals Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Groundwater Sample
- Seep Sample
- Storm Water Sample
- Tailrace Water Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in µg/L.
- Result shown for only samples with exceedance of SLV.
- Storm water/Tailrace water: screening criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.
  Groundwater/Seeps: screening criteria are derived from Oregon DEQ
- Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012.
- EQ = Exceedance Quotient
- SLV = Screening Level Value

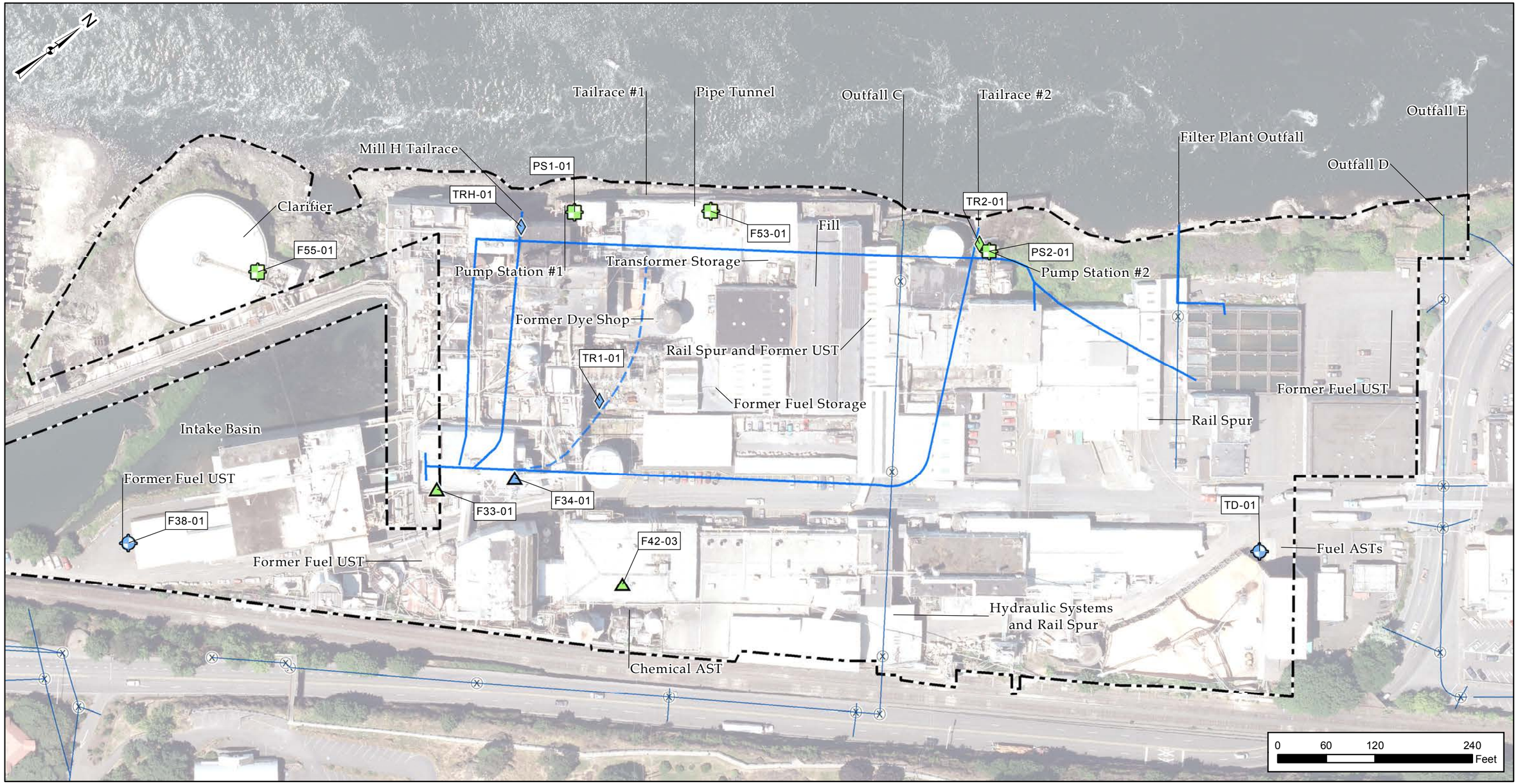
Figure 11

Metals Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps
Phase II ESA
Blue Heron Site
Oregon City, Oregon

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Portland, Oregon 97204
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File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 12 Water TPH.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Total Petroleum Hydrocarbon Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Groundwater Sample
- Seep Sample
- Storm Water Sample
- Tailrace Water Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in µg/L.
- Result shown for only samples with exceedance of SLV.
- Storm water/Tailrace water: screening criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.
  Groundwater/Seeps: screening criteria are derived from Oregon DEQ
- Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012.
- TPH = Total Petroleum Hydrocarbons
- EQ = Exceedance Quotient
- SLV = Screening Level Value

Figure 12

TPH Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps

Phase II ESA

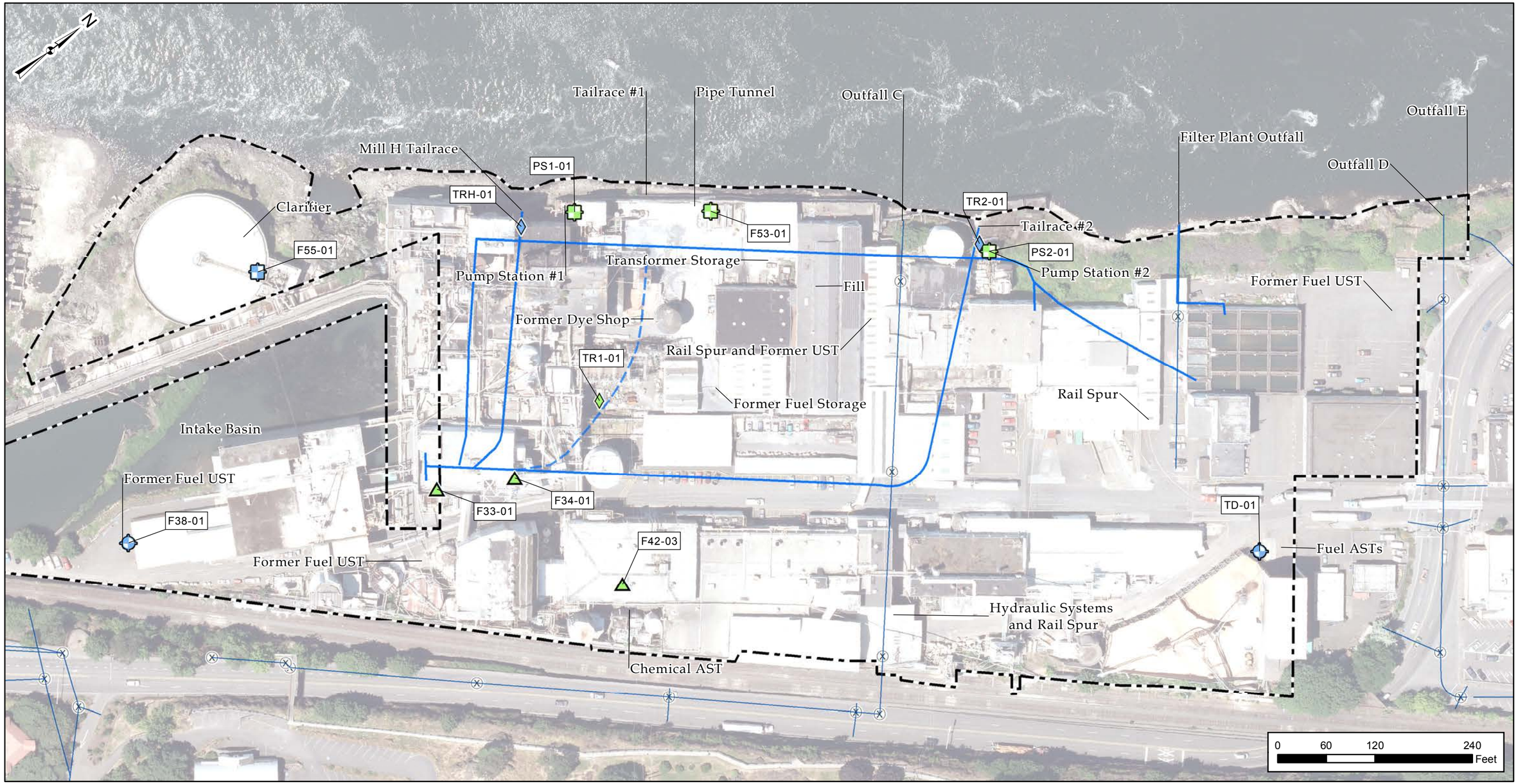
Blue Heron Site

Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 13 Water VOCs.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Volatile Organic Compound Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Groundwater Sample
- Seep Sample
- Storm Water Sample
- Tailrace Water Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

- All results given in µg/L.
- Result shown for only samples with exceedance of SLV.
- Storm water/Tailrace water: screening criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.
  Groundwater/Seeps: screening criteria are derived from Oregon DEQ
- Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012.
- VOC = Volatile Organic Compound
- EQ = Exceedance Quotient
- SLV = Screening Level Value

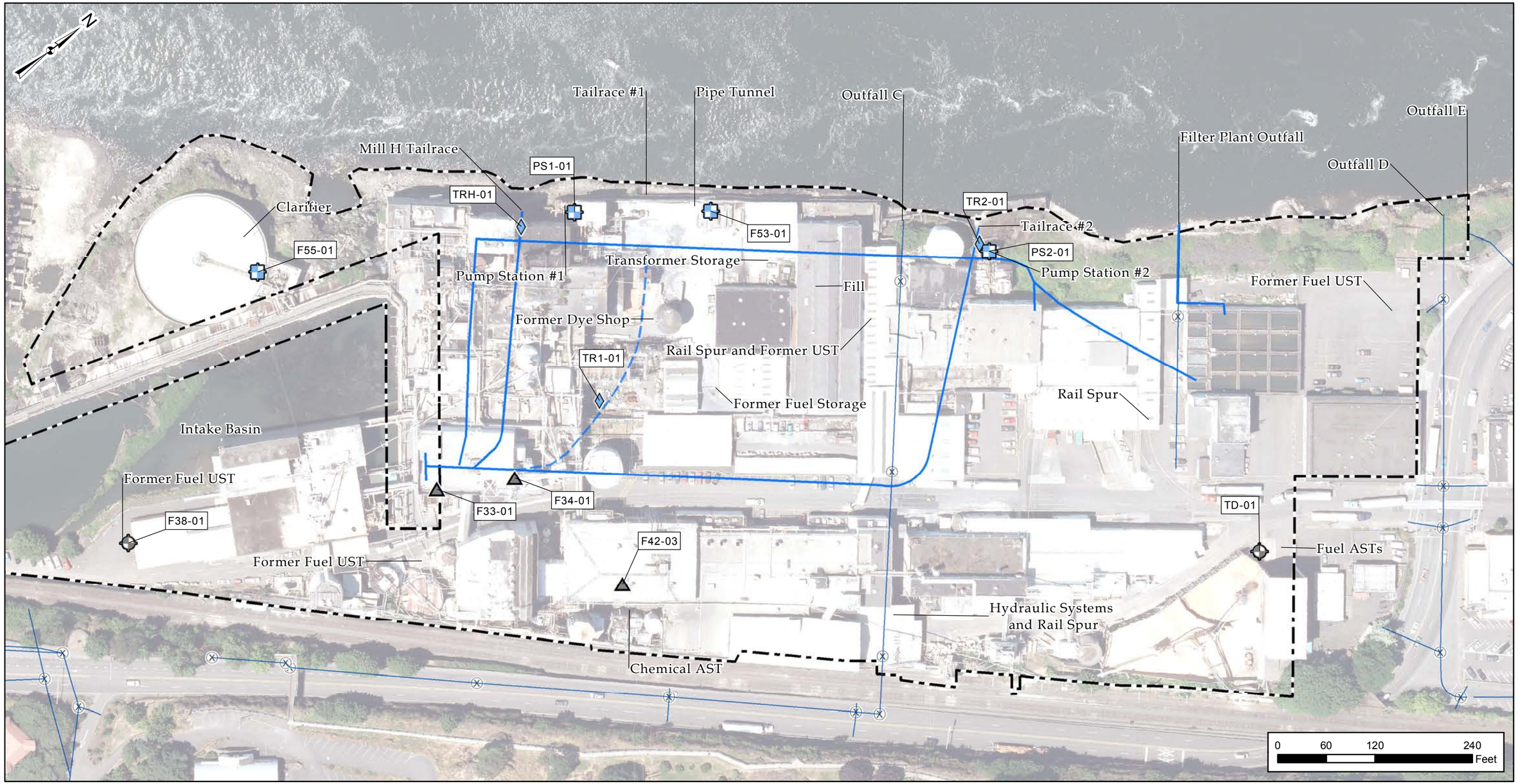
Figure 13

VOC Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps
Phase II ESA
Blue Heron Site
Oregon City, Oregon

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Portland, Oregon 97204
ERM.

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 14 Water SVOCs.mxd

Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Legend

Semivolatile Organic Compound Results

- Detected above applicable screening criteria
- Detected below applicable screening criteria
- Not Detected
- Not Analyzed

Sample Type

Colored by Result

- Groundwater Sample
- Seep Sample
- Storm Water Sample
- Tailrace Water Sample

- Blue Heron Site Boundary
- Oregon City Storm Sewer Line
- Manhole
- Tailrace (Approximate)

Notes:

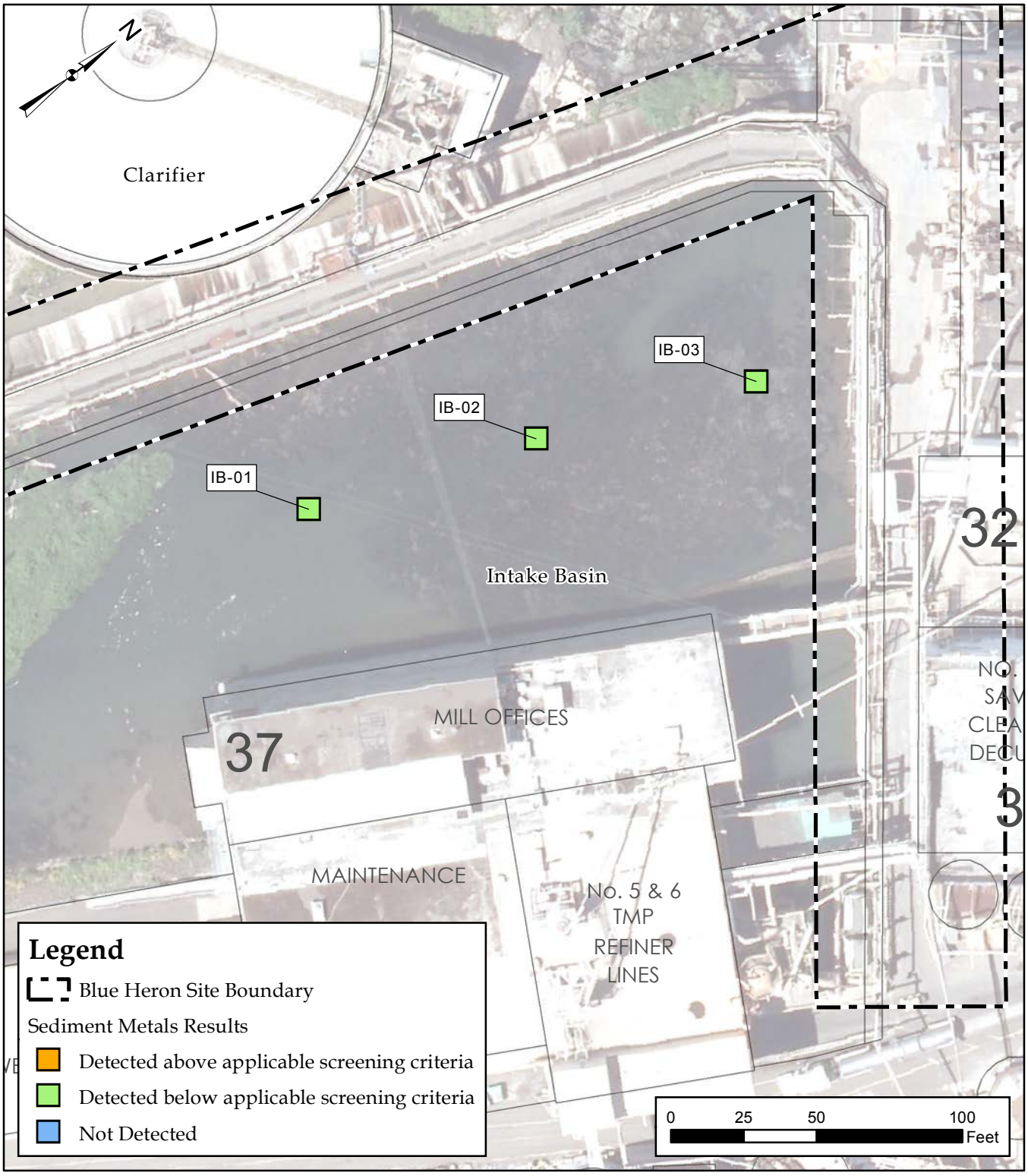
- All results given in µg/L.
- Result shown for only samples with exceedance of SLV.
- Storm water/Tailrace water: screening criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.
  Groundwater/Seeps: screening criteria are derived from Oregon DEQ
- Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012.
- SVOC = Semivolatile organic compound
- EQ = Exceedance Quotient
- SLV = Screening Level Value

Figure 14

SVOC Concentrations in Storm Water, Tailrace Water, Groundwater, and Seeps
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204

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Notes:

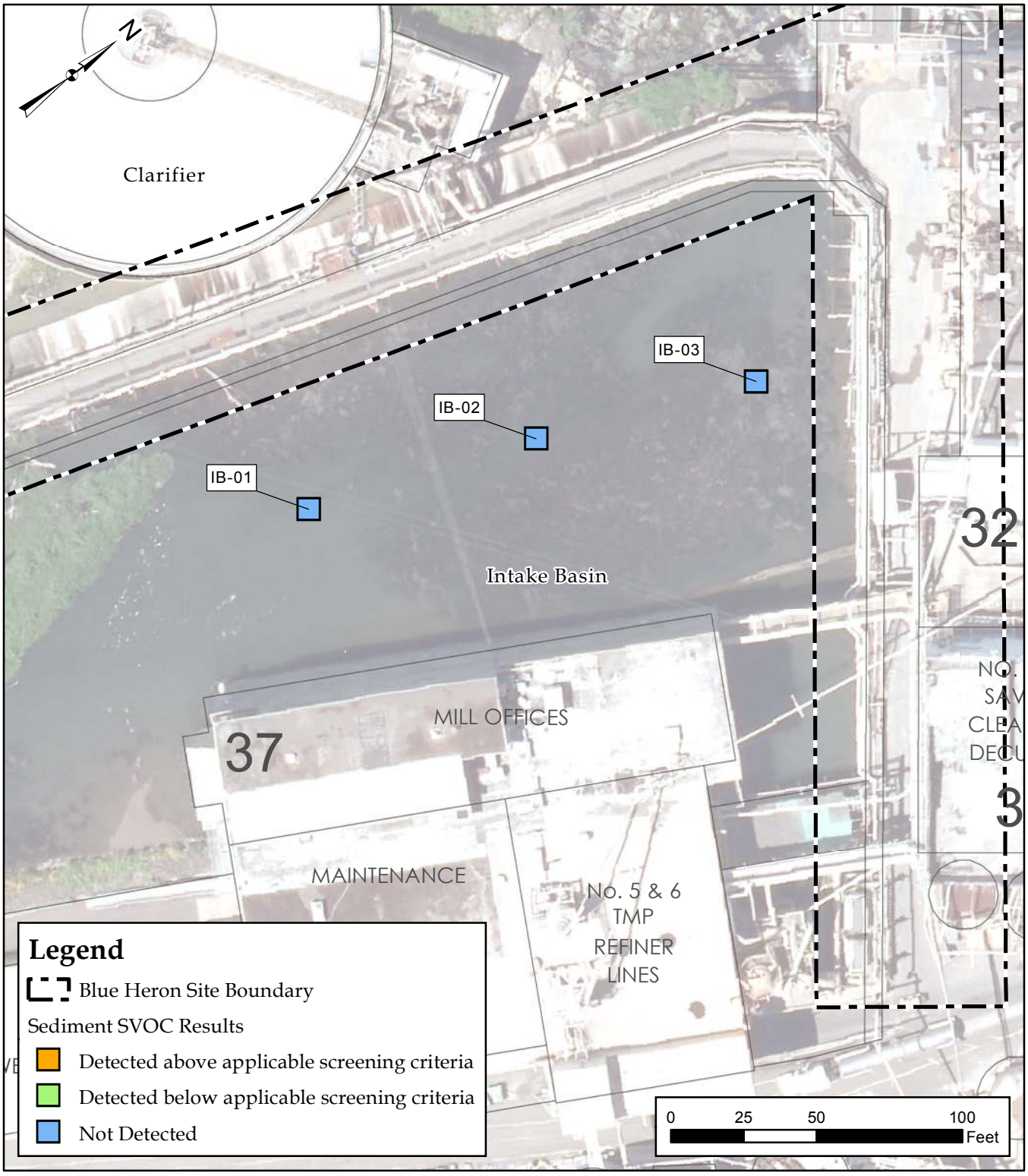
- Screening criteria are derived from Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007
- Screening criteria are not considered exceeded when results are equal to or below established regional background levels.

Figure 15

Metals Concentrations in Intake Basin Sediments
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
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Portland, Oregon 97204

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 16 IntakeBasin SVOCs.mxd Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Notes:

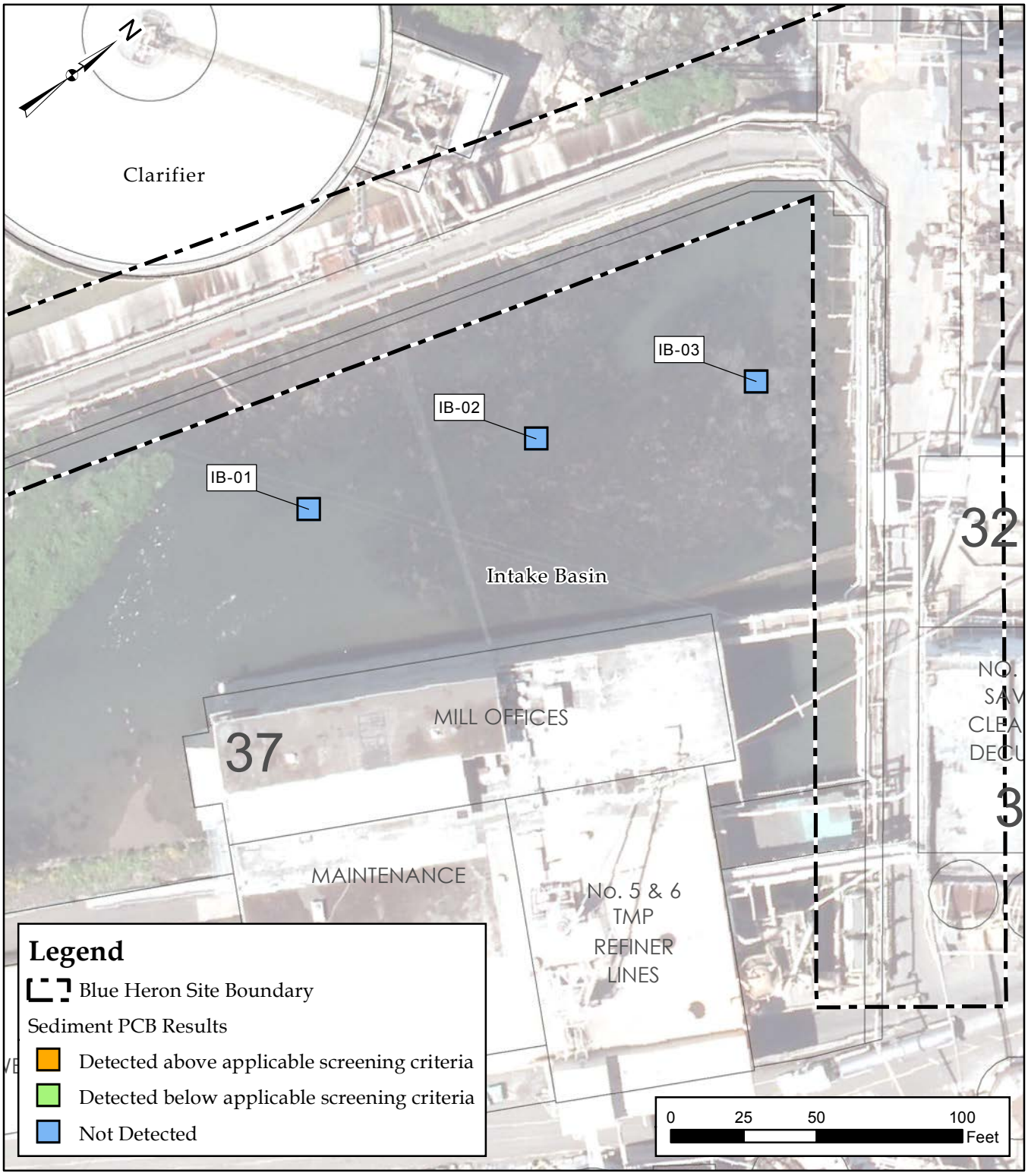
- Screening criteria are derived from Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007
- SVOC = Semivolatile organic compounds

Figure 16

SVOC Concentrations in Intake Basin Sediments
Phase II ESA
Blue Heron Site
Oregon City, Oregon

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1001 SW 5th St, Suite 1010
Portland, Oregon 97204

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 17 IntakeBasin PCBs.mxd Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Notes:

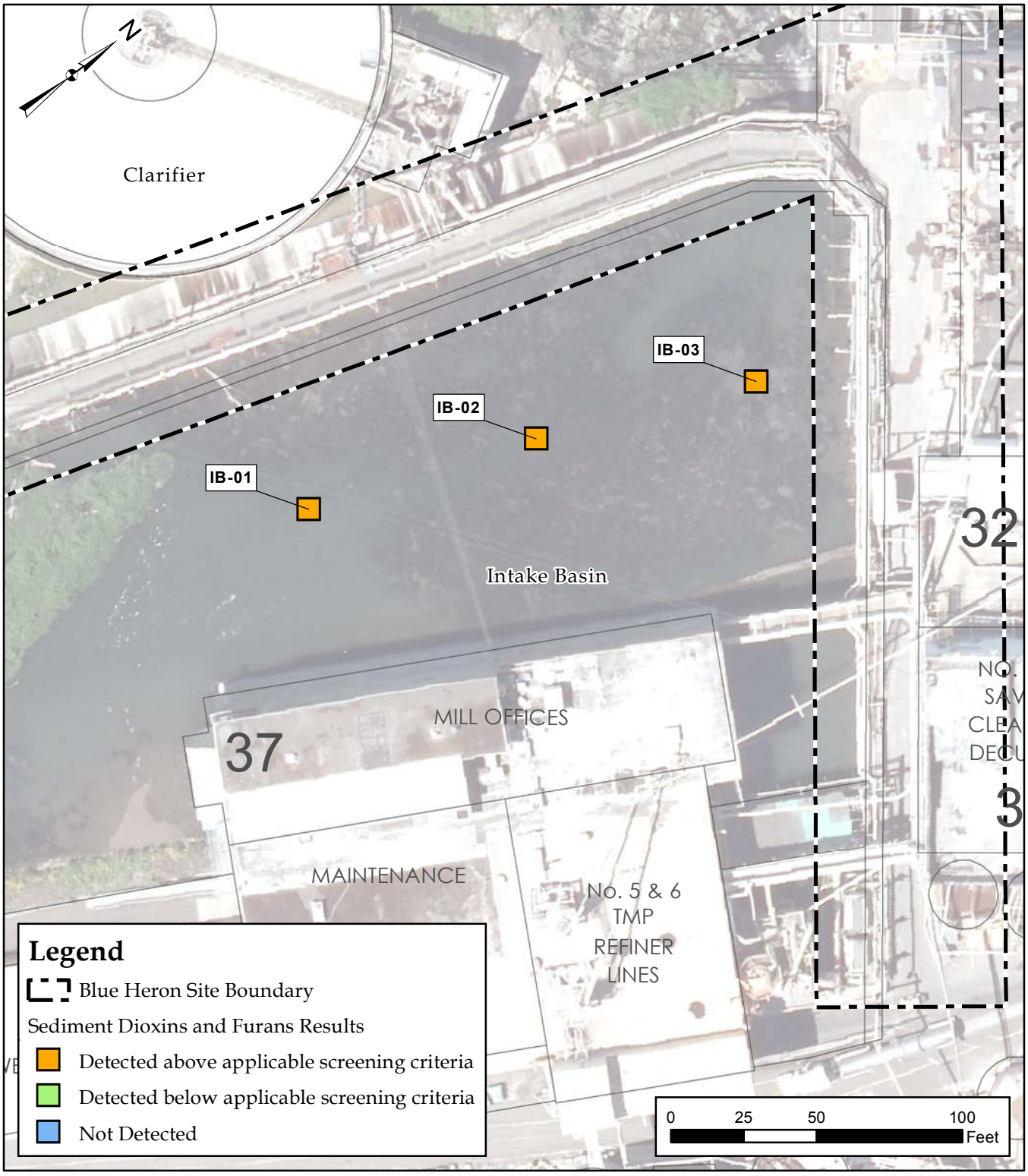
- Screening criteria are derived from Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007
- PCB = Polychlorinated biphenyl

Figure 17

PCB Concentrations in Intake Basin Sediments
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204
ERM.

File: F:\Projects\0170026_Metro Blue Heron\GIS\Report Figures\Fig 18 IntakeBasin Dioxin Furans.mxd Drawn By: Alex Kirk Date: 11/6/2012 Project: 0170026.03



Notes:

- Screening criteria are derived from Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007
- Please see Table 13 for screening criteria evaluation.

Figure 18

Dioxin/Furan Concentrations in Intake Basin Sediments
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204

Tables

Table 1

Areas of Potential Environmental Concern

Phase II Environmental Site Assessment

Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
1	Blue Heron Paper Office Area	1967 105 x 140	North Parking Lot	Former vehicle repair garage and service station 1943-1956 and Tire Sales in 1959; fuel Tanks and hydraulic systems	Soil, Groundwater	Petroleum hydrocarbons, Solvents, PCBs	3 - Soil/Fill 4 - Groundwater (if present)
			Elevator, mechanical room.	Hydraulic system	Soil, Groundwater	Petroleum hydrocarbons, PCBs	3 - Soil/Fill 4 - Groundwater (if present)
2	Water Filter Plant - Settling Basin and Pump House	1953 37 x 105 PH	Second Floor Transformer (2), filtration system ASTs, Basement Pump room	Electrical systems, Chemical storage, petroleum, Metals, Sodium Bromide, Sodium Hypochlorite, Alum	Storm water, and Sediment	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
2a	Fire Hall - Annex	1981 37 x 20	None	N/A	N/A	N/A	N/A
3	Filter Control Building	1965 41 x 65	None	N/A	N/A	N/A	N/A
4	Fire Hall	1981 37 x 45	None	N/A	N/A	N/A	N/A
5	Office and First Aid Building	1965 41 x 47	None	N/A	N/A	N/A	N/A
6	Guard Shack		None	N/A	N/A	N/A	N/A
7	4th Street Building (covered platform south)		Loading platform	Hydraulic systems	Storm water and Sediment	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
8	4th Street Building (covered platform west)		None	N/A	N/A	N/A	N/A
9	Warehouse No. 3 (Rail Car Loading)	1913 40 x 127	Basement	Elevator, 10k gallon Mineral Oil AST NW Exterior, Hydraulic systems	Soil, Groundwater	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
10	No. 3 Finishing Building	1913 54 x 125 (basement)	Basement	Hydraulic systems	Soil, Groundwater	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
11	Mill "B" Warehouse (No. 2 Finishing Building)	1913 54 x 125	None	N/A	N/A	N/A	N/A
12	Number "2" Paper Machine	1913 43 x 185	Basement	Hydraulic systems, Dye, Radiation Source	Soil, Fill, Groundwater, Storm water, and Sediment	Petroleum hydrocarbons, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
13	Number "3" Paper Machine	1913 58 x 185	Basement	Hydraulic systems, Dye, Transformers, Radiation Source	Soil, Fill, Groundwater, Storm water, and Sediment	Petroleum hydrocarbons, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present) 5 - Seeps

Table 1

Areas of Potential Environmental Concern

Phase II Environmental Site Assessment

Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
14	Sub Station - North	48 x 53	Second Floor	Transformer	Waste water	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Sub Station - Southwest	30 x 43	Second Floor	Transformers	Waste water	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Sub Station - Southeast	20 x 57	Second Floor	Transformers	Waste water	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Chemical and Tote Storage		First Floor	Felt Wash, Slimicide, Caustic, Kerosene, Hydraulic systems	Soil, Fill, Groundwater, Storm water, and Sediment	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
15	Butler Building (equipment. storage)	81 x 83	None	N/A	N/A	N/A	N/A
16	West	46 x 66	Driveway and Rail Spur	Former UST (not previous sampled), Ties and spills	Soil, Fill, Groundwater	Arsenic, Copper, Chromium, SVOCs.	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	West-center	20 x 44					
	East-center	35 x 58					
	East	40 x 55					
17	3rd Street Building (Covered Shipping Area)	1960 50 x 110	Rail Spur	Ties and spills	Soil, Fill, Groundwater	Arsenic, Copper, Chromium, SVOCs.	1 -Storm Water / Waste Water System 2 - Tailraces
18	Mill "O" Lab	1918, 78 x 160, Canopy to west	Basement	Fill and water under building	Soil, Fill, Groundwater	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Mill "O" Conference Room						
	Mill "O" Craft and Broke Pulper						
	Mill "O" Raw Material Storage	1918 83 x 83					
19	Carpenter Shop	1901 70 x 99	Former Wool Carbonizing Area, West Transformer Storage Area	Acid storage, Dyes, Transformers (exterior)	Soil, Fill, Groundwater	Metals (chromium, copper), Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
20	Pipe Shop	1988 45 x 60	None	N/A	N/A	N/A	N/A
21	Millwright Shop	1962 55 x 80	Main floor, ground surface	Former potential UST (not previous sampled) , and former petroleum ASTs for boiler system.	Soil, Fill, Groundwater	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
22	Auto Shop	1960 40 x 63	Main floor, ground surface	Former boiler system. Former Dye House	Soil, Fill, Groundwater	Metals (chromium, copper)	1 -Storm Water / Waste Water System 2 - Tailraces

Table 1
Areas of Potential Environmental Concern
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
23	Mill "B" Storage - West	60 x 240 (Former Oregon City Woolen Mill Buildings)	None	N/A	N/A	N/A	N/A
24	Mill "B" Storage - East			N/A	N/A	N/A	N/A
25	Mill "O" Storage - Interior			N/A	N/A	N/A	N/A
26	Mill "O" Storage - Exterior			N/A	N/A	N/A	N/A
27	South Substation (Electric Center)	1956-1969 30 x 60	Entire substation	Transformers (14)	Soil, Fill, Groundwater	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
28	Recovery Boiler	1956-1969 83 x 120	Second Floor	Boiler	Waste water	Metals	1 -Storm Water / Waste Water System 2 - Tailraces
29	Mill "G" Boiler Plant		Second Floor	Boilers (6), High density Stock and brightening tower to south, Boiler Chemicals	Waste water	Metals	1 -Storm Water / Waste Water System 2 - Tailraces
30	Mill "H"	1956-1969 100 x 132	Second Floor	Transformer (1) NW corner, Radiation Source	Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Mill "H" TMP Area		Second Floor	Hydraulic systems, Hazardous waste storage area, Sodium Hydrosulfite, Sulfuric Acid,	Waste water	Petroleum, PCBs, Solvents, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
	Mill "H" DeInk Area		SE corner roof	Transformer (1)	Storm water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
31	TMP Reject Refining and Screening	1970 70 x 75	W center wall, Tailrace under building	Transformer (1) W center wall, Fill and water under building	Soil, Fill, Groundwater, Sediment, Surface Water	Petroleum, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
	Refiner Line No. 4	1977 25 x 55					
	Addition	1979 25 x 70					
32	No. 1 Paper Machine	1917 43 x 203	Fill and water under building	Historical uses, Fill and water under building, Radiation Source	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces 5 - Seeps
33	No. 1 Save-All Cleaners & Desiccator (Screen Room & DeInk)	1917 78 x 78	First Floor, Basement	Transformer (2) SE Corner, Elevator, two pulp ASTs to east. Fill and water under building, laurylphosphonic acid, Surfactant, Oil, Filler, Felt Wash, Slimicide, Caustic, Kerosene, Urea.	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, , Metals	1 -Storm Water / Waste Water System 2 - Tailraces
34	Bleach Plant (De-Ink Plant)	1960 54 x 57	First Floor, Basement	Transformer (1) NW Corner, 64k Fuel Oil AST SE corner exterior, Bleach Tower and Caustic Tower to N. ext., Fill and water under building	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces

Table 1
Areas of Potential Environmental Concern
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
35	Rewind Building	1962 30 x 70 c, 17 x 42 n, 24 x 24 s	First Floor, Basement	Hi Density Stock AST to N exterior. Caustic and bleach ASTs to south. Fill and water under building	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
36	Mill "E" Maintenance Shops		First Floor, Water beneath building	Transformer (1) NE ext. Corner and SW corner. Oil Room NW Corner. Former debarker and chipper for pulp manufacturing. Water from intake basin under building. Hydraulic systems. Former UST (not previous sampled) on south side of Weld Shop. Radiation Source	Soil, Fill, Groundwater, Sediment, Surface Water	Petroleum, PCBs, Solvents, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Mill "E" Receiving and Store Room						
	Mill "E" No. 5 & 6 TMP Refiner Lines	130 x 57					
37	Mill "E" Mill Offices						
38	Weld Shop	54 x 57					
39	Sulfite Plant (Mill C)	65 x 115	Basement	Process waste, Sodium Bisulfite.	Soil, Fill, Groundwater, Waste water	Sulphur, pH,	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present). 5 - Seeps
40	DIG (Digester Building)	32 x 102	Ground floor Exterior, Basement	Petroleum AST east exterior	Soil, Fill, Groundwater, Waste water	Sulphur, pH,	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present) 5 - Seeps
41	No. 4 Save-All		Basement	Process waste (Adjacent to former Boiler Building)	Soil, Fill, Groundwater, Waste water	Metals	1 -Storm Water / Waste Water System 2 - Tailraces
42	No. 4 Paper Machine	1927 72 x 302	Basement	Transformer (1) E wall, Hydraulic systems, Elevator, Radiation Source	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
42a	No. 4 Paper Machine	1927 67 x 80	Basement	Transformer (1) S wall., Elevator, Hydraulic systems, chemical storage east exterior, laurylphosphonic acid, Surfactant, Oil, Filler, Felt Wash, Slimicide, Caustic, Kerosene, Silicate, Sulfuric Acid, Corrosion inhibitor, Dye, Radiation Source	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
43	No. 4 Paper Addition	1977 25 x 96	Basement	Hydraulic systems	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
44	No. 4 Finishing Room & Warehouse - South	1924 36 x 67	First Floor	Hydraulic systems, former chemical storage	Soil, Groundwater, Waste water	Petroleum, PCBs, Solvents, Metals	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
45	No. 4 Finishing Room & Warehouse - Central	1924 67 x 202	First Floor	Elevator	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces

Table 1
Areas of Potential Environmental Concern
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
46	No. 4 Finishing Room & Warehouse - North		First Floor	Hydraulic systems	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
47	Shipping Shed	59 x 80	First Floor	Hydraulic systems	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
48	North Substation		Ground surface	Transformers (11)	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
49	Deink ONG Pulper (Mill B)	1928 66 x 143	Current chemical storage	Chemicals collected during plant deconstruction. Laurylphosphonic Acid, Surfactant, Hydrogen Peroxide, Caustic, Silicate, Radiation Source.	Waste water	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
50	Deink ONG Repulper	80 x 100	Current chemical storage	Chemicals collected during plant deconstruction. Used Oil.	Waste water	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
51	Chip and Sawdust Silo	35 x 67	None	N/A	N/A	N/A	N/A
52	Dam		None	N/A	N/A	N/A	N/A
53	Pipe Tunnel		Entire Tunnel	Facility drainage	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
	DeMiz Building		Main Floor	Hydraulic systems, Chemical storage (Defoamer)	Waste water		1 -Storm Water / Waste Water System 2 - Tailraces
	#1 Pump Station		Sediment trap	Storm water, and sediment	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
54	Clarifier Pump House		Entire Building	Hydraulic systems, Electrical systems	Storm water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
55	Clarifier		Bottom of Clarifier	Facility drainage	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
56	Sulfuric Acid AST		Exterior	Paint, Sulfuric Acid	Storm water	Lead	1 -Storm Water / Waste Water System 2 - Tailraces
57	Aboveground Storage Tanks		Exterior	Paint, Hydrogen Peroxide, Caustic, Sulfuric Acid, Silicate	Storm water	Lead	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)

Table 1
Areas of Potential Environmental Concern
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
	Site-wide		Buildings and ground surface	Facility drainage	Surface, Fill, Groundwater, Storm water	Asbestos, Metals (Lead, Zinc)	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Intake Basin		Sediment	Upstream Sources	Sediment	Petroleum, PCBs, Solvents, Metals, Asbestos	6 - In-Water Sediment
	Tailrace 1		North of No. 1 Paper Machine	Facility leaks and groundwater drainage	Storm water, groundwater, soil, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	2 - Tailraces
	Tailrace 2		Below No. 3 Paper Machine	Facility leaks and groundwater drainage	Storm water, groundwater, soil, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	2 - Tailraces
	Mill H Tailrace		Below Mill H	Facility leaks and groundwater drainage	Storm water, groundwater, soil, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	2 - Tailraces
	#2 Pump Station		Sediment trap	Facility drainage	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
	Former Fuel Oil AST (319,200 gallons)		None	N/A	N/A	N/A	N/A
	Oil Dock		None	N/A	N/A	N/A	N/A
	Truck Dump	1968 37 x 108	Ground surface, Basement	Transformers (3) Fuels ASTs, Hydraulics	Soil, Fill, Groundwater	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Rail Spurs		Ground surface, subsurface	Ties, spills	Soil, Fill, Groundwater	Arsenic, Copper, Chromium, SVOCs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Former MgO AST		Ground surface, subsurface	Previously used as a Fuel AST for Sulfate Plant Boilers	Soil, Fill, Groundwater	Petroleum	1 -Storm Water / Waste Water System 2 - Tailraces
	Water Supply well Near 56	Near SW corner of former MgO AST	None	N/A	N/A	N/A	N/A

Information sources: Site Observations, Sanborn Maps, Historical Aerial Photographs, Historical Topographic Maps, City Directories, IRI Mill Layout Drawing, Waste Water Treatment System Drawing, Major Bulk Chemicals, Waste & Oil Mill Locations, Chemical and Raw Material Storage Map

Table 2
Sampling Rationale and Approach
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

No.	Media/Feature	Type of Sample	Purpose	COIs	Sample Location(s)	Notes
1	Storm Water / Waste Water System	Bedded Sediment	Evaluate potential releases of COIs site wide.	- Metals, including mercury (at some locations) - TPH - SVOCs - PCBs - Dioxins/Furans - Asbestos	- Pump Station #1 - Pump Station #2 - Pipe Tunnel - Clarifier	Composite samples; collect multiple depth intervals (where available) to evaluate recent and historical releases; collection of samples dependent upon presence of sufficient sediment to sample and safe access to allow sampling.
		Water	Evaluate potential releases of COIs site wide; evaluate potential releases from site via storm water.	- Metals, including hexavalent chromium and mercury (at some locations) - TPH - VOCs - SVOCs	- Pump Station #1 - Pump Station #2 - Pipe Tunnel - Clarifier	Sample of standing water in collection structure.
2	Tailraces	Bedded Sediment	Evaluate potential releases from site that are not being captured by storm water system.	- Metals, including mercury - TPH - SVOCs - PCBs - Dioxins/Furans - Asbestos	- Mill H Tailrace - Tailrace #1 - Tailrace #2	Collect multiple depth intervals(where available) to evaluate recent and historical releases; collection of samples dependent upon presence of sufficient sediment to sample and safe access to allow sampling.
		Water	Evaluate potential releases from site that are not being captured by storm water system.	- Metals, including hexavalent chromium and mercury (at some locations) - TPH - VOCs - SVOCs	- Mill H Tailrace - Tailrace #1 - Tailrace #3	Collect samples of surface/standing water within tailraces.
3	Soil / Fill	Solid	Evaluate potential releases from discrete site features; evaluate fill characteristics.	- Metals (some locations) - TPH - VOCs - SVOCs (some locations) - PCBs (some locations) - Asbestos (some locations)	Locations related to current and former tanks, transformers (in use and decommissioned), fill, and railroad spurs (ballast and other sources).	Sample where possible; soil/fill may not be present at all locations.
4	Groundwater	Water	Evaluate potential releases from discrete site features; evaluate groundwater quality both on-site and upgradient.	- Metals - TPH - VOCs - SVOCs	Locations related to current and former tanks, transformers (in use and decommissioned), fill, and railroad spurs (ballast and other sources).	Sample if groundwater encountered during soil sampling; groundwater not expected to be observed in shallow soil/fill.
5	Seeps	Water	Evaluate groundwater quality both on-site and upgradient.	- Metals - TPH - VOCs - SVOCs	Locations throughout site (No. 1 Paper Machine and Bleach Plant, east of Sulphate Plant by RR tracks).	Sample where possible; some seeps may not have sufficient flow to allow sampling.
6	Intake Basin Sediment	Bedded Sediment	Evaluate sediment quality on submerged portion of subject parcel.	- Metals - SVOCs - PCBs - Dioxins/Furans	Various locations in in-take basin.	Surface and subsurface samples.

Notes:

COIs - Constituents of interest
SVOCs - Semi-volatile organic compounds
VOCs - Volatile organic compounds
PCBs - Polychlorinated biphenyls

Table 3
Sampling Matrix
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature	Proposed Sample Location	Sampling Method / Notes	Sample ID	Sample Depth (feet bgs or feet bss)	Sample Type Grab/ Composite	Media	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn)	Hg	Cr VI	TPH	VOCs	SVOCs	PCB Aroclors	Dioxins/ Furans	Asbestos
							EPA 6020A	EPA 7470A/7471B	EPA 7195/ 7191A	NWTPH-Dx, Gx	EPA 8260C	EPA 8270D	EPA 8082A	EPA 8290A	ALS Laboratory Internal Method ENV004
Building 01 UST	F01-01	Direct push drill rig.	F01-01-9.5-10.5	9.5-10.5	Grab	Soil/Fill	X			X	X	X			
Building 01 UST	F01-02	Hand auger.	F01-02-1-2	1-2	Grab	Soil/Fill	X			X	X				
Building 01 UST	F01-03	Not completed, no indication of UST from GPR results.													
Truck Dump	TD-01	Direct push drill rig.	TD-01-4.5-6	4.5-6	Grab	Soil/Fill				X	X	X	X		
		Temp well with peristaltic pump.	TD-01-GW-090712	3-8	Grab	Groundwater	X			TPH-g only[2]	X	X			
	TD-02	Direct push drill rig.	TD-02-6.5-8	6.5-8	Grab	Soil/Fill				X	X	X	X		
Building 07/Spur	F07-01	Hand auger.	F07-01-0.5-1.0	0.5-1.0	Grab	Soil/Fill	X			X	X	X	X		
Building 16-17/Spur	F16-01	Hand auger, direct push drill rig.	F16-01-3-4	3-4	Grab	Soil/Fill	X			X	X	X			
			F16-01-15.5-16.5	15.5-16.5	Grab	Soil/Fill	X			X	X	X			
Building 16/UST	F16-02	Not completed, railroad ballast/shallow bedrock.													
Building 18 Mill O	F18-01	Hand auger.	F18-01-0-0.5	0-0.5	Grab	Soil/Fill	X			X	X		X		X
Building 19	F19-01	Hand auger.	F19-01-0.5-1.5	0.5-1.5	Grab	Soil/Fill	X			X	X		X		
Building 22/Millwright Shop	F21-01	Hand auger.	F21-01-0.5-2.0	0.5-2.0	Grab	Soil/Fill	X			X	X				
Building 28/Frmr Dye Shop	F28-01	Not completed, subsurface concrete structure.													
Building 38-Welding/UST	F38-01	Direct push drill rig.	F38-01-Soil-5-10	5-10	Grab	Soil/Fill	X			X	X		X		
		Temp well with peristaltic pump.	F38-01-GW-090712	5-10	Grab	Groundwater	X			X	X				
Building 42/Chemical Storage	F42-01	Hand auger.	F42-01-1.5-2.5	1.5-2.5	Grab	Soil/Fill	X			X	X				
Building 46/Shipping Shed	F47-01	No recovery, railroad ballast/shallow bedrock.													
Feature 57/Fuel AST	F57-01	Not completed, shallow bedrock.													
Pipe Tunnel	F53-01	Hand tools.	F53-01-0-0.5-091412	0-0.5	Grab	Storm Water Solids	X			X		X	X	X	X
		Direct/grab.	F53-01-SW-091412	Storm Water	Grab	Storm Water	X		X	X	X	X			
		Direct/grab.	DUP-01-SW-091412	Storm Water	Grab	Storm Water	X		X	X	X	X			
Pump Station #1	PS1-01	Hand tools.	PS1-01-0-0.5-091412	0-0.5	Grab	Storm Water Solids	X			X		X	X	X	X
		Direct/grab.	PS1-01-SW-091412	Storm Water	Grab	Storm Water	X		X	X	X	X			
Pump Station # 2	PS2-01	Hand tools.	PS2-01-Shallow	0-0.5	Grab	Storm Water Solids	X			X		X	X	X	X
		Direct/grab.	PS2-01-SW-090812	Storm Water	Grab	Storm Water	X			X	X	X			
Clarifier	F55-01	Hand tools.	F55-01-0-0.5-091412	0-0.5	Grab	Storm Water Solids	X	X		X		X	X	X	X
		Direct/grab.	F55-01-SW-091412	Storm Water	Grab	Storm Water	X	X	X	X	X	X			
Tailrace 1	TR1-01	Hand tools.	TR1-01-0-0.5-091512	0-0.5	Grab	Tailrace Solids	X	X		X		X	X	X	X
		Direct/grab.	TR1-01-SW-091412	Surface Water	Grab	Tailrace Water	X	X	X	X	X	X			
Tailrace 2	TR2-02,TR2-03	Hand tools.	TR2-SHALLOW	0-0.5	Composite	Tailrace Solids	X	X		X		X	X	X	X
		Hand tools, collected at location TR2-02	TR2-02-DEEP	0.5-1.0	Grab	Tailrace Solids	X	X		X		X	X	X	X
		Direct/grab.[1]	TR2-01-SW-091412	Surface Water	Grab	Tailrace Water	X		X	X	X	X			
Tailrace H	TRH-01	Hand tools.	TRH-01-0-0.5	0-0.5	Grab	Tailrace Solids	X	X		X		X	X	X	X
		Direct/grab.	TRH-01-SW-091412	Surface Water	Grab	Tailrace Water	X	X	X	X	X	X			
Bleach Plant Seep	F33-01	Direct/grab.	F33-01-SP-091512	Seep Water	Grab	Seep Water	X			X	X	X			
	F34-01	Direct/grab.	F34-01-SP-091512	Seep Water	Grab	Seep Water	X			X	X	X			
Upgradient Seep	F42-03	Direct/grab.	F42-03-SP-091512	Seep Water	Grab	Seep Water	X			X	X	X			
Possible Tailrace H Seep	F32-01	Not completed, no access.													
Paper Machine 3 Seep	F13-01	Not completed, no access.													
Paper Machine 3 Seep	F13-02	Not completed, no access.													
Intake Basin	IB-01	Ponar-type grab sampler.	IB-01-0-6inch-091412	0-0.5	Grab	Intake Basin Sediment	X					X	X	X	
		Vibracore.	IB-01-2.5-3.0-091412	2.5-3.0	Grab	Intake Basin Sediment	X					X	X	X	
	IB-02	Ponar-type grab sampler.	IB-02-0-6inch-091412	0-0.5	Grab	Intake Basin Sediment	X					X	X	X	
		Vibracore.	IB-02-2.5-3.0-091412	2.5-3.0	Grab	Intake Basin Sediment	X					X	X	X	
	IB-03	Ponar-type grab sampler.	IB-03-0-6inch-091412	0-0.5	Grab	Intake Basin Sediment	X					X	X	X	
		Vibracore.	IB-03-1.5-2-091412	1.5-2	Grab	Intake Basin Sediment	X					X	X	X	
		Vibracore.	IB-03-3.5-4.0-091412	2.5-3.0	Grab	Intake Basin Sediment	X					X	X	X	
Total Number of Samples							**38**	**8**	**7**	**32**	**25**	**33**	**21**	**15**	**9**

Notes & Key:

[1] Sample mis-labeled as "TR2-01" on COC and in laboratory reports.

[2] Sample not analyzed for TPH-d; sample volume unavailable due to slow recharge rate.

bgs = below ground surface

bss = below sediment surface

EPA = United States Environmental Protection Agency

GPR = Ground-penetrating radar

NWTPH = Northwest Method Total Petroleum Hydrocarbons

PCB = Polychlorinated biphenyls

SVOCs = Semivolatile organic compounds

TPH = Total petroleum hydrocarbons

TPH-d = Diesel-range total petroleum hydrocarbons

TPH-g = Gasoline-range total petroleum hydrocarbons

UST = Underground storage tank

VOCs = Volatile organic compounds

Notes & Key (continued):

As = Arsenic

Cd = Cadmium

Cr = Chromium

Cr VI = Hexavalent chromium

Cu = Copper

Hg = Mercury

Ni = Nickel

Pb = Lead

Zn = Zinc

Soil and groundwater sample location

Storm water and storm water solids sample location

Seep water sample location

Surface water and solids sample location

Intake basin sediment sample location

Table 4
Boring Log Summary
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Boring	Total Depth of Boring (feet bgs)	Drilling Method	Soil Data Summary						
			Soil Interval (feet bgs of feet bss)		USCS Soil Type	Field Screening Results			
			From	To		Odor	Sheen	Discoloration	PID Results (ppm)
F01-01	10.5	Hand Auger Direct Push	0.0	0.25	Asphalt.	no	no	no	--
			0.25	3.0	SILTY GRAVEL WITH SAND (GM): grey, fine gravel, fine to coarse sand, well-graded, angular, dry. Fill material.	no	no	no	--
			3.0	10.5	POORLY-GRADED SAND (SP): dark brown, fine, poorly-graded, slightly moist, increasing to moist with depth. At 9.5 feet bgs, as above except with laminations of silty sand. At 10 feet bgs, as above except very moist.	no	no	no	3 0 0 1.6
F01-02	2	Hand Auger	0.0	0.25	Asphalt.	no	no	no	--
			0.25	0.5	Crushed rock. Grey, fine to coarse sand and fine gravel.	no	no	no	--
			0.5	2.0	WELL-GRADED SAND WITH GRAVEL (SW): brown, fine to medium sand, fine gravel, well-graded, moist. Fill material.	no	no	no	--
F07-01	1	Hand Auger	0.0	0.25	Asphalt.	no	no	no	--
			0.25	1.0	SILTY GRAVEL WITH SAND (GM): dark grey, gravel with silt and sand, some wood, hydrocarbon odor, slightly moist.	yes	no	no	--
F16-01	17.5	Hand Auger Direct Push	0.0	0.5	Concrete.	no	no	no	--
			0.5	15.5	SILTY SAND (SM): dark brown, fine sand, some fine gravel, slightly moist. Brick fragments at 5 feet bgs. At 8 feet bgs, as above except fine to medium sand, no gravel, moist. At 12 feet bgs, as above except orangish-brown. At 15 feet bgs, as above except wet.	no	no	no	0.9 0.5 0.9 0.4 0.3
			15.5	16.5	WELL-GRADED GRAVEL (GW): olive grey, fine gravel, some fine to coarse sand, wet.	no	no	no	0
			16.5	17.5	SILTY GRAVEL WITH SAND (GM): olive grey, fine to coarse gravel, fine to coarse sand, well-graded, dry.	no	no	no	0
F18-01	0.5	Hand Auger	0.0	0.25	Concrete	no	no	no	--
			0.25	0.5	POORLY GRADED SAND (SP): brown, fine sand, some silt, with brick and concrete fragments, dry. Fill material.	no	no	no	--
F19-01	1.5	Hand Auger	0.0	0.5	Asphalt.	no	no	no	--
			0.5	1.5	WELL-GRADED GRAVEL (GW): fine to coarse gravel, few to little fines, very poorly sorted, no staining, no odor, moist.	no	no	no	--
F21-01	2	Hand Auger	0.0	0.5	Asphalt.	no	no	no	--
			0.5	2.0	WELL-GRADED SAND (SW): dark brown, medium to very coarse sand, coarse gravel, poorly sorted, no odor, no staining, moist.	no	no	no	--
F38-01	10	Hand Auger Direct Push	0.0	0.5	Asphalt with multiple lifts.	no	no	no	--
			0.5	3.5	WELL-GRADED GRAVEL (GW): dark brown, fine to coarse gravel, cobbles, few clay, few silt, subangular to subrounded gravel, poorly sorted, no staining, no odor, moist. At 2 feet bgs, many 4- to 5-inch diameter cobbles.	no	no	no	0.1 1.0
			3.5	5.0	No recovery due to soft fill with large rocks.	no	no	no	--
			5.0	10.0	Fill material. Sand and gravel, medium to very coarse sand, fine to coarse gravel, saturated, dark grey staining, no odor. Poor recovery.	no	no	yes	3.6
F42-01	2.5	Hand Auger	0.0	0.4	Concrete with rebar.	no	no	no	--
			0.4	1.0	Fill Material. Rocks and concrete rubble.	no	no	no	--
			1.0	2.5	WELL-GRADED GRAVEL (GW): dark brown, fine to coarse sand, fine to coarse gravel, few clay, very poorly sorted, dark staining, no odor, moist. Increased clay with depth from few to little.	no	no	yes	0.4

Table 4
Boring Log Summary
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Boring	Total Depth of Boring (feet bgs)	Drilling Method	Soil Data Summary						
			Soil Interval (feet bgs of feet bss)		USCS Soil Type	Field Screening Results			
			From	To		Odor	Sheen	Discoloration	PID Results (ppm)
TD-01	8	Hand Auger Direct Push	0.0	0.75	Asphalt.	no	no	no	--
			0.75	1.5	Fill material. Wood, bricks, ash, sand and gravel, no odor, no staining, dry.	no	no	no	0.2
			1.5	2.5	CLAYEY SAND (SC): dark brown, very fine to medium sand, some fill material, very poorly sorted, no odor, moist. Small amount of fill.	no	no	no	--
			2.5	7.0	WELL-GRADED SAND (SW): grey, fine to medium sand, moderately sorted, no odor, no staining, moist. At 6 feet bgs, as above except with sheen and petroleum odor.	no	no	no	0.1 0.3 0.2
			7.0	8.0	Clayey SAND (SC), coarse, medium gravel, poorly sorted. At 7.8 feet bgs, as above except fine to coarse, rounded gravel.	yes	yes	yes	--
TD-02	9	Hand Auger Direct Push	0.0	0.5	Asphalt.	no	no	no	--
			0.5	1.0	POORLY-GRADED SAND (SP): brown, fine to coarse sand, poorly sorted, no odor, no staining, increased moisture with depth from dry to moist.	no	no	no	--
			1.0	6.5	CLAYEY SAND (SC): brown, fine to coarse sand, poorly sorted, no odor, no staining, moist. At 4.0 feet bgs, as above except very fine to medium sand, with trace cobbles.	no	no	no	0.4 0.4 0.5
			6.5	7.0	SANDY LEAN CLAY (CL): very fine to medium sand, low plasticity, soft, grey staining, petroleum odor, moist.	yes	no	yes	--
			7.0	8.0	POORLY-GRADED SAND (SP): very fine to coarse sand, very poorly sorted, grey staining, petroleum odor, moist.	yes	no	yes	74.2
			8.0	9.0	POORLY-GRADED SAND WITH GRAVEL (SP): brown, fine to coarse sand, fine to coarse gravel, very poorly sorted, grey staining, petroleum odor, moist.	yes	no	yes	--
IB-01	3.1	Ponar Vibracore	0.0	0.4	ORGANIC SOIL (OH): dark brown, with woody debris, no odor, no staining.	no	no	no	--
			0.4	3.1	POORLY GRADED SAND WITH SILT (SP): dark brown, fine grain, no odor and no staining. Woody debris at 1.7 feet bgs. Layer of fine sand at 2.5 feet bgs.	no	no	no	--
IB-02	3	Ponar Vibracore	0.0	0.4	ORGANIC SOIL (OH): dark brown, with woody debris, no odor, no staining.	no	no	no	--
			0.4	3.0	POORLY GRADED SAND WITH SILT (SP-SM): dark brown, fine sand, no odor, no staining. Layer of woody debris at 1.7 feet bgs. Layer of fine sand at 2.5 feet bgs.	no	no	no	--
IB-03	3.3	Ponar Vibracore	0	0.4	ORGANIC SOIL (OH): dark brown, with woody debris, no odor, no staining.	no	no	no	--
			0.4	3.3	POORLY GRADED SAND WITH SILT (SP): dark brown, fine grain, no odor, no staining. Layer of woody debris at 1 foot bgs. Layer of fine grain sand at 1.5 feet bgs.	no	no	no	--

Notes:
bgs = below ground surface
bss = below sediment surface
PID = photo-ionization detector
ppm = part per million
USCS = Unified Soil Classification System

Table 5

Upland Soil Analytical Results
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature		Building 01 UST		Building 07 / Spur	Building 16-17 / Spur		Building 18 Mill O	Building 19	Building 22 / Millwright Shop	Building 38-Welding / UST	Building 42 / Chemical Storage	Truck Dump		Most Conservative Screening Criteria[1]	Regional Background Levels[2]
Location		F01-02	F01-01	F07-01	F16-01		F18-01	F19-01	F21-01	F38-01	F42-01	TD-01	TD-02		
Sample ID		F01-02-1-2	F01-01-9.5-10.5	F07-01-0.5-1.0	F16-01-3-4	F16-01-15.5-16.5	F18-01-0-0.5	F19-01-0.5-1.5	F21-01-0.5-2.0	F38-01-Soil-5-10	F42-01-1.5-2.5	TD-01-4.5-6	TD-02-6.5-8		
Sample Date		9/7/12	9/7/12	9/7/12	9/7/12	9/7/12	9/15/12	9/7/12	9/7/12	9/7/12	9/7/12	9/7/12	9/7/12		
Sample Depth (ft bgs)		1-2	9.5-10.5	0.5-1.0	3-4	15.5-16.5	0-0.5	0.5-1.5	0.5-2.0	5-10	1.5-2.5	4.5-6	6.5-8		
Constituent	**CAS Number**														
Total Metals by EPA Method 6000/7000 Series (mg/kg)															
Arsenic	7440-38-2	**2.2**	**1.9**	**1.4**	**2**	**0.9**	**50.2**	**4.7**	**6.5**	**8.2 J**	**9.9**			1.7	7.0
Cadmium	7440-43-9	**0.15**	**0.27**	**0.16**	**0.09**	**0.19**	**0.24**	**0.24**	**11.1**	**0.29**	**1.02**			150	1
Chromium	7440-47-3	**13.7 J+**	**18.6 J+**	**163 J+**	**15.2 J+**	**25.8 J+**	**26.2**	**18.8 J+**	**195 J+**	**17.5 J+**	**16.3 J+**			-	42
Copper	7440-50-8	**19.8**	**20.4**	**35.1**	**20.9**	**32.7**	**31.9**	**45.3**	**225**	**109 J**	**206**			12000	36
Lead	7439-92-1	**36.7**	**6.5**	**14**	**71.2**	**28.3**	**53.2**	**38.7**	**1480**	**3300**	**367**			800	17
Nickel	7440-02-0	**17.9**	**26.5**	**24.4**	**20.1**	**16.5**	**21.2**	**17.6**	**172**	**13.2 J**	**63.2**			6100	38
Zinc	7440-66-6	**49.4**	**133**	**57.7**	**64.6**	**107**	**118**	**117**	**3150**	**73.4**	**381**			-	86
Total Petroleum Hydrocarbons (TPH) by NW Methods (mg/kg)															
Gasoline Range Organics	GRO	< 5.9	< 6.2	**11 NJ**	< 5.9	< 7.2	< 5.7	< 5.9	< 5.7	< 7	< 6.8	< 7	**400 NJ**	13000	-
Diesel Range Organics	DRO	**52 NJ**	< 29	**2200 NJ**	< 28	< 33	**30 NJ**	< 280	< 550	**50 NJ**	**42 NJ**	**290 NJ**	**2000 NJ**	23000	-
Oil Range Organics	RRO	**750 NJ**	< 120	**7400 NJ**	< 120	< 130	**210 NJ**	**1700 NJ**	**4600 NJ**	**220 NJ**	**230 NJ**	**1400 NJ**	**9300 NJ**	40000	-
Volatile Organic Compounds (VOCs) by EPA Method 8260C (mg/kg): Detected Compounds Only															
1,2,4-Trimethylbenzene	95-63-6	< 0.023	< 0.024	< 0.22	< 0.023	< 0.026	< 0.022	< 0.022	< 0.022	< 0.026	< 0.025	< 0.025	**21**	1000	-
1,3,5-Trimethylbenzene	108-67-8	< 0.023	< 0.024	< 0.22	< 0.023	< 0.026	< 0.022	< 0.022	< 0.022	< 0.026	< 0.025	< 0.025	**7.5**	3100	-
Acetone	67-64-1	< 0.023	< 0.024	< 2.2	< 0.023	**0.073**	< 0.022	< 0.022	< 0.022	< 0.026	**0.034**	**0.05**	< 3	-	-
Benzene	71-43-2	< 0.0056	< 0.0058	< 0.055	< 0.0056	< 0.0064	< 0.0053	< 0.0055	< 0.0055	< 0.0065	< 0.0062	< 0.0061	**0.19**	1.2	-
Ethylbenzene	100-41-4	< 0.0056	< 0.0058	< 0.055	< 0.0056	< 0.0064	< 0.0053	< 0.0055	< 0.0055	< 0.0065	< 0.0062	< 0.0061	**0.25**	12	-
Isopropylbenzene (Cumene)	98-82-8	< 0.023	< 0.024	< 0.22	< 0.023	< 0.026	< 0.022	< 0.022	< 0.022	< 0.026	< 0.025	< 0.025	**0.53**	24000	-
m,p-Xylenes	179601-23-1	< 0.0056	< 0.0058	< 0.055	< 0.0056	< 0.0064	< 0.0053	< 0.0055	< 0.0055	< 0.0065	< 0.0062	< 0.0061	**12**	19000	-
Naphthalene	91-20-3	< 0.023	< 0.024	**7.7**	< 0.023	< 0.026	< 0.022	< 0.022	< 0.022	< 0.026	< 0.025	< 0.025	**2.4**	-	-
n-Propylbenzene	103-65-1	< 0.023	< 0.024	< 0.22	< 0.023	< 0.026	< 0.022	< 0.022	< 0.022	< 0.026	< 0.025	< 0.025	**3.1**	-	-
o-Xylene	95-47-6	< 0.0056	< 0.0058	< 0.055	< 0.0056	< 0.0064	< 0.0053	< 0.0055	< 0.0055	< 0.0065	< 0.0062	< 0.0061	**6.2**	19000	-
sec-Butylbenzene	135-98-8	< 0.023	< 0.024	< 0.22	< 0.023	< 0.026	< 0.022	< 0.022	< 0.022	< 0.026	< 0.025	< 0.025	**0.45**	-	-
Tetrachloroethene (PCE)	127-18-4	< 0.0056	< 0.0058	< 0.055	< 0.0056	< 0.0064	< 0.0053	< 0.0055	**0.0061**	< 0.0065	< 0.0062	< 0.0061	< 0.075	36	-
Toluene	108-88-3	< 0.0056	< 0.0058	< 0.055	< 0.0056	< 0.0064	< 0.0053	< 0.0055	< 0.0055	< 0.0065	< 0.0062	< 0.0061	**0.1**	24000	-
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (mg/kg): Detected Compounds Only															
2-Methylnaphthalene	91-57-6		< 2.3	**21**	< 2.3	< 2.6						< 2.5	**6.6**	-	-
4-Methylphenol	106-44-5		< 2.3	**0.15 j**	< 2.3	< 2.6						< 2.5	< 2.5	-	-
Acenaphthene	83-32-9		< 2.3	**32**	< 2.3	< 2.6						< 2.5	< 2.5	19000	-
Acenaphthylene	208-96-8		< 2.3	**0.75 j**	< 2.3	< 2.6						< 2.5	< 2.5	-	-
Anthracene	120-12-7		< 2.3	**18**	< 2.3	< 2.6						< 2.5	< 2.5	93000	-
Benz(a)anthracene	56-55-3		< 2.3	**11**	< 2.3	< 2.6						< 2.5	< 2.5	2.7	-
Benzo(a)pyrene	50-32-8		< 2.3	**2.9**	< 2.3	< 2.6						< 2.5	< 2.5	0.27	-
Benzo(b)fluoranthene	205-99-2		< 2.3	**5.2**	< 2.3	< 2.6						< 2.5	< 2.5	2.7	-
Benzo(g,h,i)perylene	191-24-2		< 2.3	**0.55 j**	< 2.3	< 2.6						< 2.5	< 2.5	-	-
Benzo(k)fluoranthene	207-08-9		< 2.3	**1.5 j**	< 2.3	< 2.6						< 2.5	< 2.5	27	-
Chrysene	218-01-9		< 2.3	**9.2**	< 2.3	< 2.6						< 2.5	< 2.5	250	-
Dibenz(a,h)anthracene	53-70-3		< 2.3	**0.22 j**	< 2.3	< 2.6						< 2.5	< 2.5	0.27	-
Dibenzofuran	132-64-9		< 2.3	**21**	< 2.3	< 2.6						< 2.5	< 2.5	-	-
Diethyl Phthalate	84-66-2		**0.13 j**	**0.15 j**	< 2.3 U	< 2.6 U						**0.14 j**	**0.16 j**	-	-
Dimethyl Phthalate	131-11-3		< 2.3	< 2.2	< 2.3	< 2.6						< 2.5	**0.63 j**	-	-
Fluoranthene	206-44-0		< 2.3	**70**	**0.091 j**	< 2.6						< 2.5	< 2.5	8900	-
Fluorene	86-73-7		< 2.3	**33**	< 2.3	< 2.6						< 2.5	< 2.5	12000	-
Indeno(1,2,3-cd)pyrene	193-39-5		< 2.3	**0.69 j**	< 2.3	< 2.6						< 2.5	< 2.5	2.7	-
Naphthalene	91-20-3		< 2.3	**18**	< 2.3	< 2.6						< 2.5	**2.5**	23	-
Phenanthrene	85-01-8		< 2.3	**120**	**0.085 j**	< 2.6						< 2.5	**0.1 j**	-	-
Pyrene	129-00-0		< 2.3	**39**	< 2.3	< 2.6						< 2.5	< 2.5	6700	-
Polychlorinated Biphenyls (PCBs) by EPA Method 8082A (mg/kg)															
Aroclor 1016	12674-11-2			< 0.054			< 0.054	< 0.056		< 0.064		< 0.063	< 0.063	-	-
Aroclor 1221	11104-28-2			< 0.11			< 0.11	< 0.12		< 0.13		< 0.13	< 0.13	-	-
Aroclor 1232	11141-16-5			< 0.054			< 0.054	< 0.056		< 0.064		< 0.063	< 0.063	-	-
Aroclor 1242	53469-21-9			< 0.054			< 0.054	< 0.056		< 0.064		< 0.063	< 0.063	-	-
Aroclor 1248	12672-29-6			< 0.054			< 0.054	< 0.056		< 0.064		< 0.063	< 0.063	-	-
Aroclor 1254	11097-69-1			< 0.054			< 0.054	< 0.056		**0.088**		< 0.063	< 0.063	-	-
Aroclor 1260	11096-82-5			< 0.054			< 0.054	< 0.056		< 0.064		< 0.063	< 0.063	-	-
Total PCBs as Aroclors				< 0.11			< 0.11	< 0.12		**0.088**		< 0.13	< 0.13	0.7	-
Asbestos by ALS Laboratory Internal Method ENV004															
Asbestos (total)	1332-21-4						ND								

Notes:

[1] Screening criteria are derived from Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012. Risk Based Decision Making Action Levels are screened among three pathways - Soil Ingestion/Dermal Contact/Inhalation, Volatilization to Outdoor Air, Vapor Intrusion to Buildings

[2] Default Background Concentrations for Metals in Oregon Soils: DEQ, 2002. Memo from Toxicology Workgroup. Default Background Concentration for Metals. October 28. Media = soil

Screening criteria are not considered exceeded when results are equal to or below established regional background levels.

- = Applicable screening criteria for this constituent are not available.

< = Constituent was not detected above the laboratory MDL or MRL (constituent-dependant). Applicable reporting limit provided.

Bold = The analyte was detected above the applicable reporting limit.

Empty cells = Constituent not analyzed.

ft bgs = feet below ground surface

MDL = Method detection limit

MRL = Method reporting limit

mg/kg = micrograms per kilogram

ND = Not detected

ng/kg = nanograms per kilogram

= Detected concentration exceeds one or more sceening criteria.

= Analyte not detected, but MDL exceeds one or more screening criteria.

Laboratory Data Qualifiers:

j = The value reported is below the laboratory reporting limit and should be considered an estimate.

ERM Data Qualifiers:

J = Detected sample result qualified as estimated

J+ = Detected sample result qualified as estimated and biased high

NJ = Estimated value

U = Sample result qualified as nondetected

Table 6
Analytes with Detections above Screening Criteria
Upland Soil
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Constituent of Interest	Site Feature	Location	Sample ID	Sample Date	Sample Depth (ft bgs)	Concentration	Regional Background Levels[1]	Screening Criteria[2]									
								Ingestion, Dermal Contact, and Inhalation						Volatilization to Outdoor		Vapor Intrusion into Buildings	
								Occupational		Construction Worker		Excavation Worker		Occupational		Occupational	
								SL	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*
Total Metals by EPA Method 6000/7000 Series (mg/kg)																	
Arsenic	Building 18 Mill O	F18-01	F18-01-0-0.5	9/15/2012	0-0.5	**50.2**	7	1.7	29.5	13	3.9	370		-		-	
	Building 38-Welding / UST	F38-01	F38-01-Soil-5-10	9/7/2012	5-10	**8.2**	7	1.7	4.8	13		370		-		-	
	Building 42 / Chemical Storage	F42-01	F42-01-1.5-2.5	9/7/2012	1.5-2.5	**9.9**	7	1.7	5.8	13		370		-		-	
Lead	Building 22 / Millwright Shop	F21-01	F21-01-0.5-2.0	9/7/2012	0.5-2.0	**1480**	17	800	1.9	800	1.9	800	1.9	-		-	
	Building 38-Welding / UST	F38-01	F38-01-Soil-5-10	9/7/2012	5-10	**3300**	17	800	4.1	800	4.1	800	4.1	-		-	
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (mg/kg)																	
Benz(a)anthracene	Building 07 / Spur	F07-01	F07-01-0.5-1.0	9/7/2012	0.5-1.0	**11**	-	2.7	4.1	21		590		-		-	
Benzo(a)pyrene	Building 07 / Spur	F07-01	F07-01-0.5-1.0	9/7/2012	0.5-1.0	**2.9**	-	0.27	10.7	2.1	1.4	59		-		-	
Benzo(b)fluoranthene	Building 07 / Spur	F07-01	F07-01-0.5-1.0	9/7/2012	0.5-1.0	**5.2**	-	2.7	1.9	21		590		-		-	

Notes:

[1] Default Background Concentrations for Metals in Oregon Soils: DEQ, 2002. Memo from Toxicology Workgroup. Default Background Concentration for Metals. October 28. Media = soil

[2] Screening criteria are derived from Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012.

- = Indicates applicable screening criteria for this constituent are not available.

Bold = The analyte was detected above the applicable reporting limit.

EQ = Exceedance quotient

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

SL = Screening level

= Detected concentration exceeds one or more sceening criteria; screening criteria exceeded are shaded.

Screening Level Exceedance Quotient Key:

= Indicates detected concentration exceeds screening criteria by a factor between 1 and 5.

= Indicates detected concentration exceeds screening criteria by a factor between 5 and 10.

= Indicates detected concentration exceeds screening criteria by a factor above 10.

Table 7

Storm Water and Tailrace Solids Analytical Results
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature		TEFs	Pipe Tunnel	Clarifier	Pump Stations		Tailraces				Most Conservative Screening Criteria[1]	Regional Background Levels[2]
Location			F53-01	F55-01	PS1-01	PS2-01	TR1-01	TR2-02	TR2-02/03 (composite)	TRH-01		
Sample ID			F53-01-0-0.5-091412	F55-01-0-0.5-091412	PS1-01-0-0.5-091412	PS2-01-Shallow	TR1-01-0-0.5-091512	TR2-02-DEEP	TR2-SHALLOW	TRH-01-0-0.5		
Sample Date			9/14/12	9/14/12	9/14/12	9/8/12	9/15/12	9/8/12	9/8/12	9/15/12		
Sample Depth (ft bgs)			0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0.5-1.0	0-0.5	0-0.5		
Constituent	**CAS Number**											
Total Metals by EPA Method 6000/7000 Series (mg/kg)												
Arsenic	7440-38-2		**6.9**	**3.8**	**1.7**	**3.6**	**17.9**	**5.9**	**7.6**	**2**	1.7	7.0
Cadmium	7440-43-9		**1.28**	**0.81**	**0.6**	**0.39**	**7.5**	**0.61**	**1.4**	**0.22**	150	1
Chromium	7440-47-3		**36.1**	**22.9**	**59.2**	**19.9 J+**	**175**	**42.3 J+**	**31 J+**	**22.2**	-	42
Copper	7440-50-8		**210**	**227**	**245**	**105**	**348**	**114**	**190**	**99.6**	12000	36
Lead	7439-92-1		**54.9**	**26.3**	**159**	**31.2**	**717**	**62.8**	**57.6**	**28.1**	800	17
Mercury	7439-97-6			**0.9**			**0.47**	**1.43**	**2.2**	**0.08**	93	0.07
Nickel	7440-02-0		**38**	**21.5**	**69.2**	**22.5**	**44.8**	**39**	**33.8**	**21.7**	6100	38
Zinc	7440-66-6		**937**	**476**	**349**	**374**	**360**	**279**	**332**	**147**	-	86
Total Petroleum Hydrocarbons (TPH) by NW Methods (mg/kg)												
Gasoline Range Organics	GRO		**75 NJ**	**180 NJ**	**50 NJ**	**120 NJ**	< 34	**23 NJ**	**55 NJ**	**19 NJ**	13000	-
Diesel Range Organics	DRO		**4200 NJ**	**6900 NJ**	**8100 NJ**	**2300 NJ**	**950 NJ**	**990 NJ**	**2000 NJ**	**2000 NJ**	23000	-
Oil Range Organics	RRO		**14000 NJ**	**15000 NJ**	**17000 NJ**	**12000 NJ**	**4200 NJ**	**6400 NJ**	**9100 NJ**	**5200 NJ**	40000	-
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (mg/kg): Detected Compounds Only												
1,4-Dichlorobenzene	106-46-7		< 1.7	< 3.2	< 3.4	**0.31 j**	< 1.2	< 4.8	< 12	< 0.54	17	-
2-Methylnaphthalene	91-57-6		< 1.7	< 3.2	< 3.4	**1.4 j**	< 1.2	< 4.8	< 12	< 0.54	-	-
4-Methylphenol	106-44-5		< 1.7	< 3.2	< 3.4	**3.3**	< 1.2	< 4.8	< 12	< 0.54	-	-
Acenaphthene	83-32-9		< 1.7	< 3.2	< 3.4	**0.4 j**	< 1.2	**0.34 j**	< 12	< 0.54	19000	-
Aniline	62-53-3		< 5.1	< 9.6	< 11	< 9.6	< 3.6	**3.5 j**	**19 j**	< 1.7	-	-
Anthracene	120-12-7		< 1.7	< 3.2	< 3.4	< 3.2	< 1.2	**0.37 j**	< 12	< 0.54	93000	-
Benz(a)anthracene	56-55-3		< 1.7	< 3.2	< 3.4	< 3.2	< 1.2	**0.32 j**	< 12	< 0.54	2.7	-
Benzo(a)pyrene	50-32-8		< 1.7	< 3.2	< 3.4	< 3.2	< 1.2	**0.46 j**	< 12	< 0.54	0.27	-
Benzo(b)fluoranthene	205-99-2		< 1.7	< 3.2	< 3.4	< 3.2	< 1.2	**0.94 j**	< 12	< 0.54	2.7	-
Bis(2-ethylhexyl) Phthalate	117-81-7		**7.1**	**15**	**19**	**56**	**1.6**	**44**	**4.6 j**	**4.4**	150	-
Butyl Benzyl Phthalate	85-68-7		< 1.7	< 3.2	< 3.4	**0.5 j**	< 1.2	< 4.8	< 12	< 0.54	-	-
Chrysene	218-01-9		< 1.7	< 3.2	< 3.4	< 3.2	< 1.2	**0.23 j**	< 12	< 0.54	250	-
Dibenzofuran	132-64-9		< 1.7	< 3.2	< 3.4	**0.26 j**	< 1.2	< 4.8	< 12	< 0.54	-	-
Diethyl Phthalate	84-66-2		< 1.7	< 3.2	< 3.4	**0.65 j**	< 1.2	**0.27 j**	< 12	< 0.54	-	-
Dimethyl Phthalate	131-11-3		< 1.7	< 3.2	< 3.4	< 3.2	< 1.2	< 4.8	**0.59 j**	< 0.54	-	-
Di-n-butyl Phthalate	84-74-2		< 1.7	< 3.2	< 3.4	**0.51 j**	< 1.2	< 4.8	< 12	< 0.54	-	-
Fluoranthene	206-44-0		< 1.7	< 3.2	< 3.4	**0.26 j**	< 1.2	**1.6 j**	< 12	< 0.54	8900	-
Fluorene	86-73-7		< 1.7	< 3.2	< 3.4	**0.34 j**	< 1.2	**0.33 j**	< 12	< 0.54	12000	-
Naphthalene	91-20-3		< 1.7	< 3.2	< 3.4	**3.9**	< 1.2	< 4.8	< 12	< 0.54	23	-
Phenanthrene	85-01-8		< 1.7	< 3.2	< 3.4	**0.7 j**	< 1.2	**1.3 j**	< 12	< 0.54	-	-
Pyrene	129-00-0		< 1.7	< 3.2	< 3.4	**0.25 j**	< 1.2	**1.5 j**	< 12	< 0.54	6700	-
Polychlorinated Biphenyls (PCBs) by EPA Method 8082A (mg/kg)												
Aroclor 1016	12674-11-2		< 0.34	< 0.64	< 0.23	< 0.081	< 0.24	< 0.12	< 0.29	< 0.11	-	-
Aroclor 1221	11104-28-2		< 0.68	< 1.3	< 0.45	< 0.17	< 0.48	< 0.24	< 0.57	< 0.22	-	-
Aroclor 1232	11141-16-5		< 0.34	< 0.64	< 0.23	< 0.081	< 0.24	< 0.12	< 0.29	< 0.11	-	-
Aroclor 1242	53469-21-9		< 0.34	< 0.64	< 0.23	**0.49**	< 0.24	< 0.12	< 0.29	< 0.11	-	-
Aroclor 1248	12672-29-6		**2.9**	< 0.64	**0.37**	< 0.081	< 0.24	< 0.12	< 0.29	< 0.11	-	-
Aroclor 1254	11097-69-1		< 0.34	< 0.64	< 0.23	**0.31**	< 0.24	< 0.12	< 0.29	< 0.11	-	-
Aroclor 1260	11096-82-5		< 0.34	< 0.64	< 0.23	**0.088**	< 0.24	< 0.12	< 0.29	< 0.11	-	-
Total PCBs as Aroclors			**2.9**	< 1.3	**0.37**	**0.888**	< 0.48	< 0.24	< 0.57	< 0.22	0.70	-
Dioxins and Furans by EPA Method 8290A (ng/kg)												
2378-TCDD	1746-01-6	1	< 3.38 U	< 6.41	< 2.24	< 0.804	< 2.39	< 1.21 U	< 2.82 U	< 1.08	15.0	-
12378-PeCDD	40321-76-4	1	**3.66 j**	< 32.1 U	< 11.2	< 4.02	**3.18 j**	**2.09 j**	**8.72 j**	**0.417 j**	-	-
123478-HxCDD	39227-28-6	0.1	**9.37 j**	< 32.1 U	< 11.2	< 4.02	**6.16 j**	**2.27 j**	**9.8 j**	< 5.39 U	-	-
123678-HxCDD	57653-85-7	0.1	**54.3**	< 32.1 U	< 11.2 U	< 4.02 U	**65.2**	**36.3**	**140**	**4.81 j**	-	-
123789-HxCDD	19408-74-3	0.1	**22.1**	**11.8 j**	**4.18 j**	**2.38 j**	**21.8**	**9.51**	**17.3**	< 5.39 U	-	-
1234678-HpCDD	35822-46-9	0.01	**1160**	**1230**	**580 J**	**38.7**	**1340**	**1230**	**2800**	**112**	-	-
OCDD	3268-87-9	0.0003	**12200**	**10200 J**	**4160 J**	**374**	**12400 J**	**18900 eJ**	**48100 eJ**	**1810**	-	-
2378-TCDF	51207-31-9	0.1	**7.2**	**4.14 j**	**5.08**	**3.84**	**6.87**	**8.09**	**9.33**	< 1.08 U	-	-
12378-PeCDF	57117-41-6	0.03	**9.87 j**	< 32.1 U	< 11.2	< 4.02	**6.6 j**	**1.52 j**	**4.75 j**	**1.57 j**	-	-
23478-PeCDF	57117-31-4	0.3	**46.2**	< 32.1 U	< 11.2	< 4.02	**7.71 j**	**2.02 j**	**4.68 j**	**1.21 j**	-	-
123478-HxCDF	70648-26-9	0.1	**211**	**8.42 j**	**2.08 j**	**3.05 j**	**24.7**	**8.53**	**17.1**	**7.22**	-	-
123678-HxCDF	57117-44-9	0.1	**84.4**	< 32.1 U	< 11.2 U	**1.28 j**	**12.7**	< 6.05 U	**8.85 j**	**2.01 j**	-	-
123789-HxCDF	72918-21-9	0.1	< 16.9	< 32.1	< 11.2	< 4.02	< 12	< 6.05	< 14.1	< 5.39 U	-	-

Table 7

Storm Water and Tailrace Solids Analytical Results
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature			Pipe Tunnel	Clarifier	Pump Stations		Tailraces				Most Conservative Screening Criteria[1]	Regional Background Levels[2]
Location		TEFs	F53-01	F55-01	PS1-01	PS2-01	TR1-01	TR2-02	TR2-02/03 (composite)	TRH-01		
Sample ID			F53-01-0-0.5-091412	F55-01-0-0.5-091412	PS1-01-0-0.5-091412	PS2-01-Shallow	TR1-01-0-0.5-091512	TR2-02-DEEP	TR2-SHALLOW	TRH-01-0-0.5		
Sample Date			9/14/12	9/14/12	9/14/12	9/8/12	9/15/12	9/8/12	9/8/12	9/15/12		
Sample Depth (ft bgs)			0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0.5-1.0	0-0.5	0-0.5		
Constituent	**CAS Number**											
234678-HxCDF	60851-34-5	0.1	**60.1**	< 32.1 U	< 11.2 U	**1.3 j**	**15.3**	**6.49**	**20.6**	**3 j**	-	-
1234678-HpCDF	67562-39-4	0.01	**280**	**78.7 J**	**37.6 J**	**8.39**	**255 J**	**99.9**	**300**	**36.9**	-	-
1234789-HpCDF	55673-89-7	0.01	**63**	< 32.1	< 11.2	**1.85 j**	**7.93 j**	**6.08**	< 14.1 U	**2.91 j**	-	-
OCDF	39001-02-0	0.0003	**495**	**163**	**162**	**13.7**	**337**	**567**	**757**	**63.6**	-	-
Total TCDD	41903-57-5		**0.957 j**	< 6.41	**1.94 j**	< 0.804	**1.66 j**	**36.9**	**75.8**	< 1.08	-	-
Total PeCDD	36088-22-9		**11.3 j**	**4.27 j**	**2.72 j**	< 4.02	**21**	**43.3**	**69.1**	**0.749 j**	-	-
Total HxCDD	34465-46-8		**246**	**205**	**65.7**	**14.5**	**343**	**284**	**522**	**21.4**	-	-
Total HpCDD	37871-00-4		**2290**	**2370**	**1080**	**82.1**	**3080**	**3290**	**5750**	**227**	-	-
Total TCDF	30402-14-3		**113**	**10.1**	**6.63**	**7.02**	**28.5**	**22.6**	**24.7**	**2.15**	-	-
Total PeCDF	30402-15-4		**436**	**32.9**	**2.16 j**	**5.32**	**124**	**43.2**	**139**	**13.2**	-	-
Total HxCDF	55684-94-1		**905**	**146**	**30.8**	**17**	**447**	**192**	**789**	**109**	-	-
Total HpCDF	38998-75-3		**749**	**230**	**98.4**	**22.6**	**699**	**498**	**1170**	**134**	-	-
Calculated TEQ (ND=0)[3]			**81.5**	**18.6**	**8.61**	**1.79**	**40.8**	**29.1**	**78.2**	**4.61**	15.0	-
Calculated TEQ (ND=1/2 DL)[3]			**84.0**	**51.4**	**20.0**	**5.47**	**42.6**	**30.3**	**80.4**	**6.01**	15.0	-
Asbestos by ALS Laboratory Internal Method ENV004												
Asbestos (total)	1332-21-4		ND	ND	ND	ND	ND	ND	ND	ND	-	-

Notes:

[1] Screening criteria are derived from Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012. Risk Based Decision Making Action Levels are screened among three pathways - Soil Ingestion/Dermal Contact/Inhalation, Volatilization to Outdoor Air, Vapor Intrusion to Buildings

[2] Default Background Concentrations for Metals in Oregon Soils: DEQ, 2002. Memo from Toxicology Workgroup. Default Background Concentration for Metals. October 28. Media = soil Screening criteria are not considered exceeded when results are equal to or below established regional background levels.

[3] TEQ = Toxicity Equivalency Quotient to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD). Only positively identified compounds are included in TEQ calculation. TEF = Toxicity Equivalency Factors (Van den Berg et al. 2006. The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds, ToxSci Advance Access, 7 July 2006).

- = Applicable screening criteria for this constituent are not available.

< = Constituent was not detected above the laboratory MDL or MRL (constituent-dependant). Applicable reporting limit provided.

Bold = The analyte was detected above the applicable reporting limit.

Empty cells = Constituent not analyzed.

ft bgs = feet below ground surface

MDL = Method detection limit

MRL = Method reporting limit

mg/kg = micrograms per kilogram

ND = Not detected

ng/kg = nanograms per kilogram

= Detected concentration exceeds one or more sceening criteria.

= Analyte not detected, but MDL exceeds one or more screening criteria.

Laboratory Data Qualifiers:

j = The value reported is below the laboratory reporting limit and should be considered an estimate.

ERM Data Qualifiers:

J = Detected sample result qualified as estimated

J+ = Detected sample result qualified as estimated and biased high

NJ = Estimated value

U = Sample result qualified as nondetected

Table 8
Analytes with Detections above Screening Criteria
Storm Water and Tailrace Solids
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Constituent of Interest	Site Feature	Location	Sample ID	Sample Date	Sample Depth (ft bgs)	Concentration	Regional Background Levels[1]	Screening Criteria[2]									
								Ingestion, Dermal Contact, and Inhalation						Volatilization to Outdoor Air		Vapor Intrusion into	
								Occupational		Construction Worker		Excavation Worker		Occupational		Occupational	
								SL	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*
Total Metals by EPA Method 6000/7000 Series (mg/kg)																	
Arsenic	Tailraces	TR1-01	TR-01-0-0.5-091512	9/15/2012	0-0.5	**17.9**	7	1.7	10.5	13	1.4	370		-		-	
		TR2-02/03 (composite)	TR2-SHALLOW	9/8/2012	0-0.5	**7.6**	7	1.7	4.5	13		370		-		-	
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (mg/kg)																	
Benzo(a)pyrene	Tailraces	TR2-02	TR2-02-DEEP	9/8/2012	Deep	**0.46**		0.27	1.7	2.1		59		-		-	
Polychlorinated Biphenyls (PCBs) by EPA Method 8082A (mg/kg)																	
Total PCBs as Aroclors	Pipe Tunnel	F53-01	F53-01-0-0.5	9/14/2012	0-0.5	**2.9**		0.7	4.1	7.5		210		-		-	
	Pump Stations	PS2-01	PS2-01-Shallow	9/8/2012	0-0.5	**0.888**		0.7	1.3	7.5		210		-		-	
Dioxins and Furans by EPA Method 8290A (ng/kg)																	
Calculated TEQ (ND=0)[3]	Pipe Tunnel	F53-01	F53-01-0-0.5	9/14/2012	0-0.5	**81.50**		15	5.4	150		4200		-		-	
	Clarifier	F55-01	F55-01-0-0.5-091412	9/14/2012	0-0.5	**18.63**		15	1.2	150		4200		-		-	
	Tailraces	TR1-01	TR1-01-0-0.5-091512	9/15/2012	0-0.5	**40.81**		15	2.7	150		4200		-		-	
		TR2-02	TR2-02-DEEP	9/8/2012	0.5-1.0	**29.06**		15	1.9	150		4200		-		-	
		TR2-02/03 (composite)	TR2-SHALLOW	9/8/2012	0-0.5	**78.22**		15	5.2	150		4200		-		-	
Calculated TEQ (ND=1/2 DL)[3]	Pipe Tunnel	F53-01	F53-01-0-0.5	9/14/2012	0-0.5	**84.04**		15	5.6	150		4200		-		-	
	Clarifier	F55-01	F55-01-0-0.5-091412	9/14/2012	0-0.5	**51.37**		15	3.4	150		4200		-		-	
	Pump Stations	PS1-01	PS1-01-0-0.5-091412	9/14/2012	0-0.5	**20.03**		15	1.3	150		4200		-		-	
	Tailraces	TR1-01, TR1-02	TR1-01-0-0.5-091512	9/15/2012	0-0.5	**42.61**		15	2.8	150		4200		-		-	
		TR2-02	TR2-02-DEEP	9/8/2012	0.5-1.0	**30.27**		15	2.0	150		4200		-		-	
		TR2-02/03 (composite)	TR2-SHALLOW	9/8/2012	0-0.5	**80.41**		15	5.4	150		4200		-		-	

Notes:

[1] Default Background Concentrations for Metals in Oregon Soils: DEQ, 2002. Memo from Toxicology Workgroup. Default Background Concentration for Metals. October 28. Media = soil

[2] Screening criteria are derived from Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012.

[3] TEQ = Toxicity Equivalency Quotient to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD). Only positively identified compounds are included in TEQ calculation. Toxicity equivalency factors provided in previous table.

- = Indicates applicable screening criteria for this constituent are not available.

Bold = The analyte was detected above the applicable reporting limit.

EQ = Exceedance quotient

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

SL = Screening level

ng/kg = nanograms per kilogram

= Detected concentration exceeds one or more sceening criteria; screening criteria exceeded are shaded.

Screening Level Exceedance Quotient Key:

= Indicates detected concentration exceeds screening criteria by a factor between 1 and 5.

= Indicates detected concentration exceeds screening criteria by a factor between 5 and 10.

= Indicates detected concentration exceeds screening criteria by a factor above 10.

Table 9

Storm Water and Tailrace Water Analytical Results
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature		Pipe Tunnel		Clarifier	Pump Stations		Tailraces			Most Conservative Screening Criteria[1]
Location		F53-01	F53-01	F55-01	PS1-01	PS2-01	TR1-01	TR2-02[2]	TRH-01	
Sample ID		F53-01-SW-091412	DUP-01-SW-091412	F55-01-SW-091412	PS1-01-SW-091412	PS2-01-SW-090812	TR1-01-SW-091412	TR2-01-SW-091412	TRH-01-SW-091412	
Sample Date		9/14/12	9/14/12	9/14/12	9/14/12	9/8/12	9/14/12	9/14/12	9/14/12	
Constituent	**CAS Number**									
Total Metals by EPA Method 6000/7000 Series (µg/L)										
Arsenic	7440-38-2	**1.6**	**1.5**	**1.2**	**1.3**	**2**	**1.6**	**3.5**	**0.5**	2.1
Cadmium	7440-43-9	**0.15**	**0.21**	**0.08**	**1.14**	**0.39**	**0.11**	**0.14**	**0.14**	1.1
Chromium	7440-47-3	**1.4**	**1.3**	**1.6**	**1**	**4.2**	**0.5**	**4.9**	**0.6**	-
Copper	7440-50-8	**22.2**	**20.8**	**9**	**21.2**	**84.6**	**7.4**	**37**	**41**	12
Lead	7439-92-1	**4.97**	**9.13**	**1.16**	**1.74**	**7.32**	**1.75**	**1.66**	**2.95**	-
Nickel	7440-02-0	**23.2**	**21.5**	**24.4**	**15.9**	**37.1**	**6**	**38.7**	**6.9**	140
Zinc	7440-66-6	**415**	**833**	**26.7**	**36.7**	**119**	**15.8**	**86**	**27.7**	110
Hexavalent Chromium	18540-29-9	< 2	< 2	< 2	< 2		< 2	< 2	< 2	-
Mercury	7439-97-6			< 0.2			< 0.2		< 0.2	0.012
Total Petroleum Hydrocarbons (TPH) by NW Methods (µg/L)										
Gasoline Range Organics	GRO	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	-
Diesel Range Organics	DRO	**280 NJ**	**500 NJ**	**460 NJ**	**410 NJ**	**60000 NJ**	< 260	**6100 NJ**	< 260	-
Oil Range Organics	RRO	< 490	**830 NJ**	< 530	< 500	**130000 NJ**	< 510	**3300 NJ**	< 520	-
Volatile Organic Compounds (VOCs) by EPA Method 8260C (µg/L): Detected Compounds Only										
1,2,4-Trimethylbenzene	95-63-6	< 2	< 2	< 2	< 2	**11**	< 2	< 2	< 2	-
1,3,5-Trimethylbenzene	108-67-8	< 2	< 2	< 2	< 2	**3.1**	< 2	< 2	< 2	-
Chloroform	67-66-3	**0.97**	**0.98**	< 0.5	**1.2**	**0.68**	**1.4**	< 0.5	< 0.5	74
Ethylbenzene	100-41-4	< 0.5	< 0.5	< 0.5	< 0.5	**1.5**	< 0.5	< 0.5	< 0.5	160
m,p-Xylenes	179601-23-1	< 0.5	< 0.5	< 0.5	< 0.5	**9.4**	< 0.5	< 0.5	< 0.5	-
Naphthalene	91-20-3	< 2	< 2	< 2	< 2	**7.4**	< 2	< 2	< 2	-
o-Xylene	95-47-6	< 0.5	< 0.5	< 0.5	< 0.5	**6**	< 0.5	< 0.5	< 0.5	-
Toluene	108-88-3	< 0.5	< 0.5	< 0.5	< 0.5	**1.3**	< 0.5	< 0.5	< 0.5	720
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (µg/L): Detected Compounds Only										
No Compounds Detected										

Notes:

[1] Criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.

[2] Sample labeled as "TR2-01" on COC and in laboratory reports.

- = Applicable screening criteria for this constituent are not available.

< = Constituent was not detected above the laboratory MDL or MRL (constituent-dependant). Applicable reporting limit provided.

Bold = The analyte was detected above the applicable reporting limit.

Empty cells = Constituent not analyzed.

MDL = Method detection limit

MRL = Method reporting limit

µg/L = Micrograms per liter

= Detected concentration exceeds one or more sceening criteria.

= Analyte not detected, but MDL exceeds one or more screening criteria.

ERM Data Qualifiers:

NJ = Estimated value

Table 10
Analytes with Detections above Screening Criteria
Storm Water and Tailrace Water
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Constituent of Interest	Site Feature	Location	Sample ID	Sample Date	Concentration	Screening Criteria[1] (µg/L)							
						Human Health (Consumption)				Freshwater AWQC			
						Water + Organism		Organism Only		Acute		Chronic	
						SL	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*
Total Metals by EPA Method 6000/7000 Series (µg/L)													
Arsenic	Tailraces	TR2-02[2]	TR2-01-SW-091412	9/14/2012	**3.5**	2.1	1.7	2.1	1.7	-		-	
Cadmium	Pump Stations	PS1-01	PS1-01-SW-091412	9/14/2012	**1.14**	-		-		3.9		1.1	1.0
Copper	Pipe Tunnel	F53-01	F53-01-SW-091412	9/14/2012	**22.2**	1300		-		18	1.2	12	1.9
		F53-01	DUP-01-SW-091412	9/14/2012	**20.8**	1300		-		18	1.2	12	1.7
	Pump Stations	PS1-01	PS1-01-SW-091412	9/14/2012	**21.2**	1300		-		18	1.2	12	1.8
		PS2-01	PS2-01-SW-090812	9/8/2012	**84.6**	1300		-		18	4.7	12	7.1
	Tailraces	TR2-01	TR2-01-SW-091412	9/14/2012	**37**	1300		-		18	2.1	12	3.1
		TRH-01	TRH-01-SW-091412	9/14/2012	**41**	1300		-		18	2.3	12	3.4
Zinc	Pipe Tunnel	F53-01	F53-01-SW-091412	9/14/2012	**415**	2100		2600		120	3.5	110	3.8
		F53-01	DUP-01-SW-091412	9/14/2012	**833**	2100		2600		120	6.9	110	7.6
	Pump Stations	PS2-01	PS2-01-SW-090812	9/8/2012	**119**	2100		2600		120		110	1.1

Notes:

[1] Criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.

[2] Sample labeled as "TR2-01" on COC and in laboratory reports.

- = Indicates applicable screening criteria for this constituent are not available.

Bold = The analyte was detected above the applicable reporting limit.

EQ = Exceedance quotient

µg/L = Micrograms per liter

SL = Screening level

= Detected concentration exceeds one or more sceening criteria; screening criteria exceeded are shaded.

Screening Level Exceedance Quotient Key:

= Indicates detected concentration exceeds screening criteria by a factor between 1 and 5.

= Indicates detected concentration exceeds screening criteria by a factor between 5 and 10.

= Indicates detected concentration exceeds screening criteria by a factor above 10.

Table 11

Groundwater and Seep Analytical Results
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature		Groundwater		Seep Water			Most Conservative Screening Criteria[1]
		Building 38-Welding/UST	Truck Dump	Building 33 / No. 1 Paper Machine & Bleach Plant		Building 42 / Chemical Storage	
Location		F38-01	TD-01	F33-01	F34-01	F42-03	
Sample ID		F38-01-GW-090712	TD-01-GW-090712	F33-01-SP-091512	F34-01-SP-091512	F42-03-SP-091512	
Sample Date		9/7/12	9/7/12	9/15/12	9/15/12	9/15/12	
Sample Depth (ft bgs)		5-10	3-8	Surface	Surface	Surface	
Constituent	**CAS Number**						
Total Metals by EPA Method 6000/7000 Series (µg/L)							
Arsenic	7440-38-2	**2.3**	**11.6**	**2.9**	**2.7**	**9.7**	5800
Cadmium	7440-43-9	< 0.02	< 0.02	**0.47**	**0.12**	**5**	57000
Chromium	7440-47-3	< 0.2	**0.9**	**10.2**	< 2 U	**35.2**	-
Copper	7440-50-8	**0.9**	**0.4**	**34.8**	**11.3**	**1310**	5000000
Lead	7439-92-1	**4.67**	**0.09**	**40.1**	**8.67**	**283**	-
Nickel	7440-02-0	**1.1**	**6.1**	**30**	< 4 U	**120**	12000000
Zinc	7440-66-6	**1.5**	**2**	**84.5**	**20.4**	**1220**	-
Total Petroleum Hydrocarbons (TPH) by NW Methods (µg/L)							
Gasoline Range Organics	GRO	< 250	< 250	< 250	< 250	< 250	13000
Diesel Range Organics	DRO	< 250	na	< 270	< 250	**8500 NJ**	23000
Oil Range Organics	RRO	< 490	na	**910 NJ**	< 500	**31000 NJ**	40000
Volatile Organic Compounds (VOCs) by EPA Method 8260C (µg/L): Detected Compounds Only							
Carbon Disulfide		< 0.5	< 0.5	< 0.5	< 0.5	**1**	-
Chloroform		< 0.5	< 0.5	< 0.5	**2.2**	< 0.5	720
Ethylbenzene		< 0.5	< 0.5	**2.3**	< 0.5	< 0.5	4400
m,p-Xylenes		< 0.5	< 0.5	**10**	< 0.5	< 0.5	23000
o-Xylene		< 0.5	< 0.5	**2.8**	< 0.5	< 0.5	-
Toluene		< 0.5	< 0.5	**9.4**	**1.1**	**0.93**	210000
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (µg/L): Detected Compounds Only							
Bis(2-ethylhexyl) Phthalate	117-81-7		< 9.5	< 10	< 12	**21**	-

Notes:

[1] Screening criteria are derived from Oregon DEQ Risk Based Decision Making for the Remediation of Petroleum Impacted Sites for Occupational and Construction Worker receptors, June 2012. Risk Based Decision Making Action Levels are screened among three pathways - Volatilization to Outdoor Air, Vapor Intrusion to Buildings, and Groundwater in Excavations

- = Applicable screening criteria for this constituent are not available.

< = Constituent was not detected above the laboratory MDL or MRL (constituent-dependant). Applicable reporting limit provided.

Bold = The analyte was detected above the applicable reporting limit.

na = Not analyzed. Sample volume unavailable due to slow recharge rate.

ft bgs = feet below ground surface

MDL = Method detection limit

MRL = Method reporting limit

µg/L = Micrograms per liter

ERM Data Qualifiers:

NJ = Estimated value

U = Sample result qualified as nondetected

Table 12
Intake Basin Sediment Analytical Results
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature		TEFs	Intake Basin							Most Conservative Screening Criteria[1]
Location			IB-01		IB-02		IB-03			
Sample ID			IB-01-0-6inch-091412	IB-01-2.5-3.0-091412	IB-02-0-6inch-091412	IB-02-2.5-3.0-091412	IB-03-0-6inch-091412	IB-03-1.5-2-091412	IB-03-3.5-4.0-091412	
Sample Date			9/14/12	9/14/12	9/14/12	9/14/12	9/14/12	9/14/12	9/14/12	
Sample Depth (ft bss)			0-0.5	2.5-3.0	0-0.5	2.5-3.0	0-0.5	1.5-2	2.5-3.0	
Constituent	CAS Number									
Total Metals by EPA Method 6000/7000 Series (mg/kg)										
Arsenic	7440-38-2		**2.4**	**2.8**	**2.4**	**3.2**	**2.8**	**2.1**	**2.7**	7
Cadmium	7440-43-9		**0.12**	**0.18**	**0.1**	**0.21**	**0.12**	**0.11**	**0.17**	1
Chromium	7440-47-3		**24.5**	**31.1**	**22.8**	**33.1**	**26.6**	**21.4**	**29**	-
Copper	7440-50-8		**26.7**	**38.7**	**22**	**42.8**	**28.2**	**21.4**	**36.1**	-
Lead	7439-92-1		**8.78 J**	**10.5**	**5.42**	**11.6**	**6.59**	**5.61**	**10**	17
Nickel	7440-02-0		**23.5**	**26.1**	**23.4**	**26.7**	**24.6**	**23.6**	**24.2**	-
Zinc	7440-66-6		**67.5**	**85.2**	**61.2**	**90.9**	**69.9**	**58.2**	**79.4**	-
Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D (mg/kg): Detected Compounds Only										
No Compounds Detected										
Polychlorinated Biphenyls (PCBs) by EPA Method 8082A (mg/kg)										
Aroclor 1016	12674-11-2		< 0.089	< 0.089	< 0.078	< 0.09	< 0.084	< 0.069	< 0.084	-
Aroclor 1221	11104-28-2		< 0.18	< 0.18	< 0.16	< 0.18	< 0.17	< 0.14	< 0.17	-
Aroclor 1232	11141-16-5		< 0.089	< 0.089	< 0.078	< 0.09	< 0.084	< 0.069	< 0.084	-
Aroclor 1242	53469-21-9		< 0.089	< 0.089	< 0.078	< 0.09	< 0.084	< 0.069	< 0.084	-
Aroclor 1248	12672-29-6		< 0.089	< 0.089	< 0.078	< 0.09	< 0.084	< 0.069	< 0.084	-
Aroclor 1254	11097-69-1		< 0.089	< 0.089	< 0.078	< 0.09	< 0.084	< 0.069	< 0.084	-
Aroclor 1260	11096-82-5		< 0.089	< 0.089	< 0.078	< 0.09	< 0.084	< 0.069	< 0.084	-
Total PCBs as Aroclors			< 0.18	< 0.18	< 0.16	< 0.18	< 0.17	< 0.14	< 0.17	4.80E-05
Dioxins and Furans by EPA Method 8290A (ng/kg)										
2378-TCDD	1746-01-6	1	< 0.898	< 0.885	< 0.773	< 0.914 U	< 0.852	< 0.699	**0.628 j**	0.0011
12378-PeCDD	40321-76-4	1	< 4.49	**0.492 j**	< 3.86	< 4.57 U	< 4.26	< 3.5	< 4.22 U	0.034
123478-HxCDD	39227-28-6	0.1	< 4.49	**0.542 j**	< 3.86	< 4.57 U	< 4.26	< 3.5	< 4.22 U	0.34
123678-HxCDD	57653-85-7	0.1	**1.07 j**	**4.97**	< 3.86	**6.08**	**1.33 j**	**0.751 j**	**8.18**	0.34
123789-HxCDD	19408-74-3	0.1	< 4.49	< 4.42 U	< 3.86	< 4.57 U	< 4.26	**0.486 j**	**3.92 j**	0.34
1234678-HpCDD	35822-46-9	0.01	**19.5**	**46.3**	**14.5**	**76.9**	**21.1**	**17.3**	**70.4**	85
OCDD	3268-87-9	0.0003	**137**	**375 J**	**116**	**665 J**	**161**	**145**	**573**	2800
2378-TCDF	51207-31-9	0.1	< 0.898	**4.04**	< 0.773	**3.98**	< 0.852	< 0.699	**3.57**	0.094
12378-PeCDF	57117-41-6	0.03	< 4.49	< 4.42	< 3.86	**0.44 j**	< 4.26	< 3.5	< 4.22 U	0.31
23478-PeCDF	57117-31-4	0.3	< 4.49	< 4.42	< 3.86	< 4.57	< 4.26	< 3.5	< 4.22 U	0.0037
123478-HxCDF	70648-26-9	0.1	< 4.49	**0.65 j**	< 3.86	**0.987 j**	**0.558 j**	**0.24 j**	< 4.22 U	0.34
123678-HxCDF	57117-44-9	0.1	< 4.49	**0.598 j**	< 3.86	< 0.788 U	**0.25 j**	**0.141 j**	**0.963 j**	0.34
123789-HxCDF	72918-21-9	0.1	< 4.49	< 4.42	< 3.86	< 4.57	< 4.26	< 3.5	< 4.22	0.34
234678-HxCDF	60851-34-5	0.1	< 4.49	**0.615 j**	< 3.86	**0.956 j**	**0.368 j**	< 3.5	**0.941 j**	0.34
1234678-HpCDF	67562-39-4	0.01	< 4.49 U	**5.92**	**2.81 j**	**10.1**	**4.41**	< 3.5 U	< 9.33 U	85
1234789-HpCDF	55673-89-7	0.01	< 4.49	< 4.42	< 3.86	< 4.57	**0.432 j**	< 3.5	< 4.22	85
OCDF	39001-02-0	0.0003	**11.6**	**22.4**	**10.6**	**42.6**	**17.6**	**16.1**	**33.7**	2800
Total TCDD	41903-57-5		**1.22**	**0.89**	**0.782**	< 0.914	**1.3**	< 0.699	**2.85**	-
Total PeCDD	36088-22-9		< 4.49	**0.492 j**	< 3.86	**1.24 j**	< 4.26	**0.308 j**	**4.39**	-
Total HxCDD	34465-46-8		**1.83 j**	**34.5**	< 3.86	**40.6**	**6.46**	**4.53**	**55.6**	-
Total HpCDD	37871-00-4		**36.9**	**99.4**	**29.9**	**167**	**43.9**	**33.3**	**147**	-
Total TCDF	30402-14-3		< 0.898	**8.2**	< 0.773	**12.2**	< 0.852	< 0.699	**6.82**	-
Total PeCDF	30402-15-4		< 4.49	**4.86**	**1.36 j**	**7.74**	**1.41 j**	**0.931 j**	**7.83**	-
Total HxCDF	55684-94-1		**2.48 j**	**13.1**	**1.53 j**	**18.9**	**6.93**	**3.26 j**	**18.6**	-
Total HpCDF	38998-75-3		**7.67**	**20.8**	**8.63**	**36.1**	**15.4**	**7.25**	**22.5**	-
Calculated TEQ (ND=0)[2]			**0.347**	**2.27**	**0.211**	**2.30**	**0.564**	**0.383**	**3.27**	0.0011
Calculated TEQ (ND=1/2 DL)[2]			**5.22**	**3.91**	**4.57**	**6.47**	**4.50**	**3.66**	**6.78**	0.0011

Notes:

[1] Screening criteria are derived from Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007.

[2] TEQ = Toxicity Equivalency Quotient to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD). Only positively identified compounds are included in TEQ calculation.

TEF = Toxicity Equivalency Factors (Van den Berg et al. 2006. The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds, ToxSci Advance Access, 7 July 2006).

- = Applicable screening criteria for this constituent are not available.

< = Constituent was not detected above the laboratory MDL or MRL (constituent-dependant). Applicable reporting limit provided.

Bold = The analyte was detected above the applicable reporting limit.

ft bss = feet below sediment surface

MDL = Method detection limit

MRL = Method reporting limit

mg/kg = micrograms per kilogram

ng/kg = nanograms per kilogram

= Detected concentration exceeds one or more sceening criteria.

= Analyte not detected, but MDL exceeds one or more screening criteria.

Laboratory Data Qualifiers:

j = The value reported is below the laboratory reporting limit and should be considered an estimate.

ERM Data Qualifiers:

J = Detected sample result qualified as estimated

U = Sample result qualified as nondetected

Table 13
Analytes with Detections above Screening Criteria
Intake Basin Sediment
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Constituent of Interest	Site Feature	Location	Sample ID	Sample Date	Sample Depth (ft bss)	Concentration	Screening Criteria[1]															
							Birds				Mammals				Fish				Humans				Inorganic Background
							Individual		Population		Individual		Population		Freshwater		Marine		General		Subsistence		Freshwater	
							SL	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*	*SL*	*EQ*
Dioxins and Furans by EPA Method 8290A (ng/kg)																								
Calculated TEQ (ND=0)[2]	Intake Basin	IB-01	IB-01-0-6inch-091412	9/14/2012	0-0.5	**0.347**	0.7		3.5		0.052	6.7	1.4		0.56		0.56		0.0091	38.1	0.0011	315.1	-	
		IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**2.27**	0.7	3.2	3.5		0.052	43.7	1.4	1.6	0.56	4.1	0.56	4.1	0.0091	250.0	0.0011	2068.1	-	
		IB-02	IB-02-0-6inch-091412	9/14/2012	0-0.5	**0.211**	0.7		3.5		0.052	4.1	1.4		0.56		0.56		0.0091	23.2	0.0011	191.9	-	
		IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**2.30**	0.7	3.3	3.5		0.052	44.1	1.4	1.6	0.56	4.1	0.56	4.1	0.0091	252.3	0.0011	2087.1	-	
		IB-03	IB-03-0-6inch-091412	9/14/2012	0-0.5	**0.564**	0.7		3.5		0.052	10.8	1.4		0.56	1.0	0.56	1.0	0.0091	61.9	0.0011	512.4	-	
		IB-03	IB-03-1.5-2-091412	9/14/2012	1.5-2	**0.383**	0.7		3.5		0.052	7.4	1.4		0.56		0.56		0.0091	42.1	0.0011	348.3	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**3.27**	0.7	4.7	3.5		0.052	62.9	1.4	2.3	0.56	5.8	0.56	5.8	0.0091	359.5	0.0011	2974.0	-	
Calculated TEQ (ND=1/2 DL)[2]	Intake Basin	IB-01	IB-01-0-6inch-091412	9/14/2012	0-0.5	**5.22**	0.7	7.5	3.5	1.5	0.052	100.4	1.4	3.7	0.56	9.3	0.56	9.3	0.0091	573.4	0.0011	4743.8	-	
		IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**3.91**	0.7	5.6	3.5	1.1	0.052	75.2	1.4	2.8	0.56	7.0	0.56	7.0	0.0091	429.8	0.0011	3555.3	-	
		IB-02	IB-02-0-6inch-091412	9/14/2012	0-0.5	**4.57**	0.7	6.5	3.5	1.3	0.052	88.0	1.4	3.3	0.56	8.2	0.56	8.2	0.0091	502.6	0.0011	4157.7	-	
		IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**6.47**	0.7	9.2	3.5	1.8	0.052	124.4	1.4	4.6	0.56	11.6	0.56	11.6	0.0091	711.1	0.0011	5882.8	-	
		IB-03	IB-03-0-6inch-091412	9/14/2012	0-0.5	**4.50**	0.7	6.4	3.5	1.3	0.052	86.6	1.4	3.2	0.56	8.0	0.56	8.0	0.0091	495.0	0.0011	4094.6	-	
		IB-03	IB-03-1.5-2-091412	9/14/2012	1.5-2	**3.66**	0.7	5.2	3.5	1.0	0.052	70.3	1.4	2.6	0.56	6.5	0.56	6.5	0.0091	401.7	0.0011	3322.8	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**6.78**	0.7	9.7	3.5	1.9	0.052	130.4	1.4	4.8	0.56	12.1	0.56	12.1	0.0091	744.9	0.0011	6162.2	-	
2378-TCDD	Intake Basin	IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**0.628**	0.7		3.5		0.052	12.1	1.4		0.56	1.1	0.56	1.1	0.0091	69.0	0.0011	570.9	-	
12378-PeCDD	Intake Basin	IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.492**	21		110		1.5		42		17		17		0.27	1.8	0.034	14.5	-	
123478-HxCDD	Intake Basin	IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.542**	420		2100		15		420		34		34		2.7		0.34	1.6	-	
123678-HxCDD	Intake Basin	IB-01	IB-01-0-6inch-091412	9/14/2012	0-0.5	**1.07**	2100		11000		15		420		1700		1700		2.7		0.34	3.1	-	
		IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**4.97**	2100		11000		15		420		1700		1700		2.7	1.8	0.34	14.6	-	
		IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**6.08**	2100		11000		15		420		1700		1700		2.7	2.3	0.34	17.9	-	
		IB-03	IB-03-0-6inch-091412	9/14/2012	0-0.5	**1.33**	2100		11000		15		420		1700		1700		2.7		0.34	3.9	-	
		IB-03	IB-03-1.5-2-091412	9/14/2012	1.5-2	**0.751**	2100		11000		15		420		1700		1700		2.7		0.34	2.2	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**8.18**	2100		11000		15		420		1700		1700		2.7	3.0	0.34	24.1	-	
123789-HxCDD	Intake Basin	IB-03	IB-03-1.5-2-091412	9/14/2012	1.5-2	**0.486**	210		1100		15		420		1700		1700		2.7		0.34	1.4	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**3.92**	210		1100		15		420		1700		1700		2.7	1.5	0.34	11.5	-	
2378-TCDF	Intake Basin	IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**4.04**	5.9		30		4.3		120		95		95		0.77	5.2	0.094	43.0	-	
		IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**3.98**	5.9		30		4.3		120		95		95		0.77	5.2	0.094	42.3	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**3.57**	5.9		30		4.3		120		95		95		0.77	4.6	0.094	38.0	-	
12378-PeCDF	Intake Basin	IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.440**	59		300		14		400		95		95		2.6		0.31	1.4	-	
123478-HxCDF	Intake Basin	IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.650**	210		1100		15		420		170		170		2.7		0.34	1.9	-	
		IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.987**	210		1100		15		420		170		170		2.7		0.34	2.9	-	
		IB-03	IB-03-0-6inch-091412	9/14/2012	0-0.5	**0.558**	210		1100		15		420		170		170		2.7		0.34	1.6	-	
123678-HxCDF	Intake Basin	IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.598**	210		1100		15		420		170		170		2.7		0.34	1.8	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**0.963**	210		1100		15		420		170		170		2.7		0.34	2.8	-	
234678-HxCDF	Intake Basin	IB-01	IB-01-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.615**	210		1100		15		420		170		170		2.7		0.34	1.8	-	
		IB-02	IB-02-2.5-3.0-091412	9/14/2012	2.5-3.0	**0.956**	210		1100		15		420		170		170		2.7		0.34	2.8	-	
		IB-03	IB-03-0-6inch-091412	9/14/2012	0-0.5	**0.368**	210		1100		15		420		170		170		2.7		0.34	1.1	-	
		IB-03	IB-03-3.5-4.0-091412	9/14/2012	2.5-3.0	**0.941**	210		1100		15		420		170		170		2.7		0.34	2.8	-	

Notes:

[1] Screening criteria are derived from Sediment Bioaccumulation Levels provided in ODEQ Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007

[2] TEQ = Toxicity Equivalency Quotient to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD). Only positively identified compounds are included in TEQ calculation. Toxicity equivalency factors provided in previous table.

- = Indicates applicable screening criteria for this constituent are not available.

Bold = The analyte was detected above the applicable reporting limit.

EQ = Exceedance quotient

ft bss = feet below sediment surface

SL = Screening level

ng/kg = nanograms per kilogram

= Detected concentration exceeds one or more sceening criteria; screening criteria exceeded are shaded.

Screening Level Exceedance Quotient Key:

= Indicates detected concentration exceeds screening criteria by a factor between 1 and 5.

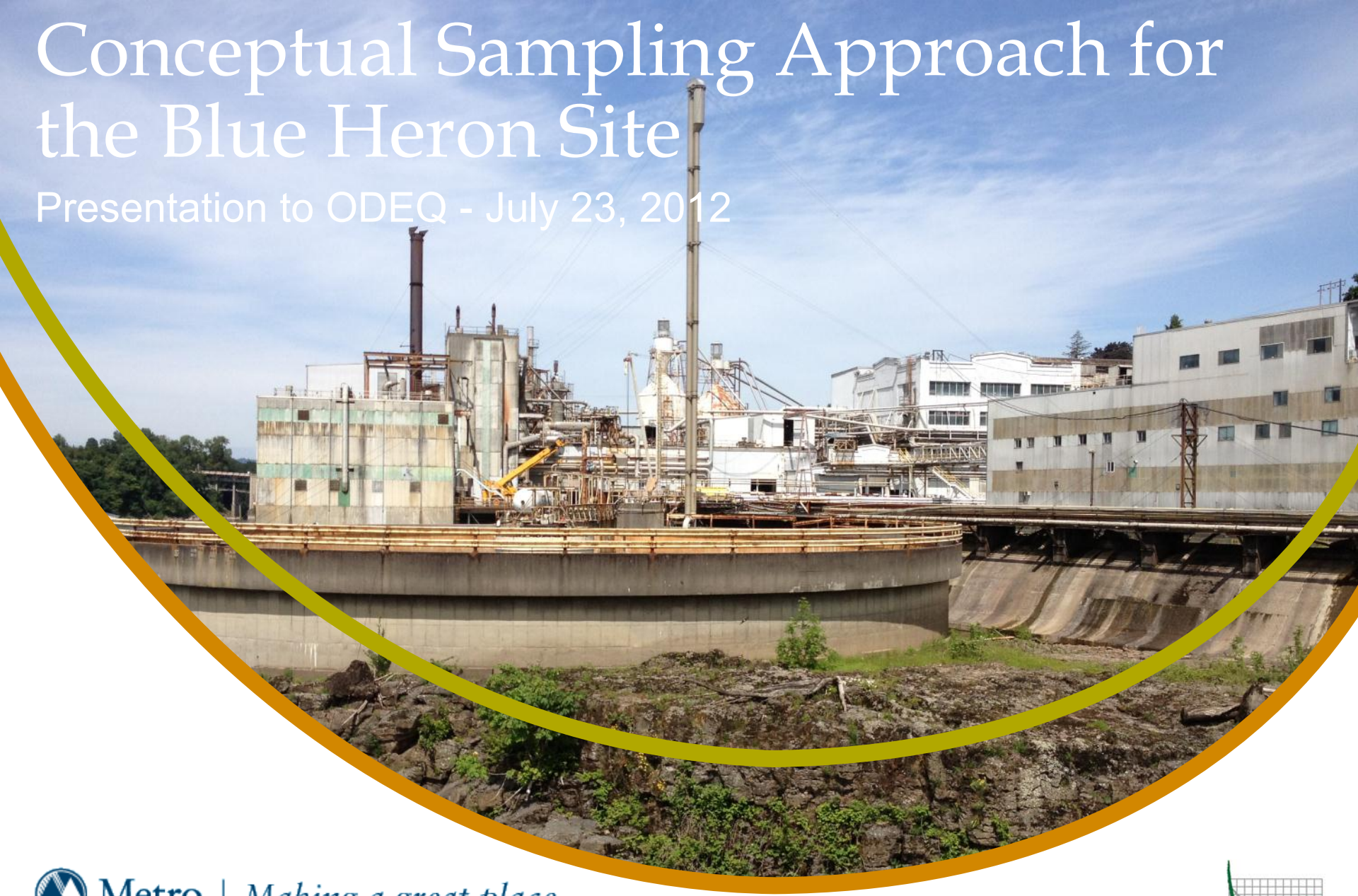
= Indicates detected concentration exceeds screening criteria by a factor between 5 and 10.

= Indicates detected concentration exceeds screening criteria by a factor above 10.

Appendix A
Phase II ESA Conceptual Approach

Conceptual Sampling Approach for the Blue Heron Site

Presentation to ODEQ - July 23, 2012

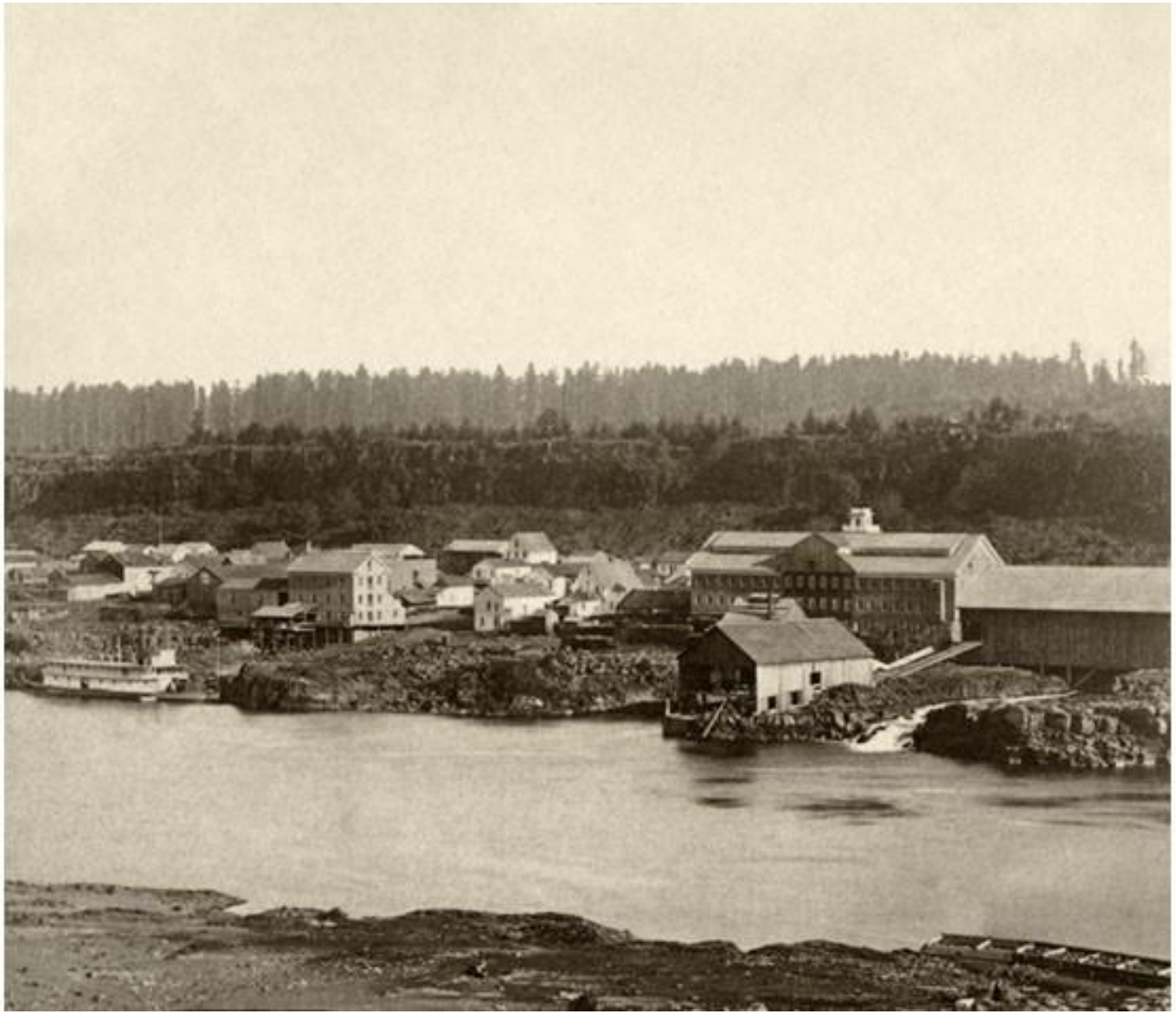


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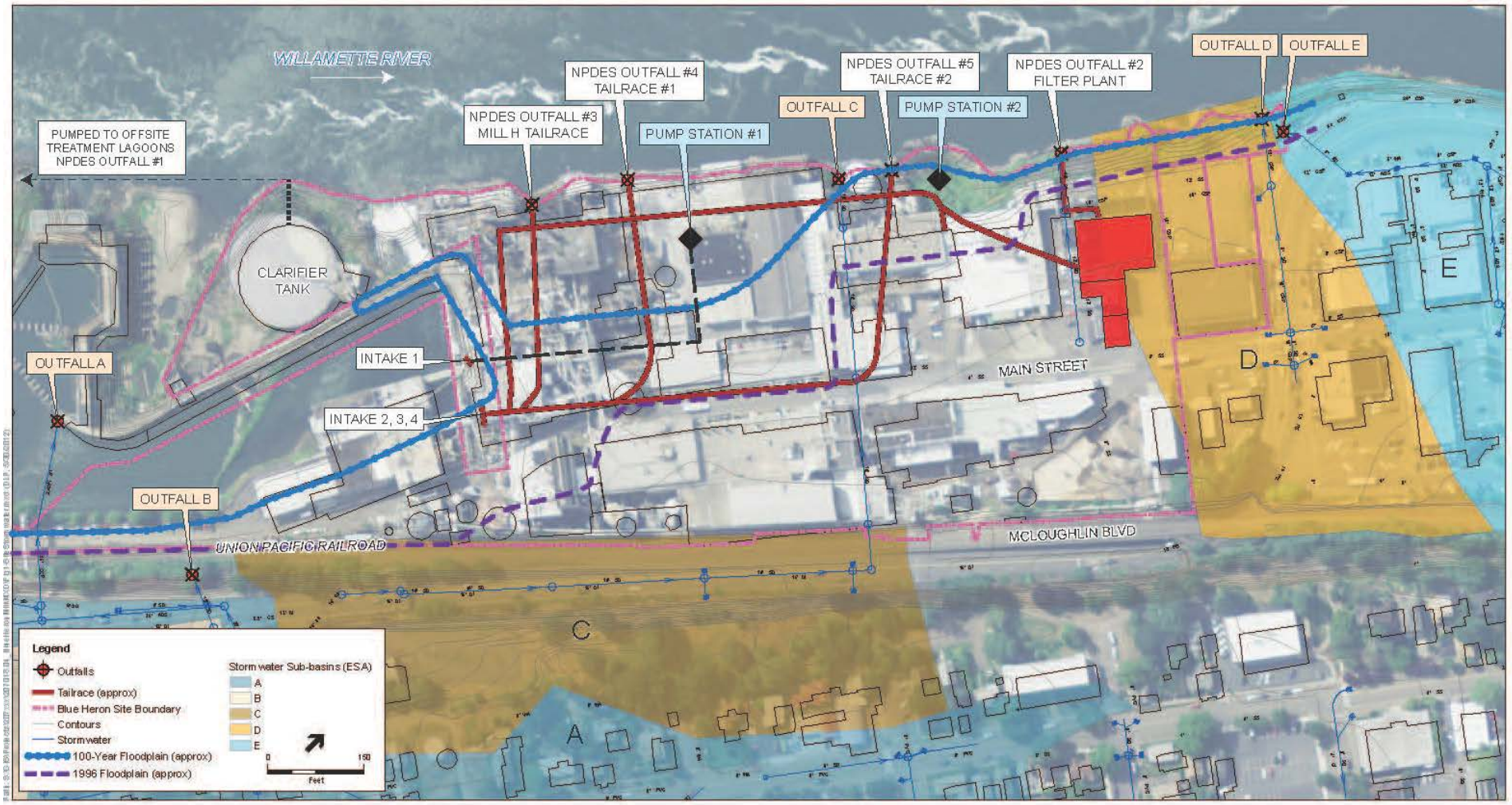
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Physical Setting

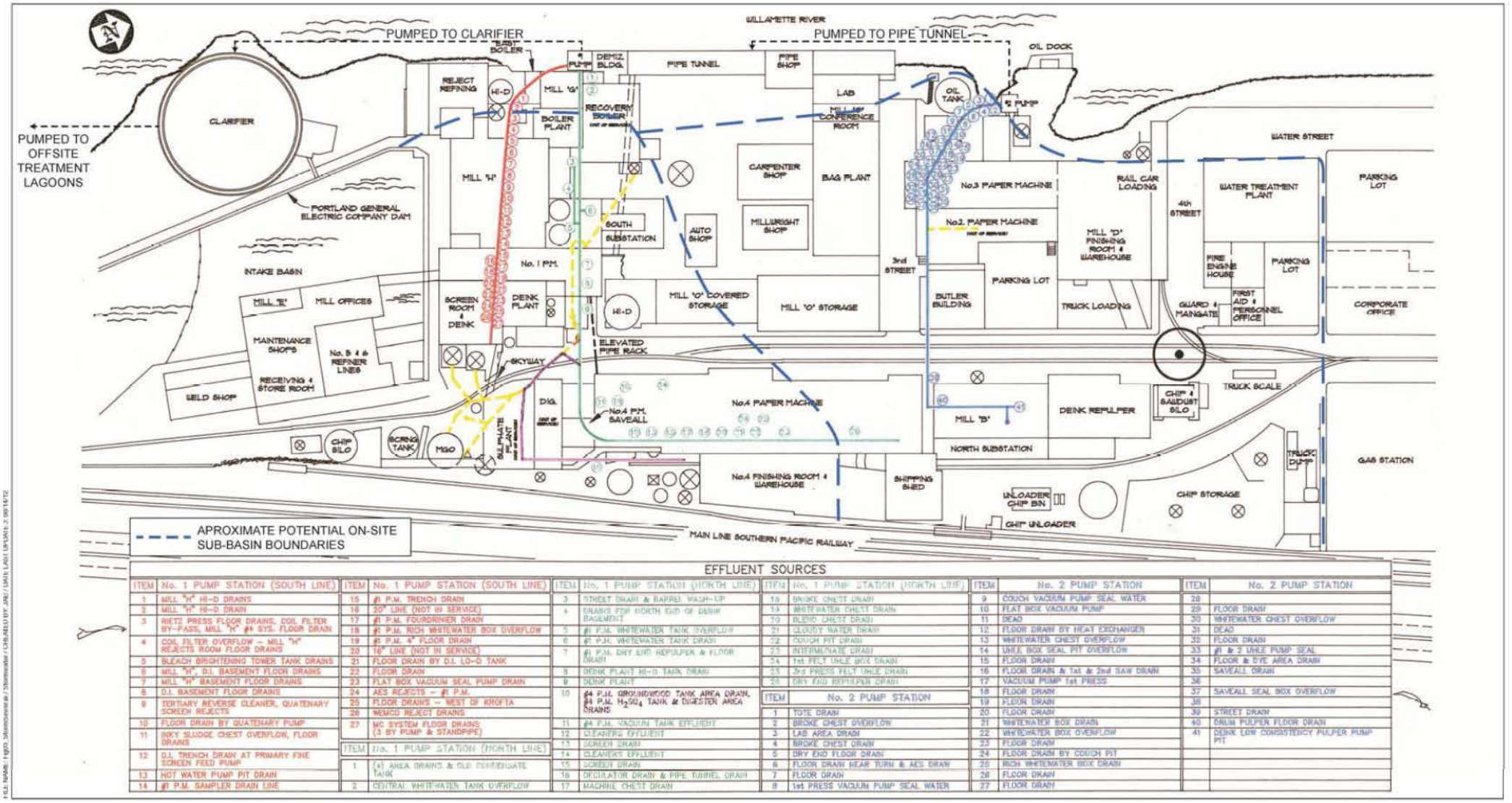


Water Management at the Site



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Water Management at the Site (cont)



EFFLUENT SOURCES

ITEM	No. 1 PUMP STATION (SOUTH LINE)
1	MILL "H" HI-D DRAINS
2	MILL "H" HI-D DRAIN
3	RIETZ PRESS FLOOR DRAINS, COIL FILTER BY-PASS, MILL "H" #1 SYS. FLOOR DRAIN
4	COIL FILTER OVERFLOW – MILL "H" REJECTS ROOM FLOOR DRAINS
5	BLEACH BRIGHTENING TOWER TANK DRAINS
6	MILL "H", D.I. BASEMENT FLOOR DRAINS
7	MILL "H" BASEMENT FLOOR DRAINS
8	D.I. BASEMENT FLOOR DRAINS
9	TERTIARY REVERSE CLEANER, QUATENARY SCREEN REJECTS
10	FLOOR DRAIN BY QUATENARY PUMP
11	SOKY SLUDGE CHEST OVERFLOW, FLOOR DRAINS
12	D.I. TRENCH DRAIN AT PRIMARY FINE SCREEN FEED PUMP
13	HOT WATER PUMP PIT DRAIN
14	#1 P.M. SAMPLER DRAIN LINE

ITEM	No. 1 PUMP STATION (SOUTH LINE)
15	#1 P.M. TRENCH DRAIN
16	20" LINE (NOT IN SERVICE)
17	#1 P.M. FOURDRINIER DRAIN
18	#1 P.M. RICH WHITEWATER BOX OVERFLOW
19	#1 P.M. 4" FLOOR DRAIN
20	16" LINE (NOT IN SERVICE)
21	FLOOR DRAIN BY D.I. LO-D TANK
22	FLOOR DRAIN
23	FLAT BOX VACUUM SEAL PUMP DRAIN
24	AES REJECTS – #1 P.M.
25	FLOOR DRAINS – WEST OF KROFTA
26	WEMCO REJECT DRAINS
27	MC SYSTEM FLOOR DRAINS (3 BY PUMP & STANDPIPE)

ITEM	No. 1 PUMP STATION (NORTH LINE)
1	(4) AREA DRAINS & OLD CONDENSATE TANK
2	CENTRAL WHITEWATER TANK OVERFLOW
3	STREET DRAIN & BARREL WASH-UP
4	DRAINS FOR NORTH END OF DEINK BASEMENT
5	#1 P.M. WHITEWATER TANK OVERFLOW
6	#1 P.M. WHITEWATER TANK DRAIN
7	#1 P.M. DRY END REPULPER & FLOOR DRAIN
8	DEINK PLANT HI-D TANK DRAIN
9	DEINK PLANT
10	#4 P.M. GROUNDWOOD TANK AREA DRAIN, #4 P.M. H_2SO_4 TANK & DIGESTER AREA DRAINS
11	#4 P.M. VACUUM TANK EFFLUENT
12	CLEANERS EFFLUENT
13	SCREEN DRAIN
14	CLEANERS EFFLUENT
15	SCREEN DRAIN
16	DECILATOR DRAIN & PIPE TUNNEL DRAIN
17	MACHINE CHEST DRAIN

ITEM	No. 1 PUMP STATION (NORTH LINE)
18	BROKE CHEST DRAIN
19	WHITEWATER CHEST DRAIN
20	BLEND CHEST DRAIN
21	CLOUDY WATER DRAIN
22	COUCH PIT DRAIN
23	INTERMEDIATE DRAIN
24	1st FELT UHLE BOX DRAIN
25	3rd PRESS FELT UHLE DRAIN
26	DRY END REPULPER DRAIN

ITEM	No. 2 PUMP STATION
1	TOTE DRAIN
2	BROKE CHEST OVERFLOW
3	LAB AREA DRAIN
4	BROKE CHEST DRAIN
5	DRY END FLOOR DRAIN
6	FLOOR DRAIN NEAR TURN & AES DRAIN
7	FLOOR DRAIN
8	1st PRESS VACUUM PUMP SEAL WATER

ITEM	No. 2 PUMP STATION
9	COUCH VACUUM PUMP SEAL WATER
10	FLAT BOX VACUUM PUMP
11	DEAD
12	FLOOR DRAIN BY HEAT EXCHANGER
13	WHITEWATER CHEST OVERFLOW
14	UHLE BOX SEAL PIT OVERFLOW
15	FLOOR DRAIN
16	FLOOR DRAIN & 1st & 2nd SAW DRAIN
17	VACUUM PUMP 1st PRESS
18	FLOOR DRAIN
19	FLOOR DRAIN
20	FLOOR DRAIN
21	WHITEWATER BOX DRAIN
22	WHITEWATER BOX OVERFLOW
23	FLOOR DRAIN
24	FLOOR DRAIN BY COUCH PIT
25	RICH WHITEWATER BOX DRAIN
26	FLOOR DRAIN
27	FLOOR DRAIN

ITEM	No. 2 PUMP STATION
28	
29	FLOOR DRAIN
30	WHITEWATER CHEST OVERFLOW
31	DEAD
32	FLOOR DRAIN
33	#1 & 2 UHLE PUMP SEAL
34	FLOOR & DYE AREA DRAIN
35	SAVEALL DRAIN
36	
37	SAVEALL SEAL BOX OVERFLOW
38	
39	STREET DRAIN
40	DRUM PULPER FLOOR DRAIN
41	DEINK LOW CONSISTENCY PULPER PUMP PIT

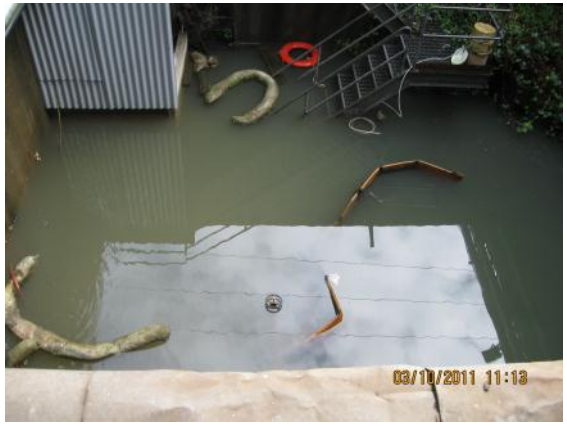
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Tailraces


10/19/2011 13:44


03/10/2011 10:53


03/10/2011 11:17


03/10/2011 11:13


10/19/2011 13:30


03/10/2011 11:17

Storm Water System









Seeps





In-Take Basin



Examples of Potential Sources





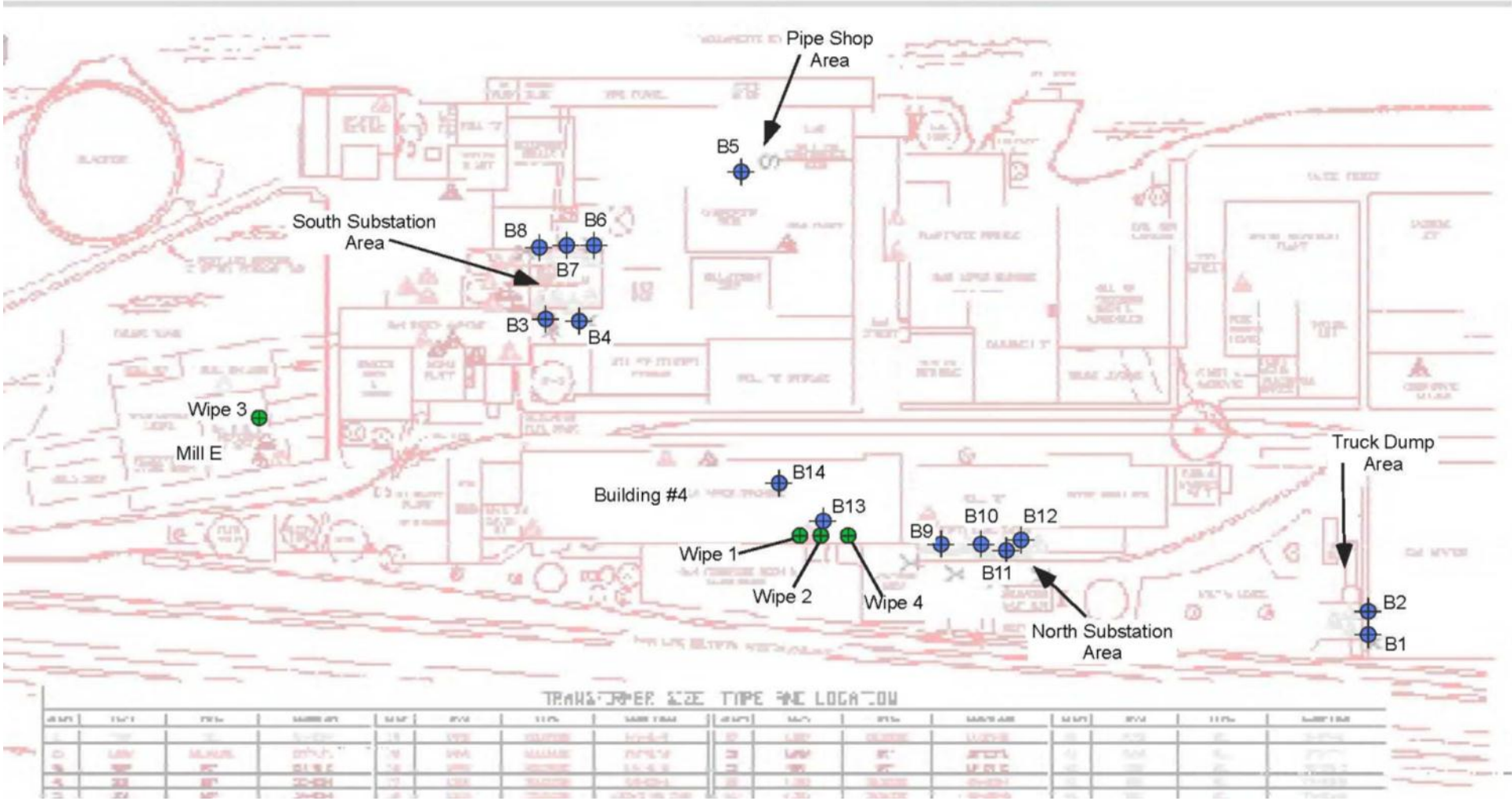






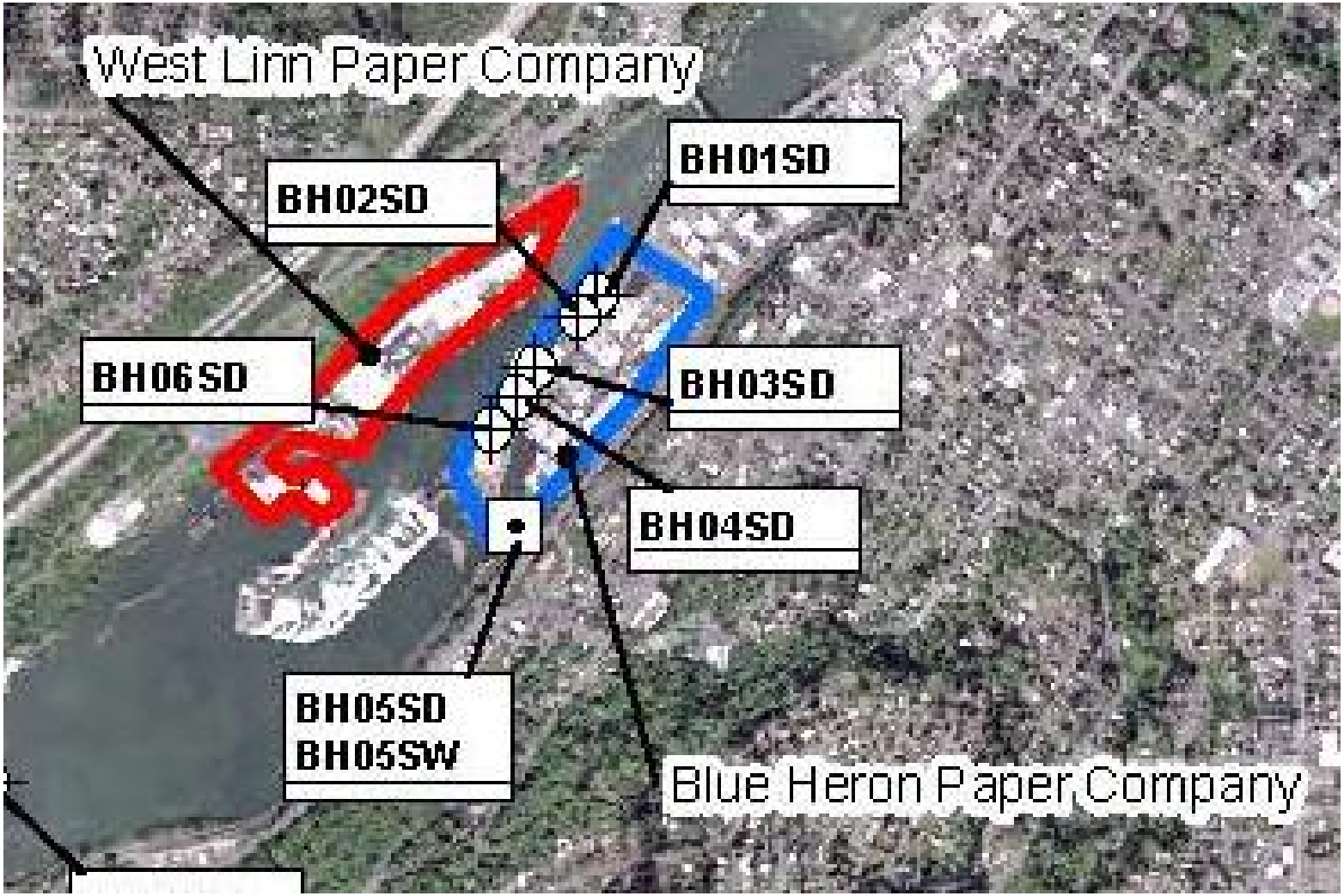
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Previous Investigations – PCB Sampling

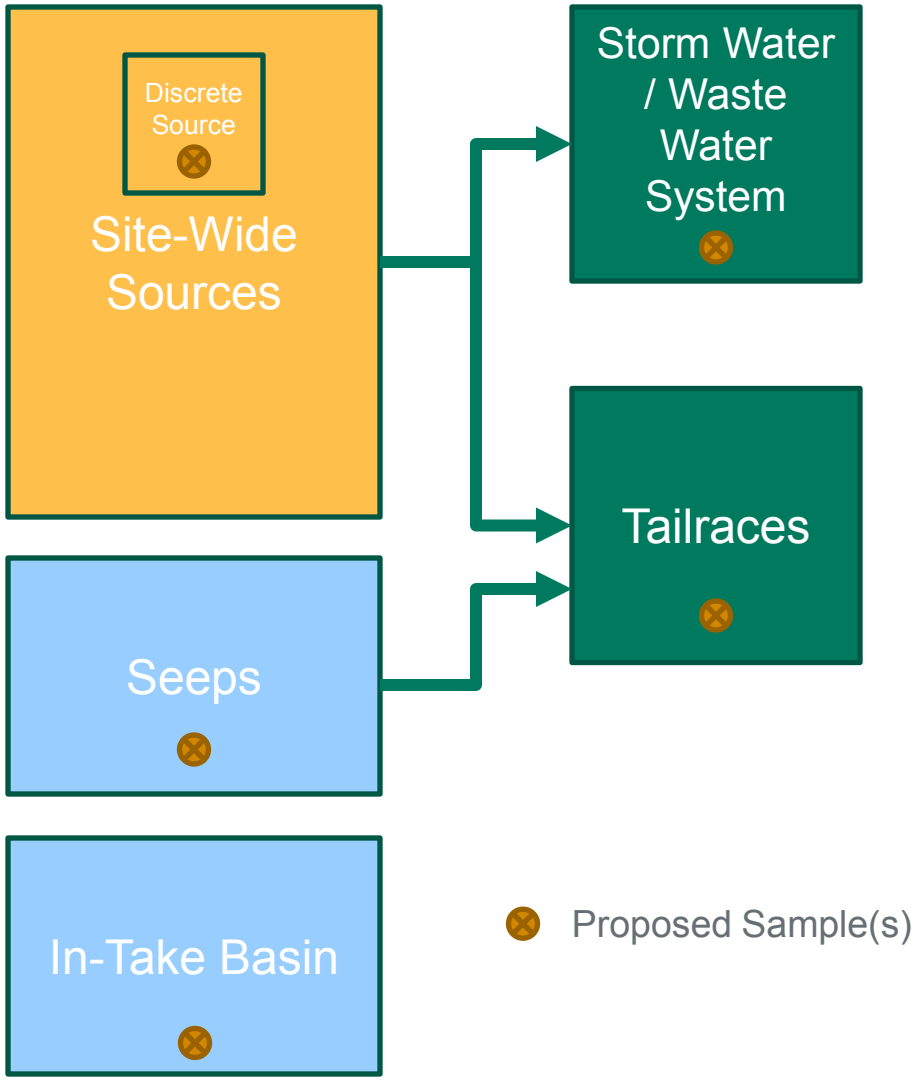


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Previous Investigations – EPA SI



Conceptual Sampling Strategy



Handouts

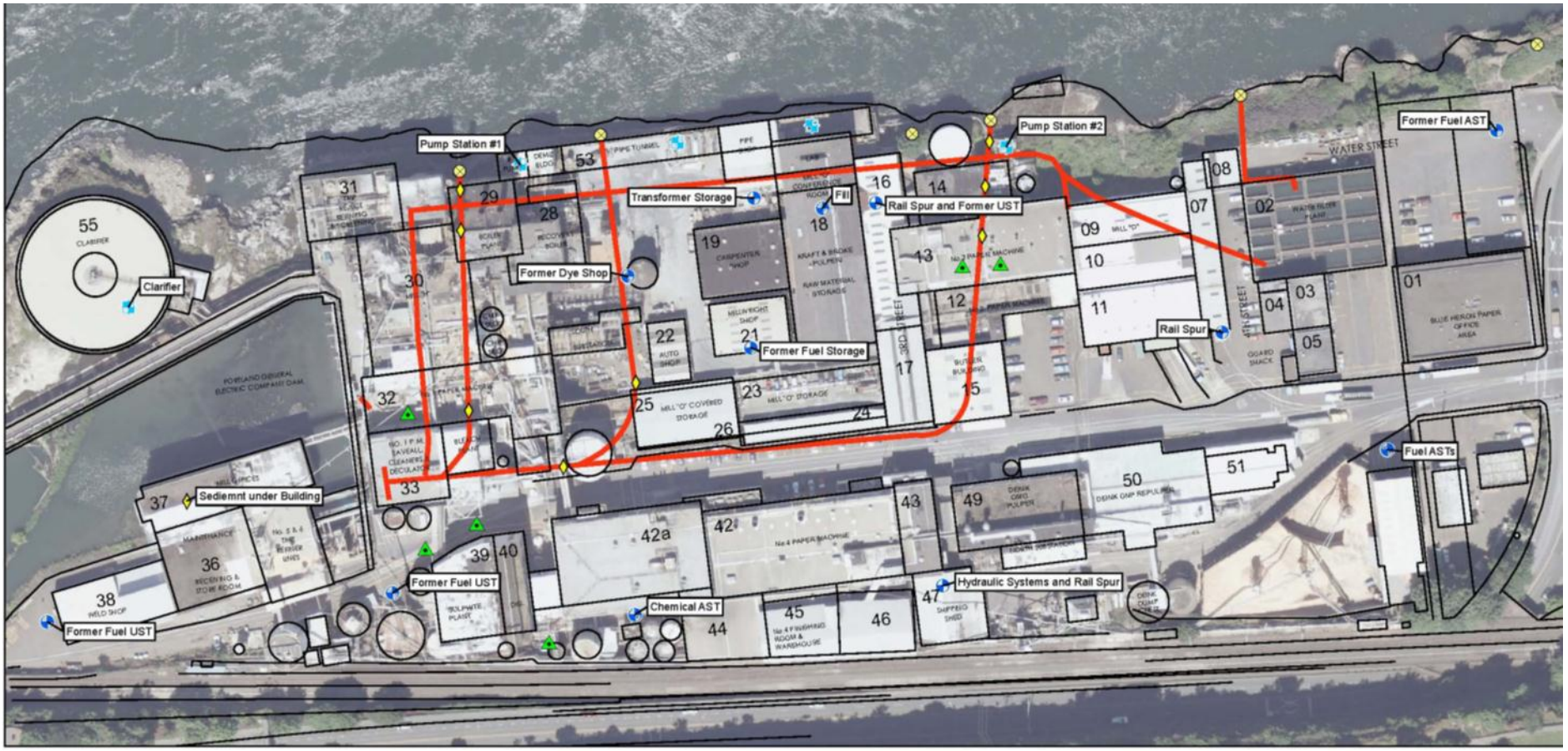
Table 1 – Area by area summary of potential areas of concern

Table 2 – Summary of proposed sampling by media type

Figure 1 – Preliminary sampling locations

Note: Sampling at all proposed sampling locations will likely not be possible (due to lack of media to sample, access issues, etc.)

Figure 1 – Proposed Sampling Locations



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Table 1
Potential Areas of Environmental Concern
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
1	Blue Heron Paper Office Area	1967 105 x 140	North Parking Lot	Former vehicle repair garage and service station 1943-1956 and Tire Sales in 1959; fuel Tanks and hydraulic systems	Soil, Groundwater	Petroleum hydrocarbons, Solvents, PCBs	3 - Soil/Fill 4 - Groundwater (if present)
			Elevator, mechanical room.	Hydraulic system	Soil, Groundwater	Petroleum hydrocarbons, PCBs	3 - Soil/Fill 4 - Groundwater (if present)
2	Water Filter Plant - Settling Basin and Pump House	1953 37 x 105 PH	Second Floor Transformer (2), filtration system ASTs, Basement Pump room	Electrical systems, Chemical storage, petroleum, Metals, Sodium Bromide, Sodium Hypochlorite, Alum	Storm water, and Sediment	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
2a	Fire Hall - Annex	1981 37 x 20	None	N/A	N/A	N/A	N/A
3	Filter Control Building	1965 41 x 65	None	N/A	N/A	N/A	N/A
4	Fire Hall	1981 37 x 45	None	N/A	N/A	N/A	N/A
5	Office and First Aid Building	1965 41 x 47	None	N/A	N/A	N/A	N/A
6	Guard Shack		None	N/A	N/A	N/A	N/A
7	4th Street Building (covered platform south)		Loading platform	Hydraulic systems	Storm water and Sediment	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
8	4th Street Building (covered platform west)		None	N/A	N/A	N/A	N/A
9	Warehouse No. 3 (Rail Car Loading)	1913 40 x 127	Basement	Elevator, 10k gallon Mineral Oil AST NW Exterior, Hydraulic systems	Soil, Groundwater	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
10	No. 3 Finishing Building	1913 54 x 125 (basement)	Basement	Hydraulic systems	Soil, Groundwater	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
11	Mill "B" Warehouse (No. 2 Finishing Building)	1913 54 x 125	None	N/A	N/A	N/A	N/A
12	Number "2" Paper Machine	1913 43 x 185	Basement	Hydraulic systems, Dye, Radiation Source	Soil, Fill, Groundwater, Storm water, and Sediment	Petroleum hydrocarbons, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
13	Number "3" Paper Machine	1913 58 x 185	Basement	Hydraulic systems, Dye, Transformers, Radiation Source	Soil, Fill, Groundwater, Storm water, and Sediment	Petroleum hydrocarbons, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present) 5 - Seeps
14	Sub Station - North	48 x 53	Second Floor	Transformer	Waste water	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Sub Station - Southwest	30 x 43	Second Floor	Transformers	Waste water	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Sub Station - Southeast	20 x 57	Second Floor	Transformers	Waste water	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces

Table 1
Potential Areas of Environmental Concern
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
	Chemical and Tote Storage		First Floor	Felt Wash, Slimicide, Caustic, Kerosene, Hydraulic systems	Soil, Fill, Groundwater, Storm water, and Sediment	Petroleum hydrocarbons, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
15	Butler Building (equipment. storage)	81 x 83	None	N/A	N/A	N/A	N/A
16	West	46 x 66	Driveway and Rail Spur	Former UST (not previous sampled), Ties and spills	Soil, Fill, Groundwater	Arsenic, Copper, Chromium, SVOCs.	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	West-center	20 x 44					
	East-center	35 x 58					
	East	40 x 55					
17	3rd Street Building (Covered Shipping Area)	1960 50 x 110	Rail Spur	Ties and spills	Soil, Fill, Groundwater	Arsenic, Copper, Chromium, SVOCs.	1 -Storm Water / Waste Water System 2 - Tailraces
18	Mill "O" Lab	1918, 78 x 160, Canopy to west	Basement	Fill and water under building	Soil, Fill, Groundwater	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Mill "O" Conference Room						
	Mill "O" Craft and Broke Pulper						
	Mill "O" Raw Material Storage	1918 83 x 83					
19	Carpenter Shop	1901 70 x 99	Former Wool Carbonizing Area, West Transformer Storage Area	Acid storage, Dyes, Transformers (exterior)	Soil, Fill, Groundwater	Metals (chromium, copper), Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
20	Pipe Shop	1988 45 x 60	None	N/A	N/A	N/A	N/A
21	Millwright Shop	1962 55 x 80	Main floor, ground surface	Former potential UST (not previous sampled) , and former petroleum ASTs for boiler system.	Soil, Fill, Groundwater	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
22	Auto Shop	1960 40 x 63	Main floor, ground surface	Former boiler system. Former Dye House	Soil, Fill, Groundwater	Metals (chromium, copper)	1 -Storm Water / Waste Water System 2 - Tailraces
23	Mill "B" Storage - West	60 x 240 (Former Oregon City Woolen Mill Buildings)	None	N/A	N/A	N/A	N/A
24	Mill "B" Storage - East			N/A	N/A	N/A	N/A
25	Mill "O" Storage - Interior			N/A	N/A	N/A	N/A
26	Mill "O" Storage - Exterior			N/A	N/A	N/A	N/A
27	South Substation (Electric Center)	1956-1969 30 x 60	Entire substation	Transformers (14)	Soil, Fill, Groundwater	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
28	Recovery Boiler	1956-1969 83 x 120	Second Floor	Boiler	Waste water	Metals	1 -Storm Water / Waste Water System 2 - Tailraces

Table 1
Potential Areas of Environmental Concern
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
29	Mill "G" Boiler Plant	1956-1969 85 x 120	Second Floor	Boilers (6), High density Stock and brightening tower to south, Boiler Chemicals	Waste water	Metals	1 -Storm Water / Waste Water System 2 - Tailraces
30	Mill "H"	1956-1969 100 x 132	Second Floor	Transformer (1) NW corner, Radiation Source	Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
	Mill "H" TMP Area		Second Floor	Hydraulic systems, Hazardous waste storage area, Sodium Hydrosulfite, Sulfuric Acid,	Waste water	Petroleum, PCBs, Solvents, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
	Mill "H" DeInk Area		SE corner roof	Transformer (1)	Storm water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
31	TMP Reject Refining and Screening	1970 70 x 75	W center wall, Tailrace under building	Transformer (1) W center wall, Fill and water under building	Soil, Fill, Groundwater, Sediment, Surface Water	Petroleum, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
	Refiner Line No. 4	1977 25 x 55					
	Addition	1979 25 x 70					
32	No. 1 Paper Machine	1917 43 x 203	Fill and water under building	Historical uses, Fill and water under building, Radiation Source	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces 5 - Seeps
33	No. 1 Save-All Cleaners & Desiccator (Screen Room & DeInk)	1917 78 x 78	First Floor, Basement	Transformer (2) SE Corner, Elevator, two pulp ASTs to east. Fill and water under building, laurylphosphonic acid, Surfactant, Oil, Filler, Felt Wash, Slimicide, Caustic, Kerosene, Urea.	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, , Metals	1 -Storm Water / Waste Water System 2 - Tailraces
34	Bleach Plant (De-Ink Plant)	1960 54 x 57	First Floor, Basement	Transformer (1) NW Corner, 64k Fuel Oil AST SE corner exterior, Bleach Tower and Caustic Tower to N. ext., Fill and water under building	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
35	Rewind Building	1962 30 x 70 c, 17 x 42 n, 24 x 24 s	First Floor, Basement	Hi Density Stock AST to N exterior. Caustic and bleach ASTs to south. Fill and water under building	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
36	Mill "E" Maintenance Shops		First Floor, Water beneath building	Transformer (1) NE ext. Corner and SW corner. Oil Room NW Corner. Former debarker and chipper for pulp manufacturing. Water from intake basin under building. Hydraulic systems. Former UST (not previous sampled) on south side of Weld Shop. Radiation Source	Soil, Fill, Groundwater, Sediment, Surface Water	Petroleum, PCBs, Solvents, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Mill "E" Receiving and Store Room						
	Mill "E" No. 5 & 6 TMP Refiner Lines	130 x 57					
37	Mill "E" Mill Offices						
38	Weld Shop	54 x 57					
39	Sulfite Plant (Mill C)	65 x 115	Basement	Process waste, Sodium Bisulfite.	Soil, Fill, Groundwater, Waste water	Sulphur, pH,	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present). 5 - Seeps

Table 1
Potential Areas of Environmental Concern
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
40	DIG (Digester Building)	32 x 102	Ground floor Exterior, Basement	Petroleum AST east exterior	Soil, Fill, Groundwater, Waste water	Sulphur, pH,	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present) 5 - Seeps
41	No. 4 Save-All		Basement	Process waste (Adjacent to former Boiler Building)	Soil, Fill, Groundwater, Waste water	Metals	1 -Storm Water / Waste Water System 2 - Tailraces
42	No. 4 Paper Machine	1927 72 x 302	Basement	Transformer (1) E wall, Hydraulic systems, Elevator, Radiation Source	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs, Metals	1 -Storm Water / Waste Water System 2 - Tailraces
42a	No. 4 Paper Machine	1927 67 x 80	Basement	Transformer (1) S wall., Elevator, Hydraulic systems, chemical storage east exterior, laurylphosphonic acid, Surfactant, Oil, Filler, Felt Wash, Slimicide, Caustic, Kerosene, Silicate, Sulfuric Acid, Corrosion inhibitor, Dye, Radiation Source	Soil, Fill, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
43	No. 4 Paper Addition	1977 25 x 96	Basement	Hydraulic systems	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
44	No. 4 Finishing Room & Warehouse - South	1924 36 x 67	First Floor	Hydraulic systems, former chemical storage	Soil, Groundwater, Waste water	Petroleum, PCBs, Solvents, Metals	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
45	No. 4 Finishing Room & Warehouse - Central	1924 67 x 202	First Floor	Elevator	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
46	No. 4 Finishing Room & Warehouse - North		First Floor	Hydraulic systems	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
47	Shipping Shed	59 x 80	First Floor	Hydraulic systems	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
48	North Substation		Ground surface	Transformers (11)	Soil, Groundwater, Waste water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
49	Deink ONG Pulper (Mill B)	1928 66 x 143	Current chemical storage	Chemicals collected during plant deconstruction. Laurylphosphonic Acid, Surfactant, Hydrogen Peroxide, Caustic, Silicate, Radiation Source.	Waste water	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
50	Deink ONG Repulper	80 x 100	Current chemical storage	Chemicals collected during plant deconstruction. Used Oil.	Waste water	Petroleum hydrocarbons, PCBs, Metals, Asbestos	1 -Storm Water / Waste Water System 2 - Tailraces
51	Chip and Sawdust Silo	35 x 67	None	N/A	N/A	N/A	N/A
52	Dam		None	N/A	N/A	N/A	N/A

Table 1
Potential Areas of Environmental Concern
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
	Pipe Tunnel		Entire Tunnel	Facility drainage	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
53	DeMiz Building		Main Floor	Hydraulic systems, Chemical storage (Defoamer)	Waste water		1 -Storm Water / Waste Water System 2 - Tailraces
	#1 Pump Station		Sediment trap	Storm water, and sediment	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
54	Clarifier Pump House		Entire Building	Hydraulic systems, Electrical systems	Storm water	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces
55	Clarifier		Bottom of Clarifier	Facility drainage	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
56	Sulfuric Acid AST		Exterior	Paint, Sulfuric Acid	Storm water	Lead	1 -Storm Water / Waste Water System 2 - Tailraces
57	Aboveground Storage Tanks		Exterior	Paint, Hydrogen Peroxide, Caustic, Sulfuric Acid, Silicate	Storm water	Lead	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Site-wide		Buildings and ground surface	Facility drainage	Surface, Fill, Groundwater, Storm water	Asbestos, Metals (Lead, Zinc)	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Intake Basin		Sediment	Upstream Sources	Sediment	Petroleum, PCBs, Solvents, Metals, Asbestos	6 - In-Water Sediment
	Tailrace 1		North of No. 1 Paper Machine	Facility leaks and groundwater drainage	Storm water, groundwater, soil, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	2 - Tailraces
	Tailrace 2		Below No. 3 Paper Machine	Facility leaks and groundwater drainage	Storm water, groundwater, soil, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	2 - Tailraces
	Mill H Tailrace		Below Mill H	Facility leaks and groundwater drainage	Storm water, groundwater, soil, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	2 - Tailraces
	#2 Pump Station		Sediment trap	Facility drainage	Storm water, and sediment	Petroleum, PCBs, Solvents, Metals, Dioxins/Furans, Asbestos	1 -Storm Water / Waste Water System
	Former Fuel Oil AST (319,200 gallons)		None	N/A	N/A	N/A	N/A
	Oil Dock		None	N/A	N/A	N/A	N/A
	Truck Dump	1968 37 x 108	Ground surface, Basement	Transformers (3) Fuels ASTs, Hydraulics	Soil, Fill, Groundwater	Petroleum, PCBs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)

Table 1
Potential Areas of Environmental Concern
Blue Heron Mill Site and Main Office Building

Feature No.	Feature Name	Date and Size	Area of Environmental Concern	Description of Possible Source	Media Potentially Impacted (Sediment, Soil, Storm water, Surface Water, or Groundwater)	Potential Constituents of Interest	Proposed Phase II Sampling to Evaluate (see Table 2)
	Rail Spurs		Ground surface, subsurface	Ties, spills	Soil, Fill, Groundwater	Arsenic, Copper, Chromium, SVOCs	1 -Storm Water / Waste Water System 2 - Tailraces 3 - Soil/Fill 4 - Groundwater (if present)
	Former MgO AST		Ground surface, subsurface	Previously used as a Fuel AST for Sulfate Plant Boilers	Soil, Fill, Groundwater	Petroleum	1 -Storm Water / Waste Water System 2 - Tailraces
	Water Supply well Near 56	Near SW corner of former MgO AST	None	N/A	N/A	N/A	N/A

Information sources: Site Observations, Sanborn Maps, Historical Aerial Photographs, Historical Topographic Maps, City Directories, IRI Mill Layout Drawing, Waste Water Treatment System Drawing, Major Bulk Chemicals, Waste & Oil Mill Locations, Chemical and Raw Material Storage Map

Table 2
Conceptual Approach
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

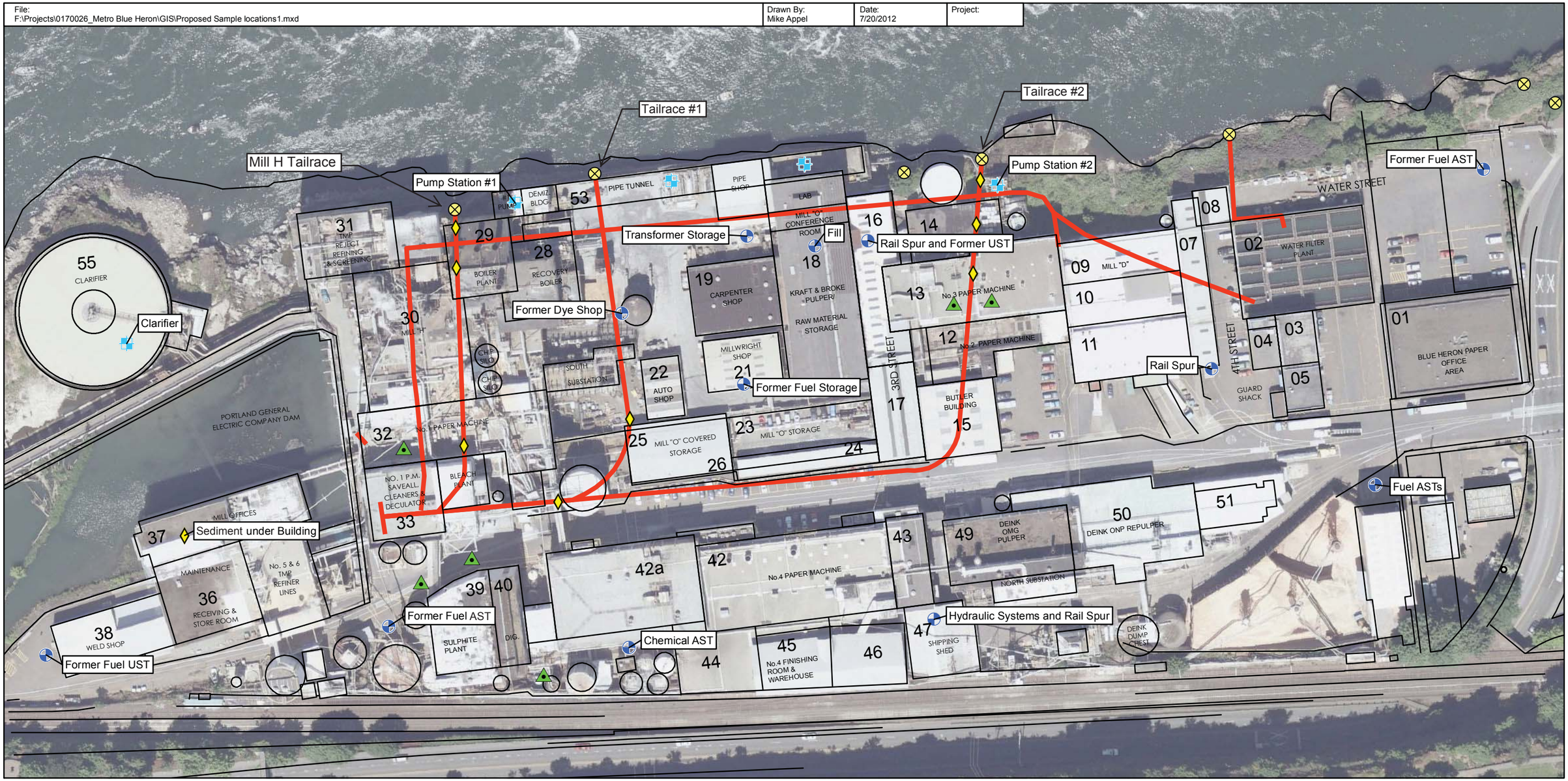
No.	Media/Feature	Type of Sample	Purpose	COIs	Sample Location(s)	Notes
1	Storm Water / Waste Water System	Bedded Sediment	Evaluate potential releases of COIs site wide	- VOCs - SVOCs - Metals - PCBs - Dioxins/Furans - Asbestos	- Pump Station #1 - Pump Station #2 - Pipe Tunnel - Clarifier	Composite samples; collect multiple depth intervals (if possible) to evaluate recent and historical releases; collection of samples dependent upon presence of sufficient sediment to sample and safe access to allow sampling
		Water	Evaluate potential releases of COIs site wide; evaluate potential releases from site via storm water	- VOCs - SVOCs - Metals, including hexavalent chromium - PCBs	- Pump Station #1 - Pump Station #2 - Pipe Tunnel - Clarifier	Sample of standing water in collection structure; collection of water during a storm event unlikely given time constraints and dry season.
2	Tailraces	Bedded Sediment	Evaluate potential releases from site that are not being captured by storm water system	- VOCs - SVOCs - Metals - PCBs - Dioxins/Furans - Asbestos	- Mill H Tailrace - Tailrace #1 - Tailrace #2	Samples to be collected on both sides of the tailrace dams; multiple depth intervals (if possible)
		Water	Evaluate potential releases from site that are not being captured by storm water system	- VOCs - SVOCs - Metals, including hexavalent chromium - PCBs	- Mill H Tailrace - Tailrace #1 - Tailrace #3	
3	Soil / Fill	Solid	Evaluate potential releases from discrete site features; evaluate fill characteristics	- VOCs - SVOCs - Metals (some locations) - TPH (some locations) - PCBs (some locations) - Asbestos (some locations)	~12 locations throughout site (see figure); locations related to current and former tanks, transformers (in use and decommissioned), fill, and railroad spurs (ballast and other sources)	Sample where possible; soil/fill may not be present at all locations
4	Groundwater	Water	Evaluate potential releases from discrete site features; evaluate groundwater quality both on-site and upgradient	- VOCs - SVOCs - Metals, including hexavalent chromium (some locations) - TPH (some locations)	~12 locations throughout site (see figure); locations related to current and former tanks, transformers (in use and decommissioned), fill, and railroad spurs (ballast and other sources)	Sample if groundwater is encountered during soil sampling; groundwater not expected to be observed in shallow soil/fill
5	Seeps	Water	Evaluate groundwater quality both on-site and upgradient	- VOCs - SVOCs - Metals, including hexavalent chromium - PCBs? - Dioxins/Furans (bleach plant only)?	Approximately 6 seeps in 4 locations throughout site (No. 1 Paper Machine, west of Sulphate Plant, east of Sulphate Plant by RR tracks, No. 3 Paper machine)	Sample where possible; some seeps may not have sufficient flow to allow sampling

Table 2
Conceptual Approach
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

No.	Media/Feature	Type of Sample	Purpose	COIs	Sample Location(s)	Notes
6	In-Water Sediment	Bedded Sediment	Evaluate sediment quality on submerged portion of subject parcel	- VOCs - SVOCs - Metals - PCBs - Dioxins/Furans	Various locations in in-take basin; exact number of samples TBD	Surface and subsurface samples; specific sampling intervals TBD

Legend:
COIs - Constituents of interest
SVOCs - Semi-volatile organic compounds
VOCs - Volatile organic compounds
PCBs - Polychlorinated biphenyls

File:	Drawn By:	Date:	Project:
F:\Projects\0170026_Metro Blue Heron\GIS\Proposed Sample locations1.mxd	Mike Appel	7/20/2012	



Legend

Proposed Phase II ESA Sample Locations

- Soil and Groundwater
- Seep
- Stormwater and Sediment
- Tailrace/Intake Basin Surface Water and Sediment
- Outfall (Abandoned)
- Tailrace (Approximate)

0 100 200 Feet

DRAFT

Aerial: ESRI Online Imagery Server, June 15, 2009

Figure 1
Proposed Sample Locations
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204
ERM.

From:	Erik Ipsen
To:	ROMERO Mike (ROMERO.Mike@deq.state.or.us)
Cc:	"Hope Whitney"; Claudia Powers (ckp@aterwynne.com); Brendan Robinson; Kim Marcus; Greg Menen
Subject:	RE: Blue Heron Mill Site Phase 2 Sampling - DEQ comments
Date:	Friday, August 24, 2012 9:58:52 AM
Attachments:	image001.jpg Potential Sample Locations082312.pdf Table 3 Sample Matrix 08 24 12.pdf image002.jpg

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Hi Mike –

Once again, I wanted to thank you for your comments on the conceptual Phase II sampling approach at the Blue Heron site. We have reviewed your comments, prepared brief responses (provided below), and modified the sampling scope accordingly.

Attached are the deliverables that were promised at our meeting on July 23: a table providing details of the proposed sampling, and a detailed figure showing all proposed sampling locations. As discussed in the responses below, we will be providing a table summarizing the proposed laboratory reporting limits and the potentially applicable screening levels next week.

Please let Hope Whitney at Metro or me know if you have any questions or comments. Our tentative schedule is to conduct field work starting on September 7.

Regards – Erik

General Comments

1. *The Phase 1 Environmental Site Assessment report was not provided and DEQ did not review it. However, the general outline of proposed sampling in Phase 2 appears to be an effort focused on the most obvious areas of concern based on operational history and previous investigations. Overall, the proposed effort should be effective in identifying the most probable environmental concerns at the property. The selected analytes and contaminants of interest (COIs) listed in Table 1 and 2 are appropriate based on the information provided.*

   Comment noted. Metro appreciates ODEQ's expedited and useful review of the proposed sampling activities.

2. *Details of sampling methods, analytical methods and screening level values (SLVs) that analytical results will be compared to were not provided at the time of these comments. DEQ understands that a table detailing this will be provided to DEQ for input during the 2nd week of August. DEQ recommends that Metro and ERM develop a simple conceptual site model (CSM) to use in identifying potential exposure pathways and to determine the appropriate screening levels for the analytical data. SLVs for both ecological and human health receptors should be used where appropriate. See http://www.deq.state.or.us/pubs/reports.htm#Cleanup for guidance documents that can help in developing a CSM and screening levels. In particular, see the Risk-Based Decision Making document and the risk assessment guidance documents for the SLVs.*

   A table providing additional details of the proposed Phase II sampling, including analytical

methods, is attached to this email. A table summarizing proposed reporting limits and potentially applicable screening levels will be transmitted to ODEQ when complete (anticipated next week). Metro and ERM are currently evaluating ODEQ's recommendation to prepare a simple conceptual site mode. Issues being weighed are available time, resources, and existing site information, as well as the importance of having this information at this stage of the project. In addition, possible end uses of the property (and hence, future receptors) are still uncertain and being evaluated. Metro will transmit the CSM to ODEQ if and when one is prepared.

3. *Stormwater management for the site will change and likely return to specific discharges from the site once the connection to the lagoons is severed. While a stormwater permit may not be required at the property in the future, consideration of potential environmental impacts related to stormwater will be useful in Metro's assessment of the site. It is obvious that some of the rationale in the proposed sampling is focused on this pathway and that actual stormwater samples may not be collected because of the seasonal timing of the sampling. DEQ's stormwater guidance for evaluating stormwater at upland sites located at http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm contains useful information especially in screening and comparison tools that may help during this assessment.*

   Comment noted. ERM is familiar with this guidance and has incorporated the principles behind it into the proposed sampling.

4. *If not already done in the Phase 1 ESA, an assessment of the locations and amounts of solids/soil accumulation at the site should be prepared and its potential for exposure to erosion or stormwater runoff discussed. This information can be used to determine sampling locations and help in the development of the CSM. This, coupled with site analytical data, will also help in the evaluation of potential future risks at the site after the tailraces are disconnected. A good understanding of stormwater drainage directions and patterns may also help in the evaluation of potential risks.*

   The amount of solids accumulation in the features to be sampled (i.e., pump stations, pipe tunnel, clarifier, and tailraces) will be performed as part of Phase II sampling, to the extent possible. A comprehensive evaluation of storm water solids accumulation at the site is beyond the current due diligence scope of work being executed at the site. An evaluation of the current storm water drainage system and options for future management is currently being performed by Metro.

5. *It is important to note that DEQ's Water Quality Division is currently working with the site trustee to close out the NPDES permit at this property. A requirement of this closeout will be to remove solids from the tailraces on site. Details of the solids removal have not yet been determined. While Phase 2 sampling calls for some sampling of the tailraces, additional tailrace sampling locations could provide additional data that may better inform the future tailrace cleanout.*

   The main purpose of the tailrace sampling is to evaluate potential releases from the upland property to the tailraces as a means of evaluating possible spills and releases on the upland property. The proposed sampling (i.e., collection and analysis of composite samples from each tailrace) is appropriate to meet this due diligence sampling objective. While Metro understands that data collected as part of this Phase II may be useful in informing cleanout of the tailraces, and will share the results with the trustee, the purpose of the sampling from

Metro's perspective, is not to characterize the accumulated solids in the tailraces for purposes of evaluating removal and management options.

6. *Based on the proposed sample locations in Figure 1, it does not appear that an investigation or survey is planned for the northern waterfront area north of pump station #2 up to the northernmost property boundary during this phase of work. It is not clear if this area was assessed in the Phase 1 ESA. This area appears to be well vegetated, has a natural shoreline and at least three historic outfalls. DEQ suggests that Metro/ERM consider some sort of assessment or survey of the area during this phase of work that focuses on current conditions, apparent runoff patterns, evidence of historic industrial use and any obvious environmental issues in the area. This information may prove useful to Metro in future considerations.*

   This area was assessed as part of the historical research of the site, which admittedly has not been shared with DEQ yet. Again we appreciate DEQ reviewing Metro's preliminary materials. Based on documents, historical aerials, and other information reviewed by ERM to date, there is no evidence of historical industrial activity in this area, and therefore no sampling in this area is proposed. In addition, due to the rocky nature of the area, it is not clear that sufficient soil is present to allow sampling. As mentioned above, an evaluation of the current storm water drainage system and options for future management is currently being performed by Metro.

7. *The conceptual approach detailed in Table 2 does not include pesticides as a contaminant of interest (COI) at the site. Pesticide use was fairly common during the operational period of the facility and they are typically screened for in stormwater and soil evaluations. Consider analyzing appropriate media such as tailrace solids and soil/fill locations for bioaccumulative pesticides such as DDT unless specific knowledge of pesticides not being used on site exists.*

   The historical information reviewed by ERM to date does not indicate that there was widespread use of pesticides, although it is suspected that pesticides were used at the site consistent with typical industrial facilities. Pesticides are a ubiquitous constituent on both industrial properties, and in the Willamette River. As such, Metro does not believe that collection of these data are necessary at this stage for purposes of conducting environmental due diligence at the site. The need for these data will be re-evaluated as Metro's evaluation of the property progresses.

Specific Comments

1. *Table 1 list spills under description of a possible source in a few of the numbered features. It is not clear what is known about these spills which makes evaluating the potential COIs for those areas (features) difficult.*

   The potential spills referenced in Table 1 are associated with the rail spurs and would include typical petroleum products, lubricants, and/or solvents. There is no available information specifically referencing spills along these rails spurs. Rather, the proposed sampling is based on ERM's experiences on other similar industrial facilities. Samples from rail spur areas are proposed for analysis of TPH, VOCs, SVOCs, metals, and PCBs.

2. *Radiation source is listed as a possible source under several of the numbered features, but radionuclides are not listed under the potential COIs and are not included in the proposed*

analytes in Table 2.

The radiation source mentioned in Table 1 is a Measurex 2002 scanning sensor (see photo below). The equipment is self-contained, located inside a building, and appeared to be in good condition. No releases from the equipment are suspected, and therefore no sampling is proposed at this time.

3. *Features No. 16 and 17 lists USTs, rail ties and spills as possible sources, but Table 1 does not list petroleum and PCBs as potential COIs for these areas. However, Table 2 does indicate that PCBs and petroleum will be sampled for in the area. Rail ties may also include pentachlorophenol in addition to arsenic, copper and chromium. Consider adding this analyte to the mix.*

   As mentioned above, samples from rail spur areas are proposed for analysis of TPH, VOCs, SVOCs (including pentachlorophenol), metals, and PCBs.

4. *Acid and caustic compounds are listed as possible sources in several features (2,30,33,34 35, 49, 56,57) yet only feature no. 39 has pH listed as a potential COI. Table 2 does not include pH in the COI or analyte list. pH is most likely to have effects on metals so at least be sure that this potential correlation is represented in the sampling plan.*

   As ODEQ correctly notes, pH impacts most notably affect metals concentrations. Analysis of metals is proposed for all but two of the Phase II samples.

5. *The May 24th, 2011 soil investigation summary prepared by Bridgewater Group, Inc for Blue Heron Paper Company identified at least one area of PCB contamination in surficial soils in the former south substation area. It doesn't appear that this Phase 2 sampling effort is addressing that area unless the soil and groundwater sample near the former dye shop on Figure 1 is intended to capture it. The Bridgewater report does not include any narrative on the site conditions or the extent of soil in that area. If not addressed in the Phase 1, consider evaluating the site conditions at that are as described in general comment no. 4 during this phase of work.*

   Site conditions have been evaluated through several site visits and inspections, and more recently, a geophysical survey to evaluate the present of soil/fill for sampling. The Bridgewater investigation appears to have done a reasonably good job of delineating potential PCB impacts in soil from current and historical transformers at the site. However, there was only one sample collected from the old transformer storage area northwest of Building 19. Because this area is probably the most likely to have impacts from old transformers, Metro is proposing another sample in this area to confirm Bridgewater's findings.

Erik Ipsen, PE
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Begin forwarded message:

From: ROMERO Mike <ROMERO.Mike@deq.state.or.us>
Date: August 6, 2012 10:32:03 AM PDT
To: Hope Whitney <Hope.Whitney@oregonmetro.gov>
Cc: SVETKOVICH Christine <SVETKOVICH.Christine@deq.state.or.us>
Subject: Blue Heron Mill Site Phase 2 Sampling - DEQ comments

Hope,

In accordance with the agreement between DEQ and Metro to provide technical consultation and review of investigation plans, DEQ has reviewed the material presented by ERM describing the proposed Phase 2 sampling at the former Blue Heron Paper Mill. Our observations and comments are summarized for your consideration below:

General Comments

1. The Phase 1 Environmental Site Assessment report was not provided and DEQ did not review it. However, the general outline of proposed sampling in Phase 2 appears to be an effort focused on the most obvious areas of concern based on operational history and previous investigations. Overall, the proposed effort should be effective in identifying the most probable environmental concerns at the property. The selected analytes and contaminants of interest (COIs) listed in Table 1 and 2 are appropriate based on the information provided.

2. Details of sampling methods, analytical methods and screening level values (SLVs) that analytical results will be compared to were not provided at the time of these comments. DEQ understands that a table detailing this will be provided to DEQ for input during the 2nd week of August. DEQ recommends that Metro and ERM develop a simple conceptual site model (CSM) to use in identifying potential exposure pathways and to determine the appropriate screening levels for the analytical data. SLVs for both ecological and human health receptors should be used where appropriate. See

http://www.deq.state.or.us/pubs/reports.htm#Cleanup for guidance documents that can help in developing a CSM and screening levels. In particular, see the Risk-Based Decision Making document and the risk assessment guidance documents for the SLVs.

3. Stormwater management for the site will change and likely return to specific discharges from the site once the connection to the lagoons is severed. While a stormwater permit may not be required at the property in the future, consideration of potential environmental impacts related to stormwater will be useful in Metro's assessment of the site. It is obvious that some of the rationale in the proposed sampling is focused on this pathway and that actual stormwater samples may not be collected because of the seasonal timing of the sampling. DEQ's stormwater guidance for evaluating stormwater at upland sites located at http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm contains useful information especially in screening and comparison tools that may help during this assessment.

4. If not already done in the Phase 1 ESA, an assessment of the locations and amounts of solids/soil accumulation at the site should be prepared and its potential for exposure to erosion or stormwater runoff discussed. This information can be used to determine sampling locations and help in the development of the CSM. This, coupled with site analytical data, will also help in the evaluation of potential future risks at the site after the tailraces are disconnected. A good understanding of stormwater drainage directions and patterns may also help in the evaluation of potential risks.

5. It is important to note that DEQ's Water Quality Division is currently working with the site trustee to close out the NPDES permit at this property. A requirement of this closeout will be to remove solids from the tailraces on site. Details of the solids removal have not yet been determined. While Phase 2 sampling calls for some sampling of the tailraces, additional tailrace sampling locations could provide additional data that may better inform the future tailrace cleanout.

6. Based on the proposed sample locations in Figure 1, it does not appear that an investigation or survey is planned for the northern waterfront area north of pump station #2 up to the northernmost property boundary during this phase of work. It is not clear if this area was assessed in the Phase 1 ESA. This area appears to be well vegetated, has a natural shoreline and at least three historic outfalls. DEQ suggests that Metro/ERM consider some sort of assessment or survey of the area during this phase of work that focuses on current conditions, apparent runoff patterns, evidence of historic industrial use and any obvious environmental issues in the area. This information may prove useful to Metro in future considerations.

7. The conceptual approach detailed in Table 2 does not include pesticides as a contaminant of interest (COI) at the site. Pesticide use was fairly common during the operational period of the facility and they are typically screened for in stormwater and soil evaluations. Consider analyzing appropriate media such as tailrace solids and soil/fill locations for bioaccumulative pesticides such as DDT unless specific knowledge of pesticides not being used on site exists.

Specific Comments

1. Table 1 list spills under description of a possible source in a few of the numbered features. It is not clear what is known about these spills which makes evaluating the potential COIs for those areas (features) difficult.

2. Radiation source is listed as a possible source under several of the numbered features, but radionuclides are not listed under the potential COIs and are not included in the proposed analytes in Table 2.

3. Features No. 16 and 17 lists USTs, rail ties and spills as possible sources, but Table 1 does not list petroleum and PCBs as potential COIs for these areas. However, Table 2 does indicate that PCBs and petroleum will be sampled for in the area. Rail ties may also include pentachlorophenol in addition to arsenic, copper and chromium. Consider adding this analyte to the mix.

4. Acid and caustic compounds are listed as possible sources in several features (2,30,33,34 35, 49, 56,57) yet only feature no. 39 has pH listed as a potential COI. Table 2 does not include pH in the COI or analyte list. pH is most likely to have effects on metals so at least be sure that this potential correlation is represented in the sampling plan.

5. The May 24th, 2011 soil investigation summary prepared by Bridgewater Group, Inc for Blue Heron Paper Company identified at least one area of PCB contamination in surficial soils in the former south substation area. It doesn't appear that this Phase 2 sampling effort is addressing that area unless the soil and groundwater sample near the former dye shop on Figure 1 is intended to capture it. The Bridgewater report does not include any narrative on the site conditions or the extent of soil in that area. If not addressed in the Phase 1, consider evaluating the site conditions at that are as described in general comment no. 4 during this phase of work.

Feel free to contact me if you or ERM have any questions regarding these comments.

Mike

Michael Romero
Northwest Region Cleanup Section
(503) 229-5563

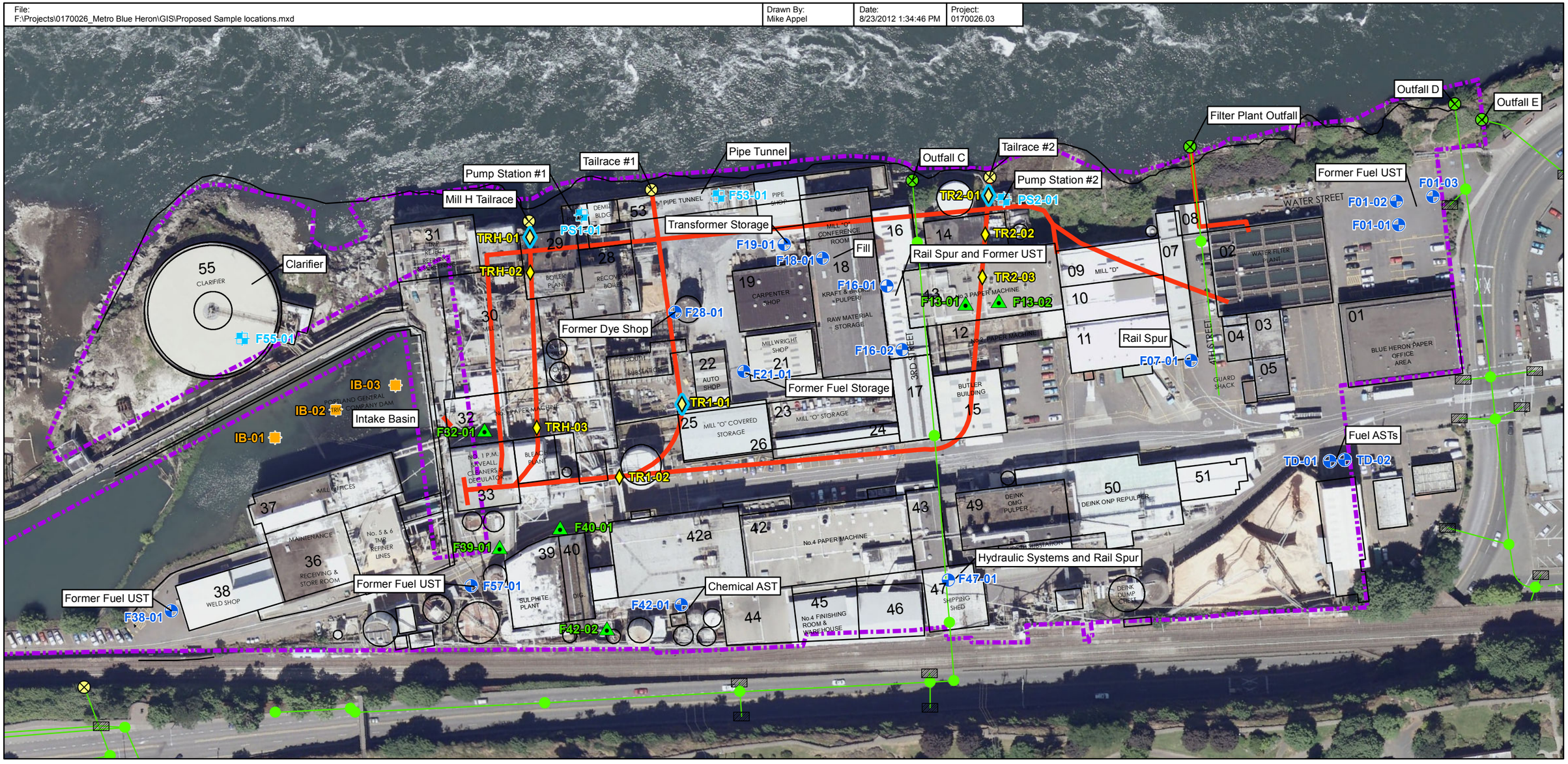
Romero.Mike@deq.state.or.us

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Drawn By:
Mike Appel

Date:
8/23/2012 1:34:46 PM

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Legend

Proposed Phase II ESA Sample Locations

- Soil and Groundwater
- Seep
- Storm Water and Storm Water Solids
- Intake Basin Sediment
- Tailrace Solids (Composite Sample)
- Tailrace Water
- Outfall (abandoned)
- Oregon City Outfall (active)
- Oregon City Storm Sewer
- Tailrace (Approximate)
- Blue Heron Site Boundary

0 120 240 Feet

DRAFT

Figure 1
Proposed Sample Locations
Phase II ESA
Blue Heron Site
Oregon City, Oregon

Environmental Resources Management
1001 SW 5th St, Suite 1010
Portland, Oregon 97204

Table 3
Sample Matrix
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Site Feature	Sample Location	Sample ID	Sample Depth	Sample Type Grab/ Composite	Media	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn)	Hg	Cr VI	Asbestos	TPH	PCB Aroclors	Dioxins/ Furans	VOCs	SVOCs
						USEPA 6010B/6020	USEPA 7470A/7471A	USEPA 3060A/ 7196A	USEPA 600	NWTPH-Dx, Gx	USEPA 8082B	AXYS Method	USEPA 8260C	USEPA 8270D/ 8270-SIM
Building 01 UST	F01-01	F01-01-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	X
Building 01 UST	F01-02	F01-02-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	
Building 01 UST	F01-03	F01-03-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	
Truck Dump	TD-01	TD-01-Soil	0 to refusal	Grab	Soil/Fill					X	X		X	X
Truck Dump	TD-02	TD-02-Soil	0 to refusal	Grab	Soil/Fill					X	X		X	X
Building 07/Spur	F07-01	F07-01-Soil	0 to refusal	Grab	Soil/Fill	X				X	X		X	X
Building 16-17/Spur	F16-01	F16-01-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	X
Building 16/UST	F16-02	F16-02-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	X
Building 18 Mill O	F18-01	F18-01-Soil	0 to refusal	Grab	Soil/Fill	X			X	X	X		X	
Building 19	F19-01	F19-01-Soil	0 to refusal	Grab	Soil/Fill	X				X	X		X	
Building 22/Millwright Shop	F21-01	F21-01-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	
Building 28/Frmr Dye Shop	F28-01	F28-01-Soil	0 to refusal	Grab	Soil/Fill	X		X		X	X		X	X
Building 38-Welding/UST	F38-01	F38-01-Soil	0 to refusal	Grab	Soil/Fill	X				X	X		X	
Building 42/Chemical Storage	F42-01	F42-01-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	
Building 46/Shipping Shed	F47-01	F47-01-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	X
Feature 57/Fuel AST	F57-01	F57-01-Soil	0 to refusal	Grab	Soil/Fill	X				X			X	X
Pipe Tunnel	F53-01	F53-01-Shallow	0 to 6 inches	Grab	Storm Water Solids	X			X	X	X	X		X
Pipe Tunnel		F53-01-Deep	Bottom 6 inches	Grab	Storm Water Solids	X			X	X	X	X		X
Pipe Tunnel		F53-01-SW	Storm Water	Grab	Storm Water	X		X		X			X	X
Pump Station #1	PS1-01	PS1-01-Shallow	0 to 6 inches	Grab	Storm Water Solids	X			X	X	X	X		X
Pump Station #1		PS1-01-Deep	Bottom 6 inches	Grab	Storm Water Solids	X			X	X	X	X		X
Pump Station #1		PS1-01-SW	Storm Water	Grab	Storm Water	X		X		X			X	X
Pump Station # 2	PS2-01	PS2-01-Shallow	0 to 6 inches	Grab	Storm Water Solids	X			X	X	X	X		X
Pump Station # 2		PS2-01-Deep	Bottom 6 inches	Grab	Storm Water Solids	X			X	X	X	X		X
Pump Station # 2		PS2-01-SW	Storm Water	Grab	Storm Water	X				X			X	X
Clarifier	F55-01	F55-01-Shallow	0 to 6 inches	Grab	Storm Water Solids	X	X		X	X	X	X		X
Clarifier		F55-01-Deep	Bottom 6 inches	Grab	Storm Water Solids	X	X		X	X	X	X		X
Clarifier		F55-01-SW	Storm Water	Grab	Storm Water	X	X	X		X			X	X
Bleach Plant Seep	F39-01	F39-01-SP	Seep Water	Grab	Seep Water	X				X			X	X
Bleach Plant Seep	F40-01	F40-01-SP	Seep Water	Grab	Seep Water	X				X			X	X
Upgradient Seep	F42-02	F42-01-SP	Seep Water	Grab	Seep Water	X				X			X	X
Possible Tailrace H Seep	F32-01	F32-01-SP	Seep Water	Grab	Seep Water	X				X			X	X
Paper Machine 3 Seep	F13-01	F13-01-SP	Seep Water	Grab	Seep Water	X				X			X	X
Paper Machine 3 Seep	F13-02	F13-02-SP	Seep Water	Grab	Seep Water	X				X			X	X
Tailrace 1	TR1-01, TR1-02	TR1-Shallow	0 to 6 inches	Composite	Tailrace Solids	X	X		X	X	X	X		X
Tailrace 1		TR1-Deep	Bottom 6 inches	Composite	Tailrace Solids	X	X		X	X	X	X		X
Tailrace 2	TR2-01, TR2-02, TR2-03	TR2-Shallow	0 to 6 inches	Composite	Tailrace Solids	X	X		X	X	X	X		X
Tailrace 2		TR2-Deep	Bottom 6 inches	Composite	Tailrace Solids	X			X	X	X	X		X
Tailrace H	TRH-01, TRH-02, TRH-03	TRH-Shallow	0 to 6 inches	Composite	Tailrace Solids	X			X	X	X	X		X
Tailrace H		TRH-Sdeep	Bottom 6 inches	Composite	Tailrace Solids	X			X	X	X	X		X
Tailrace 1	TR1-01	TR1-01-SW	Surface Water	Grab	Tailrace Water	X	X	X		X			X	X
Tailrace 2	TR2-01	TR2-01-SW	Surface Water	Grab	Tailrace Water	X		X		X			X	X
Tailrace H	TRH-01	TRH-01-SW	Surface Water	Grab	Tailrace Water	X	X	X		X			X	X
Intake Basin	IB-01	IB-01-Shallow	0 to 6 inches	Grab	Intake Basin Sediment	X					X	X		X
Intake Basin		IB-01-Deep	Bottom 6 inches	Grab	Intake Basin Sediment	X					X	X		X
Intake Basin	IB-02	IB-02-Shallow	0 to 6 inches	Grab	Intake Basin Sediment	X					X	X		X
Intake Basin		IB-02-Deep	Bottom 6 inches	Grab	Intake Basin Sediment	X					X	X		X
Intake Basin	IB-03	IB-03-Shallow	0 to 6 inches	Grab	Intake Basin Sediment	X					X	X		X
Intake Basin		IB-03-Deep	Bottom 6 inches	Grab	Intake Basin Sediment	X					X	X		X
Total Number of Samples						**47**	**8**	**7**	**15**	**43**	**27**	**20**	**29**	**42**

Notes & Key:

bgs = below ground surface
AXYS Method = USEPA Method 1613B (i.e., AXYS MLA-017)
NWTPH = Northwest Method Total Petroleum Hydrocarbons
PCB = Polychlorinated Biphenyls
SIM = Selective Ion Method for polycyclic aromatic hydrocarbons
SVOCs = Semivolatile Organic Compounds (phenols, phthalates, polycyclic aromatic hydrocarbons)
TPH = Total Petroleum Hydrocarbons
USEPA = United States Environmental Protection Agency
UST = Underground Storage Tank

Notes & Key (continued):

As Arsenic
Cd Cadmium
Cr Chromium
Cu Copper
Hg Mercury
Ni Nickel
Pb Lead
Zn Zinc
Cr VI Hexavalent Chromium

Soil and Groundwater sample location. If impacts to soil are observed during field activities, additional soil samples will be collected from the zone of impact and appropriate analyses selected to characterize the observed impacts.
Storm Water and storm water solids sample location
Seep water sample location
Surface water and solids sample location
Intake basin sediment sample location

From:	Erik Ipsen
To:	ROMERO Mike (ROMERO.Mike@deq.state.or.us)
Cc:	Hope Whitney (Hope.Whitney@oregonmetro.gov); Claudia Powers (ckp@aterwynne.com); Brendan Robinson; SVETKOVICH Christine
Subject:	Reporting Limits and Preliminary Screening Values for Blue Heron Phase II ESA Sampling
Date:	Wednesday, September 12, 2012 3:23:03 PM
Attachments:	Tables 4A_Preliminary Water Screening Level Values_2012 09 12.pdf Tables 4B_Preliminary Solid Screening Level Values_2012 09 12.pdf

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Mike –

As requested, please find attached tables summarizing the reporting limits and preliminary screening values for the Blue Heron Phase II ESA Sampling. Please let me know if you have any questions.

Sampling began last Friday/Saturday and will conclude (hopefully) this Friday/Saturday. Sediment sampling in the in-take basin is scheduled for Friday. Overall, ee have been able to get samples, but it has been a bit slow as was expected.

One thing I wanted to alert you to: while sampling Pump Station No. 2, the sampling team noticed free product over the standing water in the pump station. The team believes it might be from a hydraulic oil spill that occurred recently at the site. I understand you might already be aware of this release. We have not yet sampled the pipe tunnel, pump station No. 2, or the clarifier, so are not aware if free product is present in those features.

Please let me know if you have any questions.

Regards - Erik

Erik Ipsen, PE
Partner

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Table 4A

Proposed Analytes, Preliminary Screening Levels, and Laboratory Limits- Water
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Groundwater[1]			Storm Water and Tailrace Water[2]			
					Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Groundwater in Excavation	Human Health (Consumption)		Freshwater AWQC	
					Occupational	Occupational	Construction & Excavation Worker	Water + Organism	Organism Only	Acute	Chronic
Metals											
Arsenic	7440-38-2	6020A	0.5	0.1	-	-	5,800	2.1	2.1	-	-
Cadmium	7440-43-9	6020A	0.02	0.005	-	-	57,000	-	-	3.9	1.1
Chromium	7440-47-3	6020A	0.2	0.04	-	-	-	-	-	-	-
Copper	7440-50-8	6020A	0.02	0.1	-	-	5,000,000	1300	-	18	12
Lead	7439-92-1	6020A	0.02	0.005	-	-	-	-	-	-	-
Nickel	7440-02-0	6020A	0.2	0.03	-	-	1.2E+07	140	170	1400	160
Zinc	7440-66-6	6020A	0.5	0.2	-	-	-	2100	2600	120	110
Hexavalent Chromium	18540-29-9	7196A	50	20	-	-	8,700	-	-	-	-
Hexavalent Chromium-LL	18540-29-9	7196A	50	4	-	-	8,700	-	-	-	-
Mercury	7439-97-6	7470A	0.2	0.02	-	-	-	-	-	2.4	0.012
Volatile Organic Carbons (VOCs)											
1,1,1,2-Tetrachloroethane	630-20-6	8260C	0.5	0.11	-	-	-	-	-	-	-
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	0.5	0.075	-	-	1,100,000	-	-	-	-
1,1,2,2-Tetrachloroethane	79-34-5	8260C	0.5	0.16	-	-	-	0.12	0.40	-	-
1,1,2-Trichloroethane	79-00-5	8260C	0.5	0.14	19,000	8,800	990	0.44	1.6	-	-
1,1-Dichloroethane	75-34-3	8260C	0.5	0.077	-	-	4,300,000	-	-	-	-
1,1-Dichloroethene	75-35-4	8260C	0.5	0.08	-	340,000	43,000	230	710	-	-
1,1-Dichloropropene	563-58-6	8260C	0.5	0.089	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	87-61-6	8260C	2	0.11	-	-	-	-	-	-	-
1,2,3-Trichloropropane	96-18-4	8260C	0.5	0.2	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	120-82-1	8260C	2	0.096	-	-	-	6.4	7.0	-	-
1,2,4-Trimethylbenzene	95-63-6	8260C	2	0.069	-	-	1,700	-	-	-	-
1,2-Dibromo-3-chloropropane	96-12-8	8260C	2	0.2	-	-	-	-	-	-	-
1,2-Dibromoethane (EDB)	106-93-4	8260C	2	0.1	960	690	28	-	-	-	-
1,2-Dichlorobenzene	95-50-1	8260C	0.5	0.12	-	-	37,000	110	130	-	-
1,2-Dichloroethane (EDC)	107-06-2	8260C	0.5	0.08	9,500	3,800	630	0.35	3.7	-	-
1,2-Dichloropropane	78-87-5	8260C	0.5	0.095	-	-	-	-	-	-	-
1,3,5-Trichlorobenzene	108-70-3	8260C	5	0.11	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	108-67-8	8260C	2	0.089	-	-	-	-	-	-	-
1,3-Dichlorobenzene	541-73-1	8260C	0.5	0.1	-	-	-	80	96	-	-
1,3-Dichloropropane	142-28-9	8260C	0.5	0.14	-	-	-	-	-	-	-
1,4-Dichlorobenzene	106-46-7	8260C	0.5	0.12	20,000	5,700	1,500	16	19	-	-
2,2-Dichloropropane	594-20-7	8260C	0.5	0.06	-	-	-	-	-	-	-
2-Butanone (MEK)	78-93-3	8260C	20	1.9	-	-	-	-	-	-	-
2-Chlorotoluene	95-49-8	8260C	2	0.1	-	-	-	-	-	-	-
2-Hexanone	591-78-6	8260C	20	2.7	-	-	-	-	-	-	-
4-Chlorotoluene	106-43-4	8260C	2	0.13	-	-	-	-	-	-	-
4-Isopropyltoluene	99-87-6	8260C	2	0.06	-	-	-	-	-	-	-
4-Methyl-2-pentanone (MIBK)	108-10-1	8260C	20	2.6	-	-	-	-	-	-	-
Acetone	67-64-1	8260C	20	3.3	-	-	-	-	-	-	-
Benzene	71-43-2	8260C	0.5	0.062	-	-	-	-	-	-	-

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Groundwater[1]			Storm Water and Tailrace Water[2]			
					Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Groundwater in Excavation	Human Health (Consumption)		Freshwater AWQC	
					Occupational	Occupational	Construction & Excavation Worker	Water + Organism	Organism Only	Acute	Chronic
Bromobenzene	108-86-1	8260C	2	0.12	-	-	-	-	-	-	-
Bromochloromethane	74-97-5	8260C	0.5	0.16	-	-	-	-	-	-	-
Bromodichloromethane	75-27-4	8260C	0.5	0.091	9,300	5,600	450	-	-	-	-
Bromoform	75-25-2	8260C	0.5	0.16	1,100,000	1,100,000	14,000	-	-	-	-
Bromomethane	74-83-9	8260C	0.5	0.1	170,000	36,000	1,200	-	-	-	-
Carbon Disulfide	75-15-0	8260C	0.5	0.069	-	-	-	-	-	-	-
Carbon Tetrachloride	56-23-5	8260C	0.5	0.096	5,400	790	1,700	0.1	0.16	-	-
Chlorobenzene	108-90-7	8260C	0.5	0.11	-	-	10,000	0.000081	0.000081	2.4	0.0043
Chloroethane	75-00-3	8260C	0.5	0.16	-	-	2,400,000	-	-	19	11
Chloroform	67-66-3	8260C	0.5	0.072	5,500	1,200	720	74	160	-	-
Chloromethane	74-87-3	8260C	0.5	0.068	2,100,000	320,000	22,000	0.31	1.3	-	-
cis-1,2-Dichloroethene	156-59-2	8260C	0.5	0.067	-	-	24,000	-	-	-	-
cis-1,3-Dichloropropene	10061-01-5	8260C	0.5	0.18	-	-	-	0.30	2.1	-	-
Dibromochloromethane	124-48-1	8260C	0.5	0.14	-	-	-	-	-	-	-
Dibromomethane	74-95-3	8260C	0.5	0.15	-	-	-	-	-	-	-
Dichlorodifluoromethane	75-71-8	8260C	0.5	0.13	-	-	-	-	-	-	-
Ethyl Ether	60-29-7	8260C	1	0.075	-	-	-	-	-	-	-
Ethylbenzene	100-41-4	8260C	0.5	0.05	41,000	7,400	4,400	160	210	-	-
Hexachlorobutadiene	87-68-3	8260C	2	0.11	-	-	-	0.36	1.8	-	-
Isopropylbenzene	98-82-8	8260C	2	0.051	-	-	-	-	-	-	-
m,p-Xylenes	179601-23-1	8260C	0.5	0.11	-	-	23,000	-	-	-	-
Methylene Chloride	75-09-2	8260C	2	0.1	-	-	-	4.3	59	-	-
Naphthalene	91-20-3	8260C	2	0.88	16,000	10,000	500	-	-	-	-
n-Butylbenzene	104-51-8	8260C	2	0.054	-	-	-	-	-	-	-
n-Propylbenzene	103-65-1	8260C	2	0.054	-	-	-	-	-	-	-
o-Xylene	95-47-6	8260C	0.5	0.074	-	-	-	-	-	-	-
sec-Butylbenzene	135-98-8	8260C	2	0.062	-	-	-	-	-	-	-
Styrene	100-42-5	8260C	0.5	0.089	-	-	160,000	-	-	-	-
tert-Butylbenzene	98-06-6	8260C	2	0.059	-	-	-	-	-	-	-
Tetrachloroethene (PCE)	127-18-4	8260C	0.5	0.099	-	32,000	33,000	0.24	0.33	-	-
Tetrahydrofuran	109-99-9	8260C	5	0.94	-	-	-	-	-	-	-
Toluene	108-88-3	8260C	0.5	0.054	-	-	210,000	720	1500	-	-
trans-1,2-Dichloroethene	156-60-5	8260C	0.5	0.072	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	10061-02-6	8260C	0.5	0.068	-	-	-	-	-	-	-
Trichloroethene (TCE)	79-01-6	8260C	0.5	0.1	19,000	3,300	3,000	1.4	3.0	-	-
Trichlorofluoromethane	75-69-4	8260C	0.5	0.12	-	340,000	160,000	-	-	-	-
Vinyl Chloride	75-01-4	8260C	0.5	0.075	6,800	910	1,200	0.023	0.24	-	-
Semivolatile organic carbons (SVOCs)											
1,2,4-Trichlorobenzene	120-82-1	8270D	10	0.36	-	-	-	6.4	7.0	-	-
1,2-Dichlorobenzene	95-50-1	8270D	10	0.43	-	-	37,000	110	130	-	-
1,2-Diphenylhydrazine	122-66-7	8270D	10	0.51	-	-	-	-	-	-	-
1,3-Dichlorobenzene	541-73-1	8270D	10	0.35	-	-	-	80	96	-	-
1,4-Dichlorobenzene	106-46-7	8270D	10	0.32	20,000	5,700	1,500	16	19	-	-
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	10	0.55	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	95-95-4	8270D	10	0.38	-	-	-	330	360	-	-
2,4,6-Trichlorophenol	88-06-2	8270D	10	0.2	-	-	9,900	0.23	0.24	-	-
2,4-Dichlorophenol	120-83-2	8270D	10	0.3	-	-	-	-	-	-	-

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Groundwater[1]			Storm Water and Tailrace Water[2]			
					Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Groundwater in Excavation	Human Health (Consumption)		Freshwater AWQC	
					Occupational	Occupational	Construction & Excavation Worker	Water + Organism	Organism Only	Acute	Chronic
2,4-Dimethylphenol	105-67-9	8270D	10	0.26	-	-	-	76	85	-	-
2,4-Dinitrophenol	51-28-5	8270D	25	2.2	-	-	-	62	530	-	-
2,4-Dinitrotoluene	121-14-2	8270D	10	0.27	-	-	-	0.084	0.34	-	-
2,6-Dinitrotoluene	606-20-2	8270D	10	0.35	-	-	29,000	-	-	-	-
2-Chloronaphthalene	91-58-7	8270D	10	0.29	-	-	-	-	-	-	-
2-Chlorophenol	95-57-8	8270D	10	0.31	-	-	-	-	-	-	-
2-Methyl-4,6-dinitrophenol	534-52-1	8270D	25	2.1	-	-	-	-	-	-	-
2-Methylnaphthalene	91-57-6	8270D	10	0.24	-	-	-	-	-	-	-
2-Methylphenol	95-48-7	8270D	10	0.33	-	-	-	-	-	-	-
2-Nitroaniline	88-74-4	8270D	25	0.34	-	-	-	-	-	-	-
2-Nitrophenol	88-75-5	8270D	10	0.37	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	91-94-1	8270D	25	0.27	-	-	460	0.0027	0.0028	-	-
3-Nitroaniline	99-09-2	8270D	25	3.3	-	-	-	-	-	-	-
4-Bromophenyl Phenyl Ether	101-55-3	8270D	10	0.27	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	59-50-7	8270D	10	0.49	-	-	-	-	-	-	-
4-Chloroaniline	106-47-8	8270D	10	0.38	-	-	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	7005-72-3	8270D	10	0.28	-	-	-	-	-	-	-
4-Methylphenol	106-44-5	8270D	10	0.48	-	-	-	-	-	-	-
4-Nitroaniline	100-01-6	8270D	25	4	-	-	-	-	-	-	-
4-Nitrophenol	100-02-7	8270D	25	1.9	-	-	-	-	-	-	-
Acenaphthene	83-32-9	8270D	10	0.28	-	-	-	95	99	-	-
Acenaphthylene	208-96-8	8270D	10	0.24	-	-	-	-	-	-	-
Acetophenone	98-86-2	8270D	10	0.6	-	-	-	-	-	-	-
Aniline	62-53-3	8270D	25	0.49	-	-	-	-	-	-	-
Anthracene	120-12-7	8270D	10	0.61	-	-	-	2900	4000	-	-
Atrazine	1912-24-9	8270D	10	0.46	-	-	-	-	-	-	-
Benz(a)anthracene	56-55-3	8270D	10	0.59	-	-	9.1	0.000018	0.00002	-	-
Benzaldehyde	100-52-7	8270D	10	0.5	-	-	-	-	-	-	-
Benzo(a)pyrene	50-32-8	8270D	10	0.65	-	-	0.53	0.0013	0.0018	-	-
Benzo(b)fluoranthene	205-99-2	8270D	10	0.58	-	-	-	0.0013	0.0018	-	-
Benzo(g,h,i)perylene	191-24-2	8270D	10	0.81	-	-	-	-	-	-	-
Benzo(k)fluoranthene	207-08-9	8270D	10	0.83	-	-	-	0.0013	0.0018	-	-
Benzoic Acid	65-85-0	8270D	25	5.8	-	-	-	-	-	-	-
Benzyl Alcohol	100-51-6	8270D	10	0.38	-	-	-	-	-	-	-
Biphenyl	92-52-4	8270D	10	0.66	-	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	111-91-1	8270D	10	0.28	-	-	-	-	-	-	-
Bis(2-chloroethyl) Ether	111-44-4	8270D	10	0.33	-	-	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	39638-32-9	8270D	10	0.31	-	-	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	117-81-7	8270D	10	1.9	-	-	-	-	-	-	-
Butyl Benzyl Phthalate	85-68-7	8270D	10	0.47	-	-	-	190	190	-	-
Caprolactam	105-60-2	8270D	10	0.58	-	-	-	-	-	-	-
Carbazole	86-74-8	8270D	10	0.36	-	-	-	-	-	-	-
Chrysene	218-01-9	8270D	10	0.79	-	-	-	0.0013	0.0018	-	-
Dibenz(a,h)anthracene	53-70-3	8270D	10	0.75	-	-	0.21	0.0013	0.0018	-	-
Dibenzofuran	132-64-9	8270D	10	0.33	-	-	-	-	-	-	-
Diethyl Phthalate	84-66-2	8270D	10	0.29	-	-	-	3800	4400	-	-
Dimethyl Phthalate	131-11-3	8270D	10	0.25	-	-	-	84000	110000	-	-

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Groundwater[1]			Storm Water and Tailrace Water[2]			
					Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Groundwater in Excavation	Human Health (Consumption)		Freshwater AWQC	
					Occupational	Occupational	Construction & Excavation Worker	Water + Organism	Organism Only	Acute	Chronic
Di-n-butyl Phthalate	84-74-2	8270D	10	0.65	-	-	-	400	450	-	-
Di-n-octyl Phthalate	117-84-0	8270D	10	0.63	-	-	-	-	-	-	-
Fluoranthene	206-44-0	8270D	10	0.65	-	-	-	14	14	-	-
Fluorene	86-73-7	8270D	10	0.32	-	-	-	390	530	-	-
Hexachlorobenzene	118-74-1	8270D	10	0.63	830	310	8.1	0.000029	0.000029	-	-
Hexachlorobutadiene	87-68-3	8270D	10	0.29	-	-	-	0.36	1.8	-	-
Hexachlorocyclopentadiene	77-47-4	8270D	10	1.2	-	-	-	30	110	-	-
Hexachloroethane	67-72-1	8270D	10	0.29	-	-	2,700	0.29	0.33	-	-
Indeno(1,2,3-cd)pyrene	193-39-5	8270D	10	0.68	-	-	-	0.0013	0.0018	-	-
Isophorone	78-59-1	8270D	10	0.25	-	-	-	27	96	-	-
Naphthalene	91-20-3	8270D	10	0.37	16,000	10,000	500	-	-	-	-
Nitrobenzene	98-95-3	8270D	10	0.57	-	-	-	14	69	-	-
N-Nitrosodimethylamine	62-75-9	8270D	25	0.48	-	-	-	0.00068	0.30	-	-
N-Nitrosodi-n-propylamine	621-64-7	8270D	10	0.5	-	-	-	0.0046	0.051	-	-
N-Nitrosodiphenylamine	86-30-6	8270D	10	0.48	-	-	-	0.55	0.60	-	-
Pentachlorophenol	87-86-5	8270D	25	2.4	-	-	-	-	-	-	-
Phenanthrene	85-01-8	8270D	10	0.48	-	-	-	-	-	-	-
Phenol	108-95-2	8270D	10	0.32	-	-	-	-	-	-	-
Pyrene	129-00-0	8270D	10	0.73	-	-	-	290	400	-	-
Pyridine	110-86-1	8270D	25	7.5	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons											
Diesel Range Organics	68334-30-5	NWTPH-Dx	250	8.2	-	-	-	-	-	-	-
Gasoline Range Organics	8006-61-9	NWTPH-Gx	250	13	-	-	-	-	-	-	-

Notes:

Concentrations are listed in micrograms per liter (µg/L)
Shaded cells indicate that the screening level is less than the Sample Quantitation Limit.
1 = Risk Based Decision Making criteria
2 = Criteria are derived from the Aquatic Life Criteria Tables 20 and 33A and Human Health Criteria Table 40, approved by EPA on 17 October 2011.
AWQC = Ambient Water Quality Criteria from OAR 340-040 (2004)
DEQ = Oregon Department of Environmental Quality
MCL =Maximum Contaminant Level (USEPA. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. Sept 2008).
TEQ = Toxicity Equivalence Quotient

Table 4B

Proposed Analytes, Preliminary Screening Levels, and Laboratory Limits - Solids
Phase II Environmental Site Assessment
Blue Heron Mill Site and Main Office Building

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Intake Basin Sediment									Soil, Storm Water Solids, and Tailrace Solids						
					Birds		Mammals		Fish		Humans		Inorganic Background	Ingestion, Dermal Contact, and Inhalation				Volatilization to Outdoor Air		Vapor Intrusion into Buildings	
					Individual	Population	Individual	Population	Freshwater	Marine	General[a]	Subsistence[b]	Freshwater	Occupational	Construction Worker		Excavation Worker	Occupational		Occupational	
Metals																					
Arsenic	7440-38-2	6020A	0.5	0.06	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	7	2		13	370	-	NV	-	NV
Cadmium	7440-43-9	6020A	0.02	0.004	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	1	510		150	4,300	-	NV	-	NV
Chromium	7440-47-3	6020A	0.2	0.03	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Copper	7440-50-8	6020A	0.08	0.1	-	-	-	-	-	-	-	-	-	41,000		12,000	340,000	-	NV	-	NV
Lead	7439-92-1	6020A	0.05	0.009	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	17	800		800	800	-	NV	-	NV
Nickel	7440-02-0	6020A	0.2	0.03	-	-	-	-	-	-	-	-	-	20,000		6,100	170,000	-	NV	-	NV
Zinc	7440-66-6	6020A	0.5	0.2	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Mercury	7439-97-6	7471B	0.02	0.002	(c) (d)	(c) (d)	(c) (d)	(c) (d)	(c) (d)	(c) (d)	(c) (d)	(c) (d)	0.07	310		93	2,600	-	NV	-	NV
Hexavalent Chromium	18540-29-9	7196A	0.5	0.08	-	-	-	-	-	-	-	-	-	5.5		43	1200	-	NV	-	NV
Total Petroleum Hydrocarbons																					
Diesel Range Organics	68334-30-5	NWTPH-Dx	25	0.79	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Gasoline Range Organics	8006-61-9	NWTPH-Gx	5	1.5	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Volatile Organic Carbons (VOCs)																					
1,1,1,2-Tetrachloroethane	630-20-6	8260C	0.005	0.00011	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,1,1-Trichloroethane (TCA)	71-55-6	8260C	0.005	0.00011	-	-	-	-	-	-	-	-	-	830,000	>Csat	430,000	>Csat	-	>Csat	-	>Csat
1,1,2,2-Tetrachloroethane	79-34-5	8260C	0.005	0.00013	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,1,2-Trichloroethane	79-00-5	8260C	0.005	0.00015	-	-	-	-	-	-	-	-	-	25		290	8,100	>Csat	24	2.7	
1,1-Dichloroethane	75-34-3	8260C	0.005	0.00012	-	-	-	-	-	-	-	-	-	200,000	>Csat	62,000	>Csat	>Max	-	>Max	-
1,1-Dichloroethene	75-35-4	8260C	0.005	0.00025	-	-	-	-	-	-	-	-	-	27,000	>Csat	12,000	>Csat	340,000	>Csat	-	>Csat	680
1,1-Dichloropropene	563-58-6	8260C	0.005	0.00013	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,2,3-Trichlorobenzene	87-61-6	8260C	0.02	0.00019	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,2,3-Trichloropropane	96-18-4	8260C	0.005	0.00045	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,2,4-Trichlorobenzene	120-82-1	8260C	0.02	0.00013	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,2,4-Trimethylbenzene	95-63-6	8260C	0.02	0.000054	-	-	-	-	-	-	-	-	-	2,000	>Csat	2,000	>Csat	54,000	>Csat	1,000	1,000
1,2-Dibromo-3-chloropropane	96-12-8	8260C	0.02	0.0004	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,2-Dibromoethane (EDB)	106-93-4	8260C	0.02	0.000094	-	-	-	-	-	-	-	-	-	0.68		8.1	230		0.65	0.14	
1,2-Dichlorobenzene	95-50-1	8260C	0.005	0.000077	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,2-Dichloroethane (EDC)	107-06-2	8260C	0.005	0.00007	-	-	-	-	-	-	-	-	-	15		180	5,000	>Csat	15	0.59	
1,2-Dichloropropane	78-87-5	8260C	0.005	0.00013	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,3,5-Trimethylbenzene	108-67-8	8260C	0.02	0.000092	-	-	-	-	-	-	-	-	-	10,000	>Csat	3,100	>Csat	86,000	>Csat	-	>Max	-	>Max
1,3-Dichlorobenzene	541-73-1	8260C	0.005	0.000094	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,3-Dichloropropane	142-28-9	8260C	0.005	0.00012	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
1,4-Dichlorobenzene	106-46-7	8260C	0.005	0.000086	-	-	-	-	-	-	-	-	-	63		1,200	>Csat	34,000	>Csat	36	17
2,2-Dichloropropane	594-20-7	8260C	0.005	0.000098	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
2-Butanone (MEK)	78-93-3	8260C	0.02	0.0009	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
2-Chlorotoluene	95-49-8	8260C	0.02	0.00012	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
2-Hexanone	591-78-6	8260C	0.02	0.00093	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
4-Chlorotoluene	106-43-4	8260C	0.02	0.000088	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
4-Isopropyltoluene	99-87-6	8260C	0.02	0.000064	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
4-Methyl-2-pentanone (MIBK)	108-10-1	8260C	0.02	0.0018	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Acetone	67-64-1	8260C	0.02	0.0029	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Benzene	71-43-2	8260C	0.005	0.000054	-	-	-	-	-	-	-	-	-	34		340	9,500	>Csat	50	1.2	
Bromobenzene	108-86-1	8260C	0.005	0.000088	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Bromochloromethane	74-97-5	8260C	0.005	0.00024	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Bromodichloromethane	75-27-4	8260C	0.005	0.00016	-	-	-	-	-	-	-	-	-	15		210	5,800	>Csat	11	1.9	
Bromoform	75-25-2	8260C	0.005	0.00014	-	-	-	-	-	-	-	-	-	240		2,400	>Csat	66,000	>Csat	550	550
Bromomethane	74-83-9	8260C	0.005	0.0002	-	-	-	-	-	-	-	-	-	710		330		9,200	>Csat	700	17
Carbon Disulfide	75-15-0	8260C	0.005	0.000092	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Carbon Tetrachloride	56-23-5	8260C	0.005	0.000094	-	-	-	-	-	-	-	-	-	31		280	7,900	>Csat	65	1.6	
Chlorobenzene	108-90-7	8260C	0.005	0.000065	-	-	-	-	-	-	-	-	-	8,300	>Csat	4,300	>Csat	120,000	>Csat	-	>Csat	-	>Csat
Chloroethane	75-00-3	8260C	0.005	0.00074	-	-	-	-	-	-	-	-	-	-	>Max	-	>Max	-	>Max	-	>Max	-	>Csat
Chloroform	67-66-3	8260C	0.005	0.00011	-	-	-	-	-	-	-	-	-	25		380		11,000	>Csat	17	0.41
Chloromethane	74-87-3	8260C	0.005	0.00018	-	-	-	-	-	-	-	-	-	25,000	>Csat	25,000	>Csat	700,000	>Csat	-	>Csat	300
cis-1,2-Dichloroethene	156-59-2	8260C	0.005	0.00012	-	-	-	-	-	-	-	-	-	2,000	>Csat	620		17,000	>Csat	-	>Max	-	>Max
cis-1,3-Dichloropropene	10061-01-5	8260C	0.005	0.00013	-	-	-	-	-	-	-	-	-	-		-	-	-		-	
Dibromochloromethane	124-48-1	8260C	0.005	0.00018	-	-	-	-	-	-	-	-	-	-		-	-	-		-	

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Intake Basin Sediment									Soil, Storm Water Solids, and Tailrace Solids								
					Birds		Mammals		Fish		Humans		Inorganic Background	Ingestion, Dermal Contact, and Inhalation						Volatilization to Outdoor Air		Vapor Intrusion into Buildings	
					Individual	Population	Individual	Population	Freshwater	Marine	General[a]	Subsistence[b]	Freshwater	Occupational		Construction Worker		Excavation Worker		Occupational		Occupational	
Dibromomethane	74-95-3	8260C	0.005	0.00028	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Dichlorodifluoromethane	75-71-8	8260C	0.005	0.00012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Ethylbenzene	100-41-4	8260C	0.005	0.000094	-	-	-	-	-	-	-	-	-	140		1,600	>Csat	44,000	>Csat	160		12	
Hexachlorobutadiene	87-68-3	8260C	0.02	0.0004	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Isopropylbenzene	98-82-8	8260C	0.02	0.000081	-	-	-	-	-	-	-	-	-	53,000	>Csat	24,000	>Csat	670,000	>Csat	-	>Csat	-	>Csat
m,p-Xylenes	179601-23-1	8260C	0.005	0.0001	-	-	-	-	-	-	-	-	-	25,000	>Csat	19,000	>Csat	540,000	>Csat	-	>Csat	-	>Csat
Methylene Chloride	75-09-2	8260C	0.01	0.00016	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Naphthalene	91-20-3	8260C	0.02	0.00013	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
n-Butylbenzene	104-51-8	8260C	0.02	0.000069	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
n-Propylbenzene	103-65-1	8260C	0.02	0.00013	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
o-Xylene	95-47-6	8260C	0.005	0.000081	-	-	-	-	-	-	-	-	-	25,000	>Csat	19,000	>Csat	540,000	>Csat	-	>Csat	-	>Csat
sec-Butylbenzene	135-98-8	8260C	0.02	0.000074	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Styrene	100-42-5	8260C	0.005	0.00014	-	-	-	-	-	-	-	-	-	120,000	>Csat	51,000	>Csat	-	>Max	-	>Csat	-	>Csat
tert-Butylbenzene	98-06-6	8260C	0.02	0.00014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Tetrachloroethene (PCE)	127-18-4	8260C	0.005	0.00016	-	-	-	-	-	-	-	-	-	940	>Csat	9,100	>Csat	250,000	>Csat	-	>Csat	36	
Toluene	108-88-3	8260C	0.005	0.00015	-	-	-	-	-	-	-	-	-	77,000	>Csat	24,000	>Csat	680,000	>Csat	-	>Csat	-	>Csat
trans-1,2-Dichloroethene	156-60-5	8260C	0.005	0.00012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
trans-1,3-Dichloropropene	10061-02-6	8260C	0.005	0.00011	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Trichloroethene (TCE)	79-01-6	8260C	0.005	0.00015	-	-	-	-	-	-	-	-	-	46		420		12,000	>Csat	96		2.7	
Trichlorofluoromethane	75-69-4	8260C	0.005	0.000085	-	-	-	-	-	-	-	-	-	120,000	>Csat	63,000	>Csat	-	>Max	-	>Csat	-	>Csat
Vinyl Chloride	75-01-4	8260C	0.005	0.00018	-	-	-	-	-	-	-	-	-	3.9		30		830		89		2.2	
Semivolatile organic carbons (SVOCs)																							
1,2,4-Trichlorobenzene	120-82-1	8270D	0.33	0.011	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
1,2-Dichlorobenzene	95-50-1	8270D	0.33	0.018	-	-	-	-	-	-	-	-	-	35,000	>Csat	19,000	>Csat	520,000	>Csat	-	>Csat	-	>Csat
1,2-Diphenylhydrazine	122-66-7	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
1,3-Dichlorobenzene	541-73-1	8270D	0.33	0.018	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
1,4-Dichlorobenzene	106-46-7	8270D	0.33	0.018	-	-	-	-	-	-	-	-	-	63		1,200	>Csat	34,000	>Csat	36		17	
2,3,4,6-Tetrachlorophenol	58-90-2	8270D	0.33	0.046	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2,4,5-Trichlorophenol	95-95-4	8270D	0.33	0.018	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2,4,6-Trichlorophenol	88-06-2	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	200		1,500		42,000	>Csat	-	NV	-	NV
2,4-Dichlorophenol	120-83-2	8270D	0.33	0.016	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2,4-Dimethylphenol	105-67-9	8270D	0.33	0.015	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2,4-Dinitrophenol	51-28-5	8270D	2	0.11	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2,4-Dinitrotoluene	121-14-2	8270D	0.33	0.015	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2,6-Dinitrotoluene	606-20-2	8270D	0.33	0.016	-	-	-	-	-	-	-	-	-	770	>Csat	240		6,600	>Csat	-	NV	-	NV
2-Chloronaphthalene	91-58-7	8270D	0.33	0.01	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2-Chlorophenol	95-57-8	8270D	0.33	0.0099	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2-Methyl-4,6-dinitrophenol	534-52-1	8270D	2	0.14	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2-Methylnaphthalene	91-57-6	8270D	0.33	0.011	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2-Methylphenol	95-48-7	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2-Nitroaniline	88-74-4	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
2-Nitrophenol	88-75-5	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
3,3'-Dichlorobenzidine	91-94-1	8270D	0.33	0.027	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
3-Nitroaniline	99-09-2	8270D	0.33	0.018	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Bromophenyl Phenyl Ether	101-55-3	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Chloro-3-methylphenol	59-50-7	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Chloroaniline	106-47-8	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Chlorophenyl Phenyl Ether	7005-72-3	8270D	0.33	0.016	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Methylphenol	106-44-5	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Nitroaniline	100-01-6	8270D	2	0.18	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
4-Nitrophenol	100-02-7	8270D	2	0.15	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Acenaphthene	83-32-9	8270D	0.33	0.013	-	-	-	-	-	-	-	-	-	61,000	>Csat	19,000	>Csat	520,000	>Csat	-	>Max	-	>Max
Acenaphthylene	208-96-8	8270D	0.33	0.016	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Acetophenone	98-86-2	8270D	0.33	0.023	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aniline	62-53-3	8270D	1	0.022	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Anthracene	120-12-7	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	310,000	>Csat	93,000	>Csat	-	>Max	-	>Max	-	>Max
Atrazine	1912-24-9	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Benz(a)anthracene	56-55-3	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	2.7		21	>Csat	590	>Csat	-	NV	-	NV
Benzo(a)pyrene	50-32-8	8270D	0.33	0.02	-	-	-	-	-	-	-	-	-	0.27		2.1		59	>Csat	-	NV	-	NV
Benzo(b)fluoranthene	205-99-2	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	2.7		21	>Csat	590	>Csat	-	>Csat	-	>Csat
Benzo(g,h,i)perylene	191-24-2	8270D	0.33	0.02	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Benzo(k)fluoranthene	207-08-9	8270D	0.33	0.019	-	-	-	-	-	-	-	-	-	27	>Csat	210	>Csat	5,900	>Csat	-	NV	-	NV
Benzaldehyde	100-52-7	8270D	0.33	0.021	-	-	-	-	-	-	-	-	-	-		-		-		-		-	

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Intake Basin Sediment									Soil, Storm Water Solids, and Tailrace Solids									
					Birds		Mammals		Fish		Humans		Inorganic Background	Ingestion, Dermal Contact, and Inhalation						Volatilization to Outdoor Air		Vapor Intrusion into Buildings	
					Individual	Population	Individual	Population	Freshwater	Marine	General[a]	Subsistence[b]	Freshwater	Occupational		Construction Worker		Excavation Worker		Occupational		Occupational	
Benzoic Acid	65-85-0	8270D	2	0.14	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Benzyl Alcohol	100-51-6	8270D	0.33	0.017	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Biphenyl	92-52-4	8270D	0.33	0.009	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Bis(2-chloroethoxy)methane	111-91-1	8270D	0.33	0.011	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Bis(2-chloroethyl) Ether	111-44-4	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Bis(2-chloroisopropyl) Ether	39638-32-9	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Bis(2-ethylhexyl) Phthalate	117-81-7	8270D	0.33	0.019	-	-	-	-	-	-	-	-	-	150	>Csat	1,200	>Csat	33,000	>Csat	-	NV	-	NV
Butyl Benzyl Phthalate	85-68-7	8270D	0.33	0.016	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Caprolactam	105-60-2	8270D	0.33	0.15	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Carbazole	86-74-8	8270D	0.33	0.011	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Chrysene	218-01-9	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	250	>Csat	2,100	>Csat	57,000	>Csat	-	>Csat	-	>Csat
Dibenz(a,h)anthracene	53-70-3	8270D	0.33	0.027	-	-	-	-	-	-	-	-	-	0.27		2.1		59	>Csat	-	NV	-	NV
Dibenzofuran	132-64-9	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Diethyl Phthalate	84-66-2	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Dimethyl Phthalate	131-11-3	8270D	0.33	0.016	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Di-n-butyl Phthalate	84-74-2	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Di-n-octyl Phthalate	117-84-0	8270D	0.33	0.024	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Fluoranthene	206-44-0	8270D	0.33	0.011	-	-	360	1,800	37	37	510	62	-	29,000	>Csat	8,900	>Csat	250,000	>Csat	-	>Max	-	>Max
Fluorene	86-73-7	8270D	0.33	0.013	-	-	-	-	-	-	-	-	-	41,000	>Csat	12,000	>Csat	340,000	>Csat	-	>Max	-	>Max
Hexachlorobenzene	118-74-1	8270D	0.33	0.015	-	-	-	-	61	61	0.019	0.0023	-	1.2		12		330		79		79	
Hexachlorobutadiene	87-68-3	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Hexachlorocyclopentadiene	77-47-4	8270D	0.33	0.012	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Hexachloroethane	67-72-1	8270D	0.33	0.022	-	-	-	-	-	-	-	-	-	90		970	>Csat	27,000	>Csat	-	>Csat	-	>Csat
Indeno(1,2,3-cd)pyrene	193-39-5	8270D	0.33	0.039	-	-	-	-	-	-	-	-	-	2.7	>Csat	21	>Csat	590	>Csat	-	NV	-	NV
Isophorone	78-59-1	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Naphthalene	91-20-3	8270D	0.33	0.014	-	-	-	-	-	-	-	-	-	23		580	>Csat	16,000	>Csat	99		99	
Nitrobenzene	98-95-3	8270D	0.33	0.026	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
N-Nitrosodimethylamine	62-75-9	8270D	2	0.3	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
N-Nitrosodi-n-propylamine	621-64-7	8270D	0.33	0.019	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
N-Nitrosodiphenylamine	86-30-6	8270D	0.33	0.018	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Pentachlorophenol	87-86-5	8270D	2	0.13	-	-	0.33	3.3	0.31	0.17	0.25	0.030	-	3.9		31		860		-	NV	-	NV
Phenanthrene	85-01-8	8270D	0.33	0.01	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Phenol	108-95-2	8270D	0.33	0.019	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Pyrene	129-00-0	8270D	0.33	0.014	-	-	18,000	90,000	1.9	1.9	380	47	-	21,000	>Csat	6,700	>Csat	190,000	>Csat	-	>Max	-	>Max
Pyridine	110-86-1	8270D	0.33	0.33	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
PCBs																							
PCBs (total as Aroclors)					0.057	0.17	0.044	0.084	0.022	0.047	0.00039	4.80E-05	-	0.70		7.5	>Csat	210	>Csat	-	>Csat	-	>Csat
Aroclor 1016	12674-11-2	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1221	11104-28-2	8082A	0.2	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1232	11141-16-5	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1242	53469-21-9	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1248	12672-29-6	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1254	11097-69-1	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1260	11096-82-5	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1262	37324-23-5	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Aroclor 1268	11100-14-4	8082A	0.1	0.0061	-	-	-	-	-	-	-	-	-	-		-		-		-		-	
Dioxins and Furans																							
2378-TCDD	1746-01-6	8290	1.00E-06	5.88E-08	7.00E-07	3.50E-06	5.20E-08	1.40E-06	5.60E-07	5.60E-07	9.10E-09	1.10E-09	-	1.50E-05		1.50E-04		4.20E-03		-	>Csat	-	>Csat
12378-PeCDD	40321-76-4	8290	2.50E-06	4.82E-08	2.10E-05	1.10E-04	1.50E-06	4.20E-05	1.70E-05	1.70E-05	2.70E-07	3.40E-08	-	-		-		-		-		-	
123478-HxCDD	39227-28-6	8290	2.50E-06	4.66E-08	4.20E-04	2.10E-03	1.50E-05	4.20E-04	3.40E-05	3.40E-05	2.70E-06	3.40E-07	-	-		-		-		-		-	
123678-HxCDD	57653-85-7	8290	2.50E-06	4.25E-08	2.10E-03	1.10E-02	1.50E-05	4.20E-04	1.70E-03	1.70E-03	2.70E-06	3.40E-07	-	-		-		-		-		-	
123789-HxCDD	19408-74-3	8290	2.50E-06	4.47E-08	2.10E-04	1.10E-03	1.50E-05	4.20E-04	1.70E-03	1.70E-03	2.70E-06	3.40E-07	-	-		-		-		-		-	
1234678-HpCDD	35822-46-9	8290	2.50E-06	4.79E-08	5.30E-01	2.70E+00	3.90E-03	1.10E-01	4.30E-01	4.30E-01	6.90E-04	8.50E-05	-	-		-		-		-		-	
OCDD	3268-87-9	8290	5.00E-06	6.95E-08	5.30E+00	2.70E+01	1.30E-01	3.60E+00	4.30E+00	4.30E+00	2.30E-02	2.80E-03	-	-		-		-		-		-	
2378-TCDF	51207-31-9	8290	1.00E-06	5.62E-08	5.90E-06	3.00E-05	4.30E-06	1.20E-04	9.50E-05	9.50E-05	7.70E-07	9.40E-08	-	-		-		-		-		-	
12378-PeCDF	57117-41-6	8290	2.50E-06	3.96E-08	5.90E-05	3.00E-04	1.40E-05	4.00E-04	9.50E-05	9.50E-05	2.60E-06	3.10E-07	-	-		-		-		-		-	
23478-PeCDF	57117-31-4	8290	2.50E-06	3.88E-08	7.00E-07	3.50E-06	1.70E-07	4.70E-06	1.10E-06	1.10E-06	3.00E-08	3.70E-09	-	-		-		-		-		-	
123478-HxCDF	70648-26-9	8290	2.50E-06	3.40E-08	2.10E-04	1.10E-03	1.50E-05	4.20E-04	1.70E-04	1.70E-04	2.70E-06	3.40E-07	-	-		-		-		-		-	
123678-HxCDF	57117-44-9	8290	2.50E-06	3.35E-08	2.10E-04	1.10E-03	1.50E-05	4.20E-04	1.70E-04	1.70E-04	2.70E-06	3.40E-07	-	-		-		-		-		-	
123789-HxCDF	72918-21-9	8290	2.50E-06	4.18E-08	2.10E-04	1.10E-03	1.50E-05	4.20E-04	1.70E-04	1.70E-04	2.70E-06	3.40E-07	-	-		-		-		-		-	
234678-HxCDF	60851-34-5	8290	2.50E-06	3.67E-08	2.10E-04	1.10E-03	1.50E-05	4.20E-04	1.70E-04	1.70E-04	2.70E-06	3.40E-07	-	-		-		-		-		-	
1234678-HpCDF	67562-39-4	8290	2.50E-06	3.77E-08	5.30E-02	2.70E-01	3.90E-03	1.10E-01	4.30E-02	4.30E-02	6.90E-04	8.50E-05	-	-		-		-		-		-	

Constituent	CAS Number	USEPA Analytical Method	Sample Quantitation Limit	Method Detection Limit	Intake Basin Sediment									Soil, Storm Water Solids, and Tailrace Solids				
					Birds		Mammals		Fish		Humans		Inorganic Background	Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings
					Individual	Population	Individual	Population	Freshwater	Marine	General[a]	Subsistence[b]	Freshwater	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational
1234789-HpCDF	55673-89-7	8290	2.50E-06	5.00E-08	5.30E-02	2.70E-01	3.90E-03	1.10E-01	4.30E-02	4.30E-02	6.90E-04	8.50E-05	-	-	-	-	-	-
OCDF	39001-02-0	8290	5.00E-06	6.44E-08	5.30E+00	2.70E+01	1.30E-01	3.60E+00	4.30E+00	4.30E+00	2.30E-02	2.80E-03	-	-	-	-	-	-
Total TCDD	41903-57-5	8290	1.00E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PeCDD	36088-22-9	8290	2.50E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total HxCDD	34465-46-8	8290	2.50E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total HpCDD	37871-00-4	8290	2.50E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total TCDF	30402-14-3	8290	1.00E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PeCDF	30402-15-4	8290	2.50E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total HxCDF	55684-94-1	8290	2.50E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total HpCDF	38998-75-3	8290	2.50E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemisty																		
Asbestos	--	600	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: - = Not applicable or not available
Concentrations are listed in milligrams per kilogram (mg/kg)
Shaded cells indicate that the screening level is less than the Sample Quantitation Limit.
ODEQ = Oregon Department of Environmental Quality
RBDM = Risk Based Decision Making
Sediment Bioaccumulation Levels are collected from ODEQ *Guidance for Assessing Bioaccumulative Chemical of Concern in Sediment, Updated April 3, 2007*
Risk Based Decision Making Action Levels are screened among three pathways for Occupational and Construction Worker receptors - Soil Ingestion/Dermal Contact/Ingestion, Volatilization to Outdoor Air, Vapor Intrusion to Buildings
(a) Based on general/recreational fish ingestion rate of 0.0175 kg/day.
(b) Based on subsistence/ tribal fish ingestion rate of 0.1424 kg/day.
(c) Screen using either site specific or default regional background concentrations (shown in the column on the right in this table).
(d) Sites with mercury contamination should collect actual fish tissue data at the site. Site-specific conditions regulate the methylization process from sediment or water into aquatic receptors.
>Csat = The RBC exceeds the limit of three-phase equilibirum partioning
>Max = The RBC is greater than 100,000 mg/kg

Appendix B
Reference Documents

Appendix B - Refererence Documents

2011 Phase 2 - Aerated Stabilization Basin Site - West Linn	BlueHeronPaperPhaseIISiteAssessmentFinalReport.pdf"	
Asbestos Analysis - 2000	BLUE HERON - Asbestos Survey Feb-2000.pdf"	
Asset Info & Photos_Real Property	IRI Mill Layout Drawing (_20080331_0001).pdf"	
Asset Info & Photos_Real Property	Lagoon Property Photo, Maps & Misc Info.pdf"	
Asset Info & Photos_Real Property	Aerial Photo of Both Properties from Title Co.pdf"	
Asset Info & Photos_Real Property	Flyover Aerial Photo of Mill.jpg"	
Asset Info & Photos_Real Property	High Definition Overhead Photo of Mill - Metro - Summer 2005.pdf"	
Asset Info & Photos_Real Property	Historical Designation Report from 2002 - Part 2 (Photos).pdf"	
Asset Info & Photos_Real Property	Historical Designation Report from 2002.pdf"	
Draft Report re PCB Investigation - May 2011	Table - Results.pdf"	
Draft Report re PCB Investigation - May 2011	Figure - Sampling Locations.pdf"	
Draft Report re PCB Investigation - May 2011	Ld-BHPC Preliminary Soil Investigation.pdf"	
E&E Inc. Final Site Inspection - 12-11-08.pdf"		
EPA No Further Action Letter - Oct 2009.pdf"		
2011 Due Diligence Reports	AKS Report	113011 Blue Heron Final Report.pdf"
2011 Due Diligence Reports	BLUE HERON - Water Rights Determination Diagram - Legal.pdf"	
2011 Due Diligence Reports	HSW Email to Tony Konkol.Union Pacfic Maps Brock Nelson.pdf"	
2011 Due Diligence Reports	113 FERC 62,186.pdf"	
2011 Due Diligence Reports	Superfund Technical Assessment and Response Team Region 10 Blue Heron Preliminary Assessment Report.pdf"	
2011 Due Diligence Reports	Table - Results - Bridgewater Group Report.pdf"	
2011 Due Diligence Reports	US EPA No Further Action Letter.10.09.pdf"	
2011 Due Diligence Reports	WF-DEQ-401-complete.pdf"	
2011 Due Diligence Reports	AEI Environmental Site Assessment Phase I ESA (Mill Phase I).pdf"	
2011 Due Diligence Reports	AEI Property Photographs.pdf"	
2011 Due Diligence Reports	Asbestos Survey Blue Heron 02.2000.pdf"	
2011 Due Diligence Reports	Bridgewater Group Results of Preliminary Soil Investigation.pdf"	
2011 Due Diligence Reports	Ecology and Environment Final Blue Heron Site Inspection Report.pdf"	
2011 Due Diligence Reports	Ecology and Environment Final Blue Heron Site Inspection.pdf"	
2011 Due Diligence Reports	ERM Environmental Document Review.pdf"	
2011 Due Diligence Reports	Figure - Sampling Locations - Bridgewater Group Report.pdf"	
2011 Due Diligence Reports	OR DEQ National Polluntant Discharge Elimiation System Waste DischargeBlue Heron Permit Final.pdf"	
2011 Due Diligence Reports	OR DHS Letter - Amendment 32 Changes to Radioactive Materials License.pdf"	
2011 Due Diligence Reports	Paul Vandenberg BHPC Environmental Dcoument Review Memo.pdf"	
2011 Due Diligence Reports	Portland Harbor Natural Resource Trustee Council Preassessment Screen POrtland Harbor Superfund Site.pdf"	
2011 Due Diligence Reports	Site Maps and Aerial Photographs.pdf"	
2011 Due Diligence Reports	Title Reports and Exceptions	Vesting-2000029964.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #6.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #7.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #8.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #9.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #10.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #17.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #18.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #19.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #20.pdf"
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2011 Due Diligence Reports	Title Reports and Exceptions	Exception #31.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #32.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #33 and #34.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #35.pdf"
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2011 Due Diligence Reports	Title Reports and Exceptions	Exception #39.pdf"
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2011 Due Diligence Reports	Title Reports and Exceptions	Exception #41.pdf"
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2011 Due Diligence Reports	Title Reports and Exceptions	Exception #43.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #45.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #46.pdf"

2011 Due Diligence Reports	Title Reports and Exceptions	Exception #47.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Exception #48.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 1.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 2.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 3.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 4.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 5.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 6.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Map 7.pdf"
2011 Due Diligence Reports	Title Reports and Exceptions	Preliminary Title Report.07.27.11.pdf"
Building Assessment Matrix	V2-0 WF Historic Asset Site Diagram.pdf"	
Building Assessment Matrix	Template - WF Historical Asset Assessment.xlsx"	
Building Assessment Matrix	V 2-1 - WF Historical Asset Assessment.pdf"	
Building Assessment Matrix	V 2-1 - WF Historical Asset Assessment.xlsx"	
Building Snap Shot Forms	South Substation.docx"	
Building Snap Shot Forms	Sulphite Plant.docx"	
Building Snap Shot Forms	Water Filter Plant.docx"	
Building Snap Shot Forms	Wollen Mill Foudations.docx"	
Building Snap Shot Forms	AutoShop.docx"	
Building Snap Shot Forms	Blue Heron Paper Office Building.docx"	
Building Snap Shot Forms	Butler Building.docx"	
Building Snap Shot Forms	Carpentry Shop.docx"	
Building Snap Shot Forms	Clarifier.docx"	
Building Snap Shot Forms	Deink Mill B.docx"	
Building Snap Shot Forms	Deink ONP Repulper.docx"	
Building Snap Shot Forms	Digesters.docx"	
Building Snap Shot Forms	Fire Station, Office, Guard Shack.docx"	
Building Snap Shot Forms	Mill D.docx"	
Building Snap Shot Forms	Mill E.docx"	
Building Snap Shot Forms	Mill G.docx"	
Building Snap Shot Forms	Mill O.docx"	
Building Snap Shot Forms	Millwright Shop.docx"	
Building Snap Shot Forms	No 4 Paper Machine Warehouse.docx"	
Building Snap Shot Forms	No 4 Paper Machine.docx"	
Building Snap Shot Forms	No 2 Paper Machine.docx"	
Building Snap Shot Forms	No.3 Paper Machine.docx"	
Building Snap Shot Forms	North Substation.docx"	
Building Snap Shot Forms	Pipe Chase.docx"	
Building Snap Shot Forms	Pipe Shop.docx"	
Scans from Blue Heron Collection	smurfit scan of mill timeline.pdf"	
Scans from Blue Heron Collection	Smurfit write up on history of plant.pdf"	
Scans from Blue Heron Collection	tough rules saving a dying oregon river NYT 1970.pdf"	
Scans from Blue Heron Collection	1930s history timeline page II.pdf"	
Scans from Blue Heron Collection	1930s timeline of firsts.pdf"	
Scans from Blue Heron Collection	1950s speech on history of site.pdf"	
Scans from Blue Heron Collection	1953 speech.pdf"	
Scans from Blue Heron Collection	1967 Publishers timeline of Mill.pdf"	
Scans from Blue Heron Collection	a visit through publishers paper.pdf"	
Scans from Blue Heron Collection	Blue Heron 3.pdf"	
Scans from Blue Heron Collection	blue Heron2.pdf"	
Scans from Blue Heron Collection	Hawley Sells to Publishers 1948.pdf"	
Scans from Blue Heron Collection	Pacific PaperMill News 1947.pdf"	
Scans from Blue Heron Collection	pulp mills asked to reduce waste 1965.pdf"	
Scans from Blue Heron Collection	SKMBT_C552D12020115090.pdf"	
Scans from Blue Heron Collection	SKMBT_C552D12020115101.pdf"	
Scans from Blue Heron Collection	SKMBT_C552D12020115102.pdf"	
Scans from Blue Heron Collection	SKMBT_C552D12020115103.pdf"	
Scans from Blue Heron Collection	SKMBT_C552D12020115120.pdf"	
Exhibit A- Oregonian Archive for Publishers Paper.pdf"		
historic contributing map.pdf"		
NR_Noms_83002173- White House.pdf"		
Publishers Paper History.pdf"		
rpt_SiteForm_short_grp.pdf"		
1930s history timeline.pdf"		
2002 willamette_falls_request_of_eligibility_-_photos.pdf"		
2002 willamette_falls_request_of_eligibility_-_report.pdf"		
BH Property Report 2.22.12.pdf"		
Blue Heron Historic Contributing strucutre survey.pdf"		
Blue Heron Sanborn Maps 1884-1950.pdf"		
Blue Heron1.pdf"		
Cad Master Facility Plan Maps	699-0000-GM-D-6234 BHP MILL MAP.pdf"	
Cad Master Facility Plan Maps	699-0000-GM-D-06234 SNC OC MILL MAP.pdf"	
Cad Master Facility Plan Maps	699-0000-GM-D-6234 BHP MILL MAP LINE.pdf"	
Cad Master Facility Plan Maps	699-0000-GM-D-6234 BHP MILL MAP REV 4.pdf"	
GIS MAPS Summer 2011	Blue Heron Mill - Utilities Map - 24x36L - 20110325.pdf"	
GIS MAPS Summer 2011	Blue Heron Mill - Zoning Map - 11x17L - 20110331.pdf"	

GIS MAPS Summer 2011	Blue Heron Mill - Zoning Map - 24x36L - 20110325.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Aerial Photo Map - 11x17L - 20110331.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Aerial Photo Map - 24x36L - 20110325.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Contour Map - 11x17L - 20110331.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Contour Map - 24x36L - 20110325.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Natural Resources Map - 11x17L - 20110331.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Natural Resources Map - 24x36L - 20110325.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Taxlots and Ownership Map - 11x17 - 20110331.pdf"		
GIS MAPS Summer 2011	Blue Heron Mill - Utilities Map - 11x17L - 20110331.pdf"		
Oregon City - GIS	Blue Heron Storm Features.pdf"		
Oregon City - GIS	Blue Heron Water lines.pdf"		
Oregon City - GIS	Blue Heron Sewer Features.pdf"		
Tax and Plat Maps	Blue Heron Mill - Tax Map 2-2E-31BD - 24x36L - 20110325.pdf"		
Tax and Plat Maps	Blue Heron Mill - Taxlots and Ownership Map - 24x36L - 20110325.pdf"		
Tax and Plat Maps	0002 Oregon City - Edited.jpg"		
Tax and Plat Maps	0002 Oregon City_closeup.tif"		
Tax and Plat Maps	2s2e31.jpg"		
Tax and Plat Maps	2s2e31bd.jpg"		
Tax and Plat Maps	Blue Heron Mill - Plat Map - 24x36L - 20110325.pdf"		
Tax and Plat Maps	Blue Heron Mill - Tax Map 2-2E-31 - 24x36L - 20110325.pdf"		
1996 Floodline b.jpg"			
USGS Quad Map.pdf"			
415_Main_Street_Master Facility Map.pdf"			
1938 Map of Blue Heron and west linn plant.pdf"			
1996 Floodline a.jpg"			
Key Bankruptcy Docs & Orders	710 - Notice of Bankruptcy Case, Meeting of Creditors, and Deadlines, and Trustee Appointment.pdf"		
Key Bankruptcy Docs & Orders	755 - Supplemental conversion documents.pdf"		
Key Bankruptcy Docs & Orders	784 - Order Extending Time to Assume or Reject Unexpired Leases and Executory Contracts.pdf"		
Key Bankruptcy Docs & Orders	677 - Order re Conversion.pdf"		
Key Bankruptcy Docs & Orders	705 - Conversion Documents.pdf"		
Key Bankruptcy Docs & Orders	Disclosure Statement (latest version)	476-1 - Second Amended Disclosure Statement - Exhibits.pdf"	
Key Bankruptcy Docs & Orders	Disclosure Statement (latest version)	476 - Second Amended Disclosure Statement.pdf"	
Key Bankruptcy Docs & Orders	Petition & Schedules	BLUE HERON - 001 - Voluntary Petition.pdf"	
Key Bankruptcy Docs & Orders	Petition & Schedules	BLUE HERON - 003 - List of 20 Largest Creditors.pdf"	
Key Bankruptcy Docs & Orders	Petition & Schedules	BLUE HERON - 004 - List of Equity Security Holders.pdf"	
Key Bankruptcy Docs & Orders	Petition & Schedules	BLUE HERON - 005 - Corporate Ownership Statement.pdf"	
Key Bankruptcy Docs & Orders	Petition & Schedules	BLUE HERON - 060 - Missing documents - Schedules.pdf"	
Key Bankruptcy Docs & Orders	740 - Order re Sale of Inventory & Supplies.pdf"		
Key Bankruptcy Docs & Orders	782 - Order re Sale of Machinery, Fixtures, Equipment, Vehicles, and Furnishings.pdf"		
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment A_Lab Analytical Reports	0803161.pdf"
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment B_Data Validation Memo	M-DV-032708.doc"
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment C_FSDSs	Soil FSDS.pdf"
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment C_FSDSs	Water FSDS.pdf"
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment D_Sampling Photographs	Photo Array 03.27.08.doc"
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment E_Health and Safety Plan	Phase II HSP.rtf"
Lagoon Phase I & II - April 2008	Appendix A_Phase II ESA	Attachment F_Boring Logs	boring logs_032708.pdf"
Lagoon Phase I & II - April 2008	Appendix B_Resumes	St John, AM--2007.doc"	
Lagoon Phase I & II - April 2008	Appendix B_Resumes	Titkemeier, Kelly--2007.doc"	
Lagoon Phase I & II - April 2008	Appendix C_User Data Request	User Data Request BHPC1.pdf"	
Lagoon Phase I & II - April 2008	Appendix D_Title Report	Fig D-1_Taxlot IDs.pdf"	
Lagoon Phase I & II - April 2008	Appendix D_Title Report	N08-01806.pdf"	
Lagoon Phase I & II - April 2008	Appendix E_EDR Geocheck Report	2172082_2.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_2007_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1936_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1939_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1944_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1953_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1957_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1961_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1967_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1972_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1977_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1980_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1986_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1991_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_1996_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix F_Aerial Photographs	Fig_2002_Historic Aerial.pdf"	
Lagoon Phase I & II - April 2008	Appendix G_Sanborn Fire Insurance Maps	2172082_3.pdf"	
Lagoon Phase I & II - April 2008	Appendix H_Polk City Directories	21720824.pdf"	
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	PQD0178Dioxin.pdf"	
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	tef_values.pdf"	
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	2006 LA soil sludge coc.pdf"	
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	2006 LA soil sludge.pdf"	
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	2006 Neauman soil sludge coc.PDF"	
Lagoon Phase I & II - April 2008	Appendix I_Prior EnviroSite Assessments	2006 Neauman soil sludge.pdf"	
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	2007 sludge.pdf"	

Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	biomonitoring services.pdf"
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	Blue Heron Permit Final.pdf"
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	Determination of PCDD.pdf"
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	expiremental sulphite waste liquor pond.pdf"
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	heron diox TEF.pdf"
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	heron diox TEF.xls"
Lagoon Phase I & II - April 2008	Appendix I_Prior Enviro Site Assessments	pqd0178.PDF"
Lagoon Phase I & II - April 2008	Appendix J_Site Photographs	Fig J1_Site Visit Photographs.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig3_Boring Locations.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig4_Zoning.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig ES-1_Site Location.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig ES-2_Zoning.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig ES-3_Site Features.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig ES-4_Boring Locations.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig1_Site Location.pdf"
Lagoon Phase I & II - April 2008	Figures	Fig2_Site Features.pdf"
Lagoon Phase I & II - April 2008	Tables	Notes.xls"
Lagoon Phase I & II - April 2008	Tables	Table 1-TEF.pdf"
Lagoon Phase I & II - April 2008	Tables	Table 2-GW Data.pdf"
Lagoon Phase I & II - April 2008	Tables	Table 3-GW Data.pdf"
Lagoon Phase I & II - April 2008	Tables	Table 4-GW Data.pdf"
Lagoon Phase I & II - April 2008	Tables	Table 5-GW Data.pdf"
Lagoon Phase I & II - April 2008	Tables	Table Notes.pdf"
Lagoon Phase I & II - April 2008	Tables	T-GW Data.xls"
Lagoon Phase I & II - April 2008	Tables	T-TEF.xls"
Lagoon Phase I & II - April 2008	Text	Rd-Phase I ESA.pdf"
Mill Phase I - April 2008	1-Exec Summary - Phase I.pdf"	
Mill Phase I - April 2008	2-Figures.pdf"	
Mill Phase I - April 2008	3-Appendix A.pdf"	
Mill Phase I - April 2008	4-Appendix B.pdf"	
Mill Phase I - April 2008	5-Appendix C.pdf"	
Mill Phase I - April 2008	6-Appendix D.pdf"	
Smurfit APA	1 - Asset Purchase Agreement BHP-Smurfit.pdf"	
Smurfit APA	2 - Disclosure Schedules to APA - without employee data.pdf"	
Smurfit APA	3 - Environmental Side Letter.pdf"	
Smurfit APA	4 - Indemnification Side Letter.pdf"	
Smurfit APA	5 - Promissory Note.pdf"	
Smurfit APA	6 - Transition Services Agreement.pdf"	
Smurfit APA	7 - Supply Agreement.pdf"	
Smurfit APA	8 - Lease Agreement.pdf"	
Smurfit APA	9 - Smurfit Employee Side Letter.pdf"	
Smurfit APA	Closing Documents List.pdf"	
Survey_Mill	699-0010-GM-C-10131sht 1 RECORD of SURVEY MILL SITE (_20081003_0010).pdf"	
Survey_Mill	699-0010-GM-C-10131sht 2 RECORD of SURVEY MILL SITE (_20081003_0011).pdf"	
Survey_Mill	699-0010-GM-C-10131sht 3 RECORD of SURVEY MILL SITE (_20081003_0012).pdf"	
Survey_Mill	699-0010-GM-C-10131sht 4 RECORD of SURVEY MILL SITE (_20081003_0013).pdf"	
Survey_Mill	699-0010-GM-C-10131sht 5 RECORD of SURVEY MILL SITE (_20081003_0014).pdf"	
Survey_Mill	699-0010-GM-C-10187 MILL LAND SURVEY PS 21487 (_20081003_0009).pdf"	
Survey_Mill	699-0010-GM-C-10245 RECORD of SURVEY-PROPERTY LINE ADJUSTMENT for PGE (_20081003_0001).pdf"	
Summary of tools.pdf"		
Trustee's Title Report - 1st Rev - June 21, 2011.pdf"		
V 2-1 - WF Historical Asset Assessment Matrix.pdf"		
120524_Willamette Falls Site Access Standards.pdf"		
Blue Heron Building Site Plan.pdf"		
DE UCC results - BLUE HERON PAPER COMPANY.pdf"		
Lagoon Chain of Title Report - April 2008.pdf"		
Prelim Title - July 2005.pdf"		
Snap Shot_Blue Heron Paper Office Building.docx"		
699 - General Mill	acltstk.dmp"	
699 - General Mill	plot.log"	
699 - General Mill	699-0000-G-D-10800 #1 #3 #4 PM ROPE RUNS.dwg"	
699 - General Mill	699-0000-GM-B-11217 MILL PAPER MAKING FLOW DIAGRAM.dwg"	
699 - General Mill	699-0000-GM-D-06234 SNC OC MILL MAP.bak"	
699 - General Mill	699-0000-GM-D-06234 SNC OC MILL MAP.DWG"	
699 - General Mill	699-0000-GM-D-6234 BHP MILL MAP- B&W.DWG"	
699 - General Mill	699-0000-GM-D-6234 BHP MILL MAP rev 4-color.DWG"	
699 - General Mill	699-0000-GM-D-6234 BHP MILL MAP-color.DWG"	
699 - General Mill	699-0000-GM-D-07486 CHEM & RAW MAT STORAGE MAP.dwg"	
699 - General Mill	699-0000-GM-D-7486 CHEM_RAW MTRL STORAGE MAP.dwg"	
699 - General Mill	699-0000-GM-D-7487 SHT1 AREA EVAC BASE MAP.dwg"	
699 - General Mill	699-0000-GM-D-7487 SHT2 AREA EVAC BASE MAP.dwg"	
699 - General Mill	699-0000-GM-D-7488 SHT1 FIRE SYSTEM MAP rev 7.dwg"	
699 - General Mill	699-0000-GM-D-7488 SHT1 FIRE SYSTEM MAP.dwg"	
699 - General Mill	699-0000-GM-D-7488 SHT2 FIRE SYSTEM MAP.dwg"	
699 - General Mill	699-0000-GM-D-7488 SHT2 rev 7 FIRE & AMBULANCE PICK-UP MAP.dwg"	
699 - General Mill	699-0000-GM-D-7489 AIR EMISSIONS MAP.dwg"	

699 - General Mill	699-0000-GM-D-7490 RADIATION SOURCE MAP.dwg"
699 - General Mill	699-0000-GM-D-7490 rev 5 RADIATION SOURCE MAP.dwg"
699 - General Mill	699-0000-GM-D-7491 SAFETY SHWR & EYE WASH MAP.dwg"
699 - General Mill	699-0000-GM-D-7492 SEWER SYSTEM MAP.bak"
699 - General Mill	699-0000-GM-D-7492 SEWER SYSTEM MAP.dwg"
699 - General Mill	699-0000-GM-D-7493 MILL DRAINAGE MAP.dwg"
699 - General Mill	699-0000-GM-D-07509 CL CODED MAP COMP.MAINT MANAGE SYS (OBSOLETE).dwg"
699 - General Mill	699-0000-GM-D-10261 MILL E SECOND FLOOR OFFICES - PLAN.dwg"
699 - General Mill	699-0000-GM-D-10262 MILL E SECOND FLOOR OFFICES - NORTH PLAN rev1.bak"
699 - General Mill	699-0000-GM-D-10262 MILL E SECOND FLOOR OFFICES - NORTH PLAN rev1.dwg"
699 - General Mill	699-0000-GM-D-10262 MILL E SECOND FLOOR OFFICES - NORTH PLAN.DWG"
699 - General Mill	699-0000-GM-D-10263 MILL E 2ND FLOOR OFFICES - SOUTH rev1.bak"
699 - General Mill	699-0000-GM-D-10263 MILL E 2ND FLOOR OFFICES - SOUTH rev1.DWG"
699 - General Mill	699-0000-GM-D-10263 MILL E 2ND FLOOR OFFICES - SOUTH.DWG"
699 - General Mill	699-0000-GM-D-10851 SNC OC MILL MAP-TILE CHESTS & FILTER PLANT.dwg"
699 - General Mill	699-0000-GM-D-11045 sht 1 CORPORATE OFFICE BUILDING FLOOR PLAN - 1st FLOOR.dwg"
699 - General Mill	699-0000-GM-D-11045 sht 2 CORPORATE OFFICE BUILDING FLOOR PLAN - 2nd FLOOR.dwg"
699 - General Mill	699-0000-GM-D-11045 sht 3 CORPORATE OFFICE BUILDING FLOOR PLAN - BASEMENT.dwg"
699 - General Mill	699-0000-IP-D-10093 Effluent Spill Control System-No 1 & No 4 PM's Seal Water Collection P & ID.DWG"
699 - General Mill	699-0000-IP-D-10094 Effluent Spill Control System P & ID.DWG"
699 - General Mill	699-0000-P-B-10162 rev 1 WASTE WATER TREATMENT SYSTEM.dwg"
699 - General Mill	699-0000-P-B-10162 WASTE WATER TREATMENT SYSTEM.dwg"
699 - General Mill	699-0000-P-D-10697 SHT1 & 2 MILL UNDERGROUND PIPING GNRL LAYOUT rev1.dwg"
699 - General Mill	699-0000-P-D-10697 SHT1 & 2 MILL UNDERGROUND PIPING GNRL LAYOUT.dwg"
699 - General Mill	699-0000-P-D-10697 SHT1 & 2 MILL UNDERGROUND PIPING GNRL LAYOUTmod.dwg"
699 - General Mill	699-0001-GM-B-10151 MAJOR BULK CHEMICALS, WASTE & OIL MILL LOCATIONS.dwg"
699 - General Mill	699-0001-GM-D-10711 FLOOD INFO & ELEV FOR UPPER & LOWER WILLAMETTE.dwg"
699 - General Mill	699-0001-GM-D-10718 MILL AERIAL VIEW.dwg"
699 - General Mill	699-0010-GM-C-2430 LAND SURVEY- LAGOON- WEST LINN PS 21487 (20081003_0002.TIF).dwg"
699 - General Mill	699-0010-GM-C-10131 sht 1 RECORD of SURVEY- MILL SITE (20081003_010.TIF).bak"
699 - General Mill	699-0010-GM-C-10131 sht 1 RECORD of SURVEY- MILL SITE (20081003_010.TIF).dwg"
699 - General Mill	699-0010-GM-C-10131 sht 2 RECORD of SURVEY- MILL SITE (20081003_011.TIF).bak"
699 - General Mill	699-0010-GM-C-10131 sht 2 RECORD of SURVEY- MILL SITE (20081003_011.TIF).dwg"
699 - General Mill	699-0010-GM-C-10131 sht 3 RECORD of SURVEY- MILL SITE (20081003_012.TIF).bak"
699 - General Mill	699-0010-GM-C-10131 sht 3 RECORD of SURVEY- MILL SITE (20081003_012.TIF).dwg"
699 - General Mill	699-0010-GM-C-10131 sht 4 RECORD of SURVEY- MILL SITE (20081003_013.TIF).bak"
699 - General Mill	699-0010-GM-C-10131 sht 4 RECORD of SURVEY- MILL SITE (20081003_013.TIF).dwg"
699 - General Mill	699-0010-GM-C-10131 sht 5 RECORD of SURVEY- MILL SITE (20081003_014.TIF).bak"
699 - General Mill	699-0010-GM-C-10131 sht 5 RECORD of SURVEY- MILL SITE (20081003_014.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 1 RECORD of SURVEY- LAGOON AREA (20081003_003.TIF).bak"
699 - General Mill	699-0010-GM-C-10132 sht 1 RECORD of SURVEY- LAGOON AREA (20081003_003.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 2 RECORD of SURVEY- LAGOON AREA (20081003_004.TIF).bak"
699 - General Mill	699-0010-GM-C-10132 sht 2 RECORD of SURVEY- LAGOON AREA (20081003_004.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 3 RECORD of SURVEY- LAGOON AREA (20081003_005.TIF).bak"
699 - General Mill	699-0010-GM-C-10132 sht 3 RECORD of SURVEY- LAGOON AREA (20081003_005.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 4 RECORD of SURVEY- LAGOON AREA (20081003_006.TIF).bak"
699 - General Mill	699-0010-GM-C-10132 sht 4 RECORD of SURVEY- LAGOON AREA (20081003_006.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 5 RECORD of SURVEY- LAGOON AREA (20081003_007.TIF).bak"
699 - General Mill	699-0010-GM-C-10132 sht 5 RECORD of SURVEY- LAGOON AREA (20081003_007.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 6 RECORD of SURVEY- LAGOON AREA (20081003_008.TIF).dwg"
699 - General Mill	699-0010-GM-C-10132 sht 6 rev ! RECORD of SURVEY- LAGOON AREA (20081003_008.TIF).dwg"
699 - General Mill	699-0010-GM-C-10187 MILL LAND SURVEY PS 21487 (20081003_0009.TIF).dwg"
699 - General Mill	699-0010-GM-C-10245 RECORD of SURVEY- PROPERTY LINE ADJUSTMENT for PGE- (20081003_001.TIF).bak"
699 - General Mill	699-0010-GM-C-10245 RECORD of SURVEY- PROPERTY LINE ADJUSTMENT for PGE- (20081003_001.TIF).dwg"
699 - General Mill	699-0010-GM-C-10245 RECORD of SURVEY- PROPERTY LINE ADJUSTMENT for PGE- (20081003_001.TIG).bak"
699 - General Mill	699-0010-GM-D-10104 MILL MAP of TRAIN CROSSINGS.dwg"
699 - General Mill	699-0010-GM-D-10848 Y2K COMPLIANCE ZONES.dwg"
699 - General Mill	699-0010-GM-D-11208 sht 1 427 BLDG ASBESTOS SURVEY.dwg"
699 - General Mill	699-0010-GM-D-11208 sht 2 427 BLDG ASBESTOS SURVEY.dwg"
699 - General Mill	699-0010-GM-D-11208 sht 3 427 BLDG ASBESTOS SURVEY.dwg"
699 - General Mill	699-0010-GM-D-11300 IRI MILL LAYOUT DWG.dwg"
699 - General Mill	699-0020-GM-D-10104 MILL MAP - RAILROAD TRACKS & CROSSINGS.DWG"
699 - General Mill	699-0200-S-D-10778 SHT1 MILL ENTRANCE SIGN FRAME STRUCTURE.dwg"
699 - General Mill	699-0200-S-D-10778 SHT2 MILL ENTRANCE SIGN FRAME STRUCTURE.dwg"
699 - General Mill	699-1000-IP-B-02399 DEPT 699 AMMONIA SYS P&ID.dwg"
699 - General Mill	699-1200-I-D-07435 CLARIFIER EFFLUENT DISCHARGE SURGE VALVE PLAN & DETAILS.dwg"
699 - General Mill	699-1200-IP-D-10581 SHT1 MILLWIDE WW USAGES P & ID.dwg"
699 - General Mill	699-1200-IP-D-10581 SHT2 MILLWIDE Mill H & G WW USAGES P & ID.dwg"
699 - General Mill	699-1200-IP-D-10581 SHT3 MILLWIDE #1PM WW USAGES P & ID.dwg"
699 - General Mill	699-1200-IP-D-10581 SHT4 MILLWIDE #3PM WW USAGES P & ID.dwg"
699 - General Mill	699-1200-IP-D-10581 SHT5 MILLWIDE #4PM WW USAGES P & ID.dwg"
699 - General Mill	699-1600-PS-D-11289 MILL STEAM FLOW.bak"
699 - General Mill	699-1600-PS-D-11289 MILL STEAM FLOW.dwg"
699 - General Mill	699-2000-S-D-10156 EFF. CONTAIN UTILITY TUNNEL-Wall Opngs..DWG"
699 - General Mill	699-2000-S-D-10157 EFF. CONTAIN. UTILITY TUNNEL-Access Platform Plan.dwg"
699 - General Mill	699-2000-S-D-10158 EFF. CONTAIN UTILITY TUNNEL-Access Platform Sec. & Dtls.dwg"

699 - General Mill 699-2000-S-D-10159 EFF. CONTAIN UTILITY TUNNEL-Ladder Sec. & Dtls..dwg"
699 - General Mill 699-7000-EP-D-06235 SHT 1 (VOIDED) POWER DISTRIBUTION ONELINE.dwg"
699 - General Mill 699-7000-EP-D-06235 SHT 2 (VOIDED) POWER DISTRIBUTION ONELINE.dwg"
699 - General Mill 699-7000-EP-D-06235 SHT 3 (VOIDED) POWER DISTRIBUTION ONELINE.dwg"
699 - General Mill 699-7000-EP-D-06235 SHT 4 (VOIDED) POWER DISTRIBUTION ONELINE.dwg"
699 - General Mill 699-7000-EP-D-06235 SHT 5 (VOIDED) POWER DISTRIBUTION ONELINE.dwg"
699 - General Mill 699-7000-EP-E-10661 ONELINE MILL WIDE POWER DISTRIBUTION 4 plot version.dwg"
699 - General Mill 699-7000-EP-E-10661 ONELINE MILL WIDE POWER DISTRIBUTION.dwg"
699 - General Mill 699-9000-GM-D-07517-1 WATER RIGHTS DETERMINATION, CURRENT PROCESS WATER USAGE, BLOCK DIAGRAM.dwg"
699 - General Mill 699-9000-GM-D-07517-2 RIVER WATER INTAKE, CURRENT PROCESS WATER USAGE, BLOCK DIAGRAM.dwg"
699 - General Mill 699-9000-GM-D-07517-3 FILTERED WATER DISTRIBUTION, CURRENT PROCESS WATER USAGE, BLOCK DIAGRAM.dwg"
699 - General Mill 699-9000-GM-D-07517-4 EFFLUENT FLOWS CURRENT PROCESS WATER USAGE BLOCK DIAGRAM.dwg"
699 - General Mill 699-9000-GM-D-07517-4 EFFLUENT FLOWS, CURRENT PROCESS WATER USAGE, BLOCK DIAGRAM.dwg"
699 - General Mill 699-9000-GM-D-07518-1 WATER RIGHTS, CURRENT PROCESS & DIVERSION POINTS.dwg"
699 - General Mill 699-9000-GM-D-07518-2 WATER RIGHTS, CURRENT PROCESS ATMOSPHERIC LOSSES.dwg"
699 - General Mill 699-9000-GM-D-07518-3 WATER RIGHTS, CURRENT PROCESS WATER USAGE __ PEAK USAGE -- TANK FILL-UP.dwg"
699 - General Mill 699-9000-PS-B-11542 HEAT AND PWR BLNCE EXISITING ANUAL AVE.DWG"
699 - General Mill 699-9000-PS-B-11543 HEAT AND PWR BALNCE NO 5 TMP OFF PEAK HRS.dwg"
699 - General Mill 699-9000-PS-B-11544 HEAT AND PWR BALNCE NO 5 TMP 180 BDT ANNUAL AVE.dwg"
699 - General Mill 699-9000-PS-B-11545 HEAT AND PWR BALNCE FUTURE TURBINE GENERATOR ANNUAL AVE.dwg"
699 - General Mill 699-9105-EC-B-11727 EAST-WEST TRAVWELING WATER SCREEN MOTOR CONTROL.dwg"
699 - General Mill 699-9120-EM-B-11725 NORTH FISH SCREEN SHOWER PUMP.dwg"
699 - General Mill 699-9122-EM-B-11726 SOUTH FISH SCREEN SHOWER PUMP.dwg"
699 - General Mill 699-9600-CS-B-11492 LAB VIDEO CABLE RUN.dwg"
699 - General Mill 699-9600-CS-B-11873 ETHERNET NETWORK CABLE RUN.dwg"
699 - General Mill 699-9600-TS-D-10322 SHT2 PHONE SYSTEM MAP.bak"
699 - General Mill 699-9600-TS-D-10322-1 rev 1 MILL PHONE SYS MAP - INDEX.dwg"
699 - General Mill 699-9600-TS-D-10322-2 MILL PHONE SYS MAP - MISC LOCOs.dwg"
699 - General Mill 699-9600-TS-D-10323 PHONE SYSTEM MAP CORPORATE OFFICE BSMNT.dwg"
699 - General Mill 699-9600-TS-D-10323 rev2.dwg"
699 - General Mill 699-9600-TS-D-10324 PHONE SYSTEM MAP CORPORATE OFFICE 1ST FLR.dwg"
699 - General Mill 699-9600-TS-D-10324 rev 2.dwg"
699 - General Mill 699-9600-TS-D-10325 PHONE SYSTEM MAPS CORP OFFICE.dwg"
699 - General Mill 699-9600-TS-D-10326 PHONESYSTEM MAPS PERSONNEL, FIRST AID GUARD SHACK.dwg"
699 - General Mill 699-9600-TS-D-10327 PHONE SYSTEM MAP MILL E 4TH FLR.dwg"
699 - General Mill 699-9600-TS-D-10327 rev 2 PHONE SYSTEM MAP MILL E 4TH FLR.dwg"
699 - General Mill 699-9600-TS-D-10328 PHONE SYSTEM MAP MILL E 3RD FLR.bak"
699 - General Mill 699-9600-TS-D-10328 PHONE SYSTEM MAP MILL E 3RD FLR.dwg"
699 - General Mill 699-9600-TS-D-10329 PHONE SYSTEM MAP MILL E 2ND FLOOR SOUTH.bak"
699 - General Mill 699-9600-TS-D-10329 PHONE SYSTEM MAP MILL E 2ND FLOOR SOUTH.dwg"
699 - General Mill 699-9600-TS-D-10330 PHONE SYSTEM MAP MILL E 2ND FLOOR NORTH.dwg"
699 - General Mill 699-9600-TS-D-10330 rev 3 PHONE SYSTEM MAP MILL E 2ND FLOOR NORTH.dwg"
699 - General Mill 699-9600-TS-D-10331 PHONE SYSTEM MAP MILL E 1ST FLR.bak"
699 - General Mill 699-9600-TS-D-10331 PHONE SYSTEM MAP MILL E 1ST FLR.dwg"
699 - General Mill 699-9600-TS-D-10332 PHONE SYSTEM MAP #1PM.dwg"
699 - General Mill 699-9600-TS-D-10333 PHONE SYSTEM MAP #3PM.dwg"
699 - General Mill 699-9600-TS-D-10334 PHONE SYSTEM MAP #4PM.dwg"
699 - General Mill 699-9600-TS-D-10335 PHONE SYSTEM MAP MILL B DEINK.dwg"
699 - General Mill 699-9600-TS-D-10336 SHT1 PHONE SYSTEM MAP MILL H REFINING & DEINK.dwg"
699 - General Mill 699-9600-TS-D-10336 SHT2 PHONE SYSTEM MAP MILL H REFINING & DEINK.dwg"
699 - General Mill 699-9600-TS-D-10337 PHONE SYSTEM MAP MACHINE MILLWRIGHT SHOP.dwg"
699 - General Mill 699-9600-TS-D-10338 PHONE SYSTEM MAP MILL O.dwg"
699 - General Mill 699-9900-E-D-10019 TRANSFORMER SIZE&TYPE HAZ COMMUNICATION-MILL LOCATIONS rev1.dwg"
699 - General Mill 699-9900-E-D-10019 TRANSFORMER SIZE&TYPE HAZ COMMUNICATION-MILL LOCATIONS.dwg"
699 - General Mill 699-9900-PW-D-10831 FILTERED WATER, MILL, AERIAL VIEW.bak"
699 - General Mill 699-9900-PW-D-10831 FILTERED WATER, MILL, AERIAL VIEW.dwg"
699 - General Mill acltstk.dmp"
699 - General Mill plot.log"
Fig02_WaterManagement.pdf"

Appendix C
Boring Logs

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

F01-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 2 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Direct Push
AT TIME OF DRILLING ---
LOGGED BY B. Robinson **CHECKED BY** M. Appel
AT END OF DRILLING ---
NOTES Refusal at 10.5 feet due to basalt rock.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				0.3 Asphalt.	
		GM		SILTY GRAVEL WITH SAND (GM): grey, fine gravel, fine to coarse sand, well-graded, angular, dry. Fill material.	
2.5				3.0	
		SP		POORLY-GRADED SAND (SP): dark brown, fine, poorly-graded, slightly moist, increasing to moist with depth.	
5.0					3
					0
7.5					0
10.0	F01-01-9.5-10.5 (1105)			At 9.5 feet bgs, as above except with laminations of silty sand.	
				At 10 feet bgs, as above except very moist.	1.6
				10.5 Bottom of borehole at 10.5 feet.	

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
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Portland, Oregon 97204
Telephone: 503-488-5282

F01-02

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Hand Auger
AT TIME OF DRILLING ---
LOGGED BY B. Robinson **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 2 feet due to concrete slab.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
0.3				Asphalt.
0.5				Crushed rock. Grey, fine to coarse sand and fine gravel.
	F01-02-1-2 (1210)	SW		WELL-GRADED SAND WITH GRAVEL (SW): brown, fine to medium sand, fine gravel, well-graded, moist. Fill material.
2.0				

Bottom of borehole at 2.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

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Portland, Oregon 97204
Telephone: 503-488-5282

F07-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Hand Auger
AT TIME OF DRILLING ---
LOGGED BY B. Robinson **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 1 foot due to wood and gravel ballast.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
			0.3	Asphalt.
	F07-01-0.5-1.0 (1340)	GM		SILTY GRAVEL WITH SAND (GM): dark grey, gravel with silt and sand, some wood, hydrocarbon odor, slightly moist.
			1.0	

Bottom of borehole at 1.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
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Portland, Oregon 97204
Telephone: 503-488-5282

F16-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 2 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Direct Push
AT TIME OF DRILLING ---
LOGGED BY B. Robinson **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 17.5 feet, possibly weathered basalt.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0					Concrete.	
					0.5	
					SILTY SAND (SM): dark brown, fine sand, some fine gravel, slightly moist.	0.9
2.5						0.5
	F16-01-3-4 (1550)					
		100				0.9
5.0					Brick fragments at 5 feet bgs.	
7.5		40	SM		At 8 feet bgs, as above except fine to medium sand, no gravel, moist.	0.4
10.0						
12.5		60			At 12 feet bgs, as above except orangish-brown.	0.3
15.0						

(Continued Next Page)

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

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1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 2 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Direct Push
AT TIME OF DRILLING ---
LOGGED BY B. Robinson **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 17.5 feet, possibly weathered basalt.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
15.0			SM		SILTY SAND (SM): dark brown, fine sand, some fine gravel, slightly moist. *(continued)*	
				15.5	At 15 feet bgs, as above except wet.	
	F16-01-15.5-16.5 (1555)	100	GW		WELL-GRADED GRAVEL (GW): olive grey, fine gravel, some fine to coarse sand, wet.	0
				16.5		
			GM		SILTY GRAVEL WITH SAND (GM): olive grey, fine to coarse gravel, fine to coarse sand, well-graded, dry.	0
17.5				17.5		

Bottom of borehole at 17.5 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

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Portland, Oregon 97204
Telephone: 503-488-5282

F18-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/15/12 **COMPLETED** 9/15/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Grab Sample
AT TIME OF DRILLING ---
LOGGED BY B. Robinson **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION
0.0				0.3	Concrete.
		SP		0.5	POORLY GRADED SAND (SP): brown, fine sand, some silt, with brick and concrete fragments, dry. Fill material.

Bottom of borehole at 0.5 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

F19-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Hand Auger
AT TIME OF DRILLING ---
LOGGED BY M. Appel **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 1.5 feet due to large 8-inch rocks throughout soil material.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
			0.5	Asphalt.
	F10-01:0.5-1.5 (1645)	GW	1.5	WELL-GRADED GRAVEL (GW): fine to coarse gravel, few to little fines, very poorly sorted, no staining, no odor, moist.

Bottom of borehole at 1.5 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

F21-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Hand Auger
AT TIME OF DRILLING ---
LOGGED BY M. Appel **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 2.0 due to large rocks throughout soil material.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
			0.5	Asphalt.
	F19-01:0.5-2.0 (1715)	SW	2.0	WELL-GRADED SAND (SW): dark brown, medium to very coarse sand, coarse gravel, poorly sorted, no odor, no staining, moist.

Bottom of borehole at 2.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

F38-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 2 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Direct Push
▽ **AT TIME OF DRILLING** 5.32 ft
LOGGED BY M. Appel **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0.0				Asphalt with multiple lifts.		
				0.5		
		GW		WELL-GRADED GRAVEL (GW): dark brown, fine to coarse gravel, cobbles, few clay, few silt, subangular to subrounded gravel, poorly sorted, no staining, no odor, moist.	0.1	
2.5				At 2 feet bgs, many 4- to 5-inch diameter cobbles.		
				3.5	1	
				No recovery due to soft fill with large rocks.		
5.0				5.0		
	F38-01: 5-10 (1020)			▽ Fill material. Sand and gravel, medium to very coarse sand, fine to coarse gravel, saturated, dark grey staining, no odor. Poor recovery.		
7.5					3.6	Temporary well
10.0				10.0		

Bottom of borehole at 10.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

F42-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Hand Auger
AT TIME OF DRILLING ---
LOGGED BY M. Appel **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 2.5 feet due to large rocks throughout.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0					
				0.4 Concrete with rebar.	
				1.0 Fill Material. Rocks and concrete rubble.	
	F42-01:1.5-2.5 (1500)	GW		WELL-GRADED GRAVEL (GW): dark brown, fine to coarse sand, fine to coarse gravel, few clay, very poorly sorted, dark staining, no odor, moist. Increased clay with depth from few to little.	0.4
2.5				2.5	

Bottom of borehole at 2.5 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

IB-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/14/12 **COMPLETED** 9/14/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Gravity LLC
GROUND WATER LEVELS:
EQUIPMENT Vibracore
AT TIME OF DRILLING ---
LOGGED BY H. Seyl **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES mudline at 5 feet
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0			
		0.4	ORGANIC SOIL (OH): dark brown, with woody debris, no odor, no staining.
			POORLY GRADED SAND WITH SILT (SP): dark brown, fine grain, no odor and no staining.
			Woody debris at 1.7 feet bgs.
2.5			
	IB-01-GRAB-091412		Layer of fine sand at 2.5 feet bgs.
		3.1	

Bottom of borehole at 3.1 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

IB-02

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/14/12 **COMPLETED** 9/14/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Gravity LLC
GROUND WATER LEVELS:
EQUIPMENT Vibracore
AT TIME OF DRILLING ---
LOGGED BY H. Seyl **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES mudline at 5.1 feet
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0		OH		ORGANIC SOIL (OH): dark brown, with woody debris, no odor, no staining.
0.4		SP-SM		POORLY GRADED SAND WITH SILT (SP-SM): dark brown, fine sand, no odor, no staining.
				Layer of woody debris at 1.7 feet bgs.
2.5	IB-02-2.5-3.0-091412			Layer of fine sand at 2.5 feet bgs.
3.0				Bottom of borehole at 3.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

IB-03

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/14/12 **COMPLETED** 9/14/12
GROUND ELEVATION _____ **HOLE SIZE** 4 inch
CONTRACTOR Gravity LLC
GROUND WATER LEVELS:
EQUIPMENT Vibracore
AT TIME OF DRILLING ---
LOGGED BY H. Seyl **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES mudline at 5.3 feet
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0		OH		ORGANIC SOIL (OH): dark brown, with woody debris, no odor, no staining.
0.4				
		SP-SM		POORLY GRADED SAND WITH SILT (SP): dark brown, fine grain, no odor, no staining.
				Layer of woody debris at 1 foot bgs.
	IB-03-1.5-2.0-091412			Layer of fine grain sand at 1.5 feet bgs.
2.5				
	IB-03-3.5-4.0-091412			
3.3				

Bottom of borehole at 3.3 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

TD-01

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION ---- **HOLE SIZE** 2 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Direct Push
▽ **AT TIME OF DRILLING** 5.85 ft
LOGGED BY M. Appel **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 8 feet due to basalt bedrock.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0.0				Asphalt.		
				0.8		
				Fill material. Wood, bricks, ash, sand and gravel, no odor, no staining, dry.	0.2	
				1.5		
		SC		CLAYEY SAND (SC): dark brown, very fine to medium sand, some fill material, very poorly sorted, no odor, moist. Small amount of fill.		
2.5				2.5		
				WELL-GRADED SAND (SW): grey, fine to medium sand, moderately sorted, no odor, no staining, moist.	0.1	
5.0	TD-01: 4.4-6 (1220)	SW			0.3	Temporary well
				▽ At 6 feet bgs, as above except with sheen and petroleum odor.	0.2	
				7.0		
7.5		SC		CLAYEY SAND (SC): fine to coarse sand, very poorly sorted, grey staining to 7.8 feet bgs, petroleum odor, saturated.		
				8.0 At 7.8 feet bgs, as above except fine to coarse, rounded gravel.		

Bottom of borehole at 8.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

TD-02

CLIENT Portland Metro
PROJECT NAME Blue Heron
PROJECT NUMBER 0170026
PROJECT LOCATION Oregon City
DATE STARTED 9/7/12 **COMPLETED** 9/7/12
GROUND ELEVATION _____ **HOLE SIZE** 2 inch
CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
EQUIPMENT Direct Push
AT TIME OF DRILLING ---
LOGGED BY M. Appel **CHECKED BY** B. Robinson
AT END OF DRILLING ---
NOTES Refusal at 9 feet due to fractured basalt bedrock.
AFTER DRILLING ---

DEPTH (ft)	SAMPLE IDENTIFICATION	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				Asphalt.	
0.5		SP		POORLY-GRADED SAND (SP): brown, fine to coarse sand, poorly sorted, no odor, no staining, increased moisture with depth from dry to moist.	
1.0		SC		CLAYEY SAND (SC): brown, fine to coarse sand, poorly sorted, no odor, no staining, moist.	0.4
2.5					
5.0				At 4.0 feet bgs, as above except very fine to medium sand, with trace cobbles.	0.4
6.5	TD-02: 5-8 (1135)				0.5
7.0		CL		SANDY LEAN CLAY (CL): very fine to medium sand, low plasticity, soft, grey staining, petroleum odor, moist.	
7.5		SP		POORLY-GRADED SAND (SP): very fine to coarse sand, very poorly sorted, grey staining, petroleum odor, moist.	74.2
8.0		SP		POORLY-GRADED SAND WITH GRAVEL (SP): brown, fine to coarse sand, fine to coarse gravel, very poorly sorted, grey staining, petroleum odor, moist.	
9.0				Bottom of borehole at 9.0 feet.	

GENERAL BH / TP / WELL - GINT STD US.GDT - 11/5/12 12:46 - \\WDPORDC02\DATAPOR\ERM\GINT\BLUE HERON\BLUEHERON.GPJ

Appendix D
Laboratory Analytical Reports

Appendix E
Data Validation Report

Memorandum

Environmental Resources Management

2875 Michelle Drive
Suite 200
Irvine, CA 92606
(949) 623-4700
(949) 623-4711 (fax)

To: Matt Mudge

Validator: Irene Lavigne

Date: 31 October 2012

Subject: Data Review of Blue Heron Mill Phase II Soil, Sediment, and Groundwater Samples Collected September 2012

Project Number: 0170026.12

Data Packages: ALS Group Data Packages K1209054, K1209255, and K1209289

The quality of the data was assessed and any necessary qualifiers were applied following the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* October 1999, the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* October 2004, and the *USEPA National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs)*, September 2005.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed preservation requirements. None of the data were qualified based on holding time or preservation exceedances.

BLANK EVALUATION

The method blank, trip blank, and rinsate blank sample results were nondetected for each of the target analytes with limited exceptions. Four samples were qualified as nondetected (U) based on associated blank detections. Additional sample data were not qualified on the basis of blank detections. Associated sample data were not qualified if the results were nondetected or if they exceeded five times the blank concentrations for organic compounds, or 10 times the blank concentrations for inorganic compounds. The blank detections and qualified sample data are shown in Table 1.

BLANK SPIKE EVAUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries were within the laboratory's limits of acceptance with limited exceptions. No sample data were qualified based on the LCS outliers. Data were not qualified if only one recovery in an LCS/LCSD pair exceeded control limits, or if the data could be verified using an associated, in-control matrix spike recovery. The LCS outliers are presented in Table 2.

MATRIX SPIKE EVALUATION

The matrix spike (MS) and matrix spike duplicate (MSD) recoveries were within the laboratory's limits of acceptance with a number of exceptions. Twelve detected sample results for chromium were qualified as estimated and biased high (J+) due to an associated MS recovery that exceeded the maximum acceptable limits. Additional recovery outliers did not result in qualification of sample data. Data were not qualified if only one recovery in a MS/MSD pair exceeded control limits, if only the relative percent difference (RPD) exceeded control limits, or if the concentrations of the unspiked samples were greater than four times the amount spiked. The MS outliers and associated, qualified data are listed in Table 2.

ESTIMATED MAXIMUM POSSIBLE CONCENTRATION

The laboratory identified a number of dioxin and furan results as estimated maximum possible concentrations (EMPC). An EMPC value is the maximum possible concentration of a compound that could be present in the sample. This classification is used when all of the identification criteria for a given dioxin or furan compound are not met. Sample data identified as EMPC by the laboratory were qualified as nondetected (U), as shown in Table 3.

SURROGATE EVALUATION

The surrogate recoveries were within acceptable limits with few exceptions. No qualifiers were applied to the data based on the surrogate outliers. Data were not qualified if only one surrogate for a semivolatile organic compounds analysis exceeded control limits, or if a sample was diluted by a factor of 10 times or more, resulting in dilution of the surrogate compounds to a point where they did not provide useful recovery information. The outlying surrogate recoveries are listed in Table 4.

LABELED COMPOUND EVALUATION

Carbon-13 labeled isotope recoveries were reported for each sample submitted for dioxin/furan analysis. The recoveries of 10 labeled CDD and CDF compounds is a measure of the effectiveness of the laboratory and method to extract the compounds of interest. Five samples had recoveries of various compounds that were below the minimum acceptable limits. Detected sample results for the corresponding compounds were qualified as estimated (J). The outlying isotope recoveries are shown in Table 5.

FIELD DUPLICATE EVALUATION

One sample was collected and analyzed in duplicate. ERM calculated the RPD between detected results. The USEPA has not established control criteria for field duplicate samples; therefore, sample data are not qualified on the basis of field duplicate imprecision. Detected duplicate results and calculated RPDs are presented in Table 6.

ANALYTICAL DUPLICATE EVALUATION

The laboratory prepared and analyzed a number of samples as analytical duplicates. ERM calculated the RPD between detected results. The RPDs were less than 20 percent, with few exceptions. The primary sample results for five samples were qualified as estimated (J) based on the RPD exceedances. The analytical duplicate sample results and calculated RPDs are listed in Table 6.

CALIBRATION RANGE EVALUATION

The laboratory noted two instances where the sample results exceeded the calibration range of the equipment. The sample results were qualified as estimated (J), and are shown in Table 7.

TPH EVALUATION

The laboratory noted that the chromatograms for a number of samples analyzed for diesel, residual, and gasoline range organics did not match the calibration standards for their respective compounds. The results for these samples were qualified as tentatively identified and estimated (NJ) as presented in Table 8.

OVERALL ASSESSMENT

No data were determined to be unusable. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically-defensible documents.

Table 1
Blank and Associated Suspect Sample Detections
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Blank ID	Associated Samples	Detected Compound	Reported Concentration	Report Limit	Units	ERM Qualifier
K1209054	K1209054-MB	NA	Zinc	0.9	0.5	mg/kg	--
K1209054	KWG1211060-10 MB	See below	Diethyl phthalate	0.024	0.34	mg/kg	--
K1209054	KWG1211060-10 MB	F16-01-3-4	Diethyl phthalate	0.11	2.3	mg/kg	2.3 U
K1209054	KWG1211060-10 MB	F16-01-15.5-16.5	Diethyl phthalate	0.11	2.6	mg/kg	2.6 U
K1209054	P160146 MB	NA	OCDD	0.463	5.0	ng/kg	--
K1209289	K1209289-MB	NA	Lead	0.070	0.040	mg/L	--
K1209289	RINSATE-091512	See below	Chromium	0.4	0.2	µg/L	--
K1209289	RINSATE-091512	F34-01-SP-091512	Chromium	2.0	0.2	µg/L	2.0 U
K1209289	RINSATE-091512	NA	Copper	0.4	0.1	µg/L	--
K1209289	RINSATE-091512	NA	Lead	0.11	0.02	µg/L	--
K1209289	RINSATE-091512	See below	Nickel	0.5	0.2	µg/L	--
K1209289	RINSATE-091512	F34-01-SP-091512	Nickel	4.0	0.2	µg/L	4.0 U
K1209289	RINSATE-091512	NA	Zinc	1.1	0.5	µg/L	--
K1209289	RINSATE-091512	NA	OCDD	18.9	61.0	pg/L	--
K1209289	EQ1200546-01 MB 09/27	NA	OCDD	34.6	50.0	pg/L	--
K1209289	EQ1200546-01 MB 09/27	NA	OCDF	5.88	50.0	pg/L	--
K1209289	EQ1200548-01 MB 10/03	NA	1,2,3,4,6,7,8-HpCDD	0.526	2.5	ng/kg	--
K1209289	EQ1200548-01 MB 10/03	NA	OCDD	4.33	5.0	ng/kg	--
K1209289	EQ1200548-01 MB 10/03	NA	1,2,3,4,6,7,8-HpCDF	0.244	2.5	ng/kg	--
K1209289	EQ1200548-01 MB 10/03	NA	OCDF	1.03	5.0	ng/kg	--
K1209289	EQ1200548-01 MB 10/03	NA	Total Hepta-Dioxins	1.07	2.5	ng/kg	--
K1209289	EQ1200548-01 MB 10/03	NA	Total Hepta-Furans	0.244	2.5	ng/kg	--
K1209289	EQ1200551-01 MB 10/05	NA	1,2,3,4,6,7,8-HpCDD	1.11	2.5	ng/kg	--
K1209289	EQ1200551-01 MB 10/05	NA	OCDD	6.81	5.0	ng/kg	--
K1209289	EQ1200551-01 MB 10/05	NA	1,2,3,4,6,7,8-HpCDF	0.190	2.5	ng/kg	--
K1209289	EQ1200551-01 MB 10/05	NA	OCDF	0.462	5.0	ng/kg	--

Table 1
Blank and Associated Suspect Sample Detections
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Blank ID	Associated Samples	Detected Compound	Reported Concentration	Report Limit	Units	ERM Qualifier
K1209289	EQ1200551-01 MB 10/05	NA	Total Hepta-Dioxins	2.19	2.5	ng/kg	--
K1209289	EQ1200551-01 MB 10/05	NA	Total Hepta-Furans	0.391	2.5	ng/kg	--

Data packages reviewed: K1209054, K1209255, K1209289

Key:
MB = Method blank
mg/kg = Milligrams per kilogram
ng/kg = Nanograms per kilogram
mg/L = Milligrams per liter
µg/L = Micrograms per liter
pg/L = Picograms per liter
U = Sample result qualified as nondetected
NA = Not applicable; associated sample data not affected
OCDD = Octachlorodibenzo-p-dioxin
OCDF = Octachlorodibenzofuran
HpCDD = Heptachlorodibenzo-p-dioxin
HpCDF = Heptachlorodibenzofuran

Table 2
Spike Recoveries Outside of Acceptable Limits
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Sample Result	ERM Qualifier
LCS/LCSD									
K1209054	KWG1210972-3	NA	Acetone	149	68-135	--	--	--	--
K1209289	KWG1211062 LCS/LCSD	NA	2-Nitrophenol	96/87	44-95	9	40	--	--
K1209289	KWG1211062 LCS/LCSD	NA	4-Chloro-3-methylphenol	104/101	44-101	4	40	--	--
MS/MSD									
K1209054	F38-01-SOIL-5-10S MS	See below	Chromium	138.9	75-125	--	--	--	--
K1209054	F38-01-SOIL-5-10S MS	F38-01-SOIL-5-10	Chromium	--	--	--	--	17.5	J+
K1209054	F38-01-SOIL-5-10S MS	F42-01-1.5-2.5	Chromium	--	--	--	--	16.3	J+
K1209054	F38-01-SOIL-5-10S MS	F19-01-0.5-1.5	Chromium	--	--	--	--	18.8	J+
K1209054	F38-01-SOIL-5-10S MS	F21-01-0.5-2	Chromium	--	--	--	--	195	J+
K1209054	F38-01-SOIL-5-10S MS	F01-01-9.5-10.5	Chromium	--	--	--	--	18.6	J+
K1209054	F38-01-SOIL-5-10S MS	F01-02-1-2	Chromium	--	--	--	--	13.7	J+
K1209054	F38-01-SOIL-5-10S MS	F07-01-0.5-1.0	Chromium	--	--	--	--	163	J+
K1209054	F38-01-SOIL-5-10S MS	F16-01-3-4	Chromium	--	--	--	--	15.2	J+
K1209054	F38-01-SOIL-5-10S MS	F16-01-15.5-16.5	Chromium	--	--	--	--	25.8	J+
K1209054	F38-01-SOIL-5-10S MS	TR2-02-DEEP	Chromium	--	--	--	--	42.3	J+
K1209054	F38-01-SOIL-5-10S MS	TR2-SHALLOW	Chromium	--	--	--	--	31	J+
K1209054	F38-01-SOIL-5-10S MS	PS2-01-SHALLOW	Chromium	--	--	--	--	19.9	J+
K1209054	F38-01-SOIL-5-10S MS	NA	Copper	557.8	75-125	--	--	4X	--
K1209054	F38-01-SOIL-5-10S MS	NA	Lead	5191.4	75-125	--	--	4X	--
K1209054	F07-01-0.5-1.0 MS/MSD	NA	Acenaphthene	27/61	30-113	18	40	--	--
K1209054	F07-01-0.5-1.0 MS/MSD	NA	Pyrene	5/95	26-130	39	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Phenol	30/56	18-106	60	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	2-Chlorophenol	31/57	27-96	60	40	--	--

Table 2
Spike Recoveries Outside of Acceptable Limits
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Sample Result	ERM Qualifier
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	1,4-Dichlorobenzene	29/50	28-95	54	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Hexachloroethane	27/50	25-102	60	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	N-Nitrosodi-n-propylamine	36/62	32-107	54	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	1,2,4-Trichlorobenzene	34/56	35-105	50	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	4-Chloro-3-methylphenol	46/74	34-100	47	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	2-Chloronaphthalene	37/59	37-110	48	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Acenaphthene	44/67	30-113	43	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	4-Nitrophenol	34/69	12-141	68	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	2,4-Dinitrotoluene	48/72	36-127	41	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Diethyl phthalate	51/78	23-131	43	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	4-Bromophenyl phenyl ether	46/78	45-109	53	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Pentachlorophenol	41/81	10-135	67	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Pyrene	46/83	26-130	59	40	--	--
K1209289	IB-03-3.5-4-091412 MS/MSD	NA	Benzo(a)pyrene	43/68	31-122	47	40	--	--

Data packages reviewed: K1209054, K1209255, K1209289

Key:
LCS/LCSD = Laboratory control sample/laboratory control sample duplicate
MS/MSD = Matrix spike/matrix spike duplicate
RPD = Relative percent difference
NA = Not applicable; associated samples not qualified
J+ = Detected sample result qualified as estimated and biased high
4X = Concentration of unspiked sample was greater than 4 times the amount spiked; no qualification required

Table 3
Estimated Maximum Possible Concentration
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Report Limit	Units	ERM Qualifier
K1209054	TR2-02-DEEP	2,3,7,8-TCDD	0.959	1.21	ng/kg	U
K1209054	TR2-02-DEEP	1,2,3,6,7,8-HxCDF	4.63	6.05	ng/kg	U
K1209054	TR2-SHALLOW	2,3,7,8-TCDD	1.05	2.82	ng/kg	U
K1209054	TR2-SHALLOW	1,2,3,4,7,8,9-HpCDF	8.12	14.1	ng/kg	U
K1209054	PS2-01-SHALLOW	1,2,3,6,7,8-HxCDD	1.17	4.02	ng/kg	U
K1209289	IB-01-6inch-091412	1,2,3,4,6,7,8-HpCDF	3.49	4.49	ng/kg	U
K1209289	IB-01-2.5-3-091412	1,2,3,7,8,9-HxCDD	2.13	4.42	ng/kg	U
K1209289	IB-02-2.5-3-091412	2,3,7,8-TCDD	0.512	0.914	ng/kg	U
K1209289	IB-02-2.5-3-091412	1,2,3,7,8-PeCDD	0.558	4.57	ng/kg	U
K1209289	IB-02-2.5-3-091412	1,2,3,4,7,8-HxCDD	0.732	4.57	ng/kg	U
K1209289	IB-02-2.5-3-091412	1,2,3,7,8,9-HxCDD	2.73	4.57	ng/kg	U
K1209289	IB-02-2.5-3-091412	1,2,3,6,7,8-HxCDF	0.788	4.57	ng/kg	U
K1209289	IB-03-3.5-4-091412	1,2,3,7,8-PeCDD	0.698	4.22	ng/kg	U
K1209289	IB-03-3.5-4-091412	1,2,3,4,7,8-HxCDD	0.672	4.22	ng/kg	U
K1209289	IB-03-3.5-4-091412	1,2,3,7,8-PeCDF	0.218	4.22	ng/kg	U
K1209289	IB-03-3.5-4-091412	2,3,4,7,8-PeCDF	0.507	4.22	ng/kg	U
K1209289	IB-03-3.5-4-091412	1,2,3,4,7,8-HxCDF	1.17	4.22	ng/kg	U
K1209289	IB-03-3.5-4-091412	1,2,3,4,6,7,8-HpCDF	9.33	4.22	ng/kg	U
K1209289	F55-01-0-0.5-091412	1,2,3,7,8-PeCDD	2.20	32.1	ng/kg	U
K1209289	F55-01-0-0.5-091412	1,2,3,4,7,8-HxCDD	3.24	32.1	ng/kg	U
K1209289	F55-01-0-0.5-091412	1,2,3,6,7,8-HxCDD	30.5	32.1	ng/kg	U
K1209289	F55-01-0-0.5-091412	1,2,3,7,8-PeCDF	2.22	32.1	ng/kg	U
K1209289	F55-01-0-0.5-091412	2,3,4,7,8-PeCDF	1.92	32.1	ng/kg	U
K1209289	F55-01-0-0.5-091412	1,2,3,6,7,8-HxCDF	3.28	32.1	ng/kg	U
K1209289	F55-01-0-0.5-091412	2,3,4,6,7,8-HxCDF	3.35	32.1	ng/kg	U
K1209289	F53-01-0-0.5-091412	2,3,7,8-TCDD	0.821	3.38	ng/kg	U
K1209289	P51-01-0-0.5-091412	1,2,3,6,7,8-HxCDD	9.89	11.2	ng/kg	U
K1209289	P51-01-0-0.5-091412	1,2,3,6,7,8-HxCDF	0.818	11.2	ng/kg	U
K1209289	P51-01-0-0.5-091412	2,3,4,6,7,8-HxCDF	1.29	11.2	ng/kg	U
K1209289	TRH-01-0-0.5	1,2,3,4,7,8-HxCDD	0.505	5.39	ng/kg	U
K1209289	TRH-01-0-0.5	1,2,3,7,8,9-HxCDD	0.909	5.39	ng/kg	U
K1209289	TRH-01-0-0.5	1,2,3,7,8,9-HxCDF	0.409	5.39	ng/kg	U
K1209289	TRH-01-0-0.5	2,3,7,8-TCDF	1.02	1.08	ng/kg	U
K1209289	IB-03-1.5-2-091412	1,2,3,4,6,7,8-HpCDF	2.71	3.50	ng/kg	U

Data packages reviewed: K1209054, K1209255, K1209289

Key:
ng/kg = Nanograms per kilogram
U = Nondetected
TCDD = Tetrachlorodibenzo-p-dioxin
HxCDF = Hexachlorodibenzofuran
HpCDF = Heptachlorodibenzofuran
HxCDD = Hexachlorodibenzo-p-dioxin
PeCDD = Pentachlorodibenzo-p-dioxin
PeCDF = Pentachlorodibenzofuran
TCDF = Tetrachlorodibenzofuran

Table 4
Surrogate Recovery Results Outside of Acceptable Limits
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Note	ERM Qualifier
K1209054	TD-02-6.5-8	DRO, RRO	n-Triacontane	6	50-150	SDO	--
K1209289	F53-01-0-0.5-091412	DRO, RRO	n-Triacontane	227	50-150	SDO	--
K1209289	F42-03-SP-091512	SVOC	2-Fluorobiphenyl	40	48-114	--	--

Data packages reviewed: K1209054, K1209255, K1209289

Key:
DRO = Diesel range organics
RRO = Residual range organics
SVOC = Semivolatile organic compounds
SDO = Surrogate diluted out of sample, no qualification required; Sample diluted by a factor of 10x or more

Table 5
Labeled Compound Recovery Results Outside of Acceptable Limits
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Method	Labeled Compound	Associated Compound	Recovery (%)	Limit (%)	ERM Qualifier
K1209054	PS2-01-SHALLOW	Dioxin/Furan	13C-1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD	31	40-135	J
K1209289	IB-01-2.5-3-091412	Dioxin/Furan	13C-OCDD	OCDD	38	40-135	J
K1209289	IB-02-2.5-3-091412	Dioxin/Furan	13C-OCDD	OCDD	29	40-135	J
K1209289	F55-01-0-0.5-091412	Dioxin/Furan	13C-OCDD	OCDD	29	40-135	J
K1209289	F55-01-0-0.5-091412	Dioxin/Furan	13C-1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF	39	40-135	J
K1209289	P51-01-0-0.5-091412	Dioxin/Furan	13C-1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD	39	40-135	J
K1209289	P51-01-0-0.5-091412	Dioxin/Furan	13C-1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDD	39	40-135	J
K1209289	P51-01-0-0.5-091412	Dioxin/Furan	13C-OCDD	OCDD	32	40-135	J
K1209289	P51-01-0-0.5-091412	Dioxin/Furan	13C-1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF	36	40-135	J
K1209289	TR1-01-0-0.5-091512	Dioxin/Furan	13C-OCDD	OCDD	33	40-135	J
K1209289	TR1-01-0-0.5-091512	Dioxin/Furan	13C-1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF	38	40-135	J

Data packages reviewed: K1209054, K1209255, K1209289

Key:
13C = Carbon-13 labeled isotope
HxCDD = Hexachlorodibenzo-p-dioxin
OCDD = Octachlorodibenzo-p-dioxin
HpCDF = Heptachlorodibenzofuran
HpCDD = Heptachlorodibenzo-p-dioxin
J = Detected sample result qualified as estimated

Table 6
Duplicate Results and Calculated Relative Percent Differences
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Concentration		Report Limit	Units	RPD	ERM Qualifier
			Sample	Duplicate				
Field Duplicates								
K1209255	F53-01-SW-091412	Arsenic	1.6	1.5	0.5	µg/L	6.5	--
K1209255	F53-01-SW-091412	Cadmium	0.15	0.21	0.02	µg/L	33	--
K1209255	F53-01-SW-091412	Chromium	1.4	1.3	0.2	µg/L	7.4	--
K1209255	F53-01-SW-091412	Copper	22.2	20.8	0.1	µg/L	6.5	--
K1209255	F53-01-SW-091412	Lead	4.97	9.13	0.02	µg/L	59	--
K1209255	F53-01-SW-091412	Nickel	23.2	21.5	0.2	µg/L	7.6	--
K1209255	F53-01-SW-091412	Zinc	415	833	0.5	µg/L	67	--
K1209255	F53-01-SW-091412	DRO	280	500	250/260	µg/L	56	--
K1209255	F53-01-SW-091412	Chloroform	0.97	0.98	0.50	µg/L	1.0	--
Analytical Duplicates								
K1209054	TD-02-6.5-8	Total solids	79.6	79.9	0.01	%	0.38	--
K1209054	F01-01-9.5-10.5	Total solids	85.9	86.0	0.01	%	0.12	--
K1209054	F38-01-SOIL-5-10D	Arsenic	8.2	5.2	0.5	mg/kg	45	J
K1209054	F38-01-SOIL-5-10D	Cadmium	0.29	0.29	0.02	mg/kg	0	--
K1209054	F38-01-SOIL-5-10D	Chromium	17.5	28.4	0.2	mg/kg	47	J
K1209054	F38-01-SOIL-5-10D	Copper	109	195	0.1	mg/kg	57	J
K1209054	F38-01-SOIL-5-10D	Lead	3300	3850	101	mg/kg	15	--
K1209054	F38-01-SOIL-5-10D	Nickel	13.2	18.9	0.2	mg/kg	36	J
K1209054	F38-01-SOIL-5-10D	Zinc	73.4	77.3	0.5	mg/kg	5.2	--
K1209054	Batch Duplicate	Mercury	0.60	0.58	0.02	mg/kg	3.4	--
K1209054	Batch Duplicate	Arsenic	1.5	1.4	0.5	µg/L	6.9	--
K1209054	Batch Duplicate	Cadmium	0.16	0.16	0.02	µg/L	0	--
K1209054	Batch Duplicate	Chromium	1.0	1.1	0.2	µg/L	9.5	--
K1209054	Batch Duplicate	Copper	1.4	1.2	0.1	µg/L	15	--
K1209054	Batch Duplicate	Lead	3.73	3.60	0.02	µg/L	3.5	--
K1209054	Batch Duplicate	Nickel	2.2	2.1	0.2	µg/L	4.7	--
K1209054	Batch Duplicate	Zinc	12.24	12.70	0.5	µg/L	3.7	--
K1209255	Batch Duplicate	Arsenic	1.5	1.4	0.5	µg/L	6.9	--
K1209255	Batch Duplicate	Cadmium	0.2	0.16	0.02	µg/L	22	--
K1209255	Batch Duplicate	Chromium	1.0	1.1	0.2	µg/L	9.5	--
K1209255	Batch Duplicate	Copper	1.4	1.2	0.1	µg/L	15	--
K1209255	Batch Duplicate	Lead	3.7	3.6	0.02	µg/L	2.7	--
K1209255	Batch Duplicate	Nickel	2.2	2.1	0.2	µg/L	4.7	--
K1209255	Batch Duplicate	Zinc	12.2	12.7	0.5	µg/L	4.0	--
K1209289	IB-01-6inch-091412	Total solids	55.7	55.9	0.01	%	0.4	--
K1209289	TR1-01-0-0.5-091512	Total solids	21.6	19.4	0.01	%	11	--
K1209289	Batch Duplicate	Mercury	0.12	0.08	0.02	mg/kg	40	--

Table 6
Duplicate Results and Calculated Relative Percent Differences
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Concentration		Report Limit	Units	RPD	ERM Qualifier
			Sample	Duplicate				
K1209289	IB-01-6inch-091412	Arsenic	2.4	2.4	0.5	mg/kg	0	--
K1209289	IB-01-6inch-091412	Cadmium	0.12	0.12	0.02	mg/kg	0	--
K1209289	IB-01-6inch-091412	Chromium	24.5	24.3	0.2	mg/kg	0.8	--
K1209289	IB-01-6inch-091412	Copper	26.7	26.6	0.1	mg/kg	0.4	--
K1209289	IB-01-6inch-091412	Lead	8.78	6.51	0.05	mg/kg	30	J
K1209289	IB-01-6inch-091412	Nickel	23.5	23.0	0.2	mg/kg	2.2	--
K1209289	IB-01-6inch-091412	Zinc	67.5	67.6	0.5	mg/kg	0.1	--
K1209289	Batch Duplicate	Mercury	1.0	0.9	0.2	µg/L	11	--
K1209289	Batch Duplicate	Arsenic	1.5	1.4	0.5	µg/L	6.9	--
K1209289	Batch Duplicate	Cadmium	0.16	0.16	0.02	µg/L	0	--
K1209289	Batch Duplicate	Chromium	1.0	1.1	0.2	µg/L	10	--
K1209289	Batch Duplicate	Copper	1.4	1.2	0.1	µg/L	15	--
K1209289	Batch Duplicate	Lead	3.73	3.60	0.02	µg/L	3.5	--
K1209289	Batch Duplicate	Nickel	2.2	2.1	0.2	µg/L	4.7	--
K1209289	Batch Duplicate	Zinc	12.24	12.70	0.5	µg/L	3.7	--
K1209289	F18-01-0-0.5	DRO	29	29	27	mg/kg	0	--
K1209289	F18-01-0-0.5	RRO	210	210	110	mg/kg	0	--

Data packages reviewed: K1209054, K1209255, K1209289

Key:
RPD = Relative percent difference
mg/kg = Milligrams per kilogram
µg/L = Micrograms per liter
Batch = Sample was prepared using a non-client sample
DRO = Diesel range organics
RRO = Residual range organics
J = Detected sample result qualified as estimated

Table 7
Calibration Range Exceedances
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	ERM Qualifier
K1209054	TR2-02-DEEP	OCDD	18900 E	ng/kg	J
K1209054	TR2-SHALLOW	OCDD	48100 E	ng/kg	J

Data packages reviewed: K1209054, K1209255, K1209289

Key:
E = Sample concentration exceeded upper end of linear calibration range
ng/kg = Nanogram per kilogram
J = Detected sample result qualified as estimated

Table 8
TPH Results
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	ERM Qualifier	Notes
K1209054	PS2-01-SW-090812	DRO	60000	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209054	PS2-01-SW-090812	RRO	130000	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F38-01-SOIL-5-10	DRO	50	mg/kg	NJ	Chromatographic pattern indicates presence of greater amount of heavier molecular weight constituents than the calibration standard
K1209054	F38-01-SOIL-5-10	RRO	220	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TD-02-6.5-8	DRO	2000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TD-02-6.5-8	RRO	9300	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TD-01-4.5-6	DRO	290	mg/kg	NJ	Chromatographic pattern indicates presence of greater amount of heavier molecular weight constituents than the calibration standard
K1209054	TD-01-4.5-6	RRO	1400	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F42-01-1.5-2.5	DRO	42	mg/kg	NJ	Chromatographic pattern indicates presence of greater amount of heavier molecular weight constituents than the calibration standard
K1209054	F42-01-1.5-2.5	RRO	230	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F19-01-0.5-1.5	RRO	1700	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F21-01-0.5-2	RRO	4600	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F01-02-1-2	DRO	52	mg/kg	NJ	Chromatographic pattern indicates presence of greater amount of heavier molecular weight constituents than the calibration standard
K1209054	F01-02-1-2	RRO	750	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F07-01-0.5-1.0	DRO	2200	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F07-01-0.5-1.0	RRO	7400	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TR2-02-DEEP	DRO	990	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TR2-02-DEEP	RRO	6400	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TR2-SHALLOW	DRO	2000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TR2-SHALLOW	RRO	9100	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	PS2-01-SHALLOW	DRO	2300	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	PS2-01-SHALLOW	RRO	12000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TS-02-6.5-8	GRO	400	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	F07-01-0.5-1.0	GRO	11	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	TR2-02-DEEP	GRO	23	mg/kg	NJ	Chromatographic pattern does not match the calibration standard

Table 8
TPH Results
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	ERM Qualifier	Notes
K1209054	TR2-SHALLOW	GRO	55	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209054	PS2-01-SHALLOW	GRO	120	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209255	PS1-01-SW-091412	DRO	410	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209255	F53-01-SW-091412	DRO	280	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209255	DUP-01-SW-091412	DRO	500	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209255	DUP-01-SW-091412	RRO	830	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209255	F5S-01-SW-091412	DRO	460	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209255	TR2-01-SW-091412	DRO	6100	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209255	TR2-01-SW-091412	RRO	3300	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F42-03-SP-091512	DRO	8500	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F42-03-SP-091512	RRO	31000	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F33-01-SP-091512	RRO	910	µg/L	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F55-01-0-0.5-091412	DRO	6900	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F55-01-0-0.5-091412	RRO	15000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F53-01-0-0.5-091412	DRO	4200	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F53-01-0-0.5-091412	RRO	14000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	P51-01-0-0.5-091412	DRO	8100	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	P51-01-0-0.5-091412	RRO	17000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	TR1-01-0-0.5-091512	DRO	950	mg/kg	NJ	Chromatographic pattern indicates presence of greater amount of heavier molecular weight constituents than the calibration standard
K1209289	TR1-01-0-0.5-091512	RRO	4200	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	TRH-01-0-0.5	DRO	2000	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	TRH-01-0-0.5	RRO	5200	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F18-01-0-0.5	DRO	30	mg/kg	NJ	Chromatographic pattern indicates presence of greater amount of heavier molecular weight constituents than the calibration standard
K1209289	F18-01-0-0.5	RRO	210	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	F55-01-0-0.5-091412	GRO	180	mg/kg	NJ	Chromatographic pattern does not match the calibration standard

Table 8
TPH Results
Soil, Water, and Sediment Samples Collected September 2012
Blue Heron Mill, Phase II ESA
Oregon City, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	ERM Qualifier	Notes
K1209289	F53-01-0-0.5-091412	GRO	75	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	P51-01-0-0.5-091412	GRO	50	mg/kg	NJ	Chromatographic pattern does not match the calibration standard
K1209289	TRH-01-0-0.5	GRO	19	mg/kg	NJ	Chromatographic pattern does not match the calibration standard

Data packages reviewed: K1209054, K1209255, K1209289

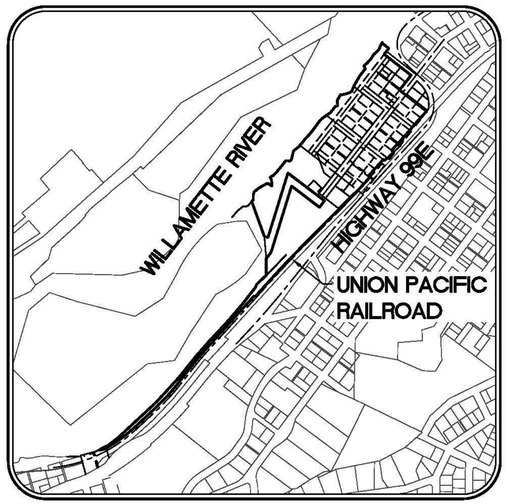
Key:
DRO = Diesel range organics
RRO = Residual range organics
GRO = Gasoline range organics
µg/L = Micrograms per liter
mg/kg = Milligrams per kilogram
NJ = Estimated value

BLUE HERON PAPER MILL/
WILLAMETTE FALLS SURVEY

A PORTION OF THE PLAT "OREGON CITY" AND OTHER LANDS LOCATED IN THE NORTHWEST 1/4 AND SOUTHWEST 1/4 OF SECTION 31, TOWNSHIP 2 SOUTH, RANGE 2 EAST, WILLAMETTE MERIDIAN, OREGON CITY, CLACKAMAS COUNTY, OREGON



VICINITY MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SITE DESCRIPTION:

TAX LOTS 300A1, 300, 390, 500, 600
CLACKAMAS COUNTY TAX MAP 2 2E 31BD

CLIENT

METRO REGIONAL SERVICES
600 NE GRAND AVENUE
PORTLAND, OREGON 97232
PHONE: (503) 797-1845

SURVEYING FIRM

AKS ENGINEERING & FORESTRY, LLC.
CONTACT: MONTY HURLEY
13910 SW GALBREATH DRIVE, SUITE 100
PHONE: (503) 925-8799

SHEET INDEX:

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2. SHEET LAYOUT, OVERALL MAP
3. EASEMENTS, OVERALL MAP
4. DSL LEASES, OVERALL MAP
5. BOUNDARY
6. BOUNDARY
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9. ENCROACHMENTS AND FEATURES DETAILS
10. ENCROACHMENTS AND FEATURES DETAILS
11. DAM DETAILS, PROFILES AND CROSS-SECTIONS MAP WITH AERIAL PHOTO
12. DAM DETAILS
13. MILL 'H' TAILRACE PROFILES AND CROSS-SECTIONS
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15. 'GROTTO' TAILRACE PROFILE
16. FLOOD ZONES, FLOOD MARKS, AND BUILDING ELEVATIONS

NOTES:

1. SURVEY AS SHOWN WAS PREPARED BASED ON A LEGAL DESCRIPTION AND EXCEPTIONS FOR THE PARCELS CONTAINED IN THE TITLE REPORT ISSUED BY LAWYERS TITLE, ORDER NO. 32F0002230, WITH AN ISSUE DATE OF AUGUST 2, 2011.
2. THE AREA OF THE SUBJECT PROPERTY IS 21.94 ACRES.
3. HORIZONTAL DATUM: LOCAL DATUM PLANE SCALED FROM OREGON STATE PLANE, NORTH ZONE (NAD83), DETERMINED FROM STATIC GPS OBSERVATIONS HOLDING NGS CORS STATIONS JIME, NWBG, WDBN AND GWN6, AND NGS HARN STATION "TERM RESET". THIS AGREES WITH THE BASIS OF BEARINGS PER SURVEY NUMBER 28873, CLACKAMAS COUNTY SURVEY RECORDS, AS SHOWN
4. VERTICAL DATUM: NAVD88, DETERMINED FROM STATIC GPS OBSERVATIONS HOLDING NGS CORS STATIONS JIME, NWBG, WDBN AND GWN6, AND NGS HARN STATION "TERM RESET". "TERM RESET" IS A BRASS DISK SET IN CONCRETE NEAR THE SOUTHWEST CORNER OF THE OREGON TRAIL INTERPRETIVE CENTER IN OREGON CITY WITH A NAVD88 ELEVATION OF 41.522. TO CONVERT NAVD88 ELEVATIONS TO NGVD29 ELEVATIONS SUBTRACT 3.494' (DERIVED FROM NGS VERTCON).

BOUNDARY NARRATIVE:

A. THE ORDINARY LOW WATER LINE OF THE WILLAMETTE RIVER WAS HELD FOR THE BOUNDARY OF PARCELS 2, 12, 16, AND 43 OF DOCUMENT NUMBER 2000-029964, CLACKAMAS COUNTY DEED RECORDS PER DEED CALLS. SAID LANDS WERE PATENTED FROM FEDERAL OWNERSHIP PRIOR TO 1878 AND ARE SUBJECT TO THE TIDELAND ACTS OF 1872-1878. SAID ORDINARY LOW WATER LINE WAS ESTABLISHED BY HOLDING AN ELEVATION OF 5.5' NGVD29 (9.0' NAVD88) BELOW WILLAMETTE FALLS AND BY HOLDING AN ELEVATION OF 54.5' NGVD29 (58.0' NAVD88) ABOVE WILLAMETTE FALLS PER SHEET 9 OF 57 OF THE SURVEY "WILLAMETTE RIVER PUBLIC LANDS UNDER JURISDICTION OF OREGON STATE LAND BOARD PREPARED BY DIVISION OF STATE LANDS" DATED MARCH 1975.

B. THE "INTAKE BASIN" BEHIND THE PGE DAM CONTAINS SUBMERGED LANDS BELOW THE ORDINARY LOW WATER LINE. DURING THE COURSE OF INVESTIGATING OWNERSHIP OF THE INTAKE BASIN, THE DEPARTMENT OF STATE LANDS PERSONNEL STATED THAT THE STATE ONLY CLAIMED THE CHANNEL BETWEEN ABERNATHY ISLAND AND THE "INTAKE BASIN", LEAVING THE OWNERSHIP OF THE "INTAKE BASIN" TO THE UPLAND OWNER. THIS AREA HAS BEEN HEAVILY MODIFIED DURING CONSTRUCTION OF DAMS AND THE PAPER MILL AND LITTLE PHYSICAL EVIDENCE OF THE ORIGINAL CHANNEL EXISTS. THIS SURVEY HOLDS BEARINGS AND DISTANCES PER SURVEY NUMBER 29080 TO ESTABLISH THE WEST LINE OF THE "INTAKE BASIN".

C. A PORTION OF PARCEL 43 CALLS TO THE WEST LINE OF THE ARCHIBALD MCKINALY DONATION LAND CLAIM (DLC) 60 FOR THE WESTERLY BOUNDARY. THE WEST LINE OF SAID DLC 60 FALLS IN THE CHANNEL OF THE WILLAMETTE RIVER; HOWEVER, BARRING AN INSTRUMENT FROM THE STATE CONVEYING OWNERSHIP OF THE RIPARIAN PROPERTY (LANDS BELOW ORDINARY LOW WATER) TO THE UPLAND OWNER, OWNERSHIP OF ANY LANDS UNDER THE MEAN LOW WATER LINE WOULD REMAIN WITH THE STATE.

D. THE NORTHEAST LINE OF DOCUMENT NUMBER 2000-029964, BEING THE WESTERLY PROJECTION OF THE NORTHEAST LINE OF 5TH STREET, THE NORTHWEST LINE OF WATER STREET (VACATED), THE NORTHEAST LINE OF BLOCK 3 OF "OREGON CITY", THE SOUTHEAST LINE OF SAID BLOCK 3, AND THE NORTHEAST LINES OF LOTS 3 AND 6, BLOCK 7 OF "OREGON CITY", WERE ESTABLISHED BY HOLDING BEARINGS, DISTANCES, AND FOUND MONUMENTS PER SURVEY NUMBER 28873, CLACKAMAS COUNTY SURVEY RECORDS.

E. THE NORTHWEST LINES OF THE PROPERTY GRANTED TO UNION PACIFIC RAILROAD PER BOOK 142 PAGE 620 (05/09/1916), BOOK M PAGE 98 (05/03/1876), BOOK 97 PAGE 218, (11/07/1906), BOOK 99 PAGE 196 (05/08/1907), BOOK 99 PAGE 197 (05/06/1907), BOOK 142 PAGE 623 (05/09/1916), BOOK 44 PAGE 68 (07/20/1891), AND THE CONDEMNATION PER CIRCUIT COURT CASE NO. 1976, WERE ESTABLISHED BY HOLDING BEARINGS, DISTANCES, AND FOUND MONUMENTS PER SURVEY NUMBER 28873, CLACKAMAS COUNTY SURVEY RECORDS.

F. THE CENTERLINE ALIGNMENT OF THE UNION PACIFIC RAILROAD SOUTH OF "MILL RESERVE" WAS ESTABLISHED BY HOLDING CALLS PER BOOK 186 PAGE 210 (RECORDED 10/28/1926). DEED CALLS PER SAID DOCUMENT WERE HELD TO ESTABLISH THE POINT OF BEGINNING OF SAID ALIGNMENT. A BEST-FIT OF DEED CALLS (OFFSETS TO A CONCRETE RETAINING WALL) WERE HELD FOR ROTATION OF ALIGNMENT. SAID DOCUMENT CALLS TO THE BOUNDARY OF BLOCK 21 OF THE PLAT "CANEMAH" FOR AN ENDING POINT; HOWEVER, THE TRUE LOCATION OF THE PLAT OF "CANEMAH" IS SOMEWHAT UNCLEAR; THEREFORE, THE RETAINING WALL WAS HELD AS THE BEST AVAILABLE EVIDENCE OF THE INTENDED ALIGNMENT OF THE CENTERLINE.

G. THE BOUNDARY OF THE RAILROAD PROPERTY SOUTH OF "MILL RESERVE" WAS ESTABLISHED BY HOLDING DEED OFFSETS FROM RAILROAD CENTERLINE PER DOCUMENT NUMBER 2000-029964.

H. THE BOUNDARY OF THE ARCHIBALD MCKINLAY DONATION LAND CLAIM 60 WAS ESTABLISHED BY HOLDING FOUND MONUMENTS, REFERENCE MONUMENTS, DISTANCES, AND ANGLES WERE HELD PER UNITED STATES BEARING TREE ENTRY 2009-064 AND UNITED STATES BEARING TREE ENTRY 2009-057.

I. THE BOUNDARY OF BLOCK 21 OF THE PLAT "CANEMAH" WAS ESTABLISHED BY HOLDING DISTANCES AND ANGLES FROM THE CALCULATED MOST WESTERLY CORNER OF THE ARCHIBALD MCKINLAY DONATION LAND CLAIM NUMBER 60 (BEING THE MOST NORTHERLY CORNER OF THE ABSALOM HEDGES DONATION LAND CLAIM NUMBER 47) PER SURVEY NUMBER 1-352 BY DEXTER MILNE DATED 12/20/1965 (ALSO KNOWN AS CD-139A).

J. IT APPEARS THAT THE REALIGNMENT OF HIGHWAY 99E (MCLOUGHLIN BOULEVARD) (5TH STREET) AS SHOWN PER ODOT ROLL MAPS 05B-03-0008 AND 05B-02-0009 DID NOT REQUIRE ANY ADDITIONAL RIGHT-OF-WAY TO BE DEDICATED FROM THE PROPERTY CURRENTLY DESCRIBED IN DOCUMENT NUMBER 2000-029964. THE NORTHEASTERLY LINE OF BLOCK 3 OF THE PLAT "OREGON CITY", THE NORTHWESTERLY LINE OF WATER STREET, AND THE NORTHEASTERLY LINE OF 5TH STREET ARE HELD FOR HIGHWAY 99E RIGHT-OF-WAY, AS SHOWN.

K. THE REMAINING BOUNDARY OF PARCEL 43 OF SAID DOCUMENT NUMBER 2000-029964 WAS ESTABLISHED BY HOLDING FOUND MONUMENTS, BEARINGS, AND DISTANCES PER SURVEY NUMBER 29080.

COVER SHEET

BLUE HERON PAPER MILL OREGON CITY OREGON

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CHECKED BY: MBH
DRAWING NO.: 3225 COVER
SCALE: AS NOTED

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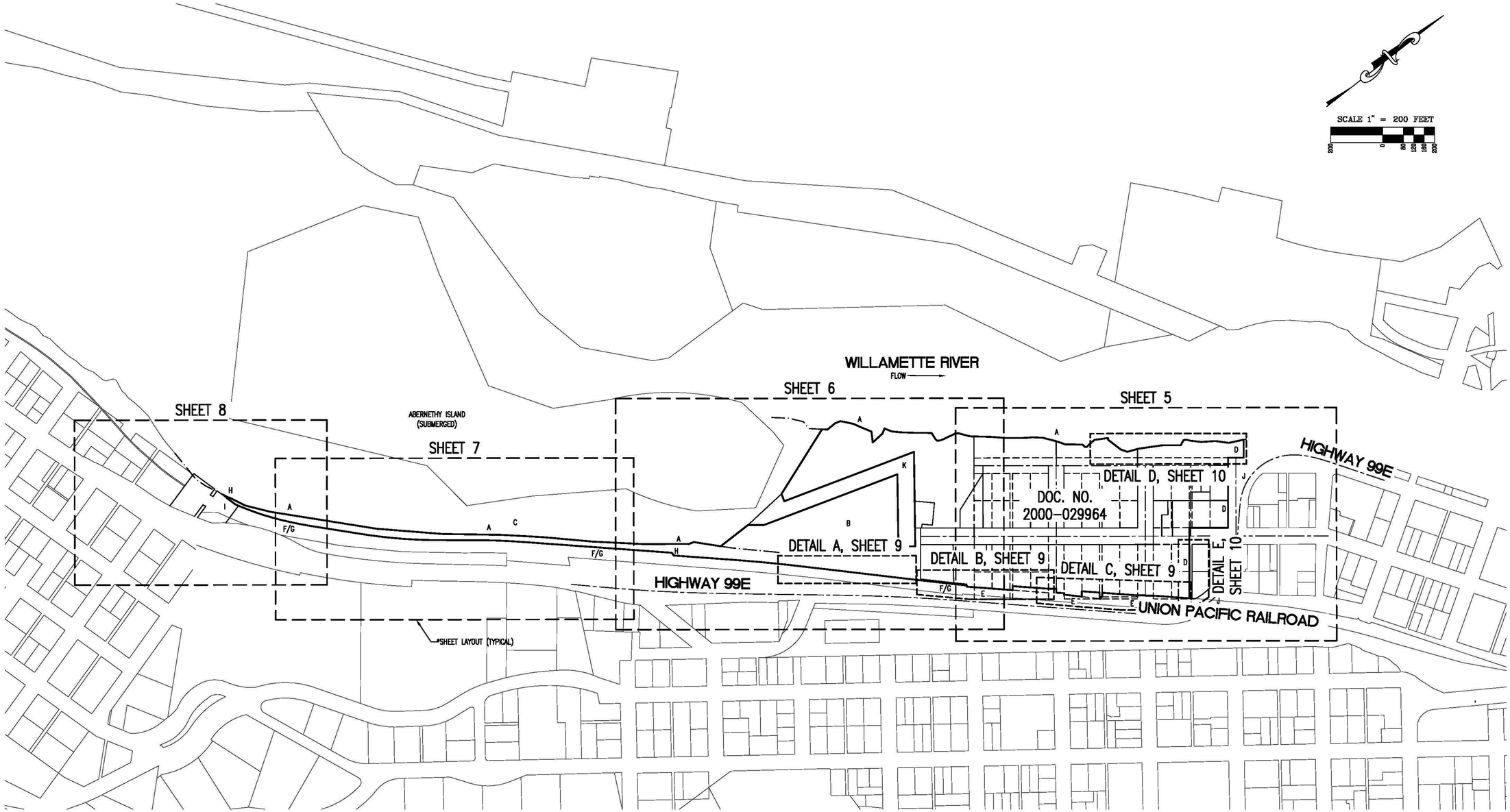
DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
1 OF 16



*SHEET LAYOUT IS SHOWN FOR SHEETS 5-10 ONLY
*LETTERS SHOWN MATCH THE LETTERS ON THE BOUNDARY NARRATIVE (SHEET 1).

SHEET LAYOUT, OVERALL MAP

BLUE HERON PAPER MILL
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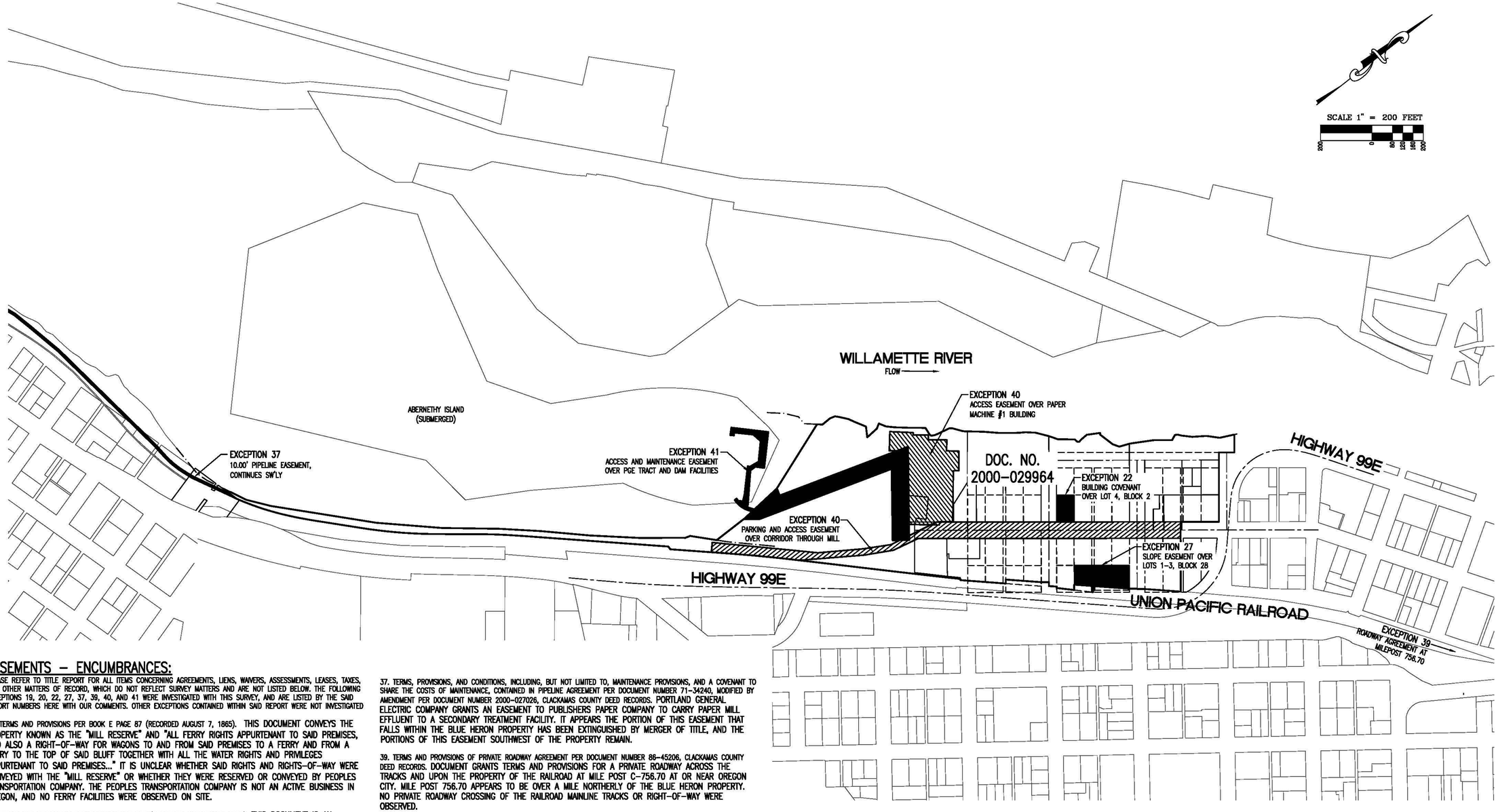
DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
56542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
2 OF 16



EASEMENTS – ENCUMBRANCES:

PLEASE REFER TO TITLE REPORT FOR ALL ITEMS CONCERNING AGREEMENTS, LIENS, WAIVERS, ASSESSMENTS, LEASES, TAXES, AND OTHER MATTERS OF RECORD, WHICH DO NOT REFLECT SURVEY MATTERS AND ARE NOT LISTED BELOW. THE FOLLOWING EXCEPTIONS 19, 20, 22, 27, 37, 39, 40, AND 41 WERE INVESTIGATED WITH THIS SURVEY, AND ARE LISTED BY THE SAID REPORT NUMBERS HERE WITH OUR COMMENTS. OTHER EXCEPTIONS CONTAINED WITHIN SAID REPORT WERE NOT INVESTIGATED

19. TERMS AND PROVISIONS PER BOOK E PAGE 87 (RECORDED AUGUST 7, 1865). THIS DOCUMENT CONVEYS THE PROPERTY KNOWN AS THE "MILL RESERVE" AND "ALL FERRY RIGHTS APPURTENANT TO SAID PREMISES, AND ALSO A RIGHT-OF-WAY FOR WAGONS TO AND FROM SAID PREMISES TO A FERRY AND FROM A FERRY TO THE TOP OF SAID BLUFF TOGETHER WITH ALL THE WATER RIGHTS AND PRIVILEGES APPURTENANT TO SAID PREMISES..." IT IS UNCLEAR WHETHER SAID RIGHTS AND RIGHTS-OF-WAY WERE CONVEYED WITH THE "MILL RESERVE" OR WHETHER THEY WERE RESERVED OR CONVEYED BY PEOPLES TRANSPORTATION COMPANY. THE PEOPLES TRANSPORTATION COMPANY IS NOT AN ACTIVE BUSINESS IN OREGON, AND NO FERRY FACILITIES WERE OBSERVED ON SITE.

20. TERMS AND PROVISIONS PER BOOK G PAGE 357 (RECORDED JANUARY 12, 1870). THIS DOCUMENT IS AN AGREEMENT BETWEEN PEOPLES TRANSPORTATION COMPANY AND OREGON CITY COUNCIL TO VACATE PORTIONS OF WATER STREET AND ALLEYS "FOR CANAL LOCKS AND WORKS FOR PASSAGE OF STEAM BOATS AROUND FALLS", IN EXCHANGE FOR THIS PEOPLES TRANSPORTATION COMPANY CONVEYS AN OFFSITE PARCEL OF LAND TO OREGON CITY COUNCIL FOR PUBLIC HIGHWAY.

22. TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, AND/OR SETBACKS PER BOOK L PAGE 329 (RECORDED NOVEMBER 24, 1875). THIS DOCUMENT CONVEYS LOT 4, BLOCK 2 OF THE PLAT "OREGON CITY". THIS DOCUMENT CREATES A COVENANT REGARDING THE MATERIAL AND LOCATION OF WALLS AND BUILDINGS ALONG THE EASTERLY LINE OF SAID LOT 4 AND PROVIDES THE ADJOINER THE RIGHT TO USE SAID WALL. IT APPEARS THIS COVENANT MAY HAVE BEEN EXTINGUISHED BY MERGER OF TITLE.

27. SLOPE EASEMENT PER BOOK 142 PAGE 620 (RECORDED MAY 6, 1916). THIS DOCUMENT GRANTS AN EASEMENT TO OREGON AND CALIFORNIA RAILROAD COMPANY "TO CONSTRUCT AND MAINTAIN EARTH SLOPES EXTENDING WESTERLY ON TO SAID LOTS 1, 2, AND 3 BLOCK 28 BEYOND THE WESTERLY LINE OF THE LAND HEREIN CONVEYED, AND TO SUCH EXTENT AS MAY BE NECESSARY FOR THE SAFE MAINTENANCE OF THE ROADBED AND EMBANKMENT OF THE GRANTEE.....". THE EAST LINE OF THE SUBJECT PROPERTY IN THIS AREA IS CURRENTLY BEING UTILIZED TO STORE METAL DEBRIS MAKING IT DIFFICULT TO ASSESS THE EARTH SLOPES IN THIS AREA. IT APPEARS THAT SLOPES EXTEND APPROXIMATELY 60' WESTERLY FROM THE CENTERLINE OF THE WESTERLY MAIN TRACKS OF THE RAILROAD.

37. TERMS, PROVISIONS, AND CONDITIONS, INCLUDING, BUT NOT LIMITED TO, MAINTENANCE PROVISIONS, AND A COVENANT TO SHARE THE COSTS OF MAINTENANCE, CONTAINED IN PIPELINE AGREEMENT PER DOCUMENT NUMBER 71-34240, MODIFIED BY AMENDMENT PER DOCUMENT NUMBER 2000-027026, CLACKAMAS COUNTY DEED RECORDS. PORTLAND GENERAL ELECTRIC COMPANY GRANTS AN EASEMENT TO PUBLISHERS PAPER COMPANY TO CARRY PAPER MILL EFFLUENT TO A SECONDARY TREATMENT FACILITY. IT APPEARS THE PORTION OF THIS EASEMENT THAT FALLS WITHIN THE BLUE HERON PROPERTY HAS BEEN EXTINGUISHED BY MERGER OF TITLE, AND THE PORTIONS OF THIS EASEMENT SOUTHWEST OF THE PROPERTY REMAIN.

39. TERMS AND PROVISIONS OF PRIVATE ROADWAY AGREEMENT PER DOCUMENT NUMBER 86-45206, CLACKAMAS COUNTY DEED RECORDS. DOCUMENT GRANTS TERMS AND PROVISIONS FOR A PRIVATE ROADWAY ACROSS THE TRACKS AND UPON THE PROPERTY OF THE RAILROAD AT MILE POST C-756.70 AT OR NEAR OREGON CITY. MILE POST 756.70 APPEARS TO BE OVER A MILE NORTHERLY OF THE BLUE HERON PROPERTY. NO PRIVATE ROADWAY CROSSING OF THE RAILROAD MAINLINE TRACKS OR RIGHT-OF-WAY WERE OBSERVED.

40. AN EASEMENT PER DOCUMENT NUMBER 2000-027027, CLACKAMAS COUNTY DEED RECORDS. DOCUMENT GRANTS A NON-EXCLUSIVE INGRESS/EGRESS AND PARKING EASEMENT TO PORTLAND GENERAL ELECTRIC FOR ACCESS TO PGE PROPERTY. SAID EASEMENT IS A CONDITION OF APPROVAL FOR THE PROPERTY LINE ADJUSTMENT PER OREGON CITY LL 99-08. SAID EASEMENT IS SHOWN IN EXHIBIT 'A' OF SAID DOCUMENT, WHICH SHOWS A CROSS HATCHED AREA OVER VACATED MAIN STREET AND ITS SOUTHWESTERLY EXTENSION FOR PARKING AND ACCESS AND A SOLID HATCHED AREA OVER PAPER MACHINE #1 BUILDING FOR ACCESS AND REPAIR TO PGE FACILITIES.

41. TERMS AND PROVISIONS OF CROSS EASEMENTS FOR ENCROACHMENTS AGREEMENT PER DOCUMENT NUMBER 2000-027028, CLACKAMAS COUNTY DEED RECORDS. SAID EASEMENT IS A CONDITION OF APPROVAL FOR THE PROPERTY LINE ADJUSTMENT PER OREGON CITY LL 99-08. SAID DOCUMENT GRANTS CROSS EASEMENTS FOR ENCROACHMENTS UPON SMURFIT PROPERTY TO PGE AND CROSS EASEMENTS FOR ENCROACHMENTS UPON PGE PROPERTY TO SMURFIT. EXHIBIT 'C' IS NOTED IN THE BODY OF THE DOCUMENT AS "PGE ENCROACHMENTS" BUT APPEARS TO BE THE SAME AS EXHIBIT 'A' OF SAID DOCUMENT NUMBER 2000-027027. EXHIBIT 'D' SHOWS THE AREA RETAINED BY PGE DURING SAID PROPERTY LINE ADJUSTMENT WITH A CROSS HATCH AND NOTES AN EASEMENT FOR MAINTENANCE AND REPAIRS TO SMURFIT FACILITIES ON PGE PROPERTIES AND ACCESS TO SMURFIT FACILITIES OUTSIDE OF THE EASEMENT AREA."

EASEMENTS, OVERALL MAP

BLUE HERON PAPER MILL
OREGON CITY OREGON

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DESIGNED BY:
DRAWN BY: JOH
CHECKED BY: MRH
DRAWING NO.: 3225 PROFILES
SCALE: AS NOTED

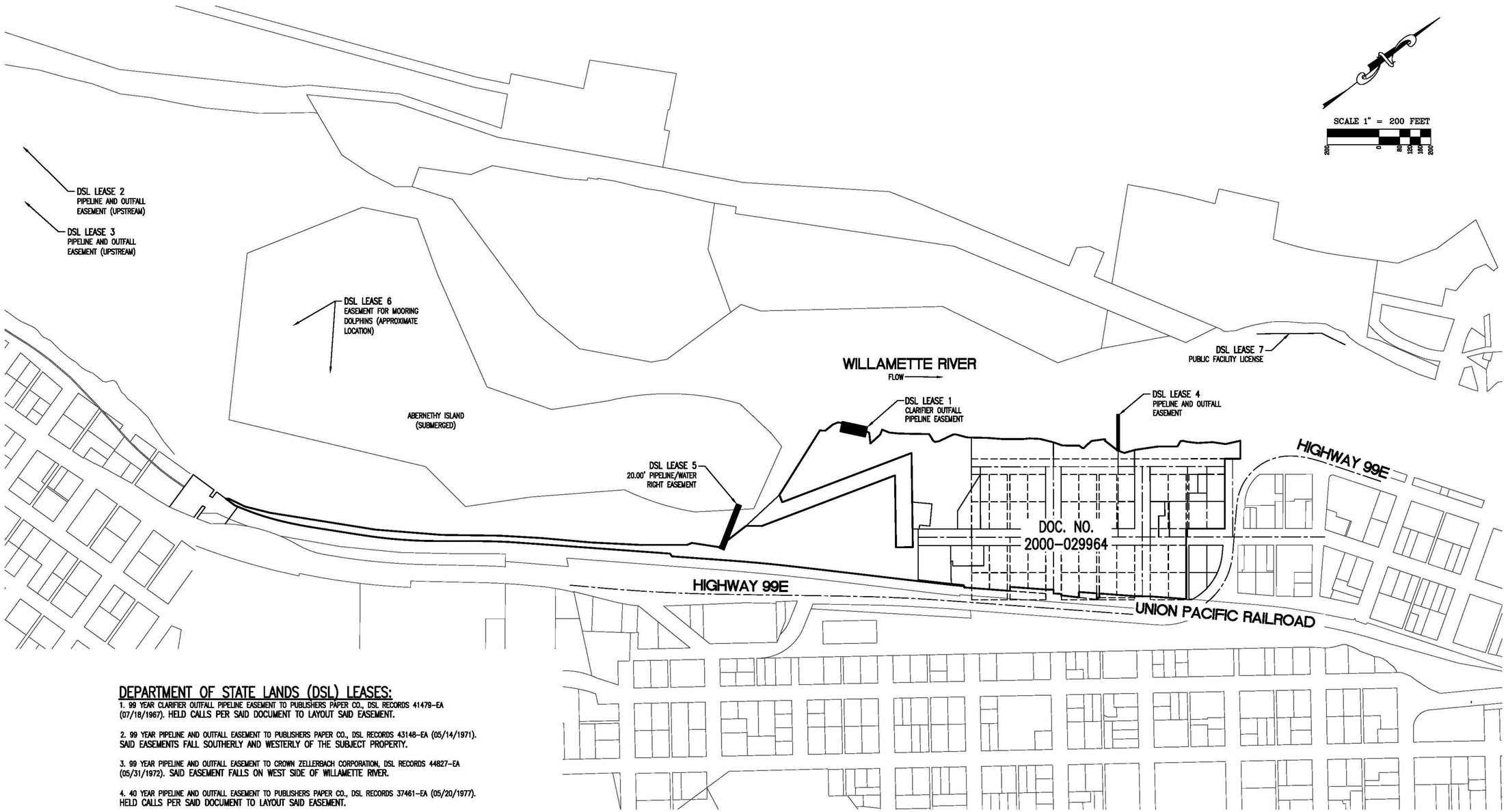
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DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
3 OF 16



DEPARTMENT OF STATE LANDS (DSL) LEASES:

1. 99 YEAR CLARIFIER OUTFALL PIPELINE EASEMENT TO PUBLISHERS PAPER CO., DSL RECORDS 41479-EA (07/18/1967). HELD CALLS PER SAID DOCUMENT TO LAYOUT SAID EASEMENT.

2. 99 YEAR PIPELINE AND OUTFALL EASEMENT TO PUBLISHERS PAPER CO., DSL RECORDS 43148-EA (05/14/1971). SAID EASEMENTS FALL SOUTHERLY AND WESTERLY OF THE SUBJECT PROPERTY.

3. 99 YEAR PIPELINE AND OUTFALL EASEMENT TO CROWN ZELLERBACH CORPORATION, DSL RECORDS 44827-EA (05/31/1972). SAID EASEMENT FALLS ON WEST SIDE OF WILLAMETTE RIVER.

4. 40 YEAR PIPELINE AND OUTFALL EASEMENT TO PUBLISHERS PAPER CO., DSL RECORDS 37461-EA (05/20/1977). HELD CALLS PER SAID DOCUMENT TO LAYOUT SAID EASEMENT.

5. 40 YEAR PIPELINE/WATER RIGHT EASEMENT TO THE CITY OF OREGON CITY, DSL RECORDS 17309-EA (12/21/1994). HELD CALLS PER SAID DOCUMENT TO LAYOUT SAID EASEMENT.

6. 15 YEAR LEASE TO PORTLAND GENERAL ELECTRIC COMPANY, DSL RECORDS 37932-ML (05/01/2007). SAID EASEMENT IS FOR WILLAMETTE FALLS MOORING DOLPHINS.

7. 15 YEAR PUBLIC FACILITY LICENSE TO THE OREGON DEPARTMENT OF FISH AND WILDLIFE, DSL RECORDS 23583-LI (12/01/2008). SAID LICENSE IS FOR FISHING DOCK ON WEST SIDE OF WILLAMETTE RIVER.

DSL LEASES, OVERALL MAP

BLUE HERON PAPER MILL
OREGON CITY OREGON

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REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
4 OF 16

SEE SHEET 6

SEE SHEET 6

STATE OWNERSHIP

UPLAND OWNERSHIP

ORDINARY LOW WATER LINE, 9.0' NAVD88 (5.5' NGVD29 PER SHEET 9 OF 57 OF SURVEY "WILLAMETTE RIVER PUBLIC LANDS UNDER JURISDICTION OF OREGON STATE LAND BOARD PREPARED BY DIVISION OF STATE LANDS" DATED MARCH 1975)

DSL LEASE 4
10.00' PIPELINE AND OUTFALL EASEMENT PER 37461-EA DSL RECORDS

5.00'

140.00' N43°05'00"W

5.00'

WILLAMETTE RIVER

FLOW

FOUND BRASS SCREW IN ROCK; PER SN 21487

69' (62.66')1 62.67' S52°04'00"E (S52°04'00"E 87')1

SCALE 1" = 50 FEET

50 0 25 50 75 100

PARCEL 16

PARCEL 12

PARCEL 2

S37°56'00"W 60.00' (S37°56'00"W 60.00')1

VACATED WATER STREET

FOUND BRASS SCREW IN RETAINING WALL; PER SN 21487

HIGHWAY 99E

C3 L=245.45'

PARCEL 27

PARCEL 8

PARCEL 4

PARCEL 3

PARCEL 1

LOT 5 LOT 6 LOT 7 LOT 8

BRASS TACK IN LEAD PLUG; PER SN 1130

BLOCK 3

PARCEL 5

270.00')2 270.00')1 S52°04'00"E 270.00'

(S53°29'30"E (S52°04'00"E S52°04'00"E 302.00'

S6 L=50.00'

105.35' 149.28' S47°13'19"E

HIGHWAY 99E

NORTH LINE OF "MILL RESERVE"

PARCEL 17

LOT 4 LOT 3 LOT 2 LOT 1

BLOCK 1

PARCEL 15

LOT 5 LOT 6 LOT 7 LOT 8

30.00' 30.00'

VACATED 3RD STREET

PARCEL 14

LOT 5 LOT 6 LOT 7 LOT 8

BLOCK 2

PARCEL 13

LOT 4 LOT 3 LOT 2 LOT 1

N52°05'00"W 333.00'

30.00' 30.00'

VACATED 4TH STREET

PARCEL 10

LOT 4

PARCEL 9

PARCEL 7

LOT 3

PARCEL 6

LOT 2 LOT 1

(5TH STREET)

DOC. NO. 2000-029964

N52°04'00"W 169.35' (N52°04'00"W 169.30')1 (N53°29'30"W 169.30')2

(S36°30'30"W 149.32')2 (S37°56'00"W 149.32')1 S37°56'00"W 149.32'

BRASS SCREW IN LEAD PLUG; PER SN 21487

5.00'

32.00'

174.32'

N42°46'41"E 5.56'

43.46' 43.93'

S1 L=50.00'

5/8" IR W/YPC INSCRIBED "COMPASS ENGINEERING" IN MONUMENT BOX; PER SN

N37°56'00"E 535.03' (N37°56'00"E 535.03')1

MAIN STREET

PARCEL 26

348.45' (348.49')1

N37°56'00"E 583.46' (N37°56'00"E 583.46')1

32.00'

PARCEL 11

VACATED MAIN STREET

93.40'

N37°56'00"E 343.23' (N37°56'00"E 343.23')1

N37°56'00"E 169.32' (N37°56'00"E 169.32')1

5/8" IR, DOWN 0.3' IN AC; PER SN 23033; HELD FOR WEST LINE OF LOT 7, BEARS N52°04'00"W 1.38'

N37°56'00"E 132.04'

S47°13'19"E 8.42'

CHORD: N44°28'06"E 0.94'

"OREGON CITY" PLAT NO. 123

PARCEL 22

199.22')1 199.22' (N53°09'30"W N53°09'30"W

PARCEL 23

BLOCK 29

LOT 5 LOT 6 LOT 7 LOT 8

30.00' 30.00'

N52°04'00"W 202.20'

PARCEL 24

BLOCK 28

LOT 5 LOT 6 LOT 7 LOT 8

N52°04'00"W 228.11'

PARCEL 25

270.00')2 271.70')1 S52°04'00"E 271.70'

(S53°29'30"E (S52°04'00"E

208.57' S52°04'00"E

BLOCK 27

LOT 4 LOT 3 LOT 2 LOT 1

DOC. NO. 2005-007871

FOUND 5/8" IR W/YPC INSCRIBED "R.A. WRIGHT ENGINEERING INC."; PER SN 23033; BEARS S44°28'06"W 0.94' FROM RIGHT-OF-WAY

PARCEL 21

FOUND PK NAIL; ORIGIN UNKNOWN

L=57.05' C33

N53°09'30"W 9.74' (N53°09'30"W 9.74')1 (N54°35'00"W 9.75')2

S42°19'33"W 177.07' (S42°19'33"W 177.07')1 (S40°52'02"W 177.11')2

N53°09'30"W 4.70'

CONDEMNATION PER CIRCUIT COURT CASE NO. 1976

S52°04'00"E 15.53' (S52°04'00"E 15.53')1 (S53°29'30"E 15.79')2

S42°12'59"W 138.59' (S42°12'59"W 138.59')1 (S40°54'02"W 138.59')2

BOOK 142 PAGE 620

S37°56'00"W 30.00' (S37°56'00"W 30.00')1 (S36°30'30"W 30.00')2

S41°21'05"W 30.05' (S41°21'05"W 30.05')1 (S39°55'00"W 30.04')2

BOOK M PAGE 98

S42°14'41"W 699.44'

HIGHWAY 99E

N52°04'00"W 15.29' (N52°04'00"W 15.29')1 (N53°29'30"W 15.29')2

N52°04'00"W 5.68' (N52°04'00"W 5.68')1 (N53°29'30"W 5.68')2

FOUND TACK; ORIGIN UNKNOWN

S44°33'32"W 68.77' (S44°33'32"W 68.77')1 (S43°08'00"W 68.76')2

BOOK 142 PAGE 620

NO CAP

S52°04'00"E 16.12' (S52°04'00"E 16.12')1

BOOK 142 PAGE 620

BOOK 97 PAGE 218

S42°12'57"W 137.00' (S42°12'57"W 137.00')1 (S40°47'25"W 137.01')2

S37°56'00"W 5.00' (S37°56'00"W 5.00')1

S52°04'00"E 6.84' (S52°04'00"E 8.84')1

S37°56'00"W 5.00' (S37°56'00"W 5.00')1

S52°04'00"E 20.89' (S52°04'00"E 20.89')1 (S53°29'30"E 20.89')2

S42°13'12"W 68.50' (S42°13'12"W 68.50')1 (S40°47'25"W 68.50')2

N52°04'00"W 23.71' (N52°04'00"W 23.71')1

BOOK 99 PAGE 196

BOOK 99 PAGE 197

UNION PACIFIC RAILROAD

S37°56'00"W 30.00' (S37°56'00"W 30.00')1 (S36°30'30"W 30.00')2

S2 L=50.00'

S42°13'08"W 139.71' (S42°13'08"W 139.71')1 (S40°47'28"W 139.71')2

BOOK 142 PAGE 623

C1 L=356.65'

UNION PACIFIC RAILROAD

FOUND 5/8" IR W/YPC INSCRIBED "R.A. WRIGHT ENGINEERING INC."; PER SN 23033

10.00'

S37°56'00"W 30.00' (S37°56'00"W 30.00')1 (S36°30'30"W 30.00')2

N52°04'00"W 1.15' (N52°04'00"W 1.15')1 (N53°29'30"W 1.15')2

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	260.42'	78°28'00"	356.65'	N02°29'18"W 329.43'
C3	204.63'	68°43'34"	245.45'	S05°51'36"E 231.00'
C33	5719.58'	00°34'17"	57.05'	N43°56'26"E 57.05'

LEGEND

△	FOUND 5/8" IRON ROD W/YPC INSCRIBED "DAVIS & PIKE LS 846"; PER SN 21487; HELD UNLESS NOTED OTHERWISE
O	DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
DOC. NO.	DOCUMENT NUMBER PER CLACKAMAS COUNTY DEED RECORDS
IP	IRON PIPE
IR	IRON ROD
W/YPC	WITH A YELLOW PLASTIC CAP
SN	SURVEY NUMBER PER CLACKAMAS COUNTY SURVEY RECORDS
DLC	DONATION LAND CLAIM
U.S.B.T.	UNITED STATES BEARING TREE
( )1	RECORD INFORMATION PER SN 28873
( )2	RECORD INFORMATION PER SN 21487
( )3	RECORD INFORMATION PER SN 29080

BOUNDARY

BLUE HERON PAPER MILL
OREGON CITY OREGON

AKS ENGINEERING & FORESTRY

ENGINEERING • PLANNING
SURVEYING • FORESTRY

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DESIGNED BY:

DRAWN BY: JOH

CHECKED BY: MBH

DRAWING NO: 3225 PROFILES

SCALE: AS NOTED

PREPARED FOR:
METRO REGIONAL SERVICES
600 NE GRAND AVE
PORTLAND, OR 97232
PHONE: (503) 797-1845

DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
5 OF 16

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C2	5729.92'	00°53'00"	88.33'	S40°33'11"W 88.33'
C7	5729.58'	0°35'00"	58.34'	N43°56'04"E 58.34'
C8	7639.44'	00°13'30"	30.00'	N44°20'20"E 30.00'
C9	11459.16'	00°09'00"	30.00'	N44°31'35"E 30.00'
C10	22918.31'	00°04'30"	30.00'	N44°38'20"E 30.00'
C11	22918.31'	00°04'30"	30.00'	S44°38'20"W 30.00'
C12	11459.16'	00°09'00"	30.00'	S44°31'35"W 30.00'
C13	7639.44'	00°13'30"	30.00'	S44°20'20"W 30.00'
C14	5729.58'	01°37'59"	163.30'	S43°24'35"W 163.29'
C15	7639.44'	00°13'30"	30.00'	S42°28'51"W 30.00'
C16	11459.16'	00°09'00"	30.00'	S42°17'36"W 30.00'
C17	22918.31'	00°04'30"	30.00'	S42°10'51"W 30.00'
C33	5719.58'	00°34'17"	57.05'	N43°56'26"E 57.05'
C34	7629.44'	00°13'30"	29.96'	N44°20'20"E 29.96'
C35	11449.16'	00°09'00"	29.97'	N44°31'35"E 29.97'
C36	22908.31'	00°04'30"	29.99'	N44°38'20"E 29.99'
C37	22928.31'	00°04'30"	30.01'	S44°38'20"W 30.01'
C38	11469.16'	00°09'00"	30.03'	S44°31'35"W 30.03'
C39	7649.44'	00°13'30"	30.04'	S44°20'20"W 30.04'
C40	5739.58'	01°37'59"	163.59'	S43°24'35"W 163.58'
C41	7649.44'	00°13'30"	30.04'	S42°28'51"W 30.04'
C42	11469.16'	00°09'00"	30.03'	S42°17'36"W 30.03'
C43	22928.31'	00°04'30"	30.01'	S42°10'51"W 30.01'

LEGEND

- △ FOUND 5/8" IRON ROD W/YPC INSCRIBED "DAVIS & PIKE LS 846"; PER SN 21487; HELD UNLESS NOTED OTHERWISE
- ○ DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
- DOC. NO. DOCUMENT NUMBER PER CLACKAMAS COUNTY DEED RECORDS
- IP IRON PIPE
- IR IRON ROD
- W/YPC WITH A YELLOW PLASTIC CAP
- SN SURVEY NUMBER PER CLACKAMAS COUNTY SURVEY RECORDS
- DLC DONATION LAND CLAIM
- U.S.B.T. UNITED STATES BEARING TREE
- ( )1 RECORD INFORMATION PER SN 28873
- ( )2 RECORD INFORMATION PER SN 21487
- ( )3 RECORD INFORMATION PER SN 29080

WILLAMETTE RIVER
FLOW

ORDINARY LOW WATER LINE, 9.0' NAVD88 (5.5' NGVD29 PER SHEET 9 OF 57 OF SURVEY "WILLAMETTE RIVER PUBLIC LANDS UNDER JURISDICTION OF OREGON STATE LAND BOARD PREPARED BY DIVISION OF STATE LANDS" DATED MARCH 1975)

DSL LEASE 1
CLARIFIER OUTFALL PIPELINE EASEMENT PER 41479-EA DSL RECORDS

N50°10'00"E 100.00'
40.00' N39°50'00"W
S39°50'00"E 40.00'
S50°10'00"W 100.00'

STATE OWNERSHIP
UPLAND OWNERSHIP

N77°42'16"W 153.58'

N19°54'18"W 2844.02'
(N19°54'18"W)3

3-1/4" BRASS DISK INSCRIBED "DAVID EVANS AND ASSOCIATES, INC. GPS-STA WILL-DAM A"; PER SN 29080

DOC. NO. 2000-041748
(ADJUSTED PER DOC. NO. 2000-027829)

(S17°10'45"W 534.40')3
S17°10'45"W 534.40'

(N17°10'45"E 329.77')3
N17°10'45"E 329.77'

N72°49'15"W 30.00'
(N72°49'15"W 30.00')3

N17°10'45"E 550.00'
(N17°10'45"E 550.00')3

3-1/4" BRASS DISK INSCRIBED "DAVID EVANS AND ASSOCIATES, INC. GPS-STA WILL-DAM B"; PER SN 29080

S68°06'01"E 260.30'
(S68°06'01"E 260.30')1

S52°47'03"E 277.98'
(S52°47'03"E 277.98')3

"INTAKE BASIN" SUBMERGED LANDS BELOW ORDINARY LOW WATER, OUTSIDE OF HISTORIC CHANNEL, OWNERSHIP APPEARS TO BE WITH UPLAND OWNER

NUMEROUS BUILDING ENCROACHMENTS IN THIS AREA, SEE ENCROACHMENT EASEMENT PER DOC. NO. 2000-027028 (EXCEPTION 41)

N52°47'03"W 363.42'
(N52°47'03"W 363.42')3

ABERNETHY ISLAND
(SUBMERGED)

DSL LEASE 5
20.00' PIPELINE/WATER RIGHT EASEMENT PER 17309-EA DSL RECORDS
10.00'
10.00'

N38°07'51"E 61.24'
(N38°07'51"E 61.24')3

DOC. NO. 2000-029964

PARCEL 43

PARCEL 16

PARCEL 17

PARCEL 18

PARCEL 19 32.00'

PARCEL 20

PARCEL 21

PARCEL 22

PARCEL 26

NORTH LINE OF "MILL RESERVE"

LOT 5 LOT 6 LOT 4 LOT 3

SEE SHEET 5

BLOCK 1

N37°56'00"E 583.46'
(N37°56'00"E 583.46')1

SEE SHEET 7

317.88'

UNKNOWN CONCRETE OUTFALL OR INTAKE STRUCTURE

S88°28'28"E 634.26'

ORDINARY LOW WATER LINE, 58.0' NAVD88 (54.5' NGVD29 PER SHEET 9 OF 57 OF SURVEY "WILLAMETTE RIVER PUBLIC LANDS UNDER JURISDICTION OF OREGON STATE LAND BOARD PREPARED BY DIVISION OF STATE LANDS" DATED MARCH 1975)

N00°43'14"W 183.50'
(N00°08'53"E)3
N00°08'53"E 133.14'

3' DIAMETER OVERHEAD PIPELINE AND OUTFALL

(N31°02'30"E 713.22')1
N31°02'30"E 713.22'

N88°28'28"W 13.17'

S42°08'36"W 182.50'

S42°08'36"W 758.00'

CONCRETE RETAINING WALL FALLS ON LINE

SOUTH LINE OF OREGON CITY CLAIM
NORTH LINE OF McKINLAY DLC 60

30.27'

L=30.01' L=30.03' L=30.04'
C43 C42 C41

L=163.59'
C40

L=30.04' L=30.03' L=30.01'
C39 C38 C37

FOUND BRASS PLATE INSCRIBED "PORTLAND ELECTRIC POWER CO. DO NOT DISTURB PERMANENT ALIGNMENT POINT", SET IN SIDE OF RETAINING WALL

C17 L=30.00' STA 807+53.00 PT
C16 L=30.00' STA 807+23.00 PCC
C15 L=30.00' STA 806+93.00 PCC
C14 L=163.30' STA 806+63.00 PCC
CONCRETE RETAINING WALL FALLS 0.4' W'LY

C13 L=30.00' STA 804+99.70 PCC
C12 L=30.00' STA 804+69.70 PCC
C11 L=30.00' STA 804+39.70 PCC
STA 804+09.70 PC

10.00'

S44°40'35"W 461.40'
S44°40'35"W 461.40'

UNION PACIFIC RAILROAD

RAILROAD CENTERLINE PER PER BOOK 186 PAGE 210 (RECORDED 10/28/1926)

STA 799+48.30 PT
C36 L=29.99'
STA 799+18.30 PCC
C35 L=29.97'
STA 798+88.30 PCC
C34 L=29.96'
STA 798+58.30 PCC
C33 L=57.05'

C10 L=30.00' C9 L=30.00' C8 L=30.00' C7 L=58.34'

N53°09'30"W 4.70'
(N53°09'30"W 199.22')1
N53°09'30"W 199.22'

1-1/8" BRASS DISK INSCRIBED "D.E.A. INC."; PER SN 29080

N37°12'57"E 65.00'
(N37°12'57"E 65.00')3

FOUND BRASS PLATE INSCRIBED "PORTLAND ELECTRIC POWER CO. DO NOT DISTURB PERMANENT ALIGNMENT POINT", ON TOP OF DAM

FOUND PK NAIL; ORIGIN UNKNOWN

N53°09'30"W 9.74'
(N53°09'30"W 9.74')1
(N54°35'00"W 9.75')2

S42°19'33"W 177.07'
(S42°19'33"W 177.07')1
(S40°52'02"W 177.11')2

L=250.00'
S5
S38°51'41"W 187.62'
(TANGENT)

S38°51'41"W 280.70'

S4 L=250.00'
C2 L=88.33'
S3 L=250.00'

HIGHWAY 99E

122.65'

1-1/8 BRASS DISK INSCRIBED "CLACKAMAS CO 1"; PER U.S.B.T. 2009-064; BEARS N86°36'30"W 36.50'

1-1/8 BRASS DISK INSCRIBED "CLACKAMAS CO 3"; PER U.S.B.T. 2009-064; BEARS S86°33'19"E 16.37'

3-1/4" BRASS DISK IN MONUMENT BOX; PER U.S.B.T. 2009-064

S 2ND STREET

TUMWATER DRIVE

SCALE 1" = 50 FEET
50 0 20 30 40 50

BOUNDARY

BLUE HERON PAPER MILL
OREGON CITY OREGON

AKS ENGINEERING & FORESTRY
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DESIGNED BY:
DRAWN BY: JOH
CHECKED BY: MBH
DRAWING NO.: 3225 PROFILES
SCALE: AS NOTED

PREPARED FOR:
METRO REGIONAL SERVICES
600 NE GRAND AVE
PORTLAND, OR 97232
PHONE: (503) 797-1845

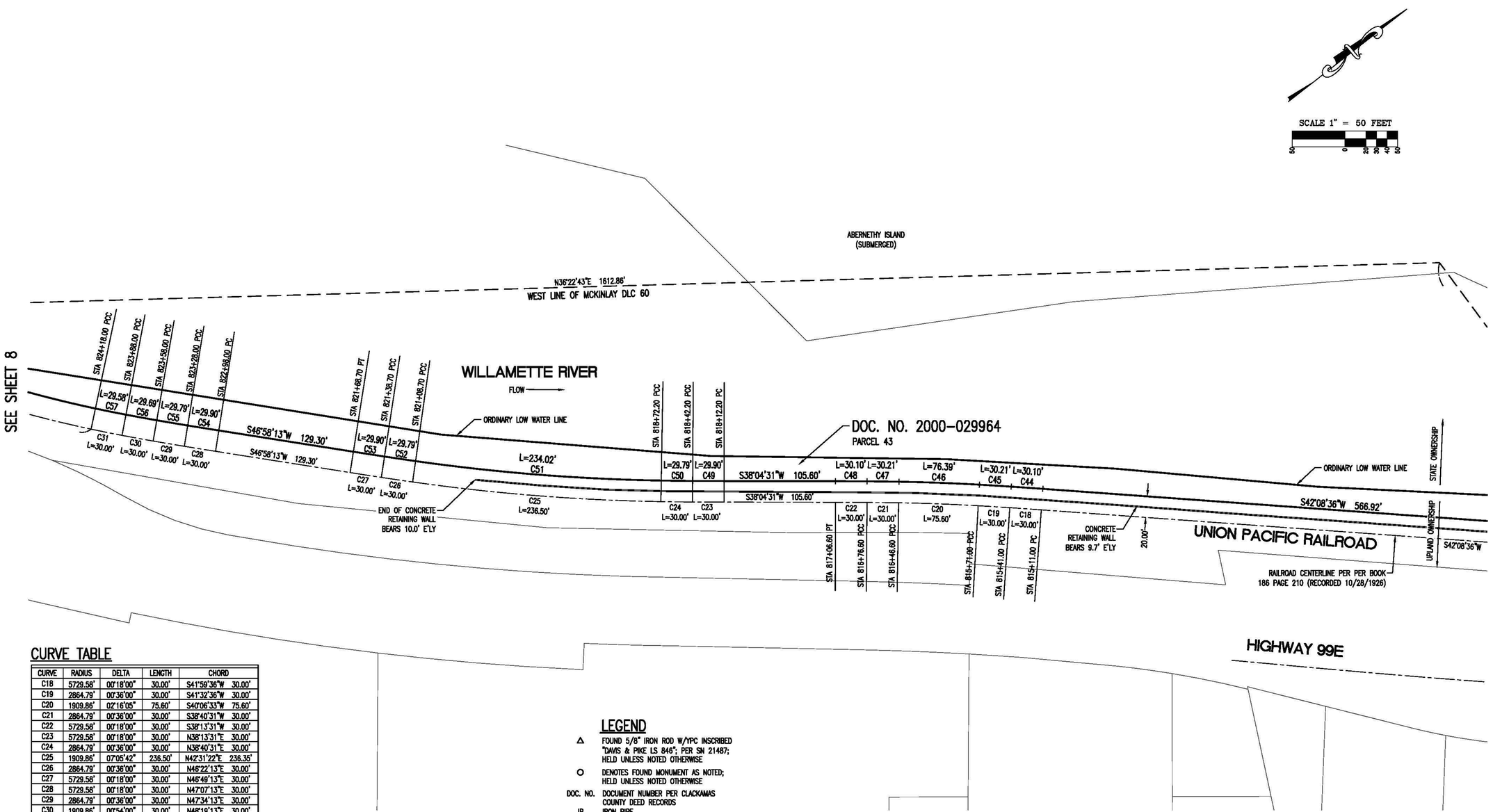
DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
56542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
6 OF 16



CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C18	5729.58'	00°18'00"	30.00'	S41°59'36"W 30.00'
C19	2864.79'	00°36'00"	30.00'	S41°32'36"W 30.00'
C20	1909.86'	02°16'05"	75.60'	S40°06'33"W 75.60'
C21	2864.79'	00°36'00"	30.00'	S38°40'31"W 30.00'
C22	5729.58'	00°18'00"	30.00'	S38°13'31"W 30.00'
C23	5729.58'	00°18'00"	30.00'	N38°13'31"E 30.00'
C24	2864.79'	00°36'00"	30.00'	N38°40'31"E 30.00'
C25	1909.86'	07°05'42"	236.50'	N42°31'22"E 236.35'
C26	2864.79'	00°36'00"	30.00'	N46°22'13"E 30.00'
C27	5729.58'	00°18'00"	30.00'	N46°49'13"E 30.00'
C28	5729.58'	00°18'00"	30.00'	N47°07'13"E 30.00'
C29	2864.79'	00°36'00"	30.00'	N47°34'13"E 30.00'
C30	1909.86'	00°54'00"	30.00'	N48°19'13"E 30.00'
C31	1432.39'	01°12'00"	30.00'	N49°22'13"E 30.00'
C44	5749.58'	00°18'00"	30.10'	S41°59'36"W 30.10'
C45	2884.79'	00°36'00"	30.21'	S41°32'36"W 30.21'
C46	1929.86'	02°16'05"	76.39'	S40°06'33"W 76.39'
C47	2884.79'	00°36'00"	30.21'	S38°40'31"W 30.21'
C48	5749.58'	00°18'00"	30.10'	S38°13'31"W 30.10'
C49	5709.58'	00°18'00"	29.90'	N38°13'31"E 29.90'
C50	2844.79'	00°36'00"	29.79'	N38°40'31"E 29.79'
C51	1889.86'	07°05'42"	234.02'	N42°31'22"E 233.87'
C52	2844.79'	00°36'00"	29.79'	N46°22'13"E 29.79'
C53	5709.58'	00°18'00"	29.90'	N46°49'13"E 29.90'
C54	5709.58'	00°18'00"	29.90'	N47°07'13"E 29.90'
C55	2844.79'	00°36'00"	29.79'	N47°34'13"E 29.79'
C56	1889.86'	00°54'00"	29.69'	N48°19'13"E 29.69'
C57	1412.39'	01°12'00"	29.58'	N49°22'13"E 29.58'

LEGEND

△	FOUND 5/8" IRON ROD W/YPC INSCRIBED "DAVIS & PIKE LS 846"; PER SN 21487; HELD UNLESS NOTED OTHERWISE
O	DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
DOC. NO.	DOCUMENT NUMBER PER CLACKAMAS COUNTY DEED RECORDS
IP	IRON PIPE
IR	IRON ROD
W/YPC	WITH A YELLOW PLASTIC CAP
SN	SURVEY NUMBER PER CLACKAMAS COUNTY SURVEY RECORDS
DLC	DONATION LAND CLAIM
U.S.B.T.	UNITED STATES BEARING TREE
( )1	RECORD INFORMATION PER SN 28873
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BLUE HERON PAPER MILL
OREGON CITY OREGON

AKS ENGINEERING & FORESTRY
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FAX: (503) 925-8969

DESIGNED BY:
DRAWN BY: JOH
CHECKED BY: MRH
DRAWING NO.: 3225 PROFILES
SCALE: AS NOTED

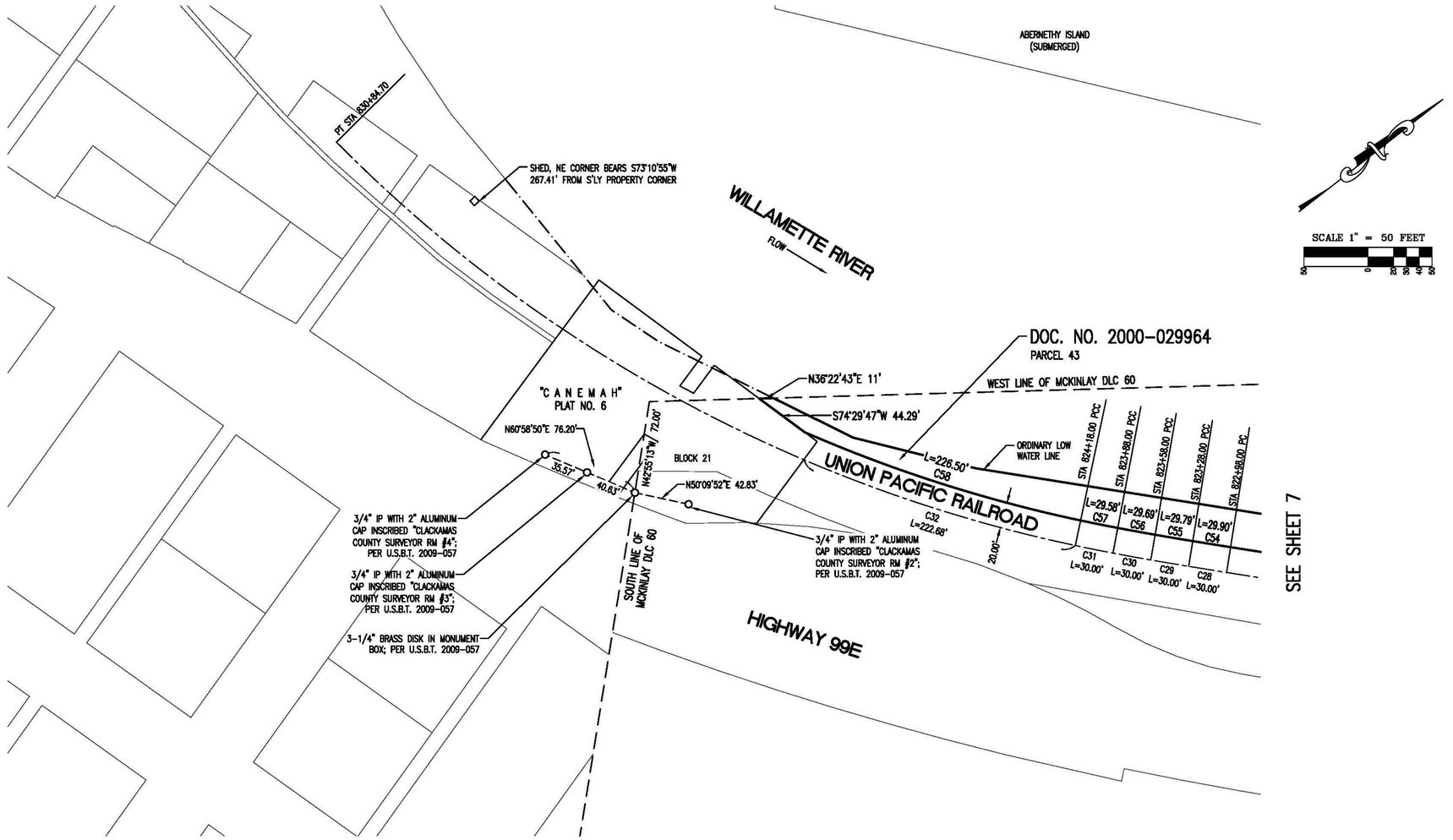
PREPARED FOR:
METRO REGIONAL SERVICES
600 NE GRAND AVE
PORTLAND, OR 97232
PHONE: (503) 797-1845

DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
7 OF 16



CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD
C28	5729.58'	00°18'00"	30.00'	N47°07'13"E 30.00'
C29	2864.79'	00°36'00"	30.00'	N47°34'13"E 30.00'
C30	1909.86'	00°54'00"	30.00'	N48°19'13"E 30.00'
C31	1432.39'	01°12'00"	30.00'	N49°22'13"E 30.00'
C32	1145.92'	11°08'02"	222.68'	N55°32'14"E 222.33'
C54	5709.58'	00°18'00"	29.90'	N47°07'13"E 29.90'
C55	2844.79'	00°36'00"	29.79'	N47°34'13"E 29.79'
C56	1889.86'	00°54'00"	29.69'	N48°19'13"E 29.69'
C57	1412.39'	01°12'00"	29.58'	N49°22'13"E 29.58'
C58	1125.92'	11°31'35"	226.50'	N55°44'01"E 226.12'

LEGEND

△	FOUND 5/8" IRON ROD W/YPC INSCRIBED "DAVIS & PIKE LS 846"; PER SN 21487; HELD UNLESS NOTED OTHERWISE
O	DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
DOC. NO.	DOCUMENT NUMBER PER CLACKAMAS COUNTY DEED RECORDS
IP	IRON PIPE
IR	IRON ROD
W/YPC	WITH A YELLOW PLASTIC CAP
SN	SURVEY NUMBER PER CLACKAMAS COUNTY SURVEY RECORDS
DLC	DONATION LAND CLAIM
U.S.B.T.	UNITED STATES BEARING TREE
( )1	RECORD INFORMATION PER SN 28873
( )2	RECORD INFORMATION PER SN 21487
( )3	RECORD INFORMATION PER SN 29080

BOUNDARY

BLUE HERON
PAPER MILL
OREGON CITY OREGON

AKS ENGINEERING & FORESTRY
ENGINEERING • PLANNING
SURVEYING • FORESTRY
13910 SW GALBREATH DR.,
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FAX: (503) 925-8969

DESIGNED BY:
DRAWN BY: JOH
CHECKED BY: MBH
DRAWING NO.: 3225 PROFILES
SCALE: AS NOTED

PREPARED FOR:
METRO REGIONAL SERVICES
600 NE GRAND AVE
PORTLAND, OR 97232
PHONE: (503) 797-1845

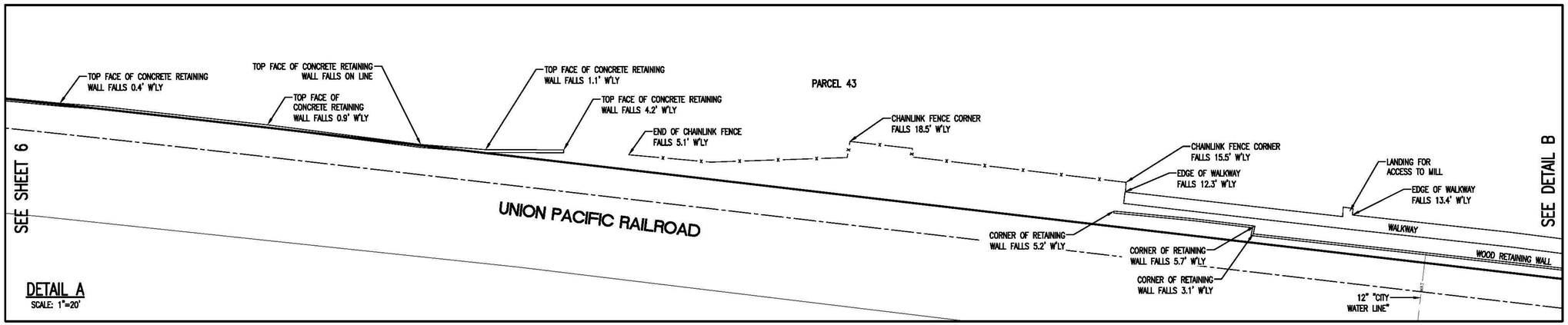
DATE: 12/14/12

REGISTERED
PROFESSIONAL
LAND SURVEYOR

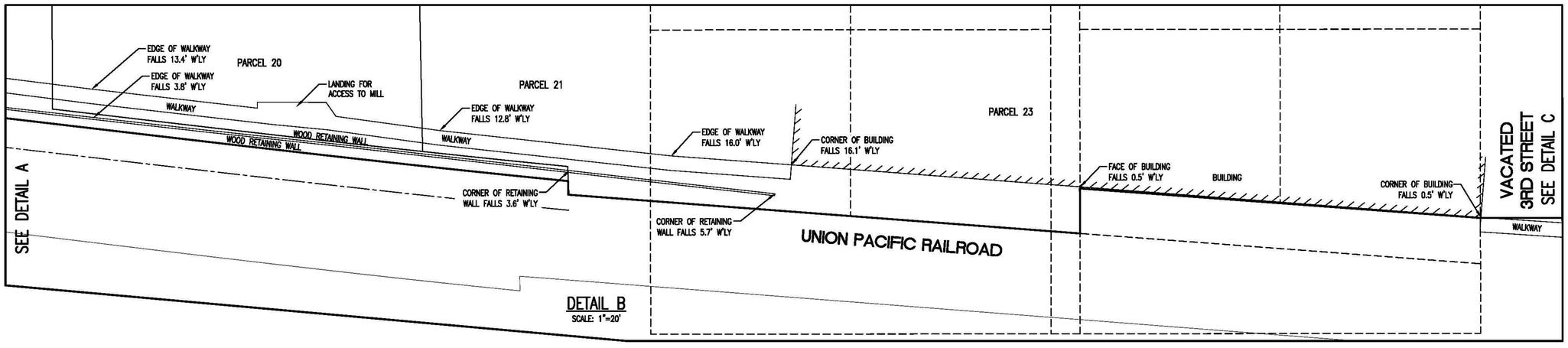
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

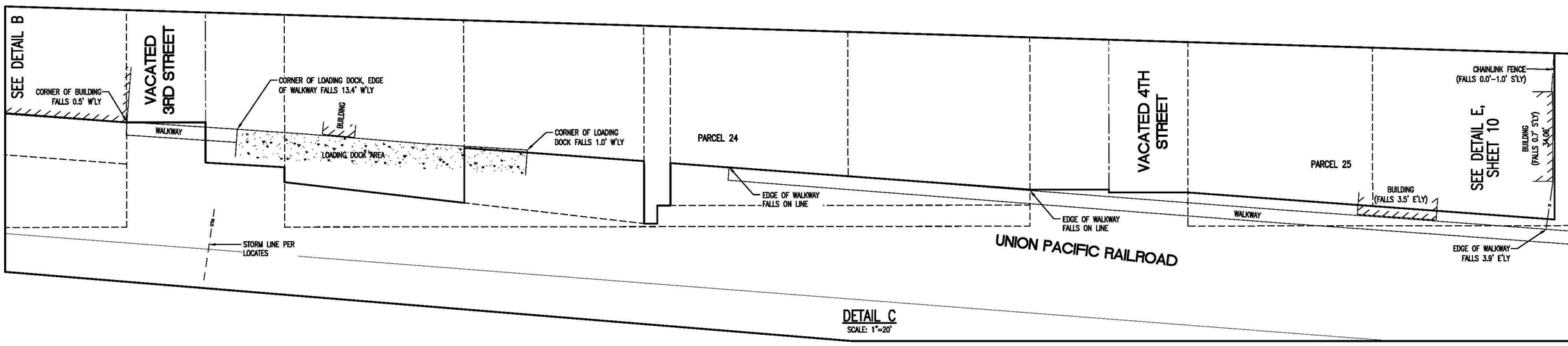
SHEET
8 OF 16



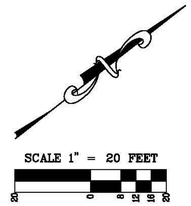
DETAIL A
SCALE: 1"=20'



DETAIL B
SCALE: 1"=20'



DETAIL C
SCALE: 1"=20'



ENCROACHMENTS AND FEATURES DETAILS

BLUE HERON PAPER MILL
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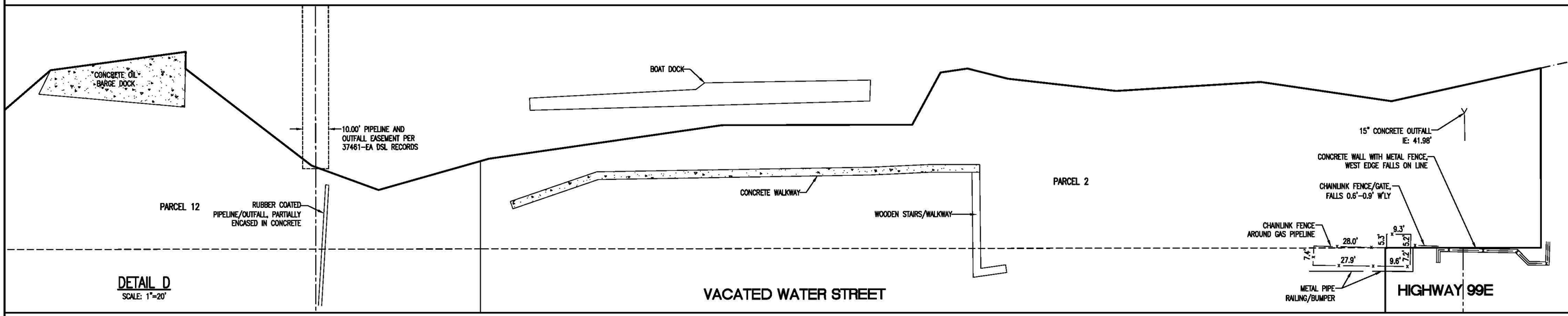
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REGISTERED PROFESSIONAL LAND SURVEYOR

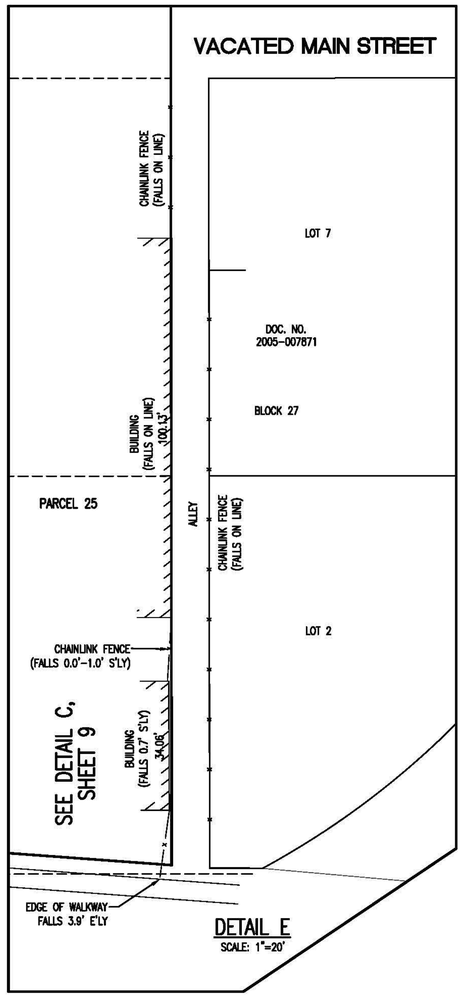
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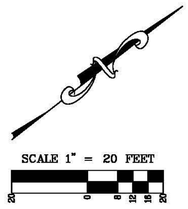
SHEET
9 OF 16



DETAIL D
SCALE: 1"=20'



DETAIL E
SCALE: 1"=20'



ENCROACHMENTS AND FEATURES DETAILS

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MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
10 OF 16

SCALE 1" = 100 FEET

100 0 40 80 100

DAM DETAILS, PROFILES, AND CROSS-SECTIONS
MAP WITH AERIAL PHOTO

BLUE HERON PAPER MILL
OREGON CITY OREGON

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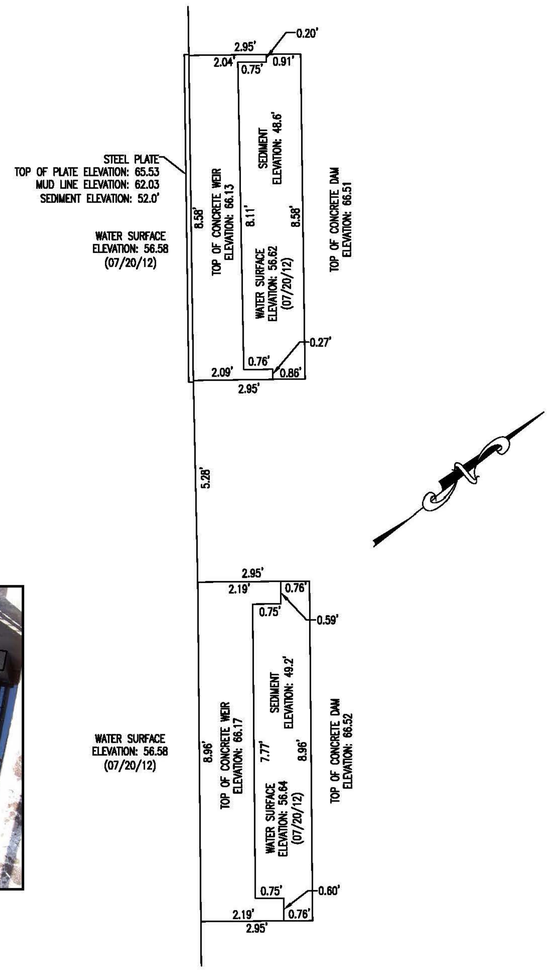
DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

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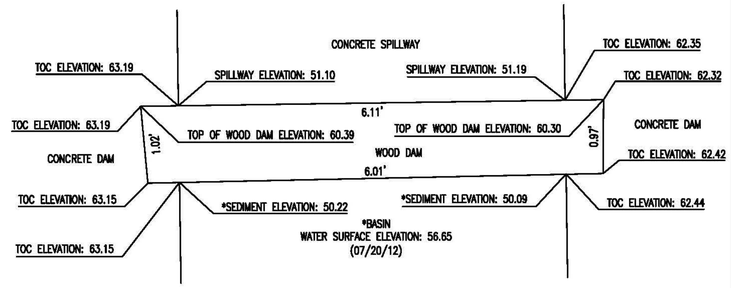
SHEET
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DAM WEIR PLAN VIEW DETAIL

SCALE: 1"=2'



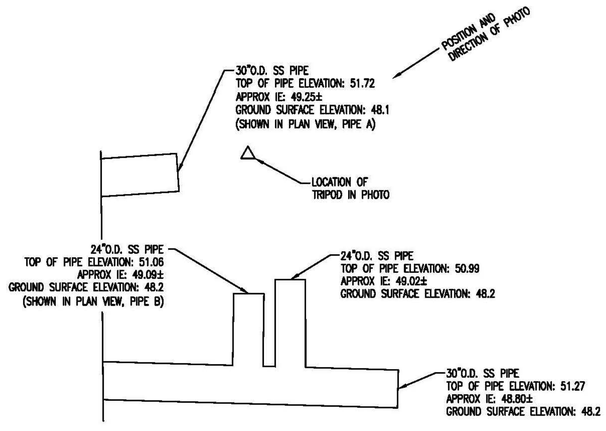
DAM SPILLWAY PLAN VIEW DETAIL

SCALE: 1"=1'

*NOTE: THIS IS ON THE BOTTOM (BACK) SIDE AND IS NOT SHOWN IN PHOTOGRAPH



NOTE:
PLAN VIEW IS LOOKING DOWN ON THIS PICTURE FROM ABOVE.



INLET PIPE PLAN VIEW DETAIL

SCALE: 1"=5'



NOTE:
PLAN VIEW IS LOOKING DOWN ON THIS PICTURE FROM ABOVE.

DAM DETAILS

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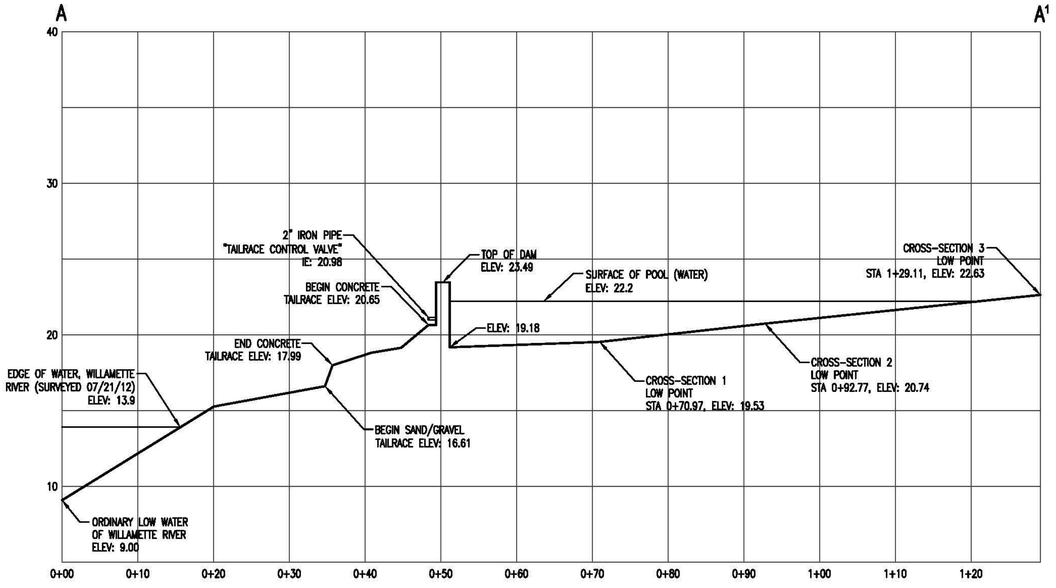
DATE: 12/14/12

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MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

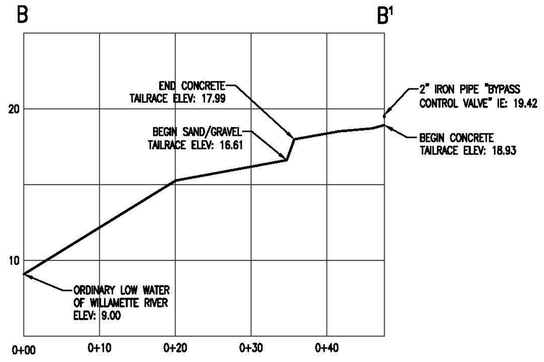
JOB NUMBER
3225

SHEET
12 OF 16



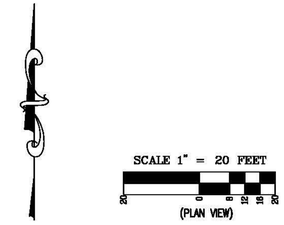
MILL "H" TAILRACE PROFILE

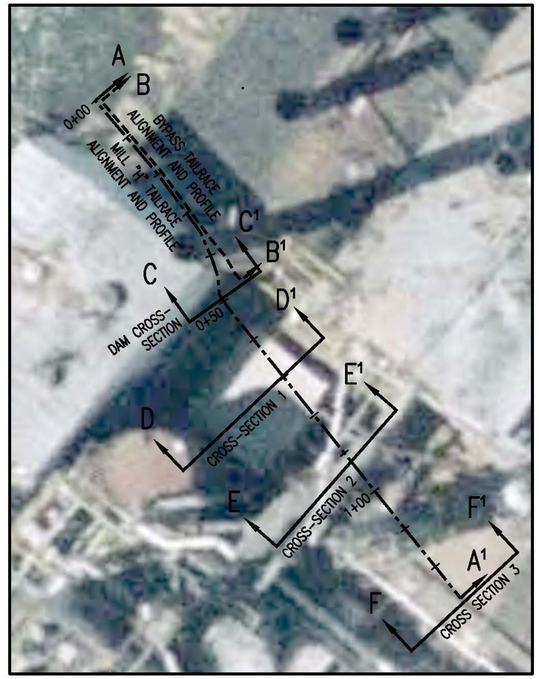
FACING NORTH, DOWNSTREAM WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

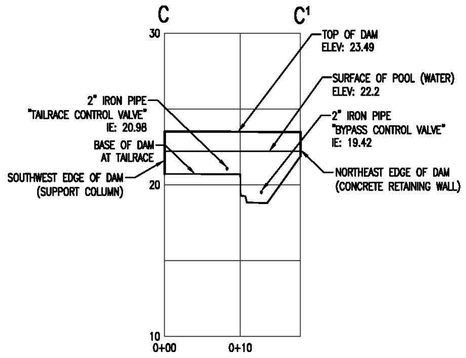


BYPASS TAILRACE PROFILE

FACING NORTH, DOWNSTREAM WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

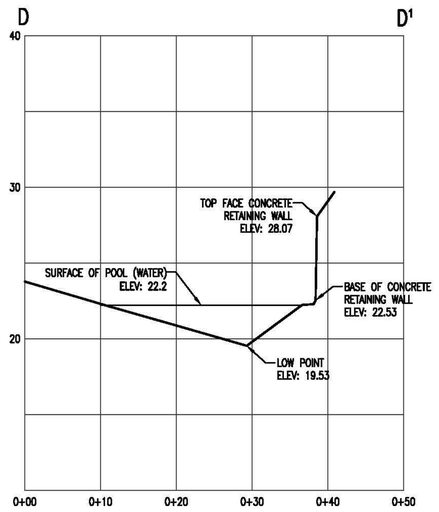






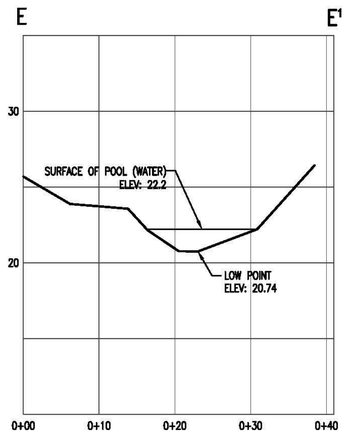
MILL "H" DAM CROSS-SECTION

FACING WEST TOWARDS WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



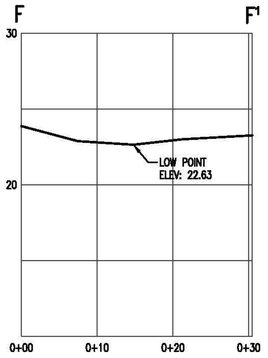
MILL "H" RESERVOIR CROSS-SECTION 1

18.5' BEHIND DAM, FACING WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



MILL "H" RESERVOIR CROSS-SECTION 2

42' BEHIND DAM, FACING WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



MILL "H" RESERVOIR CROSS-SECTION 3

79' BEHIND DAM, FACING WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

MILL 'H' TAILRACE PROFILES AND CROSS-SECTIONS

BLUE HERON PAPER MILL OREGON CITY OREGON

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PHONE: (503) 925-8799
FAX: (503) 925-8969

DESIGNED BY:
DRAWN BY: JOH
CHECKED BY: MRH
DRAWING NO.: 3225 PROFILES
SCALE: AS NOTED

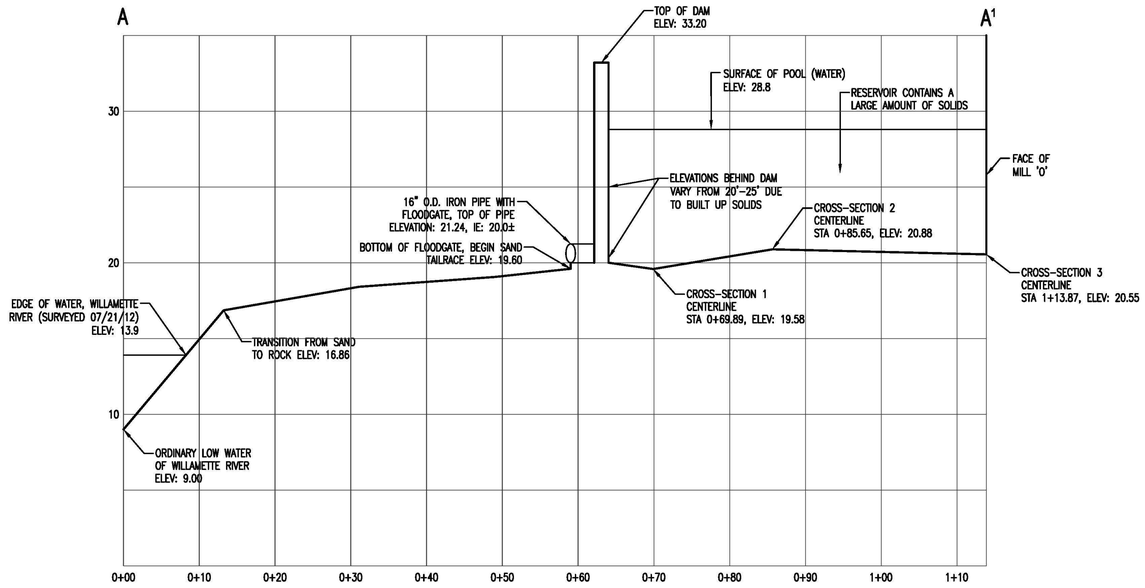
PREPARED FOR:
METRO REGIONAL SERVICES
600 NE GRAND AVE
PORTLAND, OR 97232
PHONE: (503) 797-1845

DATE: 12/14/12

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

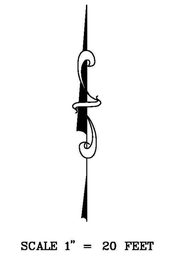
JOB NUMBER
3225

SHEET
13 OF 16

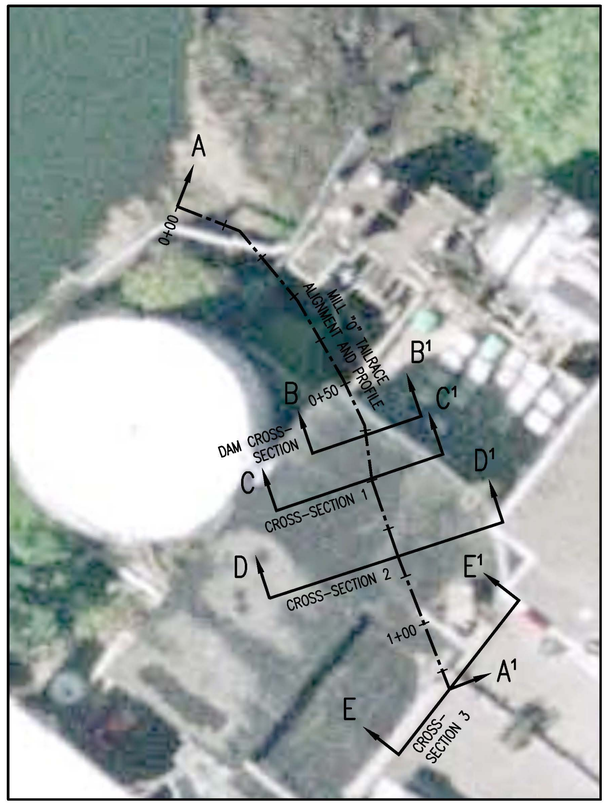


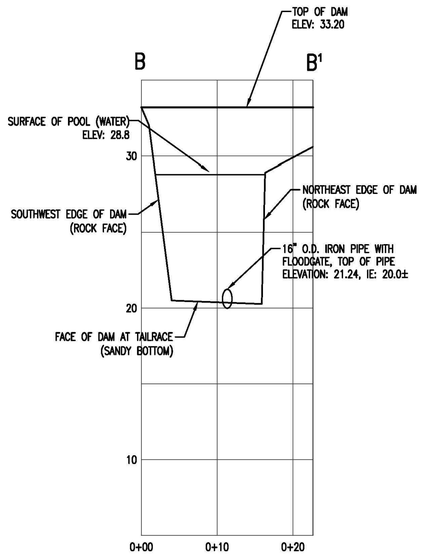
MILL "O" TAILRACE PROFILE

FACING NORTH, DOWNSTREAM WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



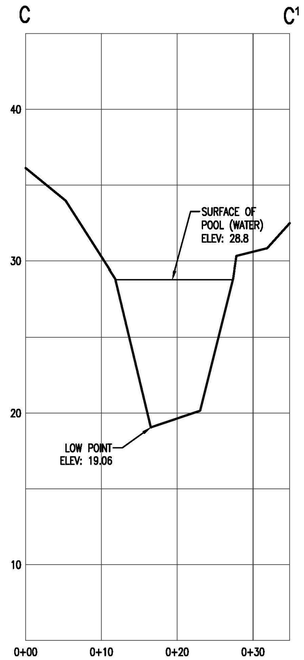
(PLAN VIEW)





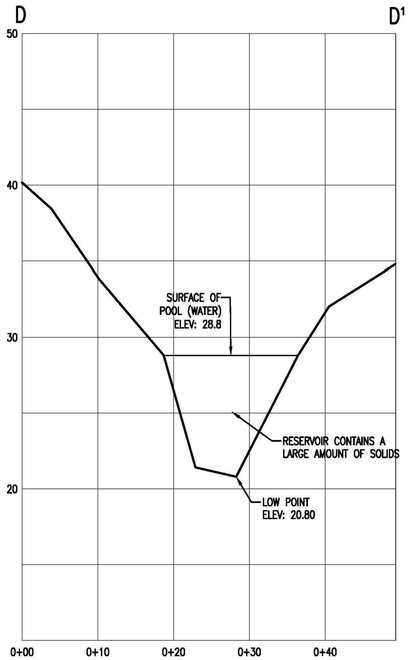
MILL "O" DAM CROSS-SECTION

FACING WEST, TOWARDS WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



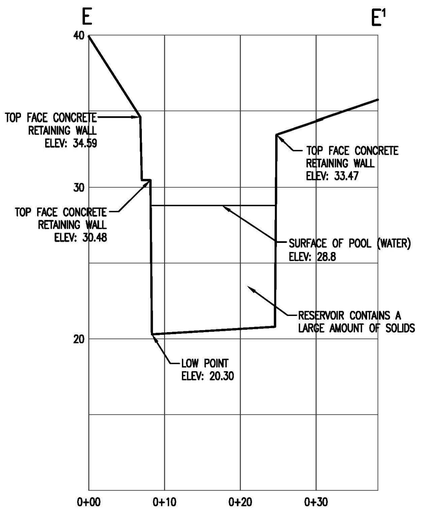
MILL "O" RESERVOIR CROSS-SECTION 1

9' BEHIND DAM, FACING WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



MILL "O" RESERVOIR CROSS-SECTION 2

24' BEHIND DAM, FACING WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'



MILL "O" RESERVOIR CROSS-SECTION 3

42'-59' BEHIND DAM @ FACE OF BUILDING, FACING WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

MILL 'O' TAILRACE PROFILES AND CROSS-SECTIONS

BLUE HERON PAPER MILL
OREGON CITY **OREGON**

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DRAWING NO.: 3225 PROFILES
SCALE: AS NOTED

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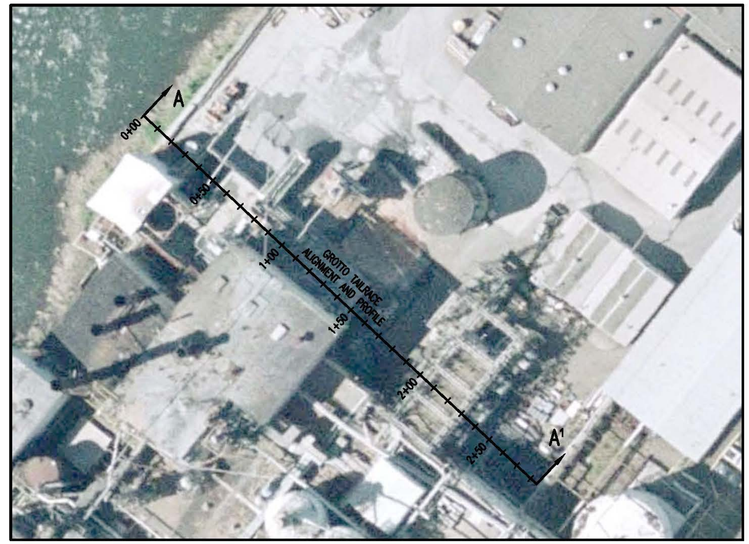
DATE: 12/14/12

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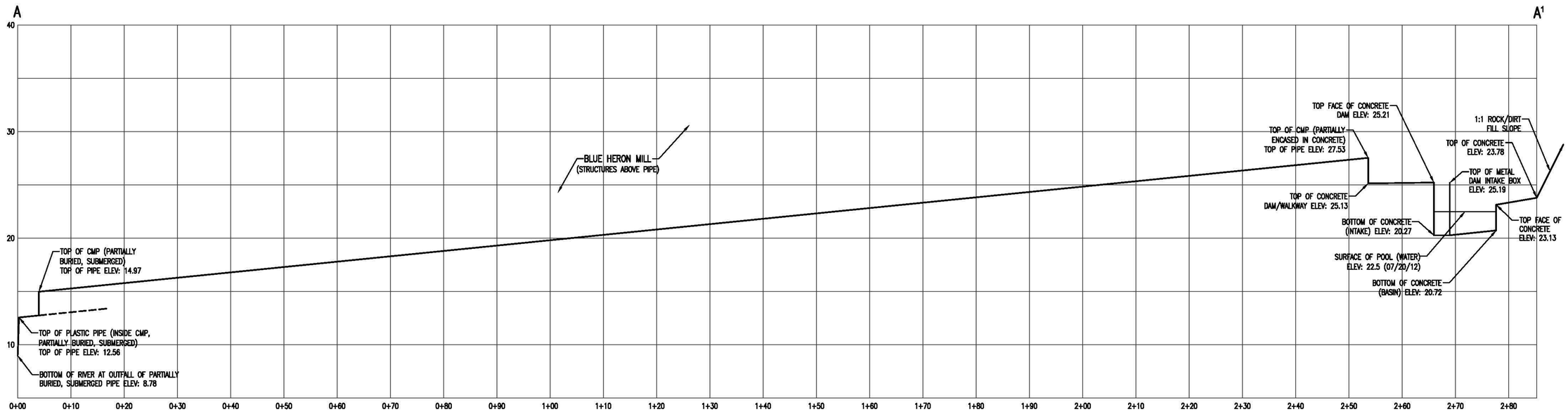
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
14 OF 16



SCALE 1" = 40 FEET
(PLAN VIEW)



"GROTTO" TAILRACE PROFILE

FACING NORTH, DOWNSTREAM WILLAMETTE RIVER
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

GROTTO TAILRACE PROFILES

BLUE HERON PAPER MILL
OREGON CITY OREGON

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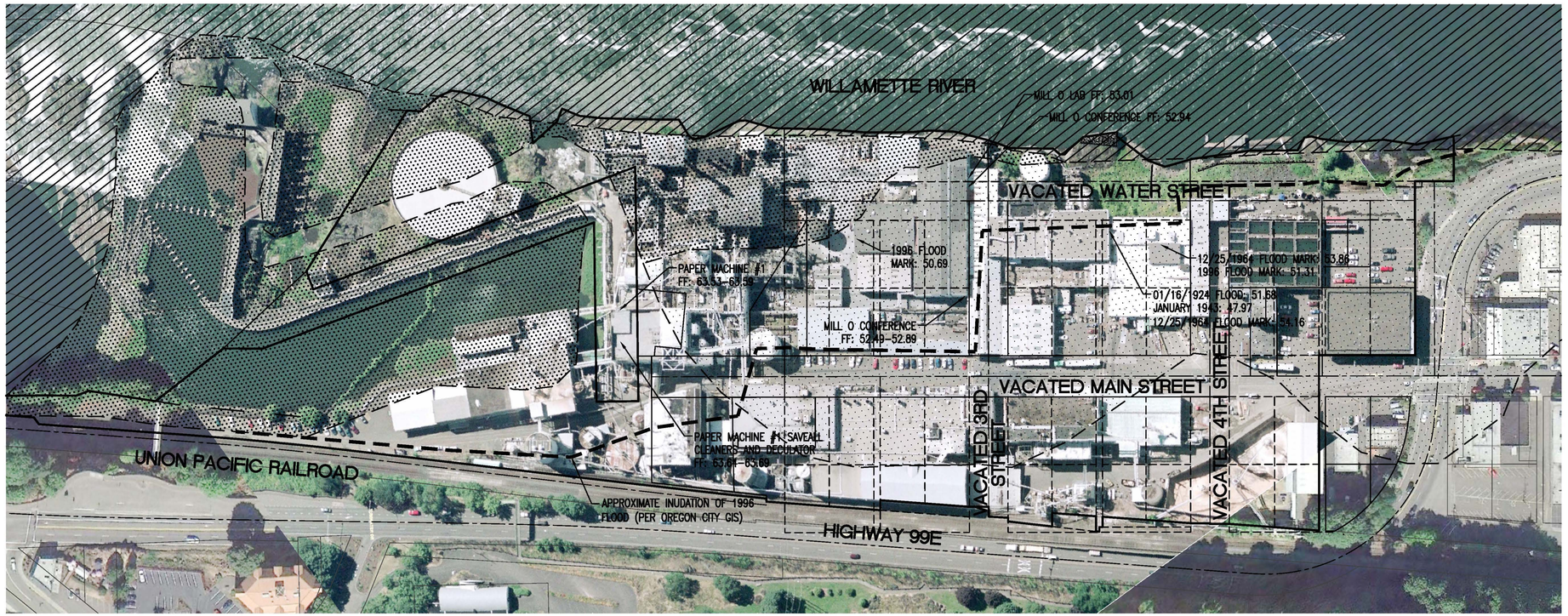
PREPARED FOR:
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PORTLAND, OR 97232
PHONE: (503) 797-1845

DATE: 12/12/12

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 15, 2003
MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

JOB NUMBER
3225

SHEET
15 OF 16



SCALE 1" = 100 FEET

100 0 40 60 80 100

FLOOD ZONE LEGEND

FLOODWAY AREAS IN ZONE AE: CHANNEL OF A STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS.

ZONE AE: SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, BASE FLOOD ELEVATIONS DETERMINED.

ZONE X: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

NOTES:

1. FLOOD ZONES WERE DETERMINED BY GRAPHIC OVERLAY OF FLOOD MAP NUMBER FM41005C0276D WITH AN EFFECTIVE DATE OF JUNE 7, 2008 (WHICH IS THE LATEST AVAILABLE FLOOD MAP FOR THE PREMISES).
2. SPECIFIC POINTS SHOWN INCLUDE ELEVATIONS FIELD TIED BASED ON FLOOD MARKS.

FLOOD ZONES, FLOOD MARKS, AND BUILDING ELEVATIONS

BLUE HERON PAPER MILL
OREGON CITY OREGON

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DESIGNED BY:
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CHECKED BY: MBH
DRAWING NO: 3225 FLOOD
SCALE: AS NOTED

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PHONE: (503) 797-1845

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MONTGOMERY B. HURLEY
58542LS
RENEWS: 6/30/13

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3225

SHEET
16 OF 16

WILLAMETTE FALLS INDUSTRIAL AREA

REQUEST FOR DETERMINATION OF ELIGIBILITY



"Glimpse of Manufacturing Center of Oregon City, Oregon"
c1907

for Portland General Electric & the Blue Heron Paper Company
in cooperation with the West Linn Paper Company

May 2002

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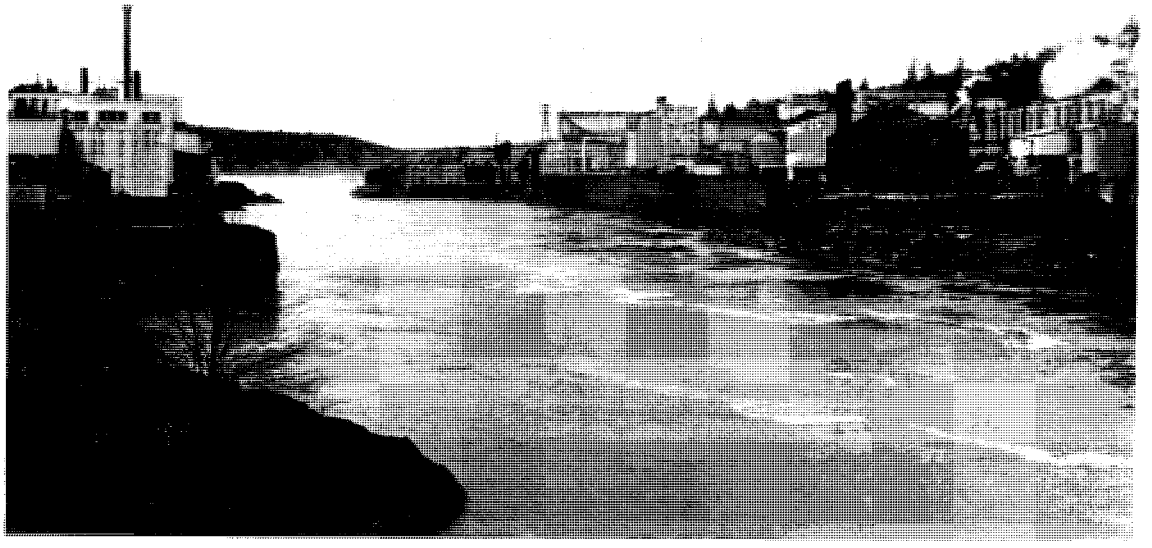
DETERMINATION OF ELIGIBILITY FOR THE NATIONAL REGISTER

Property Name: **WILLAMETTE FALLS INDUSTRIAL AREA**
Address: **Oregon City, Oregon**
West Linn, Oregon
Original Use: **Hydro/Pulp Mill** Current Use: **Hydro/Paper Mill**

Date of Construction: **1865-1951**
County: **CLACKAMAS**

Style: **Utilitarian/Industrial**
Theme: **Commerce/Industrial**

PRIMARY SIGNIFICANCE: The Willamette Falls Industrial Area consists of a densely developed complex of utilitarian buildings and related structures lining both sides of the Willamette River channel between Oregon City and West Linn in Clackamas County, Oregon. The area demonstrates significant association with the development of hydroelectricity and establishment of the papermaking industry in the State of Oregon.
[***Continued on Page 17***]



Willamette Falls Industrial Area, *Looking S, toward the Falls, from McLaughlin Blvd, Oregon City*

PHYSICAL DESCRIPTION: The Willamette Falls Industrial Area is a dense complex of utilitarian and industrial structures located along the channel of the Willamette River. Although composed of multiple individual built resources as detailed below, the visual character of the district is largely one of contiguous development, flanking the channel, with little apparent differentiation or obvious separation between most of the buildings. The area is defined by the Willamette Falls Dam on the south and extends visually to a line spanning the river at the entry point of the Willamette Locks. First developed for industrial purposes in the mid-19th century, today the historically significant resources of the Willamette Falls Industrial Area date from the late-19th century through the period of post-WWII expansion. Continuing the traditional uses of hydroelectric generation and the manufacture of paper products, the Willamette Falls Industrial Area retains significant association with the industrial movement in the Pacific Northwest and demonstrates sufficient integrity to relate its original development period. [***Continued on Page 2***]

In my opinion, the property ___ meets ___ does not meet the criteria for listing in the National Register of Historic Places.

Signature of Certifying SHPO Official/Title Date

Comments/Request for Additional Information:

LOCATION:

The Willamette Falls Industrial Area is located in Clackamas County, Oregon, at River Mile (RM) 26.5 of the Willamette River. The area is in an urban/industrial setting between the incorporated cities of West Linn and Oregon City. Within the channel of the Willamette River, the study area begins at Willamette Falls and the horseshoe shaped dam on the south and continues north to the entry point to the Willamette Locks. In general, the steep river bank forms the western boundary (in the city of West Linn, Oregon) except for two project-related resources accessed from Willamette Falls Drive. The right-of-way of the Southern Pacific Railroad forms the boundary on the east. The entire area is located within Township 2 South, Range 2 East, Section 31 and is documented on Clackamas County Assessor plats 2-2E-31, 2-2E-31BA and 2-2E-31BD.[1]

Other than the Willamette Falls Dam itself, the project area is comprised of two generally flat shelves that flank the channel of the Willamette River, with the buildings on either natural bedrock or supported by tall stone, concrete, or other pilings that have encroached upon and narrowed the original river channel during more than a century of industrial development of the site.

Resources immediately adjacent to the Industrial Area include downtown Oregon City and the former West Linn City Hall. Highway 99 (the Pacific Highway) lines the Oregon City side of the river and connects West Linn and Oregon City via the Willamette River (Oregon City) Bridge, a 745 foot concrete arch structure built in 1922. The city of West Linn, successor to Linn City which originally stood within the project area on the river bank proper, traces its history to the 1840s and was renamed West Linn in 1854. Oregon City, on the east of the project, was laid out by John McLoughlin in 1842 and was first settled in 1829. The Willamette Falls, the focal point that resulted in settlement on both sides of the channel, is generally reckoned as one of the earliest and longest inhabited areas of Euro-American settlement in the Pacific Northwest

PHYSICAL DESCRIPTION [CONTINUED FROM PAGE 1]

The following itemized catalog of the primary built resources within the Willamette Falls Industrial Area is intended to briefly document its major built elements and their development history. All "buildings" as defined by the National Park Service for the evaluation of historic resources are included, as are major or clearly identifiable "structures." The nature of the site, where each inter-connected portion of the system plays an intrinsic role in the generation of electricity and the manufacture of paper products, exhibits associations between individual elements that are 1) hard to delineate and 2) often combine both historic and non-historic resources into what now functions as a single entity. These aspects of the site significantly complicate the normal process of documenting specific individual elements, particularly within the paper mill portions of the area. With that stated, the built resources of the Willamette Falls Industrial Area are documented individually, beginning and the dam and heading in a northerly direction along the West Linn (western) side of the channel and then crossing the river to the northern entrance to the Oregon City (eastern) side of the project at Main and 5th streets, then proceeding southerly through the Blue Heron project to the powerhouse site at the southeastern corner of the dam. Resources are identified by a site number keyed to the project map (attached), name, and year of construction. Standard National Register evaluation terminology (*Historic Contributing, Historic, Non-Contributing and Non-Historic, Non-Contributing*) are included in the item header to ease review.

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[1] The project includes multiple tax lots with the entire FERC license area assessed by the State of Oregon Department of Revenue. Tax lots identification numbers within the license boundary include TL 600 (Abernethy Island continuing to the tailrace within the Blue Heron development), 702 (the West Linn log handling area), 700 (Sullivan Plant and portions of West Linn mills), 701 (extreme northern portion West Linn Mills), 800 (the Willamette Locks), and 900 (the West Linn Paper office and other portions west of the Locks). Additional properties within the Blue Heron plant north of the tailrace are documented on Assessor Plat 2E-31BD. Since most of these tax lots bear little connection to the built resources, containing portions or all of more than a single building, they have not been used as a reference in this document. Please refer to the attached project map for a graphic description of the study area.

1. **WILLAMETTE FALLS DAM**:[2] Built: **1943**
Evaluation: **Historic Contributing**

The earliest attempts to harness the power of Willamette Falls for industrial purposed reportedly occurred in the 1830s at the direction of John McLaughlin. Various small timber crib dams and structures were apparently connected to series of saw, flour, and woolen mills over the next five decades. Between 1889 and 1890, in connection with its plan to develop a pulp mill on the West Linn side, to be built upon land leased from the Willamette Transportation and Locks Company, the Willamette Pulp and Paper Company "..constructed a timber crib dam on the westerly side of the river extending some 800 feet from the wall of the canal and locks across the main channel of the river to the head of the Falls" (PGE, 1957:Q3) Two years later, in 1892, the Willamette Falls Electric Company, in preparation for the construction of what would become Station B [now the T. W. Sullivan Hydroelectric Plant], constructed a dam spanning the entire river, beginning at the bulkhead of Station A, on the east (Oregon City) side of the channel and continuing around the falls and then over the top of the earlier Willamette Pulp and Paper dam. "This latest section of timber crib dam was approximately 950 feet in length and built sufficiently far upstream from the crest of the falls to serve as a coffer dam when a concrete dam was built later" (PGE, 1957:Q4).

In 1907 the timber crib dam was replaced by a new concrete structure that spanned the entire river. "Fifty thousand dollars has been expended by the Portland Railway Light and Power Company in the construction of improvements at the falls of the Willamette that will last for all time. Work was started last May on a new concrete wall, forming the headworks for the basin, and this is now practically complete" (*Oregonian*, 26-August-1907, 8:1). The 1907 dam was itself improved and expanded several times over the next two decades.

> A flood during January 1942 washing out a 160-foot section of the Willamette Falls dam on the east side of the falls and extending northerly from the old Station A plant...the original parts of the flood-battered dam consisted of timber bents faced with heavy plank...Parts of this structure were washed out in 1923. The dam was then reinforced with rock-filled cribs on the downstream side. In 1935, the top was raised and additional cribs were added on the downstream side...For PGE, the Gilpin Construction Company built a cofferdam across the basin to dewater the construction area. In March 1943 the rock bed of the basin was exposed, revealing a millrace excavated in the 1830s for the venerable Dr. John McLaughlin to serve his waterwheel-powered flour and sawmill at the lower end of the basin area. A new dam of about 875 feet in length and 25 feet in height was constructed of concrete with flood spillway sections provided with stoplogs. The spillway piers supported a bridge connecting the various mill buildings of the Hawley Pulp and Paper Company...[*now Blue Heron*] (Griesser, 1982:181).

This 1943 concrete dam, with subsequent repairs and maintenance, remains in use today and serves as the connecting feature that supports the individual hydroelectric and paper-making operations that occupy the Willamette Falls Industrial Area detailed below.

WEST LINN [WESTERN] BANK

2. PGE Substation Built: 1930c/1990s
Evaluation: Non-Historic, Non-Contributing

An outdoor-type substation, portions of this element may date from the 1930s but were extensively rebuilt in the 1990s.

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[2] To aid use of this document individual resources determined to be of historic significance are formatted as "**RESOURCE NAME**" while non-historic and non-contributing resources are formatted as "resource name"

3. **WATER TREATMENT PLANT** Built: 1934
Evaluation: Historic Contributing

This concrete volume consists of a large multi-story lower portion with an open tower above. Built on the bluff, to the west of the main channel (along Willamette Falls Drive), the water treatment is connected to the main portion of the West Linn Paper Company plant via a suspended link that crosses the navigation channel of the locks. According to company records, the Water Treatment Plant was constructed in 1934 and while somewhat altered, retains sufficient integrity to relate its design and use during the historic period.

4. **LOG "HAUL" OR LOG BUNDLE HANDLING SYSTEM** Built: 1949, 1961
Evaluation: Historic Contributing

This steel and wood system was formerly used to bring logs into Mill A and the grinder rooms as the first step in the manufacture of pulp and paper products on the West Linn side of the channel. "Log Hauls" in this area are reported as early as 1889 and the present system apparently dates from the late 1940s, as modified. "At up river log dumps the company accumulated logs ranging from eight to fifty feet long. There logs were scales and bundled into 45,000 pound rafts for towing downstream to the log pond south of Mill A. The bundles were separated and workers used pike poles to guide logs into a conveyor serving the sawmill. After 1961, a new powerful electric hoist lifted the logs from the pond to a newly built sorting deck, where they were mechanically sorted and sent to the mill" (Stein, 1997:13). Although modified after the historic period, the log haul area represents an integral element in the significant pulp manufacture process and is considered a contributing element in the industrial character of the project.

5. **MILL A/SAWMILL** Built: 1951-52
Evaluation: Historic Contributing

The present Mill A, not to be confused with the original "Mill A," was constructed in 1952 of a steel framework with corrugated metal siding, apparently following the demolition of an earlier wood-frame sawmill that stood on this approximate site. This feature was previously determined eligible for listing as an element of the Mill A/Grinder Room Complex. (See Stein, 1997)

6. **GRINDER ROOM #2** Built: 1905
Evaluation: Historic Contributing

Built by Crown-Columbia, Grinder Room #2 is the oldest grinder room in the Willamette Falls Industrial Area. "It is an essentially one-level space extending approximately 112 feet from east to west and 192 feet from north to south...A concrete dam forms its southern and eastern walls. Its northern and western walls are timber-framed with wood siding" (Stein, 1997:11). The Oregon State Historic Preservation Office has previously determined that Grinder Room #2 is eligible for listing on the National Register of Historic Places.

i. **GRINDER ROOM #2 GENERATOR ROOM** Built: 1907, modified by 1920
Evaluation: Historic Contributing

"For the generation of electrical power Crown-Columbia in 1907 erected a separate all-concrete Generator Room northeast of Grinder Room Two. Massive walls protected the generators from high water during the annual river rises....Two adjoining and slightly offset sections make up the Generator Room as it is today. Sometime between 1909 and 1920 the company built a Generator Room annex directly west of the original one...and duplicated its massive concrete wall construction..." (Stein, 1997:11) The Grinder Room #2 Generator Room was determined eligible for listing concurrently with the Grinder Room itself.

7. **GRINDER ROOM #3** Built: 1920
Evaluation: Historic Contributing

Built on the site of the original Grinder Room 3 as erected by Crown-Columbia in 1909, this larger building stands east of the generator room. "Grinder Room #3, made of reinforced concrete, has a steel truss roof extending a few feet above the top of the dam. Along its single level, it covers an area 100 feet from east to west and 156 feet from north to south....Subsequently, Crown-Willamette constructed a Screen Room above portions of the Grinder Room Three and the penstocks leading to the Generator Room turbines...Built of reinforced concrete with a steel truss roof, it covers an area

approximately 235 feet from east to west and 82 feet from north to south" (Stein, 1997:12). The lower portions of the screen room apparently include elements of the original Mill A (not to be confused with the above) although the exact relationship between this structure was not fully determined. Grinder Room #3 was determined eligible for listing on the National Register concurrently with Grinder Room #2.

8. **STATION B** [T. W. Sullivan Hydroelectric Project] Built: 1893-1895, modified 1953
Owner: Portland General Electric Evaluation: Historic Contributing

The T. W. Sullivan Plan is a shallow u-shaped, multi-story, volume. The original 1893-1895 portion of the building is of poured in place concrete, scored to appear as coursed stone, with cast detailing and other decorative elements. "The construction of the station will be of concrete, iron, steel, brick and tile — not a particle of wood" (*Morning Oregonian*, 30-January-1893). Station B went into commercial operation in December 1895 with two generating units and third was added in January 1896. Additional units continued to expand the capacity of the plant until by 1903 Station B's output was 5,730kW, by far the largest element in the company's system, and provided the majority of power to the City of Portland until augmented by the completion of the Faraday Powerhouse, on the Clackamas, in 1907. An final addition occurred in 1924 when Unit 9 was replaced with a more modern vertical generation unit. (PGE/EDAW Team, 1998:16)

By the end of World War II Station B had been in operation for more than 50 years and, still using some of the industry's earliest equipment, was woefully out-of-date. "A comprehensive analysis indicated an installation of 12 modern propeller-type turbines...would increase peak generating capacity to 15,000 kW from the former maximum of 5,000 kW (Greisser, 1982:111). In February 1952 the plant was closed for rehabilitation and modernization. Major elements of this 1953 project included the installation of twelve new generating units, with the 1924 Unit 9 retained, and the installation of a new higher capacity gantry crane. To accommodate the crane and the larger generation units, the original gable roof of the powerhouse was removed and a new metal-framed volume added 14 feet to the building's overall height. This upper addition is clad with a gray-colored corrugated asbestos product called "Transite." It was likely during the 1953 renovation that the original arched top windows were removed and replaced with the present metal-sash industrial lights. On June 29th 1953 Portland General Electric Vice-president in charge of Operations George E. Sullivan formally re-dedicated Station B as the "T. W. Sullivan Plant" in honor of his father, its designer. In 1995 Hydro Review Magazine made the T. W. Sullivan Plant its first inductee into the *Hydro Hall of Fame*. Only one hydroelectric plant in the United States, the 1892 Vulcan Street Hydroelectric Central Station in Appleton, Wisconsin, pre-dates the construction of the Sullivan Plant and remained in operation as of 1998.

9. Fish Ladder and related facilities Built: 1966-1971
Evaluation: Non-Historic, Non-Contributing

The first fish ladder at Willamette Falls, reportedly one of the first such features in Oregon, was built in 1884-1885. The present ladder, the latest the series of fish-passage features located at the Falls, was completed in 1971 and designed by Cooper and Rose & Associates. "Planning for the current facility began in 1957 and proceeded in three phases: the first phase work began in 1966 and the final phase was completed in 1971 (PGE, 1997). The fish ladder is owned and operated by the Oregon Department of Fish and Wildlife (ODFW) and has three entrances inside the horseshoe of the falls and one inside the T. W. Sullivan tailrace. (PGE/Harza, April 2001). A fish counting station is located on the western side of the dam, near Grinder Room No. 2.

10. **STEEL BRIDGE** Built: 1913
Evaluation: Historic Contributing

This steel truss bridge connects Mill A with the portion of the plant to the north, spanning the outlet bay between Moore's Island and the expanding West Linn bank. The bridge is apparently that designed by Pacific Construction Company for the Willamette Pulp and Paper Company in 1913 and built soon thereafter. "We should make this bridge of sufficient strength to carry all pipes now running between our pulp and other mills, including the V flume, also for present pulp conveyor and all necessary handling of freight" (McBain, letter to T. W. Sullivan, 26-April-1913).

11. **MILL B/BOILER HOUSE (STEAM PLANT)** Built: 1923
Evaluation: Historic Contributing

Located to the north of the Mill A complex and separated from that portion of the paper plant by the T. W. Sullivan Hydroelectric Plant, Mill B/Boiler House, also called the "Steam Plant," contains multiple elements related to the paper production processes. Historic images show that this area was originally a series of small wood-frame, gable roof building, all presumably demolished for the construction of the present concrete volume in 1923, replacing an earlier and similarly designated structure (Stein, 1997:8). Today Mill B/Boiler House is a large multi-story concrete volume with industrial-type metal sash windows that houses numerous uses, including the boiler or steam plant, as well as several maintenance and engineering related shop spaces.

12. **MILL C** Built: 1925c
Evaluation: Historic Contributing

The first volume on this location, also known as Mill C, was constructed on this site in 1891 as the Willamette Pulp and Paper Company's Sulfite mill. While not entirely clear, the present concrete volume was clearly in place by the 1940s, replacing an earlier building that stood at least through 1911, when Sanborn Fire Insurance Maps document it as housing four paper machines and a pulp beater. This, earlier, building was comprised of two major gable volumes with prominent monitors that ran perpendicular to the locks, with a single gable volume that ran parallel to the river forming the eastern end. The monitors, in particular, aide in locating the building within available photographs.

The present Mill C structure, a multiple story concrete volume, is dated circa 1925, related to a period of expansion at the West Linn site. It does not appear to have been a part of the massive post-war construction project but can not be more specifically dated at this time.

13. **MILL K** Built:1919
Evaluation: Historic Contributing

This large concrete mill was constructed in 1919 under the direction of Harry Baxter, a long-time Crown Paper employee who began working at the West Linn mill 32 years earlier, having overseen the construction of the wood frame structures removed to make way for Mill K. "the new mill when complete will be known as Mill K and will extend from the north end of Mill C to Mill F. The plans have been well designed by Chief Engineer Frank F. Sullivan" (*Making Paper*, Dec 1919:28).[3] "The building is 439 feet in length and 60 feet in width...The building is well constructed for light and ventilation. Seventy-eight windows will be installed in the east side, overlooking the Willamette River, and fifty-six in the west..." (*Making Paper*, Mar 1920:32). Today Mill K houses Paper Machine #33 and various other uses.

14. **MILL K BLEACH PLANT** Built:1946
Evaluation: Historic Contributing

Built as an extension to Mill K during Crown-Zellerbach's massive post-war development program, the bleach plant is a large five story concrete structure and was built by L. H. Hoffman Company, of Portland. The structure is 82 feet by 106 feet is size, all reinforced concrete with an irregular window pattern. A transite panel covered addition to the east side is apparently an addition (undated) to the original structure. The Mill K Bleach Plant remains the tallest single element of the West Linn development.

15. **MILL J:** Built: c1895
Evaluation: Historic Contributing

Mill J, a single-story wood-frame building with 12/12 wood sash windows rises from concrete and stone foundation within the center of the West Linn development. Although not entirely clear, Mill J was probably built during the late 19th century by the Crown Paper Company as an element in its early development of the paper-making industry on this side of the channel. Constructed in typical late-19th

[3] Engineer Frank Sullivan was the son of T. W. Sullivan, longtime PGE employee for whom Station B was renamed in 1953. (See Resource #8).

industrial form, it is hard to distinguish Mill J from the several similar buildings in available period photographs as the designation "Mill J" does not appear to have been applied to the structure until significantly later. In 1889, for example, construction of the new sulphite mill of the Willamette Falls Pulp and Paper Company was described as "...the work to be of stone to above the high water mark, above which the structure will be of wood...a part being but one story. (*Oregon City Enterprise*, 5-Sept-1889). While it is not clear when Mill J was actually completed or what its original purpose may have been, the building, prior to the expansion of the sea wall to create additional land area, is clearly visible adjacent to the Willamette River is several early 20th century postcard views (see attached images), which were mailed in 1907 and 1908.

Mill J seems to be one of the oldest surviving paper-related structures in the Willamette Falls Industrial Area, probably dating to the late 19th century. Essentially unused, Mill J. today contains piping and various conduit that connect other, functional, portions of the operation.

16. **MILL F:** Built: 1946
Evaluation: Historic Contributing

This three-story steel-reinforced concrete volume was an element of Crown-Zellerbach's huge post-WWII modernization and expansion program. "Mill F, a processing plant,...will be 275 feet by 180 feet, three stories high,...with a steel truss roof which will give a huge room without other support" (*Oregonian*, 1-January-1946). L. H. Hoffman, of Portland, was the contractor and the building was designed by the Central Engineering Company, an affiliate of the Crown-Zellerbach company. Mill F, with large banks of industrial metal sash windows, as well as glass block, remains one of the largest single elements of the West Linn development.

17. **MILL D**: Built: c1907, rebuilt in 1946
Evaluation: Historic Contributing

Mill D is shown on this site in its original form as early as 1907 according to available historic images and was likely built shortly after the turn of the century by the Willamette Pulp and Paper Company. *(See Historic Image, Nos. 4 & 5)* In a April 1911 map prepared by T. W. Sullivan Mill D was identified as "W. P. & P. Co's New Paper Mill" and the structure is clearly visible in the 1911 Sanborn Fire Insurance Map of the area. One of the area's first "modern" concrete structures, Mill D has large rounded-corner insets framing its huge banks of industrial glazing, a feature that helps identify the mill throughout the period.

As one of the area's first concrete structures, Mill D helped establish the basic architectural model for the majority of the papermaking-related development on the West Linn side throughout the remainder of the historic period. In 1946 the structure was rebuilt and enlarged during Crown-Zellerbach's post-WWII construction program (*Oregonian*, 1-January-1946, 1:3). The most notable alteration was the extension to the north, now designated as the "Coating Plant," a large paneled volume that sits immediately adjacent to Mill D. A small "gable" pent also appears to a later, although undated, addition.

18. **OLD BOILER PLANT**: Built: c1900, pre-1909
Evaluation: Historic Contributing

Although not specifically dated, this structure was likely constructed around the turn of the century as the primary steam plant of the Willamette Pulp and Paper Company operation. In 1911 Sanborn Fire Insurance Maps of the area document the structure on the site and describe it as an "iron building, corrugated metal siding." The old boiler plant retains its large brick boilers with cast iron doors and fitting as well at three large riveted iron stacks. The metal structural system, now shorn of its "corrugated metal siding" rises from a concrete foundation. Long abandoned, the old boiler plant is no longer a functional or necessary element of the papermaking operation but remains one of the areas oldest structures and is associated with the early industrialization of the Willamette Falls area.

19. **OIL STORAGE TANKS**: Built: 1946c
Evaluation: Historic Contributing

These large storage tanks, two located immediately north of the Mill D "Coating Plant" and two larger tanks located at the northernmost point of land just east of the Willamette Locks, are not specifically

dated but are the latest in a long series of such features located in this area. The coating plant tanks likely date from 1946 and the construction of this portion of Mill D. The oil tanks at the northern end of the canal are likely older, possibly being the same as those depicted in the 1911 Sanborn Map, but have not been specifically dated.

20. **UNUSED OIL STORAGE TANK**: Built: pre-1946
Evaluation: Historic Contributing

This large steel tank, located on the western side of the northern end of the canal, is nestled into the slope of the bank that rises to West Linn. Flat-roofed and built of rolled steel plates, the tank is currently unused and of uncertain date but seems likely to have been constructed prior to the end of the historic period.

21. **WILLAMETTE FALLS LOCKS AND WEIGHMASTER'S OFFICE**: Built: 1870, 1916-1921, 1941
Evaluation: Historic Contributing

The locks at Willamette Falls were begun in the early 1870s and opened in 1873. First developed by the Peoples Transportation Company, through a series of acquisitions this transportation corridor came under common ownership with the companies that developed the initial hydroelectric project at the Falls and were operated by these various predecessor corporations to Portland General Electric until 1915. At that time the U. S. Army Corps of Engineers purchased the locks and retains ownership today. The Willamette Falls locks and its related features were listed on the National Register of Historic Places in 1974 and have subsequently been designated as a State Historic Civil Engineering Landmrk (US Army Corps of Engineers, 1996). The wood-frame Weighmaster's Office is now used as a museum and historical information center. A non-historic office building housing Army Corps offices is a non-contributing element within the project.

22. **MAIN OFFICE BUILDING**: Built: 1919
Evaluation: Historic Contributing

A multi-story ell-shaped wood-frame building, the main office of the West Linn Paper Company is located on the western side of the upper canal and was apparently built in two phases, the first circa 1919, probably in connection with the construction of the Crown-Willamette Inn Annex, a similarly designed structure (*Making Paper*, 1919:28). Long used as the office of the various paper companies that have operated on the West Linn side of the river, the Main Office Building continues to serve in that function for West Linn Paper today. The design is notable for its two gabled covered porches face to the west, finely detailed in a bungalow-inspired fashion with projecting rafters and pinned mortise and tenons at the paired support posts. Exterior siding is horizontal wood and windows are predominately 2/2 wood sash with some later aluminum sash modifications on the first floor. An addition, undated but apparently completed prior to 1950, extends from the SE corner of the main volume, creating the present "ell."

OREGON CITY [EASTERN] BANK

23. Corporate Offices [Former Post Office] : Built: 1932, modified 1970s
Evaluation: Non-Historic, Non Contributing

Originally built in 1932 as the Oregon City Post Office and designed by the noted Oregon architectural firm of Knighten and Howell, this two-story building was originally a gabled volume with stripped classical detailing. It was substantially remodeled and modified to its present appearance in the 1970s following purchase for use as the corporate offices of Publishers Paper Company. While apparently incorporating some elements of a historic building, the present volume has been so thoroughly altered that the result maintains virtually no connection to its original design and is accordingly considered non-historic.

24. Security/First Aid Building: Built: c1970s
Evaluation: Non-Historic, Non Contributing

A small single story masonry building, this structure was presumably built in the late-1970s/early 1980s following the removal of the early commercial structures that stood on this site. The present structure has no historic significance.

25. Fire Station: Built: c1955
Evaluation: Non-Historic, Non Contributing

Built of concrete block, probably in connection with the construction of the filtration plant, this structure, has no historic significance.

26. Filtration Plant: Built: 1954, upper addition added
Evaluation: Non-Historic, Non Contributing

This concrete structure was completed in 1954 and later modified with an upper story. Although an integral portion of the operation, this structure does not have any historic significance at this time.

27. Truck Unloading Shed/"Green Monster" Built: 1960s
Evaluation: Non-Historic, Non Contributing

A large steel frame structure with metal siding, this multi-story shelter allows for the unloading of trailer loads of materials used in the manufacturing process. Known within the project a the "Green Monster" because of its paint color, this building has no historic significance.

28. Chip and Sawdust Silo: Built: 1960s
Evaluation: Non-Historic, Non Contributing

One more visible elements of the Oregon City papermaking operation, this large multi-story silo is no longer in use and has no known historic significance.

29. De-Inking Annex/Repulper Built: 1960s
Evaluation: Non Contributing

This metal-clad northern extension of the De-Inker [Mill B] was built circa 1960.

30. **MILL B [DE-INKER]:** Built: 1928
Evaluation: Historic Contributing

Constructed following the demolition of a Portland Railway Light & Power Company freight shed that long stood on this site at the corner of Main and 3rd streets, this multi-story concrete volume with multi-pane industrial steel sash windows was completed in 1928 and was originally designated as "Mill B." After 1916 this parcel was the only portion on the east side of Main south of Fourth that was not owned by the Hawley company (*Oregon City Enterprise*, 7-January-1916, 1:5). Company records indicate that Mill B, now known as the "De-Inker" was constructed in connection with the remodeling and expansion of Paper Machine No. 4 and the design of both buildings bears a striking similarity. As late as 1979 various drawings continue to use the "Mill B" name.

Mill B is approximately three stories height with cast concrete columns and a Moderne cornice detail. Glass block windows remain on the upper portion with the first floor panels being of plain concrete. Various ancillary uses (tanks, sheds, piping, etc.) are located around the perimeter of the structure.

31. **PAPER MACHINE NO. 4:** Built: 1916/1919, modified 1928
Evaluation: Historic Contributing

The initial construction of Paper Machine No. 4 was a part of a period of massive expansion by the Hawley Paper and Pulp Company. "1916 property was purchased and another building was built for another paper machine, No. 4. To make room for this building, the McLaughlin House was moved to present location." (Fosberg, 1967). In 1919 a new "North End" was constructed adjacent to the PM No. 4, that was known as the "Finishing House." This facility was built by Hurley-Mason. (See drawing #805-13, dated 13-June-1919, Blue Heron Plan Vault)

In 1928 Hawley replaced No. 4 with a new newsprint machine, which at the time was the largest and fastest of its type in the western United States. "We have just installed a new paper making machine...which operates at the rate of one thousand two hundred feet a per minute and will produce

120 tons of finished paper a day.. this new machine cost two million dollars" (W. P. Hawley, as quoted in Lockley, 1928:138). It appears from available blueprints that the building was enlarged in conjunction with the installation of the new newsprint machine. V. D. Simons, with offices in the Tribune Tower, Chicago, Illinois, served as the engineer in charge of the project.

The Paper Machine No. 4 building has been subsequently remodeled and expanded, with various additions that expand its original footprint. Still, the exposed concrete exterior, engaged columns, large industrial windows, and overall character of the structure remain intact, effectively relating its original period of development.

i. **NO. 4 WAREHOUSE** Built: 1919, as modified
Evaluation: Historic Contributing

The northern portion of this volume, now designated "No. 4 Finishing Room and Warehouse," was apparently built jointly with the Paper Machine No. 4 building and is of similar concrete construction and design. Subsequent additions expanded the volume to its present footprint at some point prior to the mid-1940s according to available photographs. Separated from that building by a covered rail spur, the northern end of the No. 4 Warehouse is a shipping shed, a later addition built following the closure of 3rd Street and the construction of the northernmost extension to the No. 4 building proper.

32. **MILL C/DIGESTER/SULFITE MILL:** Built: pre-1916, as modified
Evaluation: Historic Contributing

This wood-frame volume was built sometime prior to 1916, when it was reported that its "...size was being greatly increased" (*Oregon City Enterprise*, 22-June-1916, 1:5). The building was originally designated as Mill "C." The structure contains two basic halves, the "digesters" on the north and a sulfite plant on the south. Neither are presently in use. In the Meldrum Survey of the Hawley Pulp and Paper plant, prepared in 1926, the northern portion, 50' x 132' in size, was identified as "Digester and Wet Machine Building," while the southern portion, 40' x 107' in size, was in use as a warehouse. In 1951-1952 significant modernization of Mill C occurred, including the installation of new machines and equipment that likely occurred concurrently with exterior remodeling or alteration to the original structure (See Blue Heron Paper Company, Photo Negatives 3859-3867 et seq.). The Sulfite Mill, apparently the southern portion of the structure, was closed in 1983.

The Mill C/Digester is a large transite-clad volume approximately five stories in height with a monitor-like roof. The southern, "sulfite plant\warehouse" extension in approximately three and half stories in height, with a modified shed roof. The footprint of the building is irregular, following the access street on the west side.

33. **MILL D WAREHOUSE:** Built: 1916, 1945-1946, as modified
Evaluation: Historic Contributing

Originally providing storage space adjacent to Paper Machines No 2 and No. 3, the western portion of the Mill D Warehouse housed two uses according the 1926 Meldrum map of the Hawley Plant, with the western volume designated as "Mill #3 Warehouse," and the eastern portion identified as Paper Machine No. 2." It is not clear to what extent the present structure contains elements of either or both of these buildings although the general character of the structure seems consistent with the early development of this area in 1916. Mill D, and probably the warehouse, were modified in 1945-1946 according to information in the company archive. At some undocumented time the footprint of the Mill D Warehouse has been extended by the construction of the covered loading bay that now projects to Main Street.

34. Butler Building [Hawley Office/Spectator Site] : Built: 1970c
Evaluation: Non-Historic, Non-Contributing

Originally this location was the site of the Hawley company's corporate office, located in an early dwelling that was relocated in 1916 from across the street in preparation for construction of what Paper Machine No. 4. This historic volume apparently remained as office space at least through 1967 (Fosberg, 1967). The present metal storage building was built following its removal.

35. Paper Machine No. 2 [Site] : Built: 1910, 1982
Evaluation: Non-Historic, Non-Contributing

Paper Machine No. 2, built on this site circa 1910 (although possibly an adaptation of an earlier industrial volume on the site) was a brick volume with a gable roof (Smurfit Paper Company, *Timeline of Mill Site Events*, 1993). In 1982 the machine was shut down and sometime later the building was essentially dismantled. Today, while portions of the exterior brick walls and the concrete floor remain as an interior element of the surrounding volumes, the structure is largely gone.

36. **PAPER MACHINE NO. 3:** Built: 1912-1913, as modified
Evaluation: Historic Contributing

Although not specifically dated, Paper Machine No. 3 was added to the Hawley plant in 1912-1913 and this gabled masonry volume was likely built at that time. "In 1910, machine No. 2...was installed. This was followed by machine No. 3, which began produced toweling, poster paper and light weight wrapping paper in 1913" (*Oregon City Enterprise*, 20-August-1936, 31:3-6). With various medications and alterations this structure continues in its original use.

37. **MILL "O" [OREGON WOOLEN MILL ANNEX] :** Built: 1903, as modified
Evaluation: Historic Contributing

A multi-story wood-frame volume, this structure was almost certainly built as an "annex" to the Oregon City Woolen Mill which originally stood on this block facing Main Street. In July 1903 a fire destroyed several of the woolen mills structures and the following month the company announced its plans to rebuild. "Structures for the accommodation of the boiler room, dye house, pullery and other outside buildings will be erected. ...Most of the buildings will of wood and corrugated iron and the principal structure will be three stories high *and will be directly connected to the main building* (*Oregon City Enterprise*, 21-August-1903, 5:3, emphasis added). Mill "O," the subject volume, remained with the 19th century brick woolen mill structure itself was demolished in 1980-1981 (See *Oregonian*, 6-May-1980 and Letter to Donald Nicholson, in the Willamette Falls/Publishers Paper file, SHPO, 1981).

Mill O, a large multi-story wood-frame structure clad with mixed wood and corrugated metal siding as well as large multi-pane industrial sash windows, houses a variety of functions related to the present paper manufacturing operation. These include storage and warehouse space but most notable is the lab, located at the extreme western end of the building.

38. **OREGON WOOLEN MILL FOUNDATION WALLS:** Built: 1865, 1872, 1900 modified in 1981
Evaluation: Historic Contributing

i. Mill O Covered Storage
ii. Contractor Trailer parking area

This site was originally the location of the Oregon Woolen Mill Building, built in 1865 upon a foundation of tapered "Columbia River basalt" and then rebuilt following a devastating fire in 1872. "In the morning, all that remained was the masonry walls" (Olson & Sutton, 1975). Long operated with sporadic economic success, in 1980-1981 the woolen mill building was demolished however the massive random-coursed basalt foundation was largely retained, framing the sunken cellar area once occupied by this early building. Today these walls define an open parking area designated for "Contractor Trailer Parking," and a second area covered with a metal-framed standing-seam metal roof that is designated as "Mill O Covered Storage" area on project maps.

The walls of the Oregon Woolen Mill represent a portion of one of the oldest industrial structures in the Pacific Northwest and retain sufficient integrity to their original purpose to relate the scale and character of this early industrial development.

39. Shop Buildings — Built: 1960s, modified
Evaluation: Non-Historic, Non-Contributing

i. Carpenter Shop
ii. Millwright Shop
iii. Pipe Shop
iv. Auto Shop

This series of modest structures all appear to post-date the historic period and are so counted as non-contributing.

40. Mill H [Boiler Plant]: — Built: 1955-56
Evaluation: Non-Historic, Non-Contributing

During the historic period this portion of the Oregon City side of the industrial area was occupied by a large structure called "Mill H," operated by the Crown-Willamette/Crown-Zellerbach Paper Company, the entity generally associated with the West Linn side of the area. This structure, in place at least by 1926 continued in operation throughout the 1930s and into the 1940s. Eventually purchased by Publishers Paper Company, successor to the Hawley Pulp and Paper Company, in 1955 the original Mill H was substantial razed and remodeled to its present configuration, serving as the primary boiler location for Publishers Paper and its corporate successor operations.

41. **PAPER MACHINE NO. 1:** — Built: 1923
Evaluation: Historic Contributing

In 1909 Hawley Pulp and Paper Company's first paper machine was installed in this location in a building that had formerly been occupied by the Portland Flouring Mills. The Hawley company produced its first paper on this site in March 1909. "This machine and building in which it was located were completely destroyed by fire on October 8, 1923. The present building of fireproof construction was then erected and the new No. 1 machine installed..." (*Oregon City Enterprise*, 20-August-1936, 31:3-6).

42. **MILL #1 FINISHING ROOM/BLEACH PLANT** — Built: 1923
Evaluation: Historic Contributing

Probably the single most distinctive structure associated with the Hawley Pulp and Paper Company, this four story concrete structure is notable for its stepped parapet, engaged columns and the "Hawley Pulp and Paper" legend still visible under paint on the south-facing elevation. Built on the site of the original David Harvey mill, one of the earliest uses of the Willamette Falls for waterpower, the property was first converted to paper production in 1908-1909 with the establishment of the Hawley company. Burnt in 1923, the present concrete was built upon that site and is documented in the Meldrum map of the area, along with several smaller volumes to the north. The building is now generally referred to at "the Bleach Plant."

The Mill #1 Finishing Room was long the most photographed of the various structures at the Hawley Plant, its distinctive parapet standing out from the Pacific Highway and so the subject of several postcard views. Although the building has been somewhat modified, its original multi-pane sash windows replaced with the present large panes, the distinctive signage at the parapet remains visible beneath the present paint and the overall character is substantially intact.

43. Mill E [Offices] — Built: 1944-45, 1970
Evaluation: Historic, Non-Contributing

In the early 20th century this location east of the log pond remained vacant, bisected by the PRL&P rail line that continued through Main Street to downtown Oregon City. In the mid-1940s a sawmill designated as Mill E was erected here, processing logs that were floated into the pond. In the 1970s this structure was significantly modified and re-designed. Today Mill E houses a number of uses, most notably various maintenance shops and the mill offices. While built during the historic period, Mill E retains little visual character with its original design or function.

44. Clarifier — Built: 1967
Evaluation: Non-Historic, Non-Contributing

This large concrete-lined holding tank and processing unit is the first stage in the effluent system of the Blue Heron Paper Company system. Excavation begin in April 1967 and the clarifier was first used in September of that year.

45. **STATION A [MILL A] FOUNDATION**: Built: 1889, modified 1909, 1960s
Evaluation: Historic Contributing

In 1889 the Willamette Falls Electric Company constructed the first hydroelectric generation facility at the Falls on this location and in June 1889 successfully transmitted direct current power to downtown Portland, a distance of approximately 12 miles. "The small building from which this historic event originated was known as the Willamette Falls powerhouse, or Station A...This transmission of power is generally thought o the first ever long distance transmission of electricity in the United States" (PGE/Smurfit, Dec. 1998). In 1890 Station A was converted to AC, or alternating current, which would become the national standard for electrical use. In September of that year AC power was transmitted to Portland, again the first recorded long distance electrical transmission for commercial use in the United States. In 1897, after the opening of the huge hydroelectric facility on the West Linn side of the channel (Station B, now the T. W. Sullivan Plant), Station A was abandoned and some of its equipment relocated to Station B. For a short period Station A was leased to the Willamette Pulp and Paper Company. "It was subsequently leased to the Hawley Pulp and Paper Company, which replaced the vertical water wheels with horizontal wheels to be used for pulp-grinding purposes" (PGE, 1957). This conversion apparently occurred in 1909, as in January of that year Portland Railway Light and Power engineer T. W. Sullivan noted in a letter to Franklin Griffith, company president that "This morning I was...looking over the situation there and noticing that the Hawley Pulp and Paper Co's men were unloading cord pulp wood ...into our old Station A, I went over and into said Station A and found that the Paper Co. had the plant in operation making pulp" (Sullivan, 9-January-1909).

Hawley continued to use the Station A site as a part of their operation, renaming it "Mill A." The building was remodeled extensively in 1941 and again in 1943 and possibly in 1947 according to available records. Mill A, bypassed technologically with the development of Mill E, apparently remained standing but was little used after the 1950s. The facility was severely damaged in the 1964 flood and was later razed. Today, the massive concrete foundations and steel intakes and gates remain, located at the head of the log pond on the southern end of the Oregon City development.

46. **HAWLEY POWERHOUSE**: Built: 1916
Evaluation: Historic Contributing

Built in 1916 as a component of Hawley's major expansion, the Hawley Powerhouse is a rectangular wood frame structure with a massive concrete foundation that forms a portion of the forebay wall. Plans for the new plant, built by the Grace and Rassmussen Company of Portland, were announced in Spring 1916. "The pulp mill and generating plant will be located on the brink of the falls, near Station A. It will be a concrete structure..." (*Oregon City Enterprise*, 5-May-1916, 1:2). "All the concrete work is done ...on the...generating plant on the island near station A and much of the machinery is already in Oregon City and some is installed" (*Oregon City Enterprise*, 8-December-1916, 1:1).

The Hawley Powerhouse, (also known as the Smurfit Powerhouse, after a later corporate entity) continues to generate power and is a component of FERC License No. 2233. While somewhat modified, the basic structure of the powerhouse, including its generation equipment and the majority of its features, remains virtually as built.

HISTORIC CONTEXT

The Willamette Falls Industrial Area developed within several overlapping and related historical contexts, beginning with the settlement of the Oregon Territory and continuing through the development of the transportation corridor along the Willamette River, the operation of various water-powered industries around the Falls, the pioneer development of hydroelectricity in the Portland area, and ultimately the construction and operation of the pulp and paper plants that still largely characterizes the area. A complete contextual statement of the forces that helped create the present development of the Willamette Falls Industrial Area is beyond the scope of this document. In general, however, the Willamette Falls Industrial Area is based on a natural feature, the Willamette Falls. John McLaughlin, agent for the Hudson Bay Company in the Pacific Northwest, established his trading post in this general area in the 1820s and soon a small settlement, one of the first in what would become the Oregon Territory, was developed along the eastern shores of the channel. This community, Oregon City, grew dramatically with the opening of the Oregon Trail and the first large scale influx of settlement in the 1840s.

> "In 1844 Cincinnati and Chicago were little more than villages. San Francisco was a sleepy Spanish Fortress. Seattle was an Indian village with a fur trading post and Portland, although it had one house, was distinguished chiefly as the site of Sauvie's Dairy on Wapato Island. Oregon City was platted, had streets, two churches, the Pioneer Lyceum and Literally Club, mills, a ferry, and the beginnings of a fine apple orchard in the yard of the Methodist parsonage (Welsh, 1941:12).

In a era of waterpower, the industrial potential of the Willamette Falls in the 19th century was readily apparent. As early as 1829 McLaughlin had began development of a sawmill on the east side of the river. "I commenced making preparations to built sawmill...In the year 1832 I had a mill race blasted out of the rocks, from near the head of the island which Mr. Thurston calls Abernethy Island..." (as quoted in Welsh, 1941:6). Later developments at the Falls included expanded water-powered saw milling operations and, by the mid-1840s, a flouring mill as well. Virtually all early commentaries on the Willamette Falls note its value as a power source in the development of Oregon's industrial economy. As early as 1835,

> The opportunities here for water power are equal to any that can be named. There cannot be a better situation for a factory village than on the east side of the river, a dry, wide-spread level extends some distance, and the shores form natural wharves for shipping . . . I could hardly persuade myself that this river had for many thousand years, poured its waters constantly down these falls without having facilitated the labor of man (Parker, 1967[1838]:163).

As Oregon City grew on the eastern side of the Falls, Robert Moore platted a sister community, Linn City, on the channel's western bank. Moore's burgeoning community was largely destroyed by high water in 1861 and the land on the west bank remained for more than a decade, awaiting the development of the Willamette Falls Locks, a major transportation link in the development of the state.

The Falls, the vaunted and dangerous "end of the Oregon Trail," had long proved an formidable obstacle to between the populous Portland area and the agricultural and natural-resource rich interior. Attempts to create a navigable passage at the Falls had long been impeded by the monopolistic practices of the various entities that maintain portage rights around the Falls and sought to maintain control over wheat shipments from the interior to Portland. Eventually a collection of merchants and wheat growers succeeded in the development of system of locks, dramatically easing passage. "[T]he costly canal and locks paid off handsomely to wheat farmers and Portland grain brokers and commission merchants who had warmly celebrated their opening on January 1, 1873. Freight rates between the upper and lower Willamette Rivers immediately plunged 50 percent" (MacColl, 1988:155).[4]

Meanwhile, the hydropower potential of the Falls continued to gain notice and draw industrial development. In 1866 W. W. Buck established Oregon's first paper mill at Oregon City with $50,000 in capital. The mill started operation on January 12, 1867 (Adams, 1951:4). Buck's venture was short-lived, closing less than a year later, but the potential of establishing a papermaking center at Willamette Falls was clear. In 1883 the second paper-making venture at the Falls was begun on the east bank, under the name Willamette Falls Pulp

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[4] See resource No. 21, above, for the Willamette Locks, previously listed on the National Register of Historic Places.

and Paper Company, soon changed to Willamette Pulp and Paper Company. Production as a pulp mill began in October 1889 with output of 20 tons per day. Almost immediately construction on a second sulphite mill, capable of making a higher grade product, was begun under the direction of Thomas W. Sullivan, the company's superintendent of construction (Adams, 1941:11).

In the early 1880s the noted financier Henry Villard, who had gained control of the Willamette Transportation and Locks Company, incorporated into his Oregon Railway and Navigation Company, hired Swiss engineer P. Miescher to survey the hydroelectric potential of Willamette Falls (Coldwell, 1930:284). Following Villard's bankruptcy, Edward L. Eastham of Oregon City began to formulate a plan to produce hydroelectric power at Willamette Falls as the basis for a new industrial development. Toward that goal, Eastham methodically began to acquire the land and water rights on both banks of the river [and] established the Oregon City Electric Company. "By 1887 [Eastham] had practical control over Willamette Falls in all its aspects....On or about 1-November-1888 the company began generating electricity from the falls..." (Wollner, 1990:23-24). This plant, later called "Station A" stood on a small rocky island on the Oregon City side of the channel.[5]

In June 1889, after Eastham's company had merged with a Portland-based competitor to form the Willamette Falls Electric Company, the company successfully transmitted Direct Current (DC) power from Station A to downtown Portland. The transmission "...worked magnificently and conclusively demonstrated the fact that our city can be lighted successfully from the Falls," (*Oregonian*, 4-June-1889). The June 1889 transmission of power from Willamette Falls to downtown Portland, approximately twelve miles, is recognized as the first-ever long distance electrical transmission in the United States. In 1890, with the conversion of Station A to Alternating Current (AC), the company again made history when it successfully transmitted power from the Falls to downtown Portland. "This was another 'first,' — the first instance of long distance transmission of alternating current for commercial purposes in the United States" (Griesser, 1982:4).

As electrical development occurred, another paper mill was developed at the Falls, operated by the Willamette Falls Pulp and Paper Company, and located on the West Linn side of the channel. Production began in 1890 and was expanded in 1892 with the arrival of a new superintendent, Willard P. Hawley. The Willamette mill also expanded and by 1896 opened its No. 3 paper machine, said to the be first to be operated by electricity (Adams, 1951:13).

In 1892 the Willamette Falls Electric Company, operators of Station "A," the hydroelectric facility at Oregon City, and the Willamette Transportation and Locks Company, operators of the locks on the West Linn side of the Falls, merged and formed the Portland General Electric Company. At this same time a new and enlarged dam at Willamette Falls was completed. The new dam "...extended from bulkhead of Station A on the easterly side of the river to the head of the Falls and across the top to the section built earlier by Willamette Pulp and Paper Company. This latest section of timber crib dam was approximately 950 feet in length" (PGE, 1958:Q3-4).

The new dam added to the height of the waterfall, creating additional head, and therefore added substantially to the hydroelectric potential of the site. To take improved advantage of the falls, engineer T. W. Sullivan was asked to design a new generating plant on the river's west side. Sullivan, after having designed the works of the Willamette Falls Pulp and Paper Company plant, had been hired by the electric company to redesign Station A following its damage by flood in February 1890. Soon named Hydraulic Engineer for the Willamette Falls Electric Company, Sullivan retained that position in the newly formed Portland General Electric Company and would remain with each of its various successor firms until his death in 1940.

Construction for the new plant on the West Linn side of the channel, dubbed "Station B," began in 1893 and it went into commercial operation in December 1895.[6] Today, renamed the T. W. Sullivan Hydroelectric Project, the thirteen turbines of Station B still produce hydroelectric power at the Falls, representing the

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[5] See resource No. 45, above, for the history of Station "A" and its relationship to what eventually became "Mill A" of the Hawley Pulp and Paper Company.

[6] See Resource No. 8, above, for details on Station B and its history.

second oldest continuously operated hydroelectric project in the nation and the oldest west of the Mississippi.[7] The significance of the T. W. Sullivan Plant was recognized by its induction into the Hydro Hall of Fame, maintained by Hydro Review, an industry publication.

While PGE and its various corporate predecessors were expanding and updating electrical generation capacity at Willamette Falls, other entities were transforming the area into a pulp and papermaking center serving the entire west coast of the United States. The typical turn-of-the-century booster spirit found fertile ground at Willamette Falls and period publications referred to the area as either the "Niagara of the Pacific," in reference to the area's presumably untapped hydropower or as the "Lowell of the Pacific," based on the assumption that the already-in-place industrial development was the equivalent of that vaunted Massachusetts milling town.[8]

In 1908, after a series of financial difficulties impacted the Willamette Pulp and Paper Company operation on the west bank of the river, long-time plant manager Willard P. Hawley secured financing to start a new paper plant on easterly bank. "In 1908 I purchased the old Portland Flouring Mills at Oregon City. I also acquired their power rights" (W. P. Hawley, as quoted in Lockley, 1928:138-144). Hawley's company, the Hawley Pulp and Paper Company, along with the re-organized Crown Willamette mill on the West Linn side (soon to become Crown Zellerbach) established the Willamette Falls area as one of the most productive paper manufacturing centers on the Pacific Coast. In 1919 there were four paper mills and seven pulp mills in Oregon.[9] Of these eleven facilities, eight were located at Willamette Falls (Chamber of Commerce, 1924:15).[10]

Continual expansion and modernization, with peaks of activity in the mid-1920s and then again following World War II, allowed the two major papermaking entities at Willamette Falls to remain competitive. The early companies, both Crown Willamette and Hawley, underwent various corporate restructuring and sale after World War II. In 1948 the Hawley Pulp and Paper Company was sold and renamed Publishers Paper Company, owned and operated by Times-Mirror and the Chandler Family of the *Los Angeles Times*. In 1985 Publishers was sold to Smurfit Newsprint Corporation and most recently the plant was purchased and reorganized into the present operation, Blue Heron Paper Company. Similar corporate change has occurred on the western side of the channel as well. In 1928 Crown-Willamette, which had emerged from a series of various earlier companies, merged with the Zellerbach Paper Company and the West Linn mill became a part of the combined Crown-Zellerbach Paper Company, the largest such concern in the West (Stein, 1997:9). After Crown-Zellerbach was purchased by the James River Corporation in 1986, the company was restructured and the West Linn mill was purchased by the

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[7] The Vulcan Street Hydroelectric Central Station, in Appleton, Wisconsin, opened in 1882 and remained in operation at least as late as 1997. The Appleton Plant produces only a modest 12.5 kW of power, less than one-tenth the power output of Sullivan, which is by far the largest producing 19th century hydroelectric plant identified as still in operation in the United States. (See *Hydro Review*, October 1997:34)

[8] See, for example, Gaston "From a very early time Oregon City was called the Lowell of the Pacific coast. The first flouring mills were at the falls, and the first sawmills" (Gaston, 1911:671). An 1894 publication of the Oregon City Board of Trade was entitled "Willamette Falls: The Niagara of the Pacific" and noted that "....when a great water power like that of the Willamette falls at Oregon City is made available it gives to the place where it is turned to use unmistakable promise of growth" (Board of Trade, 1894:1).

[9] These statistics refer to the function of the mill, with each site typically containing more than one "mill" operation. The Oregon Pulp and Paper Company, in Salem, for example, operated a Sulphite pulp mill as well as wrapping paper mill, counted as two of the states nine production units in Lockwood's Directory of Paper and Allied Trades.

[10] The mills reported by the Industries Committee of the Portland Chamber of Commerce's "Report on the Paper and Pulp Industry," were the Lebanon, Oregon mill of the Crown Willamette Paper Company, the Crown Willamette Paper Company and the Hawley Pulp and Paper mills at Oregon City (at this time Crown Willamette operated mills on both sides of the river), the Oregon Pulp and Paper Company at Salem and the Crown Willamette Paper Company mill at West Linn. Of the state's total pulp production (both ground wood and sulphite) of 820 tons, the mills at Willamette Falls produced 720 tons, or 88%. The Crown Willamette Mill at West Linn alone produced 485 tons, or more than half the State's total production of pulp. The comparative role of Willamette Falls in paper production was equally impressive — of Oregon's total production of 503 tons, Willamette Falls mills produced all but 18 tons, or 96%.

Simpson Paper Company in 1990. Simpson closed the mill in 1996 and in 1997, under new ownership, the mill re-opened as the West Linn Paper Company, which owns and operates the plant today.

While somewhat less convoluted, the ownership history of Station B, the hydroelectric plant within the West Linn complex, has also undergone certain reorganization. Developed by the Willamette Falls Electric Company, corporate restructuring eventually transferred ownership of the plant to Portland Railway Light and Power Company, a mammoth entity that combined the assets of more than thirty predecessor companies in 1906. PRL&P itself was reorganized into what was known as the Portland Electric Power Company, or PEPCO, in 1924 and, finally, emerged as Portland General Electric, or PGE in the 1940s. In 1953 Portland General Electric fully rebuilt the generation equipment at Station B, replacing all but one of the project's thirteen turbines with more efficient ones, and extending its productive life. The project was renamed T. W. Sullivan, in honor of the company's pioneering hydraulic engineer and today continues as a valuable component of the company's hydroelectric capacity. Today, as the successor to a broad series of interests at Willamette Falls, Portland General Electric owns and operates the Sullivan Plant, the Willamette Falls Dam, and much of the land and water right in the area, leasing portions to the two paper companies, who themselves own buildings on PGE property as well as owning portions of the project outright. The various inter-connected leases and legal arrangements concerning the densely development Willamette Falls Industrial Area are the subject of voluminous legal documents that are beyond the scope of this document.

STATEMENT OF SIGNIFICANCE: (CONTINUED FROM PAGE 1)

The Willamette Falls Industrial Area, containing a multiple individual resources associated with the early development of hydroelectricity and the papermaking industry in Oregon, is one of, if not the oldest, continuously operated industrial site in the state. First developed in the 1830s as a sawmill, the Willamette Falls served as a focal point for the initial water powered industrial development in Oregon City and, with the development of "Station A," the first commercially viable hydroelectric generation facility in the state. In 1865 the availability of waterpower led to the development of one of Oregon's earliest woolen mills at Oregon City, the foundations of which remain and later, the development of the region's major papermaking center.

The Willamette Falls Locks, developed in 1873 by a predecessor corporation to Portland General Electric, were sold to the United States government in 1915 and are now owned and operated by the U. S. Corps of Engineers. The locks and their related facilities, lining the West Linn Paper Company and the Sullivan Plant, on the western side of the Willamette River, were independently listed on the National Register of Historic Places in 1974 and in 1991 were designated as a State Historic Civil Engineering Landmark by the American Society of Civil Engineers. (US Army Corps, 1996)

Station B, renamed the T. W. Sullivan Hydroelectric Plant in 1953, remains the oldest standing building in the Willamette Falls Industrial Area and continues to function as designed, generating 16 MW of hydroelectric power under Federal Energy Regulatory Commission License No. 2233. The T. W. Sullivan Hydroelectric Project is the second oldest continuously operated hydroelectric generation facility in the United States and was an original inductee to the Hydropower Hall of Fame.

While the manufacture of pulp and paper at Willamette Falls dates to the mid-19th century, the modern development of paper making facilities dates from the late 1880s with the development of the Willamette Falls Pulp and Paper Company facilities on the western river bank. Successful paper production began on the West Linn side of the river with the construction of the Willamette Pulp and Paper Company, eventually transformed into Crown Willamette Paper Company. Today, operated as the West Linn Paper Company, multiple buildings dating from the period of historic significance remain, continuing more than a century of industrial tradition. Across the river, on the Oregon City side of the channel, Blue Heron Paper Company continues to utilize buildings initially developed by the Hawley Pulp and Paper Company in the first two decades of the 20th century, also continuing the tradition of dense industrial use that characterize Willamette Falls Industrial Area.

The Willamette Falls Industrial Area, including the Willamette Falls Dam, the Willamette Falls Locks, and Grinder Room #2, Grinder Room #3, Station B (T. W. Sullivan Hydroelectric Project), Mills B, C, D, F, J, K, and numerous other structures and buildings on the West Linn side of the channel related to the paper

industry, as well as the Hawley Powerhouse, Paper Machine No. 1, Mill B, Paper Machine No. 4, Mills C and D, Mill O Annex and various other structures on the Oregon City Side developed by the Hawley Pulp and Paper Company, along with resources related to both the mid-19th century Oregon Woolen Mill and Station A, the first hydroelectric plant in Oregon , represents one of the oldest and most densely developed industrial areas in the state.

With strong associations to the early development of both hydroelectricity and the production of pulp and paper products, the Willamette Falls Industrial Area ***is significant under Criterion A*** for its role in the history of industrialization of Oregon. Certain structures within the complex, most notably Station B (T. W. Sullivan) are additionally significant under Criterion C, for their technological association with the development of hydroelectric power technology in the 19th century.

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SELECTED SOURCES:

Adams, W. Claude. *History of Papermaking in the Pacific Northwest*. Portland, OR: Binfords and Mort Publishers, 1951.

Board of Trade. *Willamette Falls: The Niagara of the Pacific*. Oregon City, Oregon, 1894.

Fosberg, Bob. "Papermaking in Oregon Started Right in Oregon City," *Oregon City Enterprise-Courier*, 29-April-1967, 8C.

Gaston, Joseph. *Portland Oregon: Its History and Builders*. Chicago: S. J. Clarke Publishers, 1911.

Griesser, Arthur H. *History of Portland General Electric Company 1889-1981*. Portland, OR: Portland General Electric, 1982.

Lockley, Fred. *History of the Columbia River Valley, Vol. II*. Chicago, IL: S. J. Clarke Publishing Company, 1928.

Lynch, Vera Martin. *Free Land for Free Men: The Story of Clackamas County*. Portland, OR: Artline Printing, 1973.

MacColl, E. Kimbark, with Harry Stein. *Merchants, Money and Power: The Portland Establishment 1843-1913*. Portland, OR: The Georgian Press, 1988.

Making Paper. (Employee newsletter of the Crown-Zellerbach Paper Company), misc. issues as cited in text.

Meldrum, D. T. *Plat Plan, Hawley Pulp and Paper Company*, June 1926 (Drawing on File at Blue Heron Paper Company).

Olson, Gregg and Sutton, Robert K. *Oregon City Historic Industrial and Commercial District*, National Register of Historic Places Nomination Form, 1975.

Oregon City Enterprise, misc. issues as cited in text.

Oregonian [Portland], misc. issues as cited in text.

Parker, Samuel. *Journal of an Exploring Tour Beyond the Rocky Mountains, Under the Direction of the A. B. C. F. M. Performed in the Years 1835, '36, and '37*. Minneapolis, Minnesota: Ross & Haines, Reprint Edition, 1967.

PGE. *Application for License Project No. 38*, Exhibit Q "History of the Water Power Development at Willamette Falls, 1-July-1957.

PGE. Fish Runs and the PGE Hydroelectric System, February 1997.

PGE/Smurfit Newsprint Corporation. *Initial Information Package for the Willamette Falls Hydroelectric Project, FERC N. 2233*. December 1998.

PGE/EDAW Team. *Westside Projects Cultural Resource Study: T. W. Sullivan Hydroelectric Project*. Portland, OR: Portland General Electric, April 1998.

PGE/Harza. *Preliminary Draft Environmental Analysis, Willamette Falls Hydroelectric Project*. (A Report prepared for Portland General Electric and Blue Heron Paper, Inc.), Portland, OR: Portland General Electric, April 2001.

Robley, R. R. *Portland Electric Power Company with its Predecessor and Subsidiary Companies, December 16, 1860 –December 31, 1935*. Portland, OR: Portland General Electric Company, 1935.

Smurfit Paper Company. *Timeline of Mill Site Events*, 1993 (as updated by Blue Heron Paper Company, 2001).

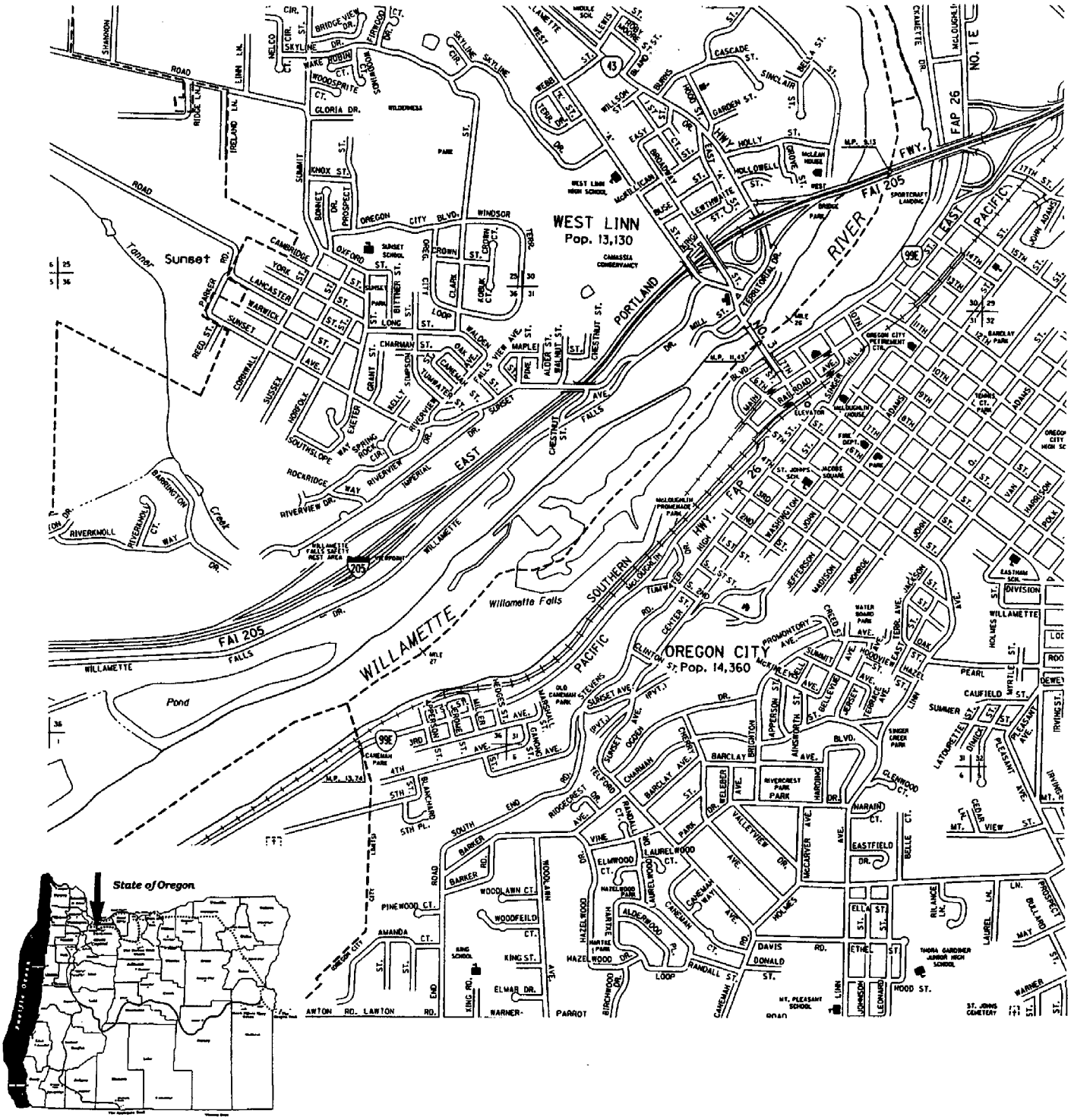
Stein, Harry H. *The Paper Mill at West Linn, Oregon 1889-1997: Hydropower, Sawmill and Grinder Operations*, (A Report for Simpson Paper Company). Portland, OR: Jacobs-Sirrine Engineers, April 1997.

US Army Corps of Engineers. *Willamette Falls Locks*. US Army Corps of Engineers, Portland District, 1996.

Welsh, William D. *A Brief History of Oregon City and West Linn, Oregon*. Portland, OR: Crown Zellerbach Corporation, 1941 (Fourth Printing, June 1952).

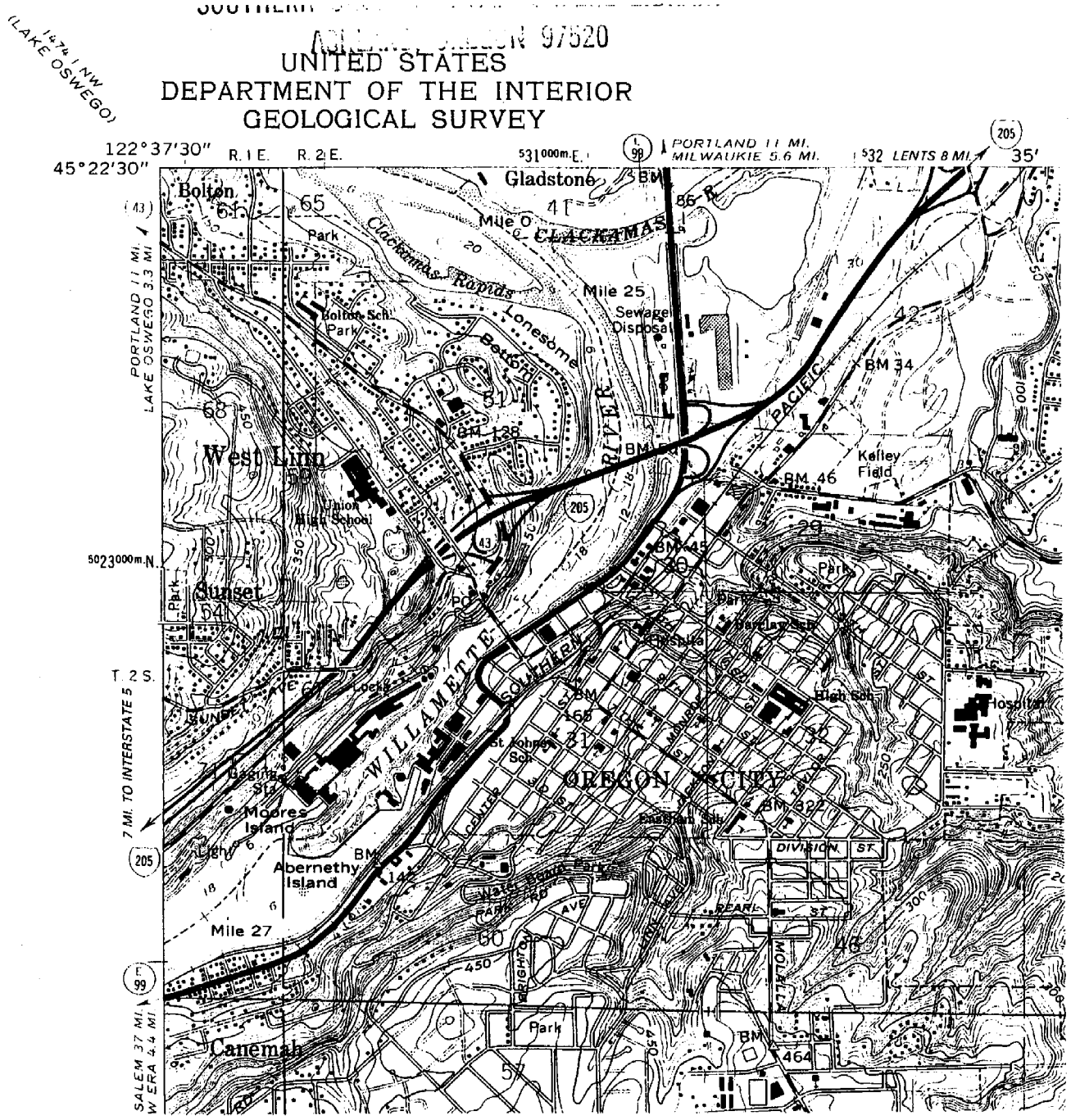
Wollner, Craig. *Electrifying Eden: Portland General Electric 1889-1965*. Portland, OR: Oregon Historical Society Press, 1990.

GENERAL VICINITY MAP



OREGON CITY AND VICINITY
Clackamas County, Oregon
Source: *Oregon State Highway Division, Sept 1987*

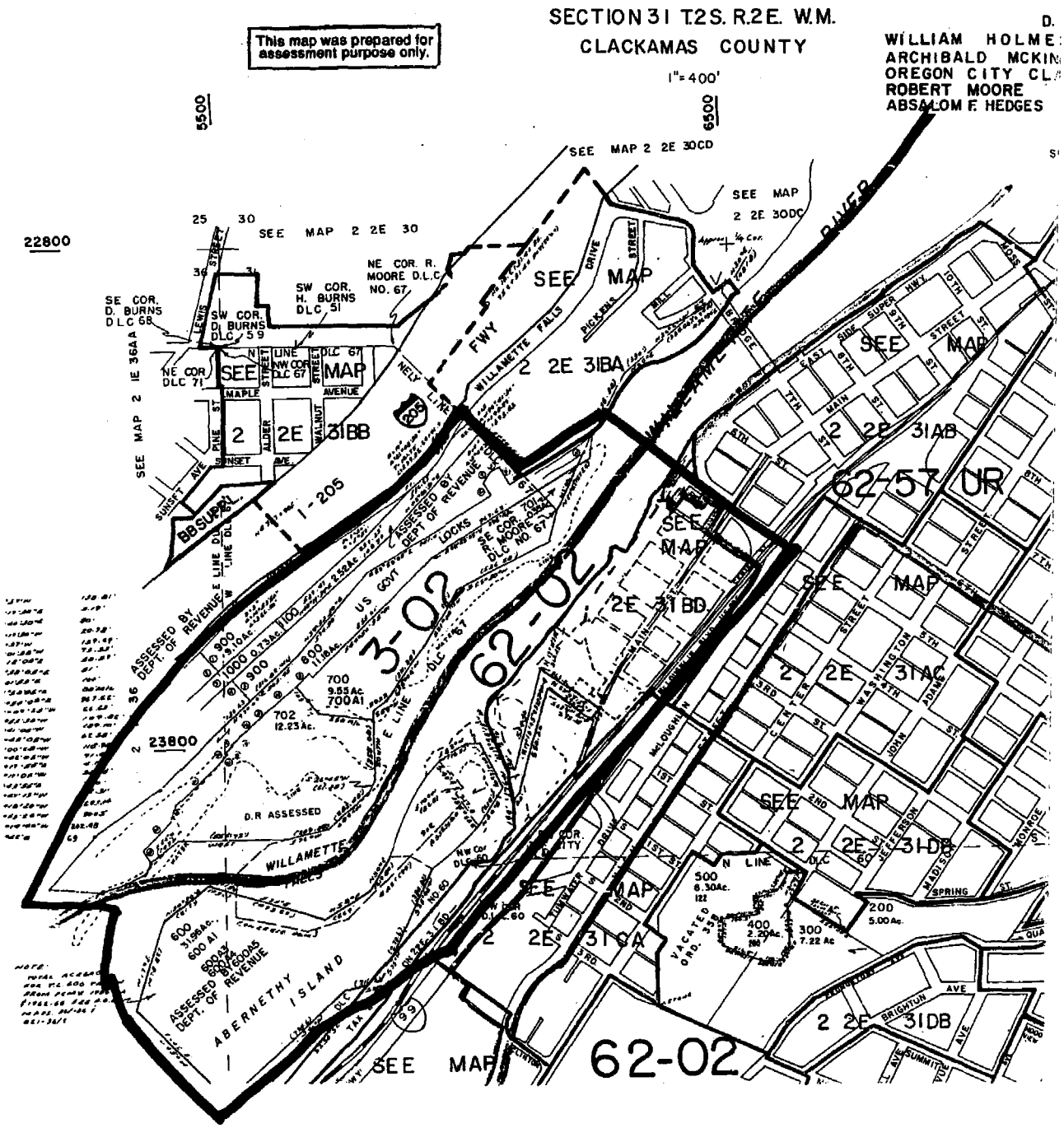
TOPOGRAPHIC MAP, PORTION



OREGON CITY, OREG.

Source: *United States Geological Service, 7.5 min quadrangle, 1961 (Photo-Revised, 1985)*

TAX LOT IDENTIFICATION



General Boundary of the
WILLAMETTE FALLS INDUSTRIAL AREA, CLACKAMAS COUNTY, OREGON
Source: *Clackamas County Assessors Plat 2-2E-31*

PHOTOGRAPHS:

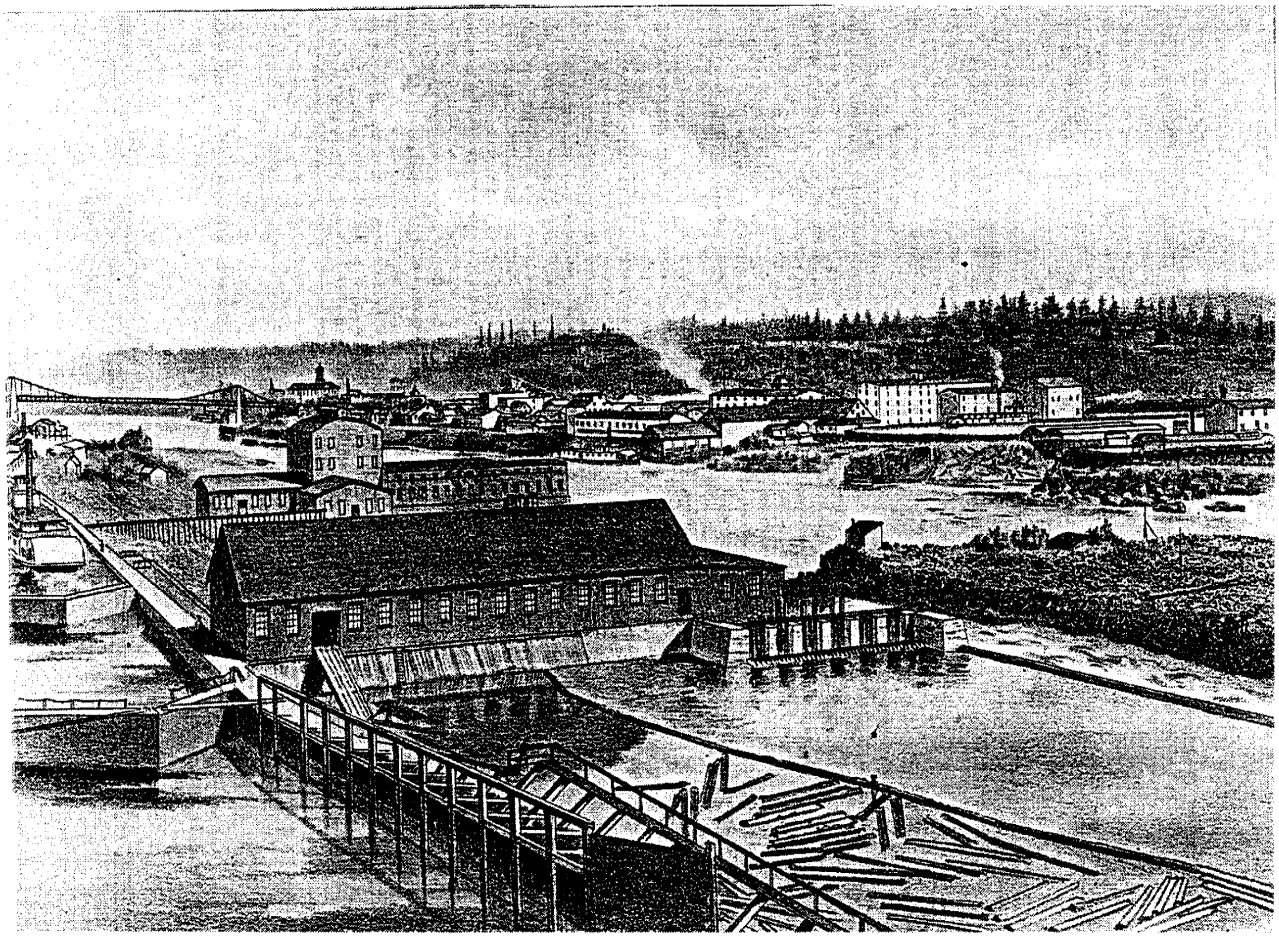


Photo 1. Historic Image
THE FACTORIES AT OREGON CITY, C1890
(Source: *The West Shore*)

PHOTOGRAPHS:

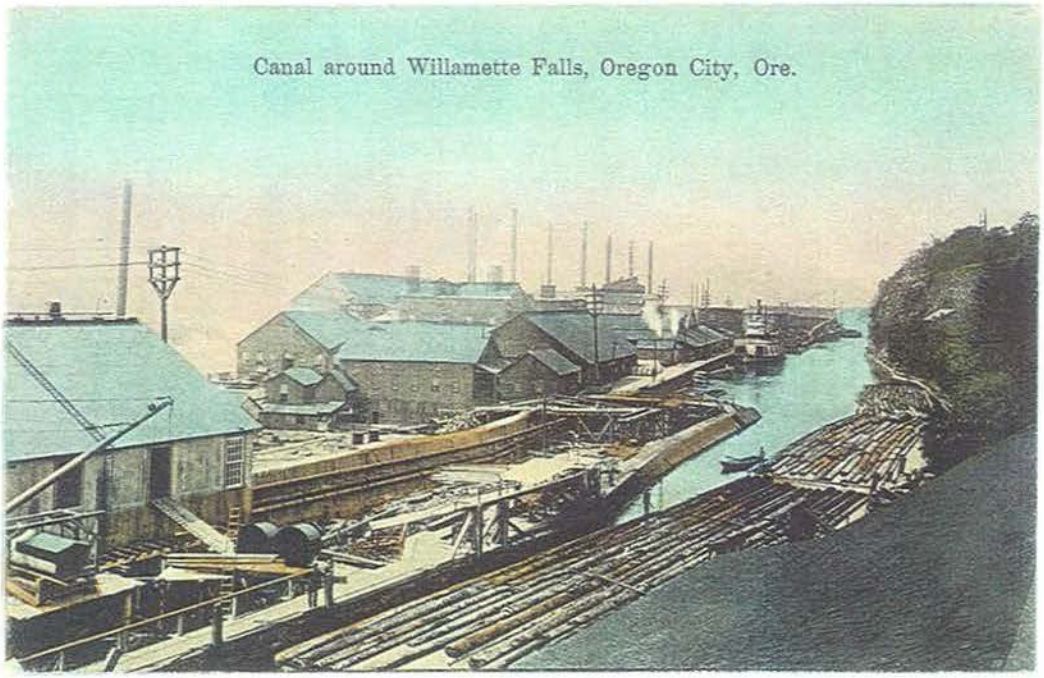


Photo 2. Historic Postcard Image
CANAL AROUND WILLAMETTE FALLS, OREGON CITY, c1900
(Source: *George Kramer Collection)*

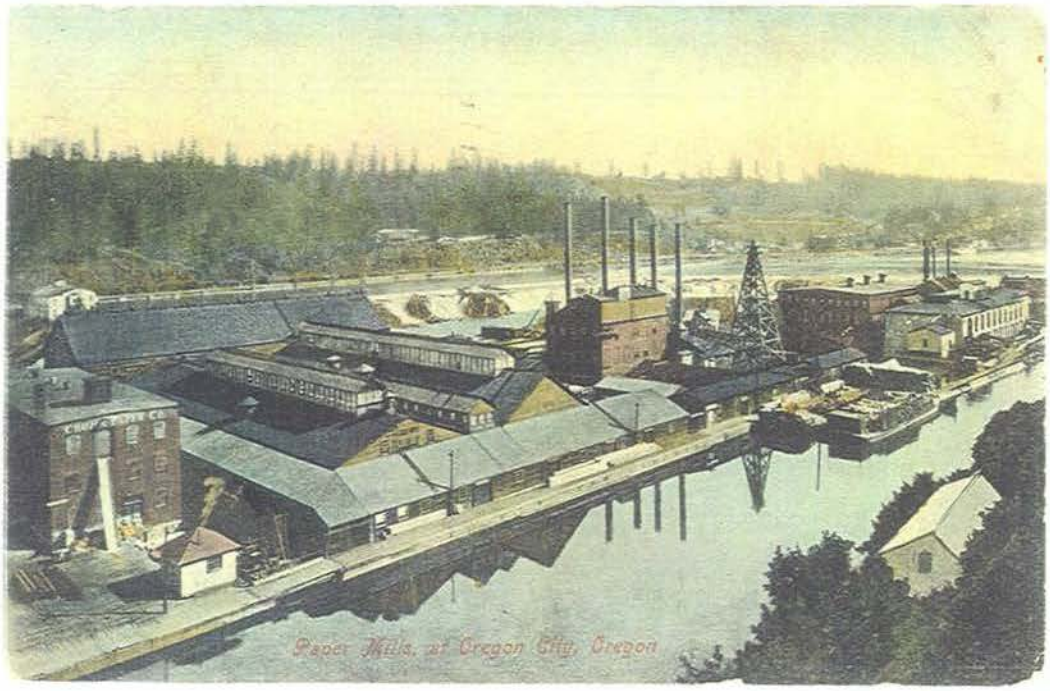


Photo 3. Historic Postcard Image
PAPER MILLS AT OREGON CITY, OREG c1905
(Source: *George Kramer Collection)*

PHOTOGRAPHS:

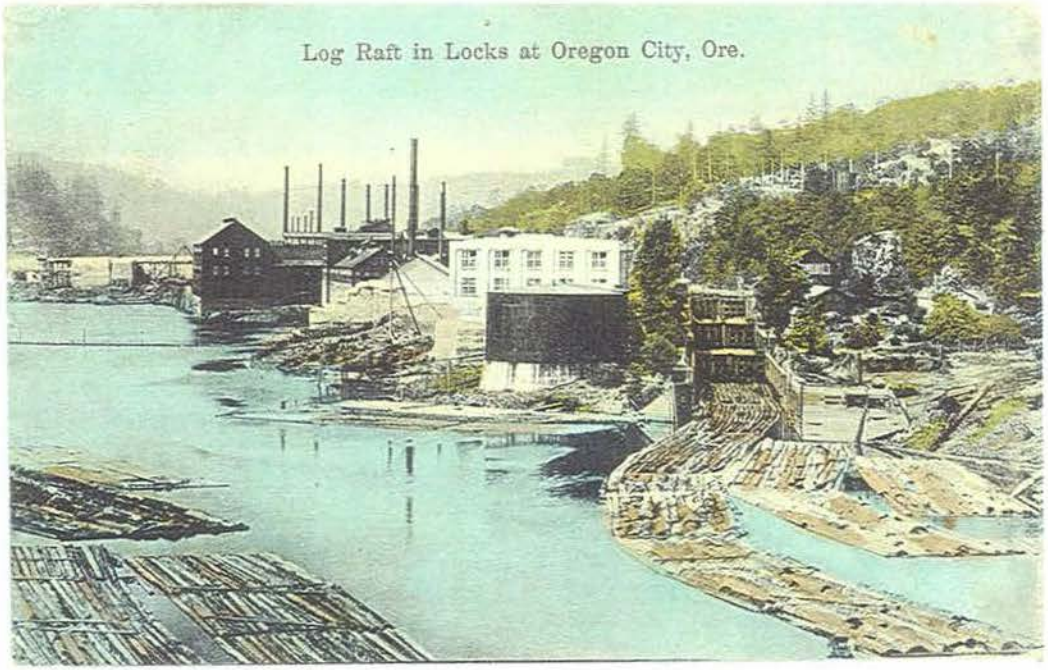


Photo 4. Historic Postcard Image
LOG RAFT IN LOCKS AT OREGON CITY, ORE. C1908
(Source: *George Kramer Collection)*

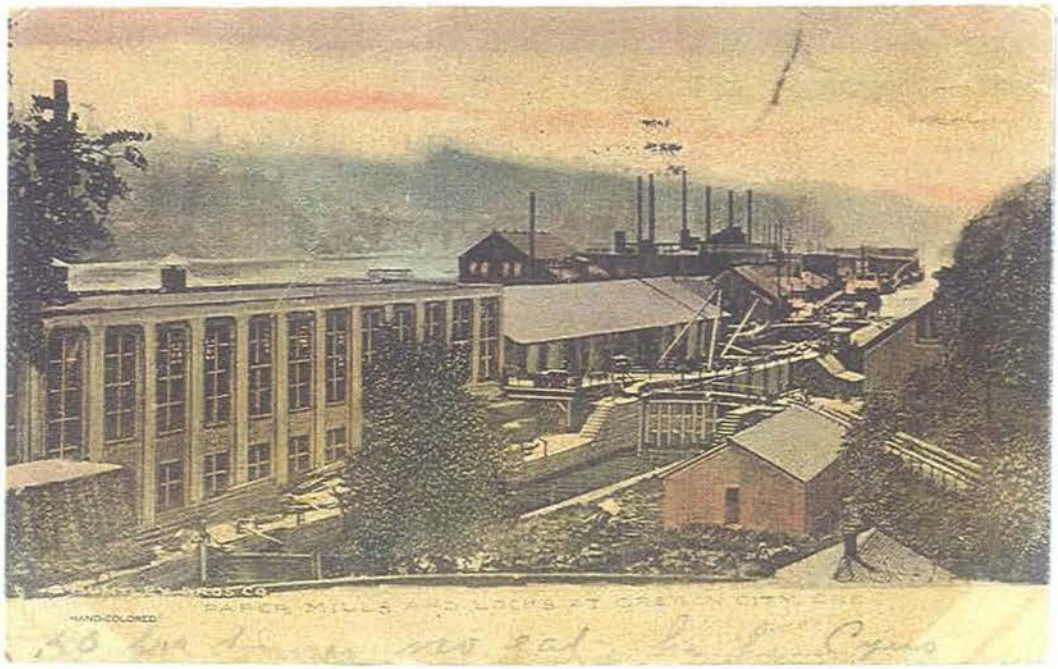


Photo 5. Historic Postcard Image
PAPER MILLS AND LOCKS AT OREGON CITY, C1907
(Source: *George Kramer Collection)*

PHOTOGRAPHS:

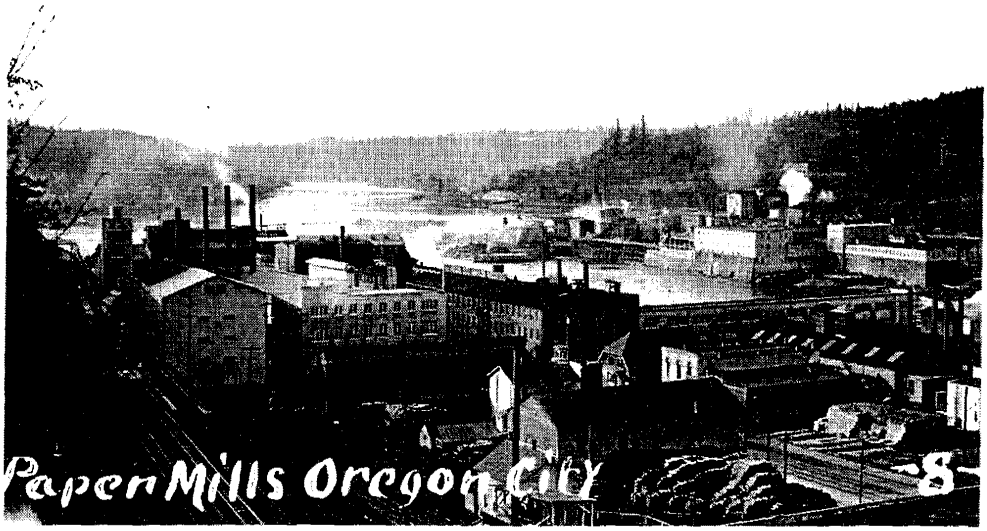


Photo 6. Historic Postcard Image
PAPER MILLS OREGON CITY, C1928
(Source: *George Kramer Collection)*

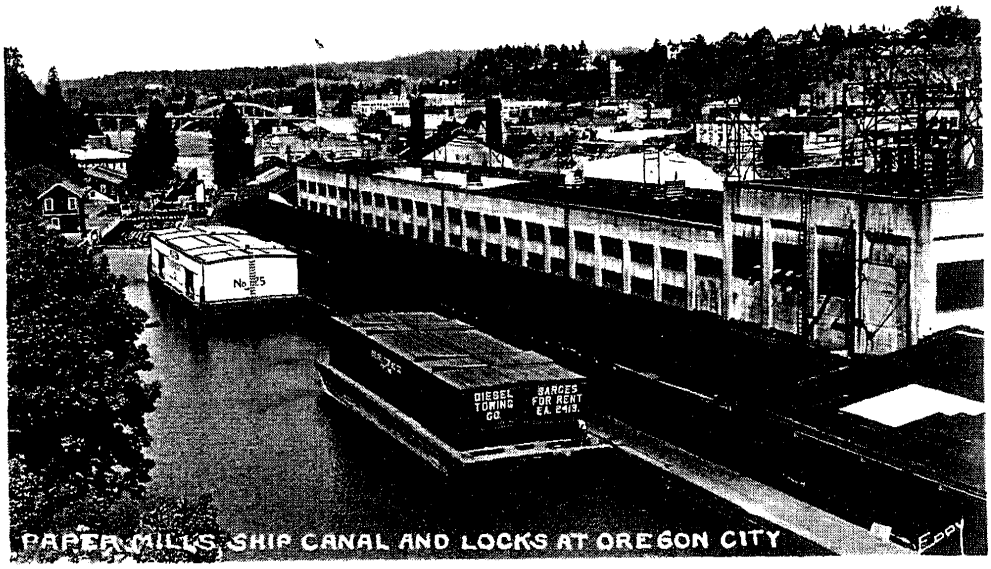


Photo 7. Historic Postcard Image
PAPER MILLS, SHIP CANAL AND LOCKS AT OREGON CITY, C1930
(Source: *George Kramer Collection)*

PHOTOGRAPHS:

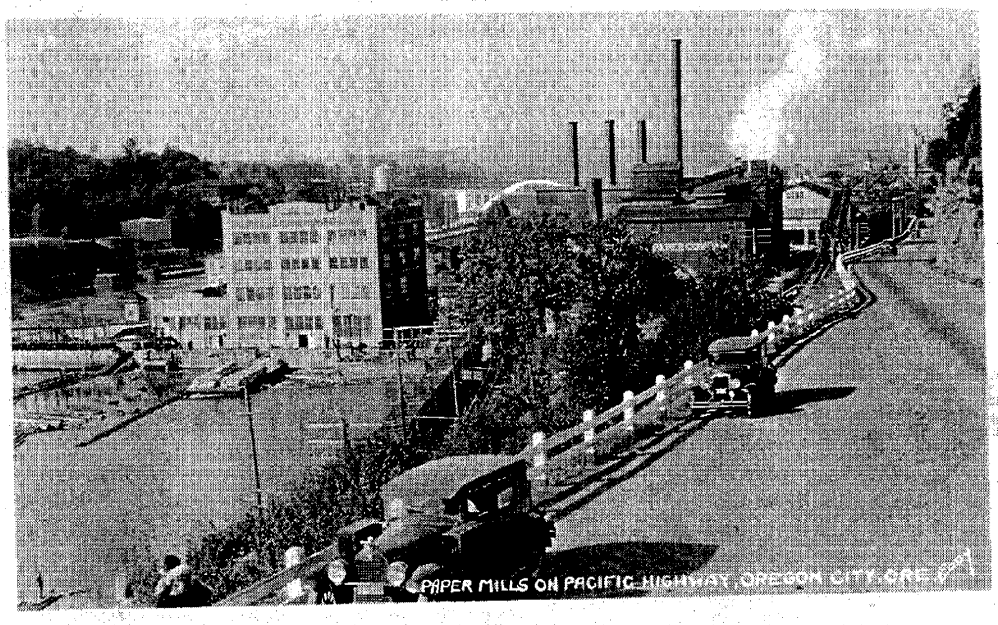


Photo 8. Historic Postcard Image
PAPER MILLS ON THE PACIFIC HIGHWAY, OREGON CITY, ORE. C1930
(Source: *George Kramer Collection)*

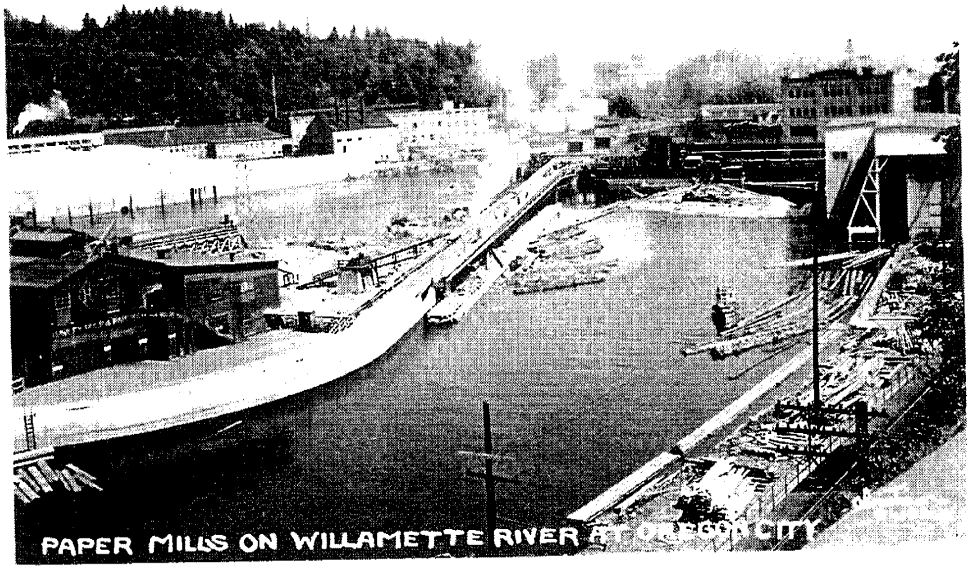


Photo 9. Historic Postcard Image
PAPER MILLS ON WILLAMETTE RIVER AT OREGON CITY, C1950
(Source: *George Kramer Collection)*

PHOTOGRAPHS:

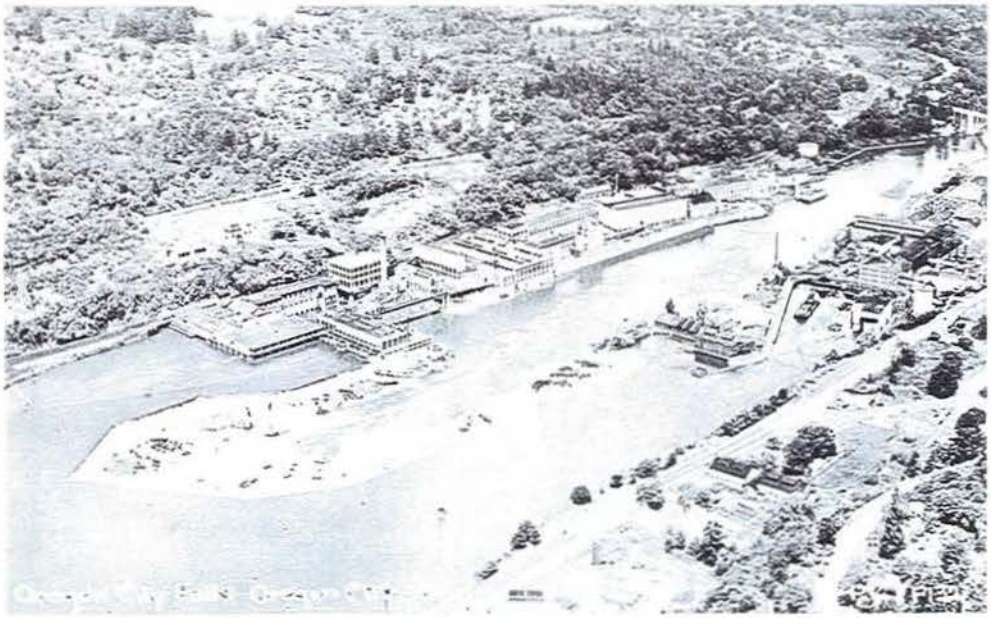


Photo 10. Historic Postcard Image
OREGON CITY FALLS, OREGON CITY, ORE., C1950
(Source: *George Kramer Collection)*



Photo 11. Historic Image
STATION "B" & WILLAMETTE PULP & PAPER MILLS, LOOKING SW, C1920
(Source: *Portland General Electric Archive)*

PHOTOGRAPHS:

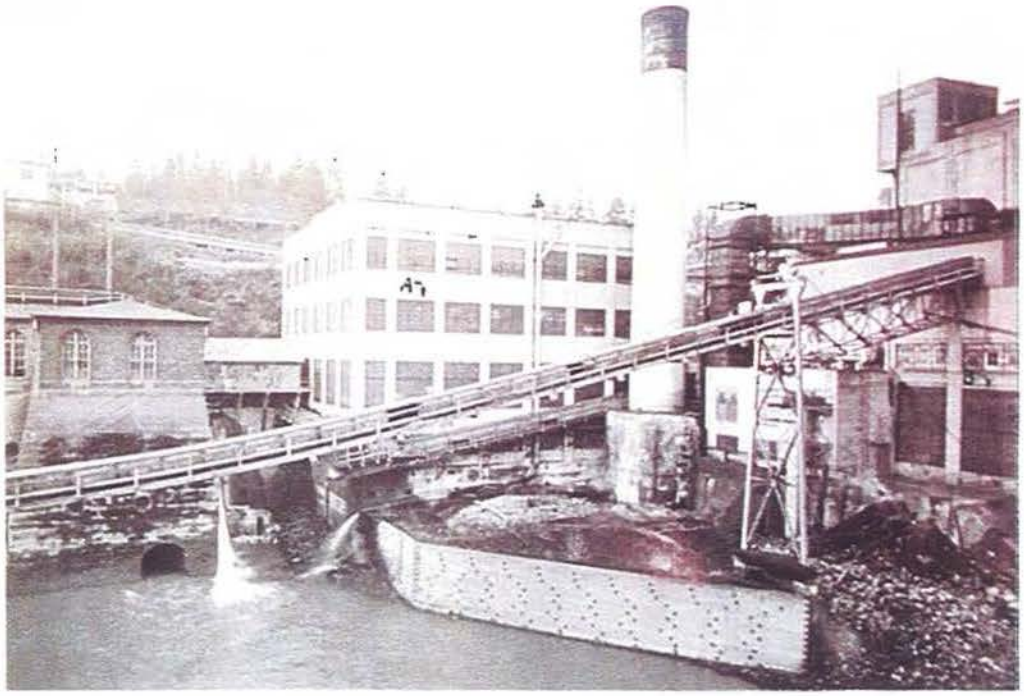


Photo 12. Historic Image
STATION B, MILL B' AND BOILER HOUSE, LOOKING NW, C1920
(Source: *Portland General Electric Archive)*

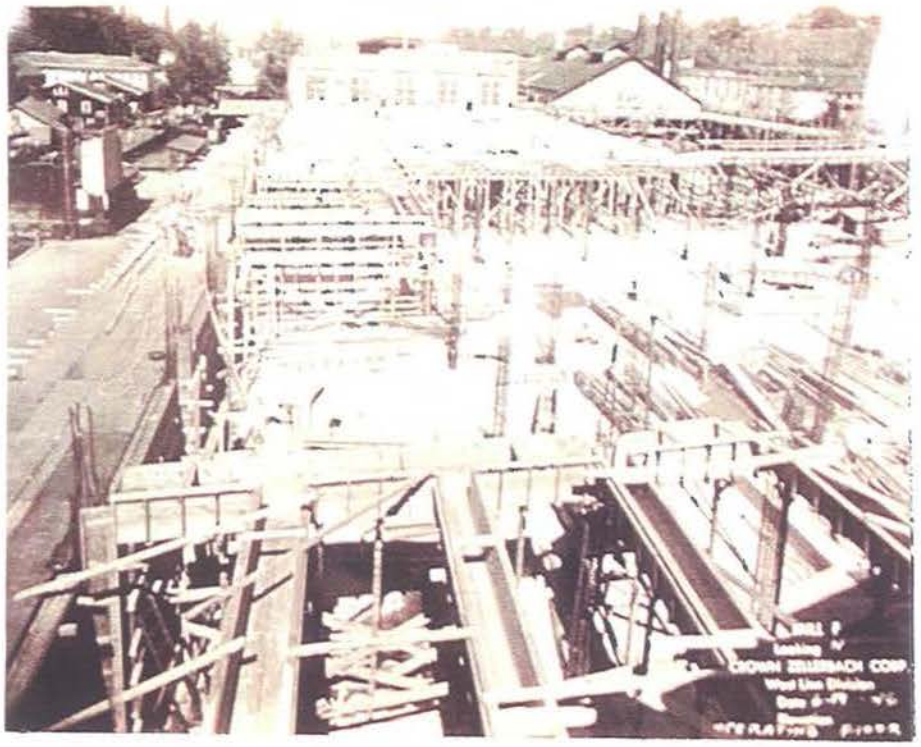


Photo 13. Historic Image
MILL F CONSTRUCTION, LOOKING N, 1946
(Source: *West Linn Paper Company Collection)*

PHOTOGRAPHS:



Photo 14. Historic Image
MILL K BLEACH PLANT CONSTRUCTION, , LOOKING SE, 1946
(Source: *West Linn Paper Company Collection)*



Photo 15. Historic Postcard Image
PAPER MACHINE NO. 4, MODIFICATIONS, LOOKING SE, 1928
(Source: *Blue Heron Paper Company Collection)*

PHOTOGRAPHS:

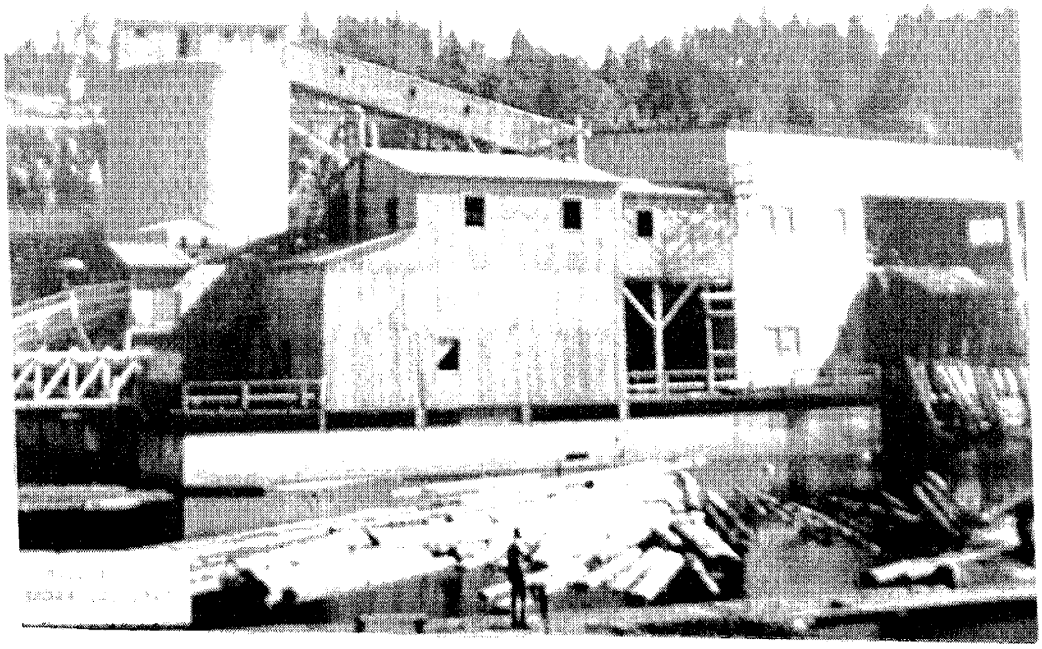


Photo 16. Historic Postcard Image
MILL E, LOOKING NE FROM MILL A, 1947
(Source: *Blue Heron Paper Company Collection)*

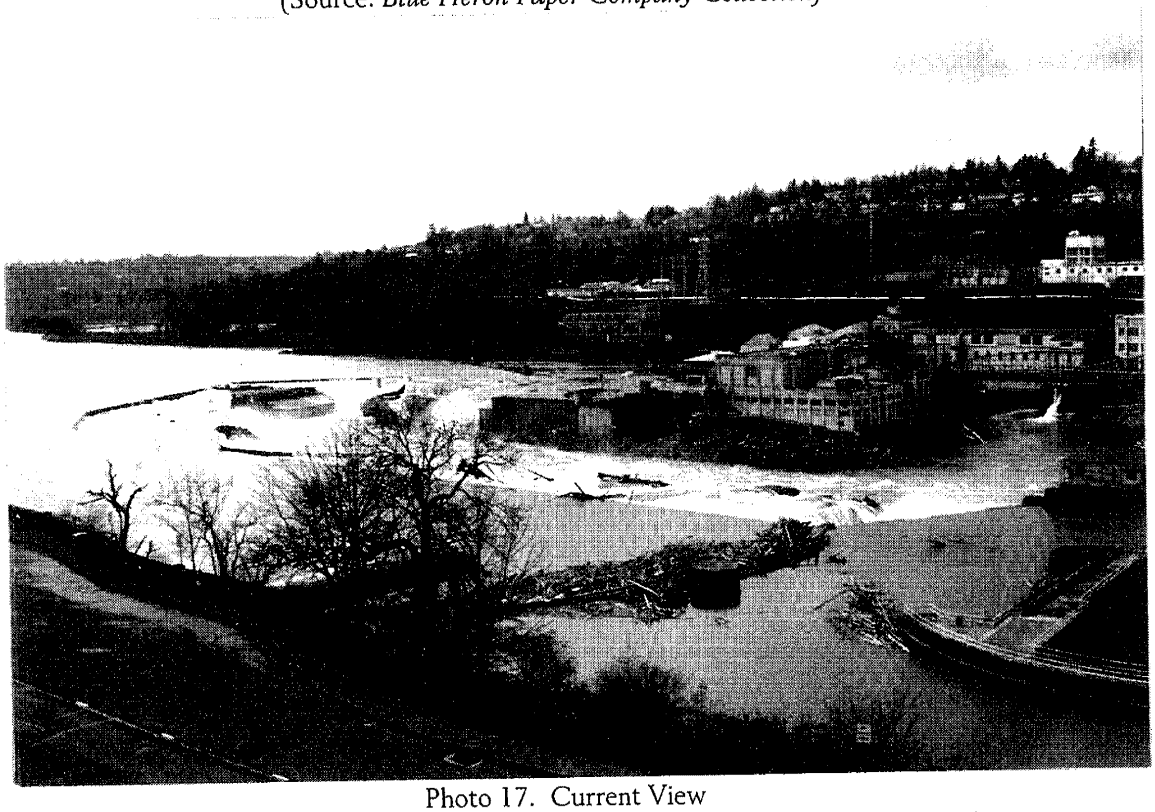


Photo 17. Current View
GENERAL VIEW, LOOKING SW, FROM MCLAUGHLIN BLVD, 2001

PHOTOGRAPHS:

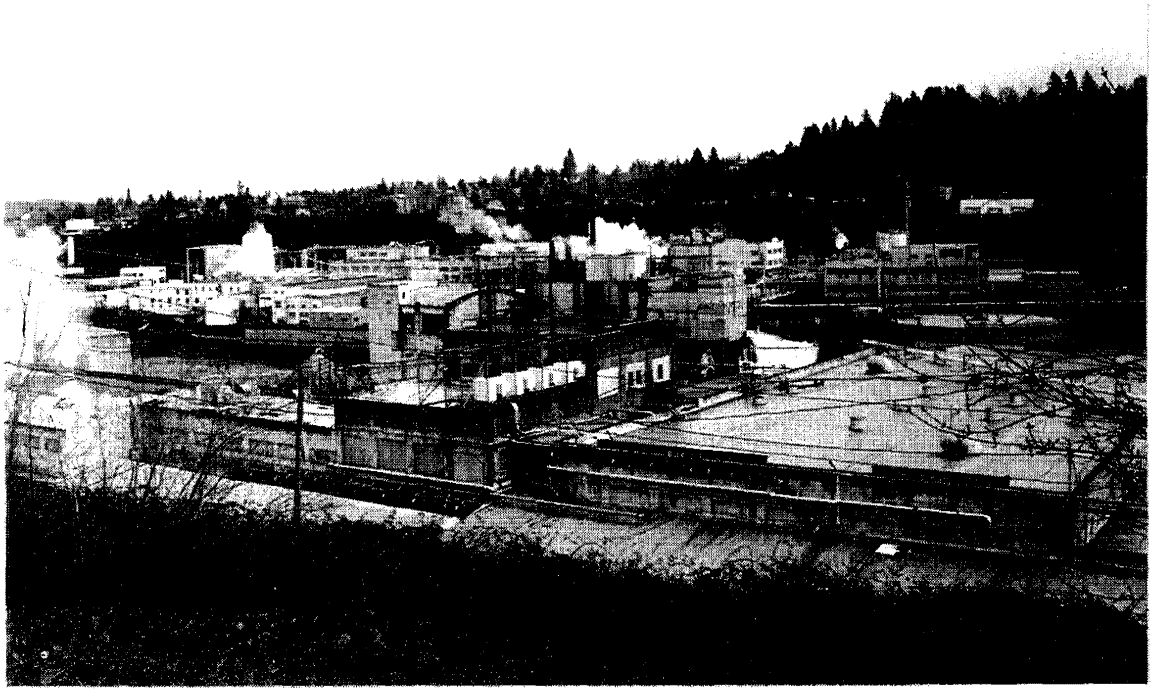


Photo 18.
GENERAL VIEW, LOOKING NE, FROM WILLAMETTE FALLS DRIVE, 2001

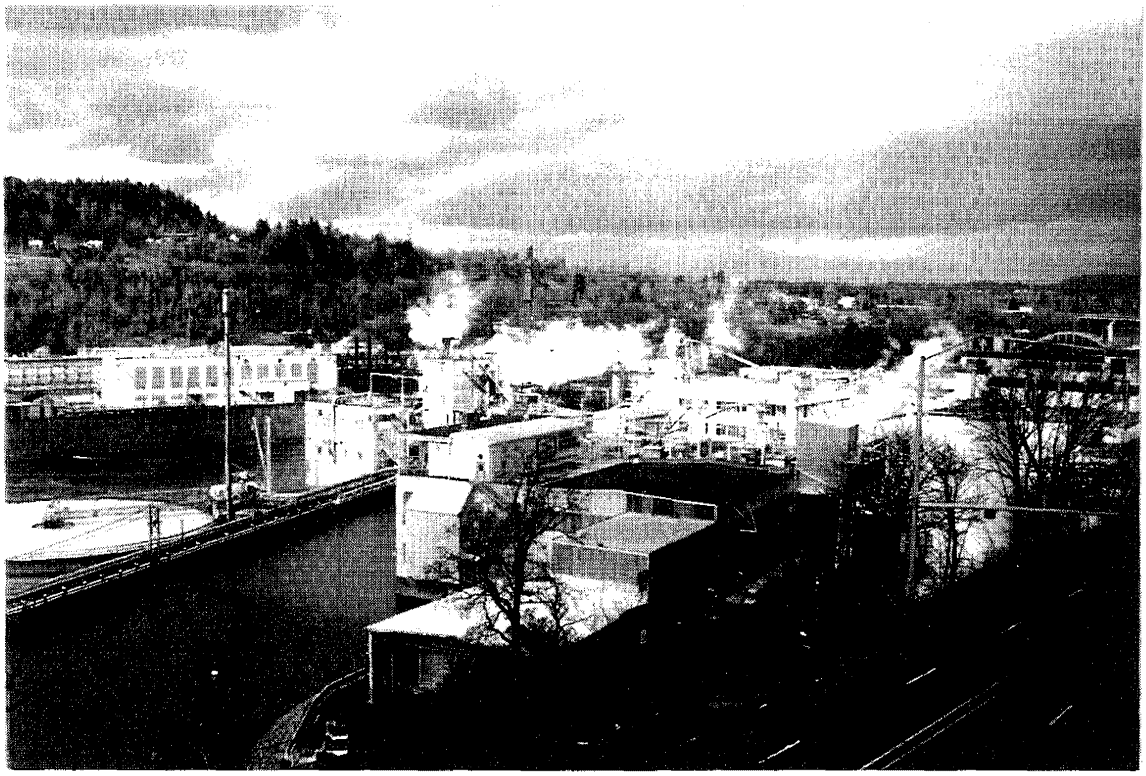


Photo 19. Current View
GENERAL VIEW, LOOKING NW, FROM TUMWATER DRIVE, 2001

PHOTOGRAPHS:

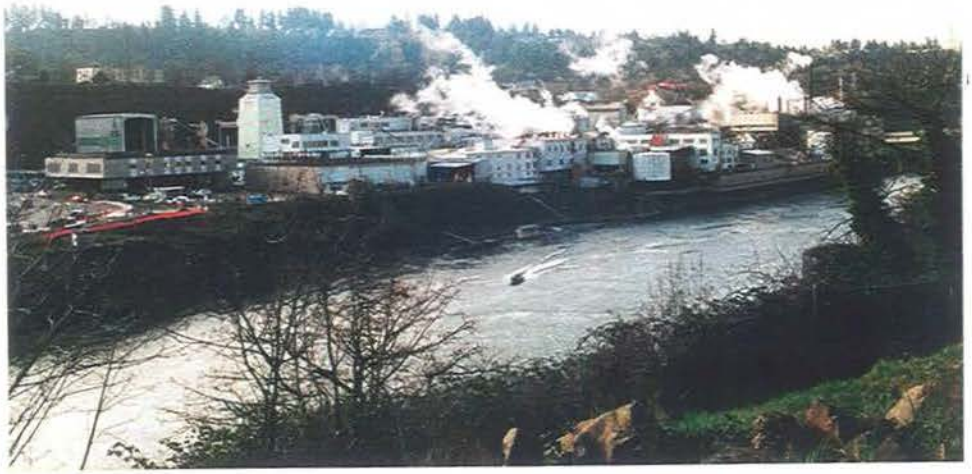


Photo 20. Current View
BLUE HERON PAPER COMPANY, LOOKING SE, FROM WEST LINN, 2001

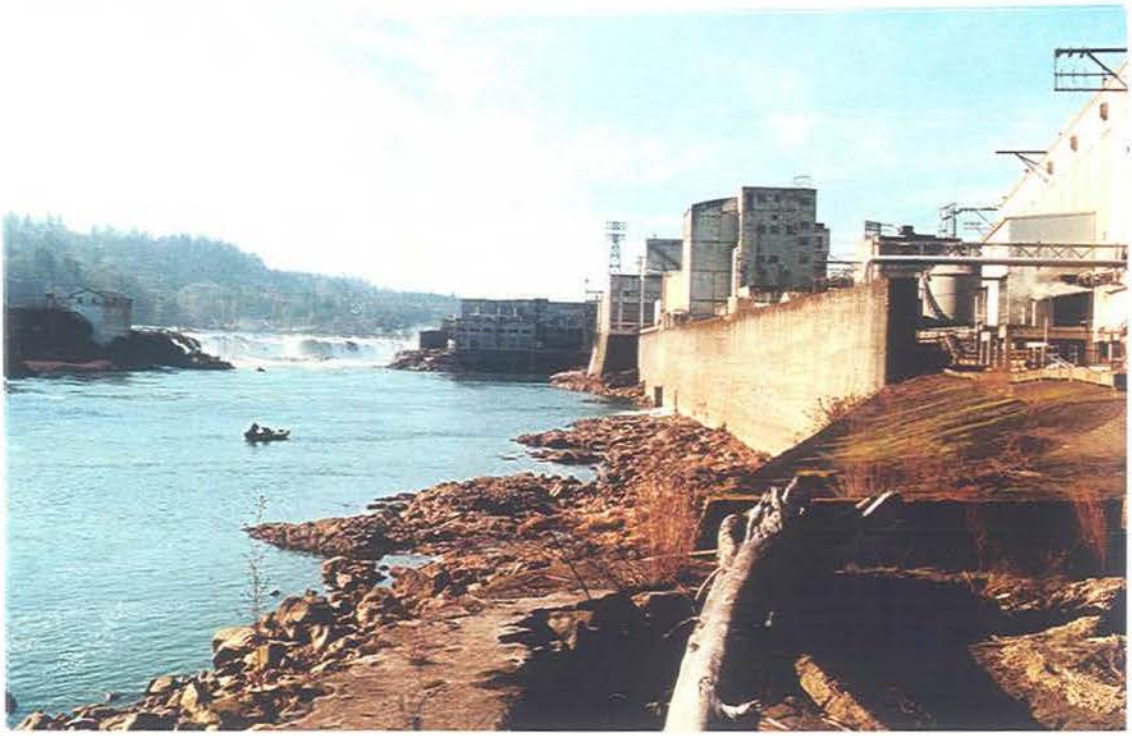


Photo 21. Current View
WEST LINN PAPER COMPANY, LOOKING SOUTH, FROM OLD BOILER PLANT, 2001

PHOTOGRAPHS:

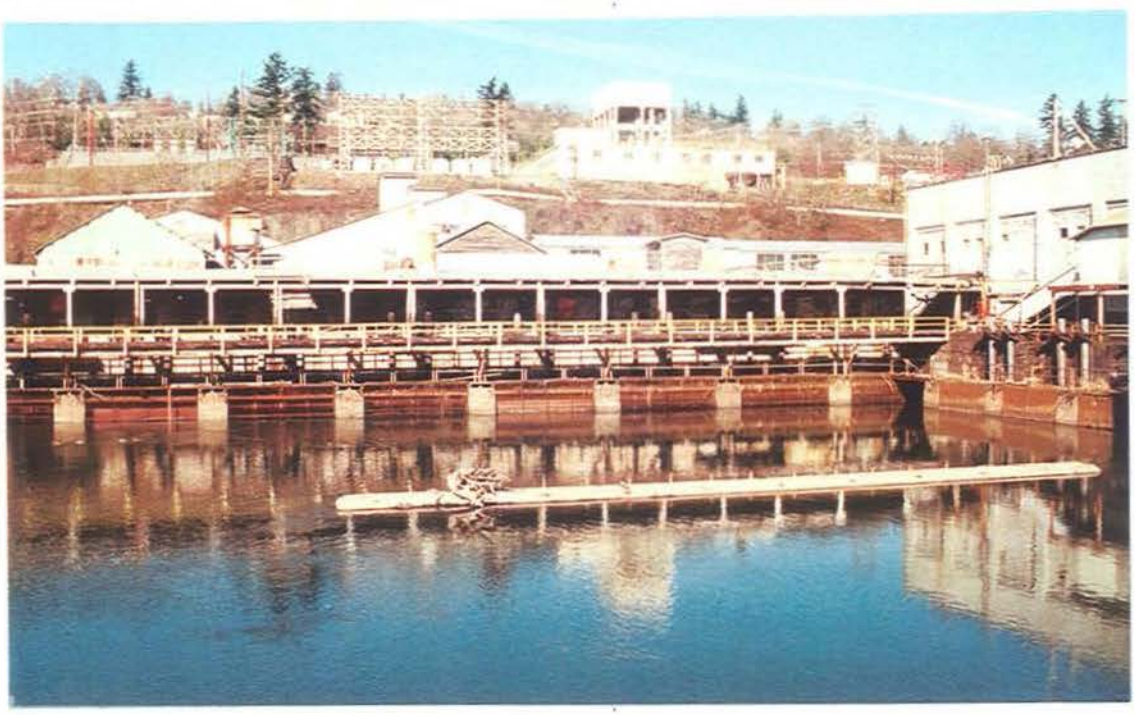


Photo 22. Current View
MILL A, GRINDER ROOM 2 (SUBSTATION/WATER TREATMENT ABOVE), LOOKING S, 2001



Photo 23. Current View
GRINDER ROOM #3, LOOKING SE, 2001

PHOTOGRAPHS:



Photo 24. Current View
T. W. Sullivan Hydroelectric Plant [Station B], Looking NE, 1997

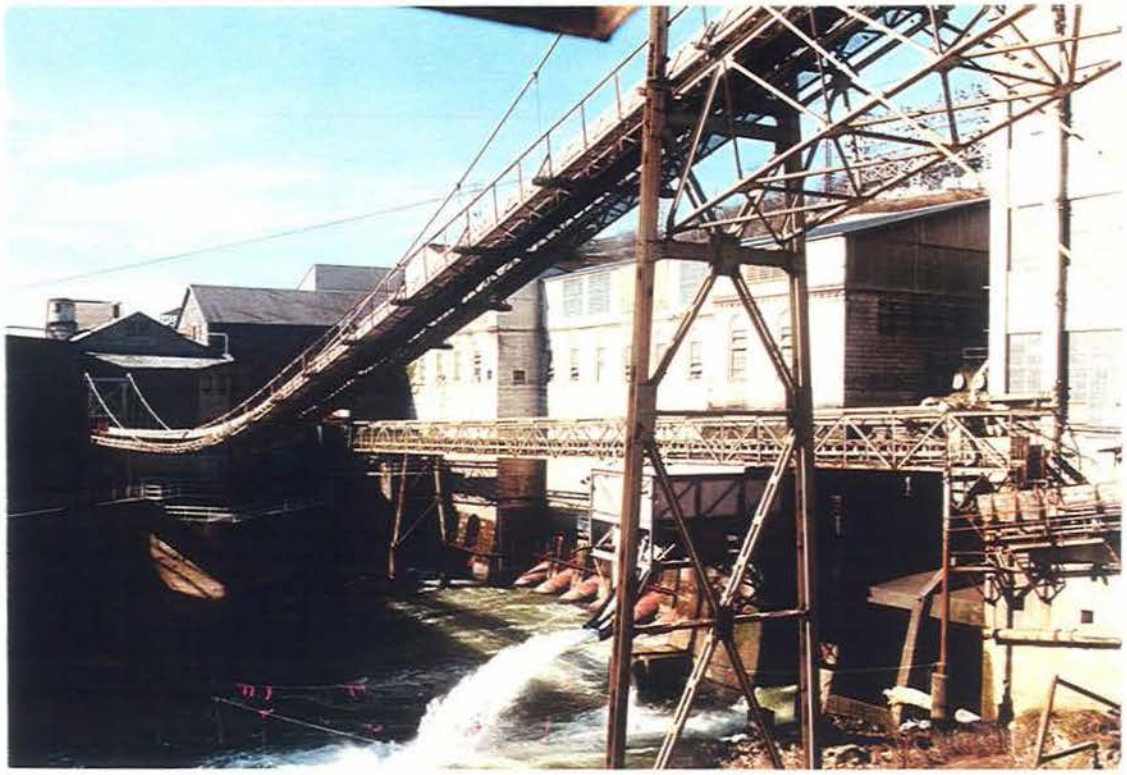


Photo 25. Current View
T. W. Sullivan Hydroelectric Plant [Station B], Looking SE, across inlet, 2001

PHOTOGRAPHS:



Photo 26. Current Interior View
T. W. Sullivan Hydroelectric Plant [Station B], Looking NW, 2001



Photo 26.1 Current Interior View
T. W. Sullivan Hydroelectric Plant [Station B], Looking S, 2001

PHOTOGRAPHS:



Photo 27. Current View
STEEL BRIDGE AND MILL B/BOILER HOUSE,
LOOKING NW, FROM GRINDER ROOM #3 DECK, 2001



Photo 28. Current Interior View
MILL C, MAINTENANCE DEPARTMENT, LOOKING SE, 2001

PHOTOGRAPHS:



Photo 29. Current View
MILL K, LOOKING SE ACROSS LOCKS, 2001



Photo 30. Current View
BLEACH PLANT, MILL J, GENERAL VIEW FROM OLD BOILER PLANT, LOOKING S, 2001

PHOTOGRAPHS:

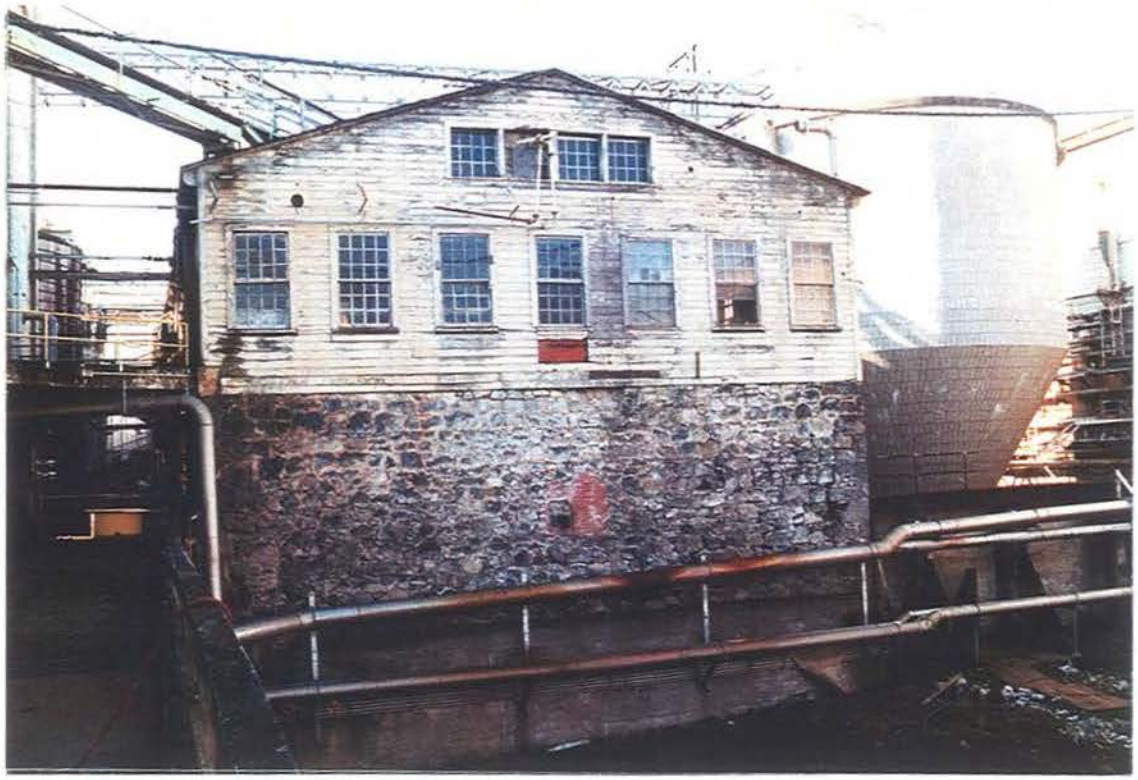


Photo 31. Current View
MILL J, LOOKING S, 2001



Photo 32. Current View
MILLS F AND D, LOOKING NE, FROM ACROSS LOCKS, 2001

PHOTOGRAPHS:



Photo 33. Current View
MILLS F AND D, LOOKING SW, 2001

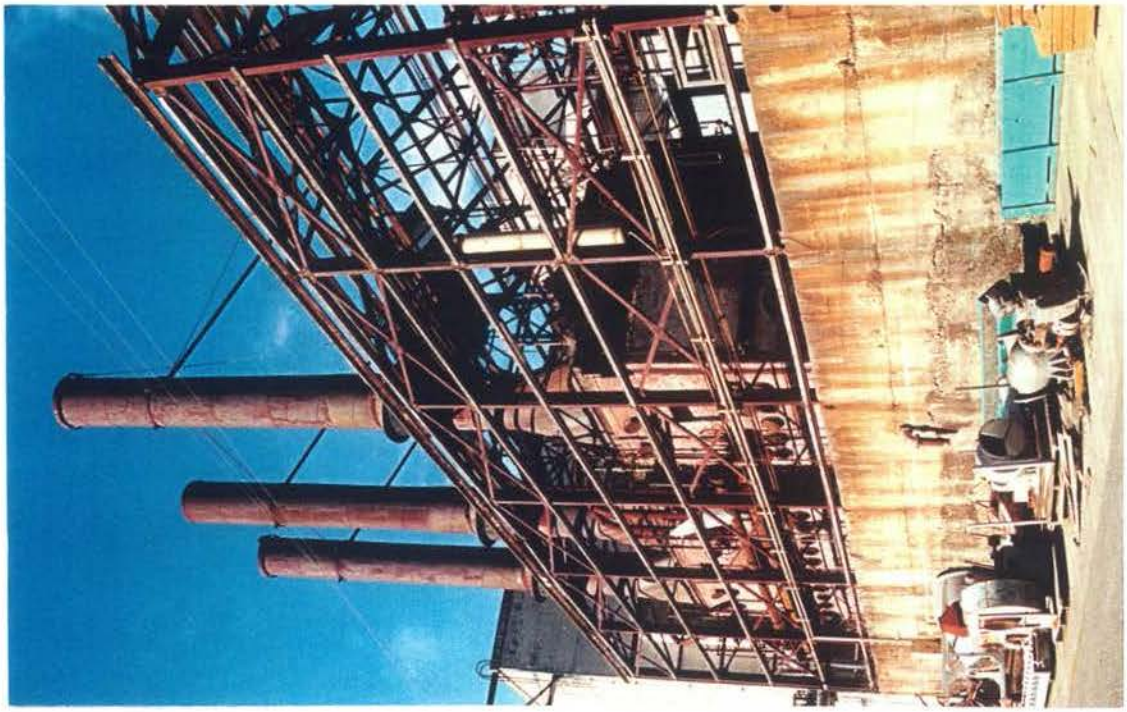


Photo 34. Current View [Vertical image, mounted horizontally]
OLD BOILER PLANT, LOOKING SW, 2001

PHOTOGRAPHS:



Photo 35. Current View
UNUSED OIL STORAGE TANK, LOOKING S (VIEW FROM ACCESS ROAD), 2001

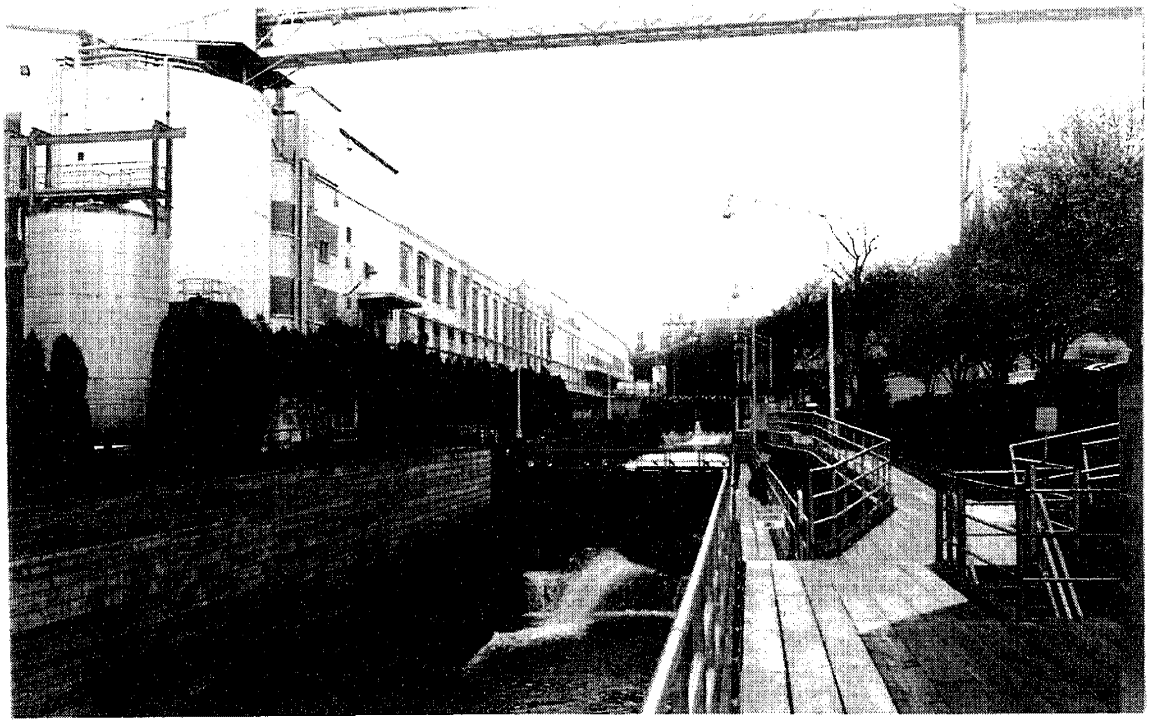


Photo 36. Current View
WILLAMETTE FALLS LOCKS, GENERAL VIEW, LOOKING SOUTH, 2001

PHOTOGRAPHS:

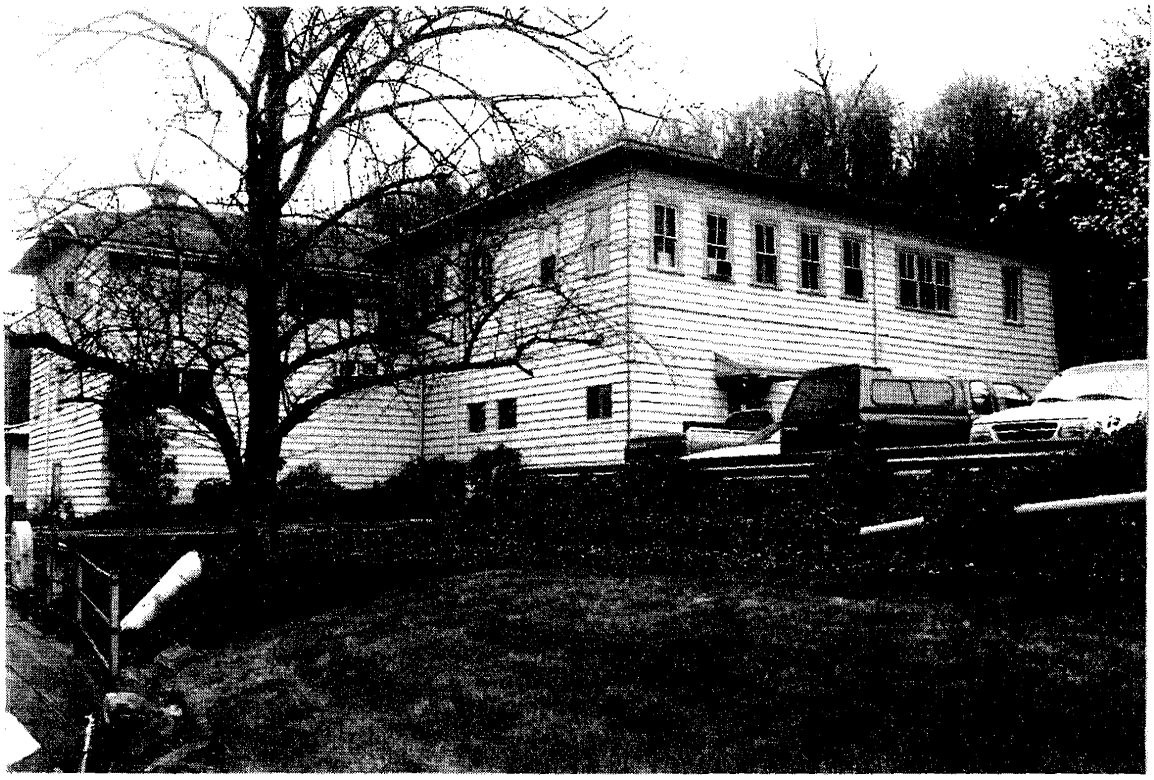


Photo 37. Current View
MAIN OFFICE BUILDING, LOOKING SW, 2001

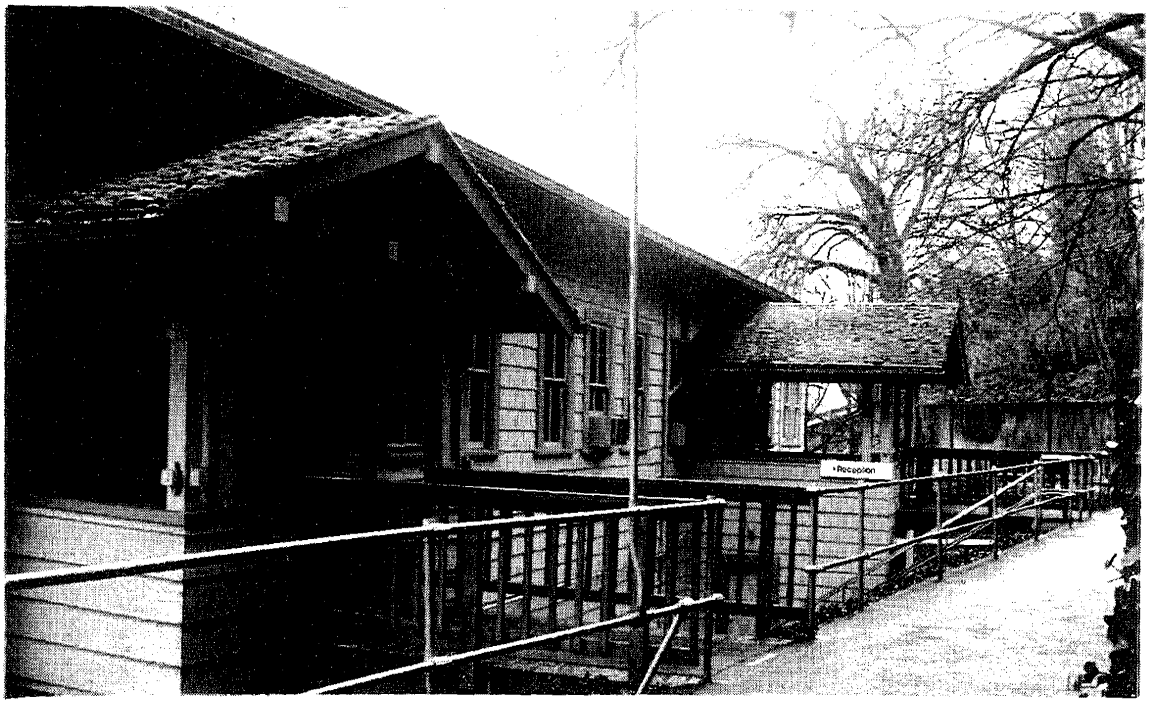


Photo 38. Current View
MAIN OFFICE BUILDING, LOOKING SE, 2001

PHOTOGRAPHS: [*Oregon City/Blue Heron Paper Company Resources*]

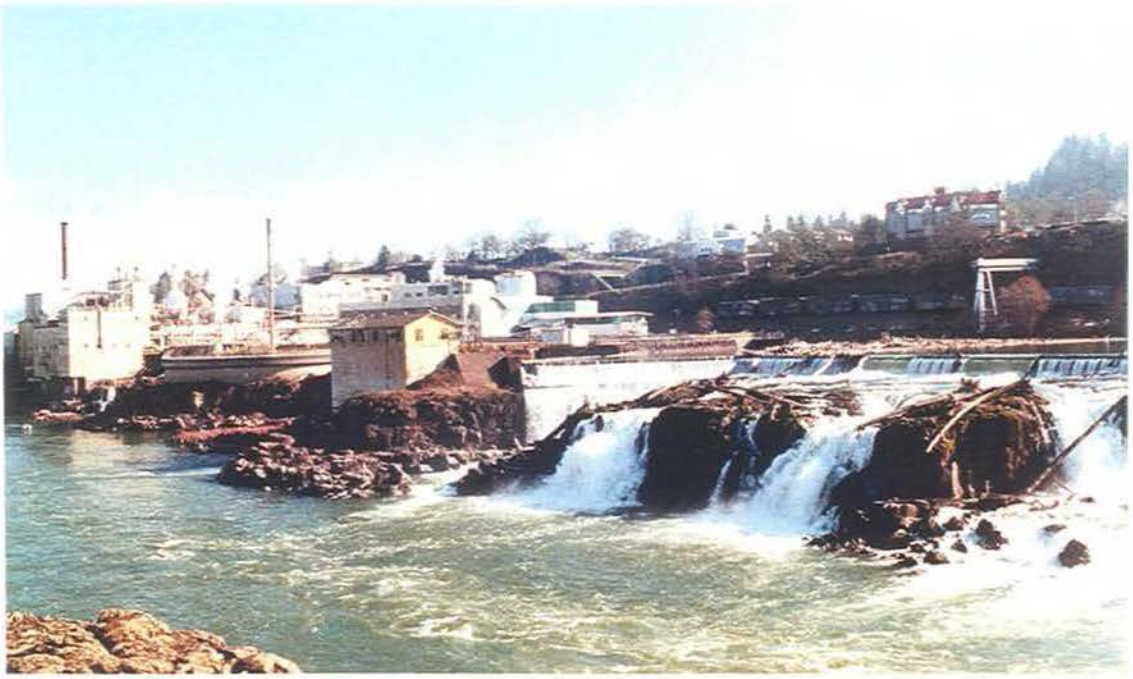


Photo 39. Current View
GENERAL VIEW OF BLUE HERON PAPER CO., LOOKING NE, FROM WEST LINN, 2001



Photo 40. Current View
CHIP SILO AND NORTH ENTRY, LOOKING SOUTH, DOWN "MAIN STREET, 2001

PHOTOGRAPHS:

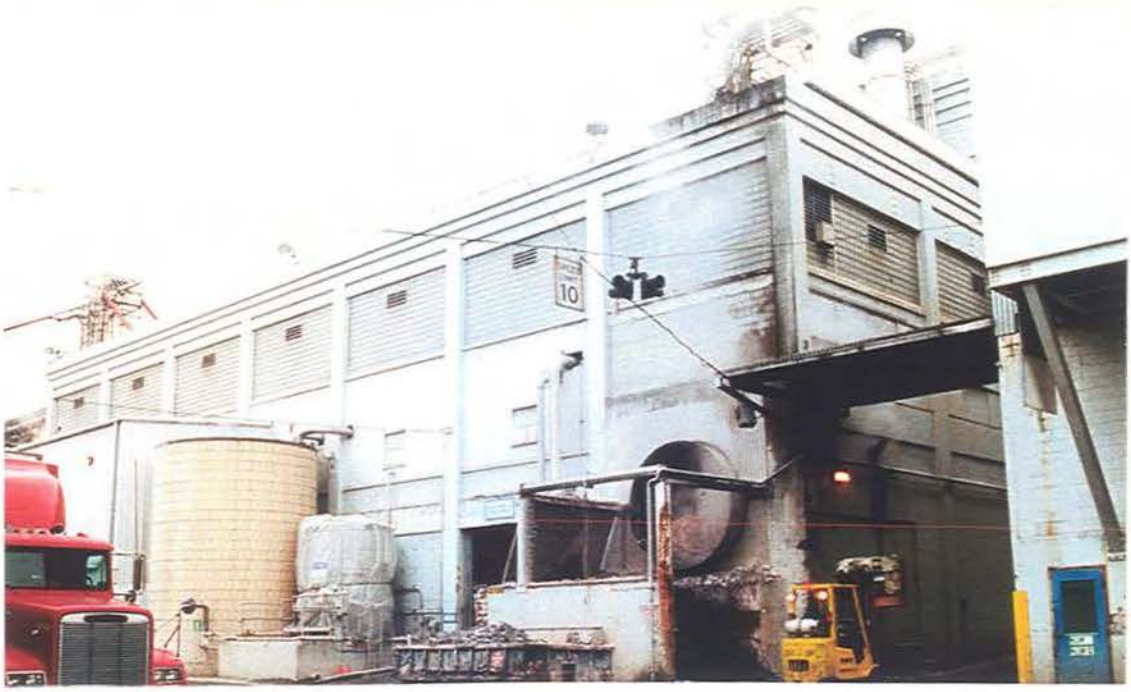


Photo 41. Current View
MILL B [DE-INKER], LOOKING NE, FROM MAIN STREET, 2001



Photo 42. Current View [Vertical image, mounted horizontally]
MILL C/DIGESTER, LOOKING SE, 2001

PHOTOGRAPHS:



Photo 43. Current View
PAPER MACHINE #2 (SITE), LOOKING N, TOWARD MILL D WAREHOUSE, 2001



Photo 44. Current View
CARPENTER SHOP, MILL SHOP, LOOKING N, TOWARDS MILL "O" ANNEX, 2001

PHOTOGRAPHS:



Photo 45. Current View
PAPER MACHINE NO. 1, NAMEPLATE, 2001



Photo 46. Current View
MILL #1 FINISHING ROOM/BLEACH PLANT, LOOKING N FROM MILL E ROOF, 2001

PHOTOGRAPHS:



Photo 47. Current View [Vertical image, mounted horizontally]
MILL #1 FINISHING ROOM/BLEACH PLANT, LOOKING W, FROM MAIN STREET, 2001



Photo 48. Current View
MILLS E [OFFICES] LOOKING NE, FROM LOG POND CAUSEWAY, 2001

PHOTOGRAPHS:

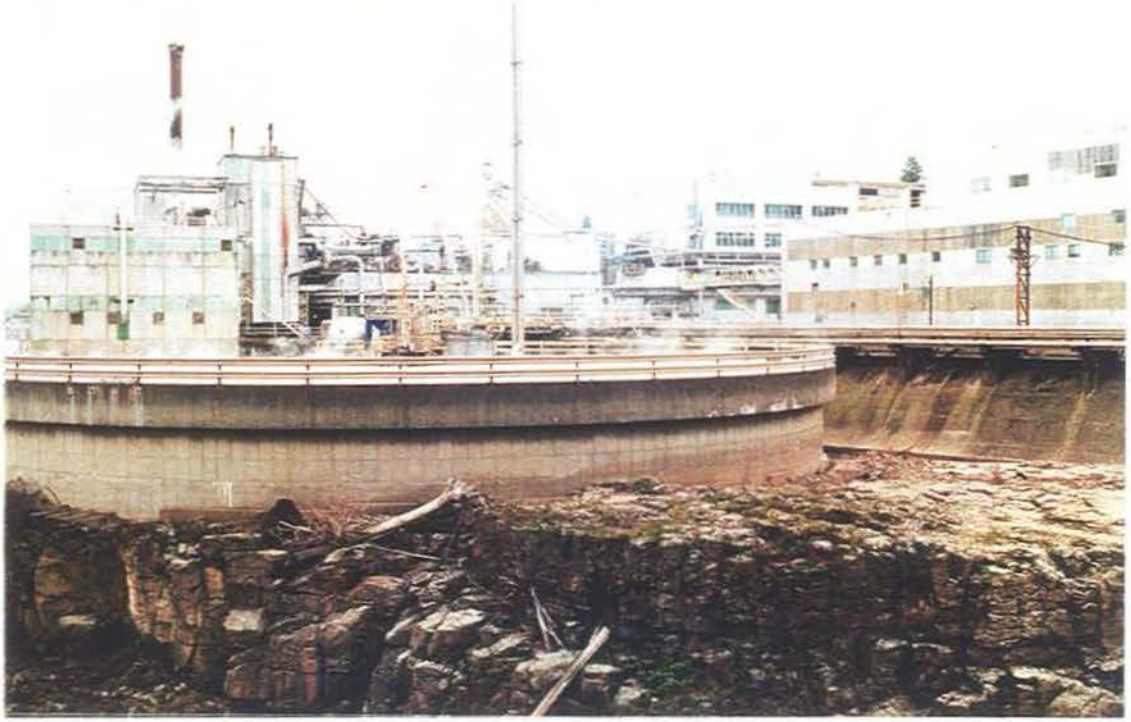


Photo 49. Current View
CLARIFIER (FOREGROUND) AND GENERAL VIEW, LOOKING NE FROM LOG POND CAUSEWAY. 2001



Photo 50. Current View
STATION A [MILL A] FOUNDATION, LOOKING SW, FROM LOG POND CAUSEWAY, 2001

PHOTOGRAPHS:

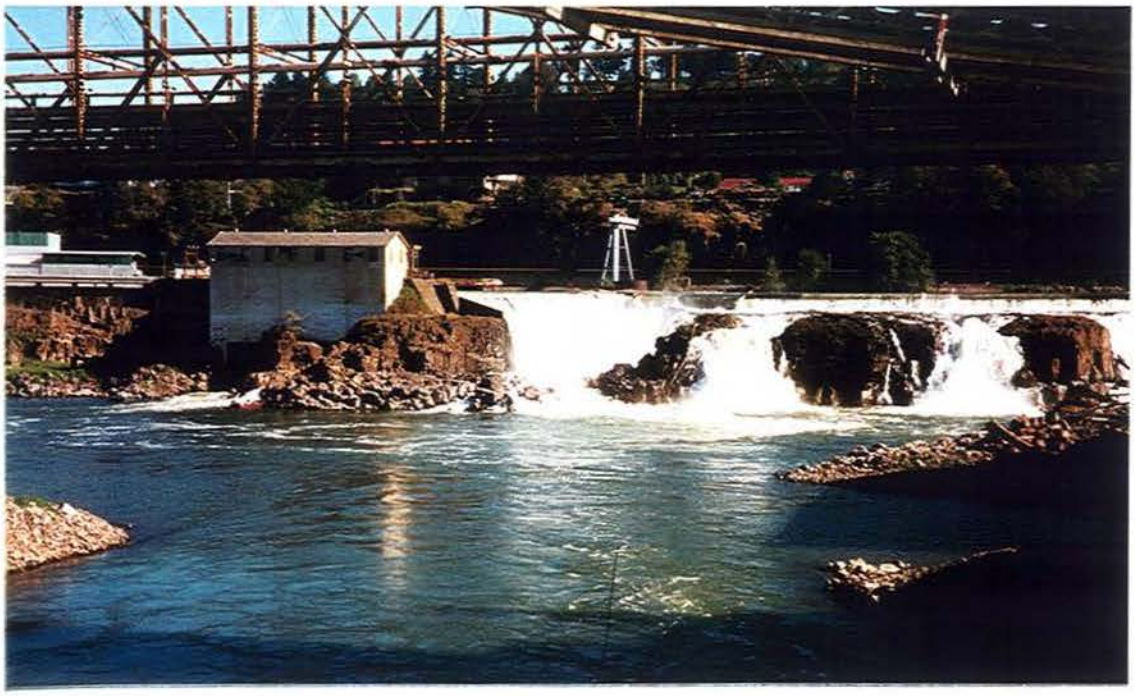


Photo 51. Current View
HAWLEY POWERHOUSE, LOOKING NE, FROM WEST LINN, SHOWING PORTION OF DAM, 1997

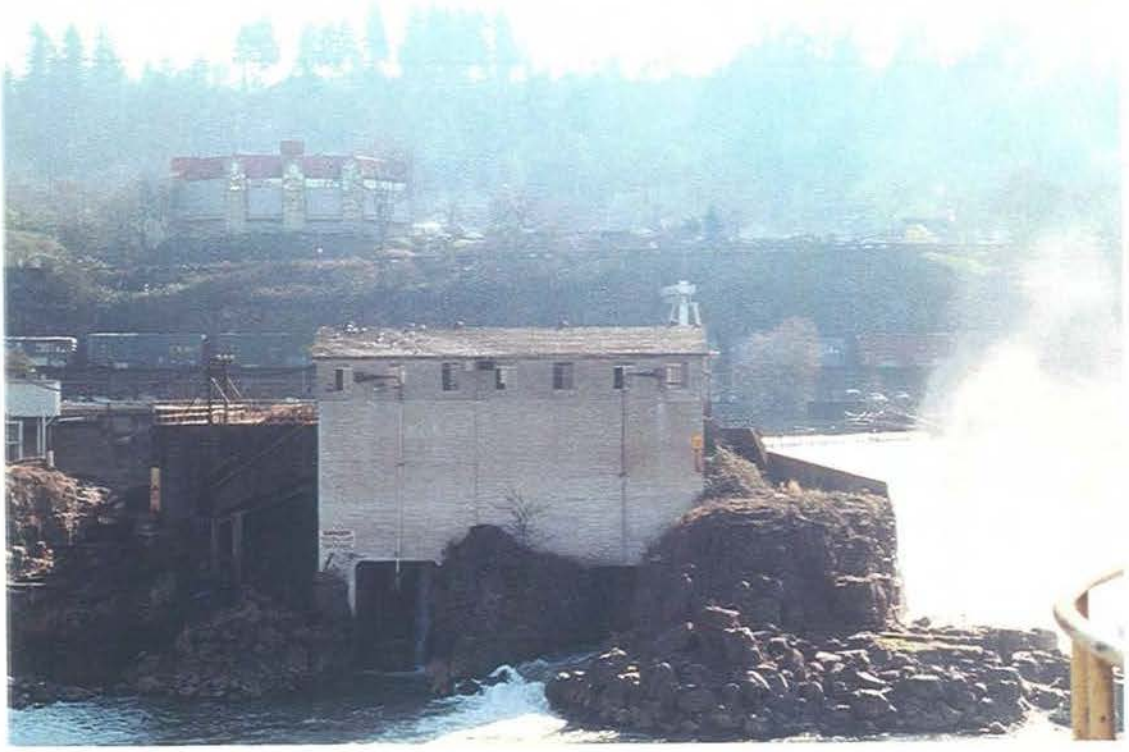


Photo 52. Current View
HAWLEY POWERHOUSE, LOOKING W, FROM WEST LINN,2001

PHOTOGRAPHS:

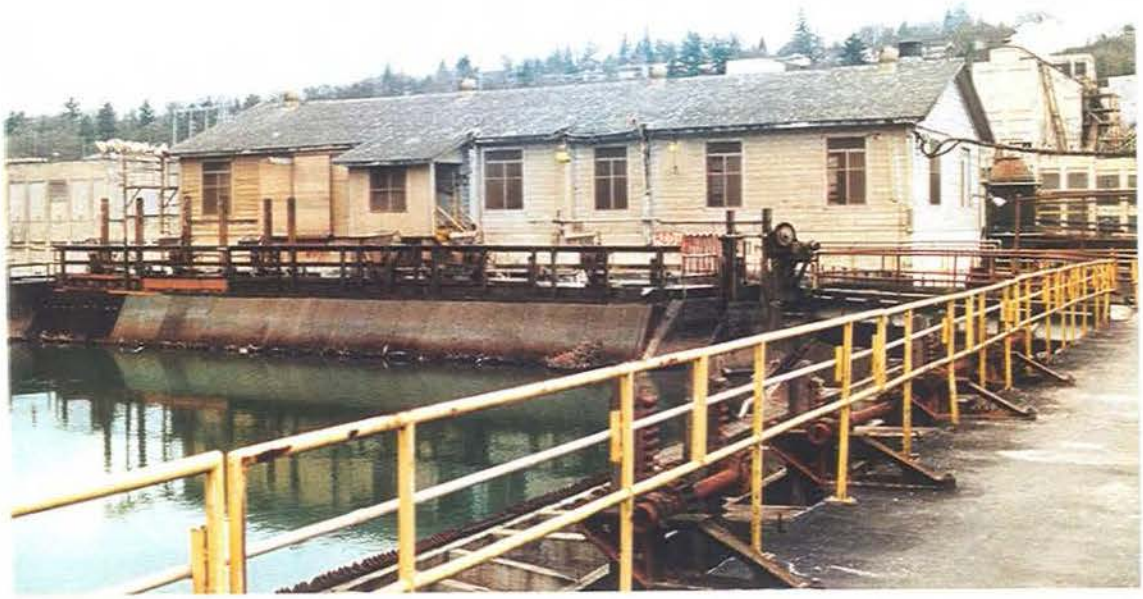


Photo 53. Current View
HAWLEY POWERHOUSE, LOOKING SW, FROM STATION A [MILL A] FOUNDATION/CAUSEWAY, 2001

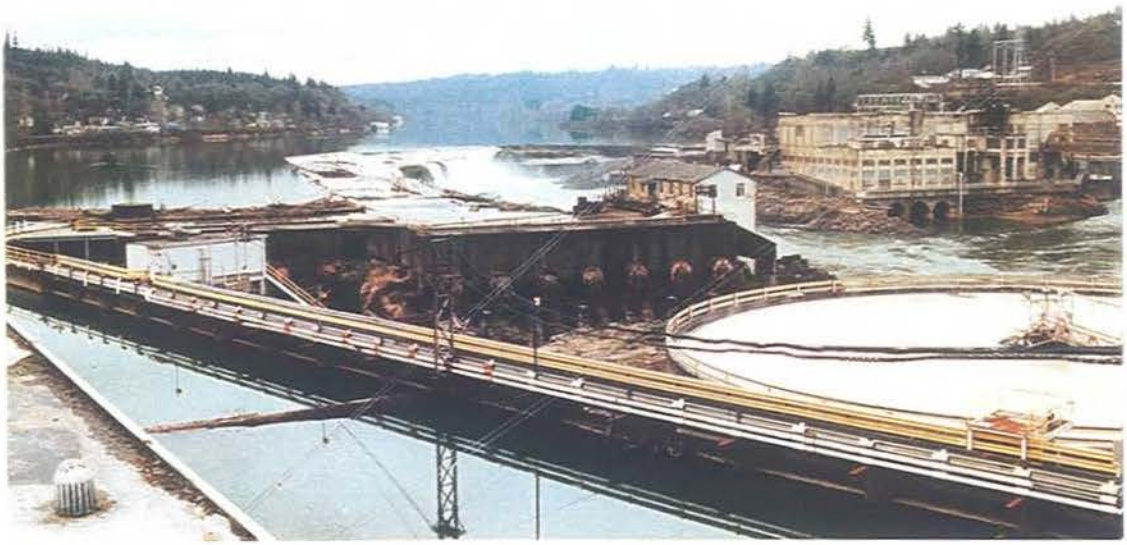
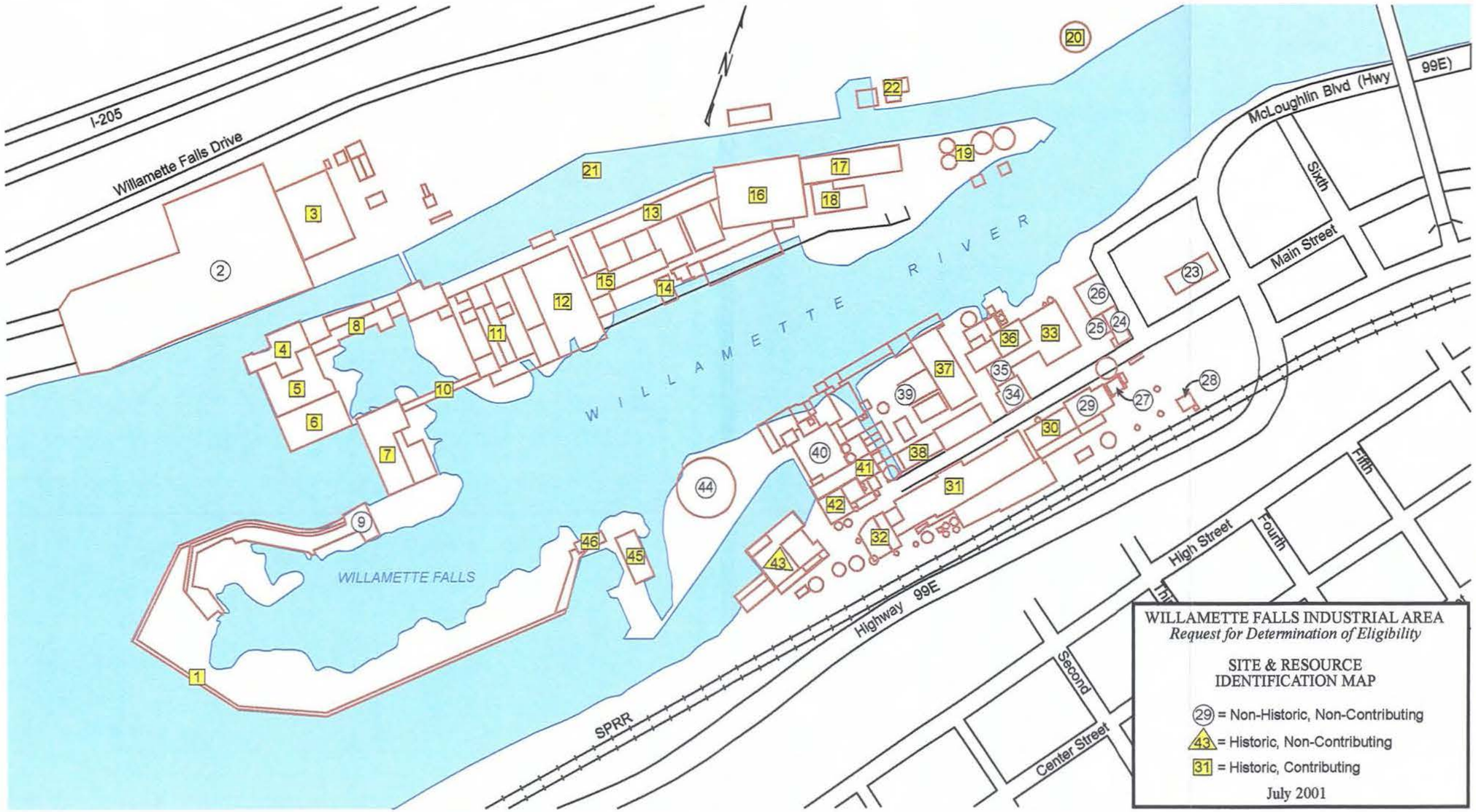


Photo 54. Current View
GENERAL VIEW, CLARIFIER, STATION A FOUNDATION, HAWLEY POWERHOUSE, DAM, & WEST LINN, LOOKING SW, FROM BLUE HERON LOG POND CAUSEWAY, 2001


I-205
Willamette Falls Drive
McLoughlin Blvd (Hwy 99E)
Sixth
Main Street
WILLAMETTE RIVER
WILLAMETTE FALLS
Highway 99E
SPRR
High Street
Fourth
Fifth
Second
Center Street
WILLAMETTE FALLS INDUSTRIAL AREA
Request for Determination of Eligibility
SITE & RESOURCE IDENTIFICATION MAP
(29) = Non-Historic, Non-Contributing
43 = Historic, Non-Contributing
31 = Historic, Contributing
July 2001

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Water Filtration Plant**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **2**

elig. evaluation: **eligible/contributing**

primary constr date: **1953** (c. ☐ secondary date: (c.)☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Steel**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Survey Update: Based on historic photographs, I looks like the floor was not added at another date. It appears in the construction photos, 1954.**

Building descriptions are taken from the "Willamette Falls Industrial Area Request for Determination of Eligibility 2002 George Kramer. Please refer to this . Document for additional context and history.

Built: 1954, upper addition added
Evaluation: Non-Historic, Non Contributing
This concrete structure was completed in 1954 and later modified with an upper story. Although an integral portion of the operation, this structure does not have any historic significance at this time.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Water Filtration Plant
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date: **1/30/2012**
Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

historic name: **Mill D -**

Oregon City ☐ vcnt **Clackamas County**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr: (remote sites) Located south of filtration plant/4th Street on river side of Main Street.

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1**

total # eligible resources: total # ineligible resources:

elig. evaluation: **eligible/contributing**

NR status:

primary constr date: **1910** (c. ☑ secondary date: **1925** (c.) ☑
(optional--use for major addns)

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

orig use comments:

secondary orig use:

primary style: **Utilitarian**

prim style comments:

secondary style:

sec style comments:

primary siding: **Metal: Other/Undefined**

siding comments:

secondary siding: **Wood:Other/Undefined**

plan type:

architect:

builder:

comments/notes: **2012 Survey Update: Based on Sanborn Map information it appears that the earliest date of a portion of the warehouse is 1910. The covered loading bay was for railroad loading. It is served by a RR spur that connects to Main Street Line. This structure extends to the face of the east warehouse addition, not all the way to Main Street.**

Building descriptions are taken from the "Willamette Falls Industrial Area Request for Determination of Eligibility 2002"– George Kramer. Please refer to this document for additional context and history.

MILLD WAREHOUSE: Built:1916,1945-1946, as modified
Evaluation: Historic Contributing
Originally providing storage space adjacent to Paper Machines No 2 and No.3, the western portion of the Mill D Warehouse housed two uses according the 1926 Meldrum map of the Hawley Plant, with the western volume designated as "Mill #3 Warehouse," and the eastern portion identified as Paper Machine No.2." It is not clear to what extent the present structure contains elements of either or both of these buildings although the general character of the structure seems consistent with the early development ohhis area in 1916. Mill D, and probably the warehouse, were modified in 1945-1946 according to information in the company archive. At some undocumented time the footprint of the Mill D Warehouse has been extended by the construction of the covered loading bay that now projects to Main Street.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Mill D -
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date: **1/30/2012**
Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Blue Heron Paper Office Building**

current/ other names: **Old Post Office**

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **2**

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1932** (c. ☐ secondary date: **1970** (c.)☐
(optional--use for major addns)

primary orig use: **Administrative Facility**

secondary orig use: **Post Office**

primary style: **Brutalism**

secondary style:

primary siding: **Concrete: Other/Undefined**

secondary siding:

plan type:

total # eligible resources: ____ total # ineligible resources: ____

NR status:

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes:

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

Corporate Offices [Former Post Office] : Built: 1932, modified 1970s
Evaluation: Non-Historic, Non Contributing
Originally built in 1932 as the Oregon City Post Office and designed by the noted Oregon architectural firm of Knighten and Howell, this two-story building was originally a gabled volume with stripped classical detailing. It was substantially remodeled and modified to its present appearance in the 1970s following purchase for use as the corporate offices of Publishers Paper Company. While apparently incorporating some elements of a historic building, the present volume has been so thoroughly altered that the result maintains virtually no connection to its original design and is accordingly considered non-historic.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

Oregon Historic Site Form

Blue Heron Paper Office Building
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date: **1/30/2012**
Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Security/ First Aid Building**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1**

elig. evaluation: **not eligible/out of period**

primary constr date: **1970** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

orig use comments:

primary style: **Utilitarian**

secondary style:

prim style comments:

sec style comments:

primary siding: **Concrete Block**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

Security/First Aid Building: Built: cl970s
Evaluation: Non-Historic, Non Contributing

A small single story masonry building, this structure was presumably built in the late-1970s/early 1980s following the removal of the early commercial structures that stood on this site. The present structure has no historic significance.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Security building with multiple blue doors at far end

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Bulter Building**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1970** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

orig use comments:

primary style: **Utilitarian**

secondary style:

prim style comments:

sec style comments:

primary siding: **Corrugated metal**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

Butler Building [Hawley Office/Spectator Site] : Built: 1970c
Evaluation: Non-Historic, Non-Contributing
Originally this location was the site of the Hawley company's corporate office, located in an early dwelling that was relocated in 1916 from across the street in preparation for construction of what Paper Machine No.4. This historic volume apparently remained as office space at least through 1967 (Fosberg, 1967). The present metal storage building was built following its removal.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Bulter Building
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **No. 3 Paper Machine**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1912** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Modern Commercial (Type)**

secondary style:

primary siding: **Concrete Block**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes:

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

PAPER MACHINE No. 3: Built: 1912-1913, as modified
Evaluation: Historic Contributing
Although not specifically dated, Paper Machine No.3 was added to the Hawley plant in 1912-1913 and this gabled masonry volume was likely built at that time. "In 1910, machine No. 2..was installed. This was followed by machine No.3, which began produced toweling, poster paper and light weight wrapping paper in 1913" (Oregon City Enterprise, 20-August-1936, 31:3-6). With various medications and alterations this structure continues in its original use.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

No. 3 Paper Machine
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date: **1/30/2012**
Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Mill "O"**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1918** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Modern Commercial (Type)**

secondary style:

primary siding: **Concrete Block**

secondary siding: **Horizontal Board**

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes:

2012 Survey Update:This building is not on the 1911 Sanborn Map. It looks to be built in 1918. Addional verifitcation is needed on this date. It first appears on the 1925 Sanborn Map.

Exterior walls are of concrete construction. Description sounds like it is wood frame exterior walls. The east wall is wood frame. The building was originally connected to the older woolen mill building, and the east wall was re-built at a later date, further west, reducing the overall footprint of the building.

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

MILL "0" (OREGON WOOLEN MILL ANNEX) : Built: 1903, as modified
Evaluation: Historic Contributing
A multi-story wood-frame volume, this structure was almost certainly built as an "annex" to the Oregon City Woolen Mill which originally stood on this block facing Main Street. In July 1903 a fire destroyed several of the woolen mills structures and the following month the company announced its plans to rebuild. "Structures for the accommodation of the boiler room, dye house, pullery and other outside buildings will be erected....Most of the buildings will of wood and corrugated iron and the principal structure will be three stories high and will be directly connected to the main building (Oregon City Enterprise, 21-August-1903, 5:3, emphasis added). Mill "0," the subject volume, remained with the 19th century brick woolen mill structure itself was demolished in 1980-1981 (See Oregonian, 6-May-1980 and Letter to Donald Nicholson, in the Willamette Falls/Publishers Paper file, SHPO,1981).
Mill 0, a large multi-story wood-frame structure clad with mixed wood and corrugated metal siding as well as large multi-pane industrial sash windows, houses a variety of functions related to the present paper manufacturing operation. These include storage and warehouse space but most notable is the lab, located at the extreme western end of the building.

GROUPINGS / ASSOCIATIONS

Oregon Historic Site Form

Mill "O"
419 Main Street
Oregon City, Clackamas County

survey project name or other grouping name: Blue Heron Mill Site, 2012 | Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date: **1/30/2012**
Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Carpentry Shop**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **2**

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1911** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Corrugated metal**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Survey Update: 1960's is not correct date. Building first shows up on 1911 Sanborn Map, prior to construction of Mill 'O'.**

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.
Shop Buildings
Built: 1960s, modified
Evaluation: Non-Historic, Non-Contributing
J. Carpenter Shop
ii. Millwright Shop
iii. Pipe Shop
iv. Auto Shop
This series of modest structures all appear to post-date the historic period and are so counted as noncontributing.

2012 Survey Update:
The Carpentry shop's previous siding was removed and is today completely covered in corrugated metal. However, the interior of the building is exposed timber framing and is connected on the second floor to Mill "O". The exterior alterations render the building non-contributing.

The second floor has been abandoned but historically held the women's locker facilities. The second floor of Mill "O" contained the bag plant which was heavily employed by women.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 | Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Carpentry Shop under red arrow

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Pipe Shop**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1960** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

orig use comments:

primary style: **Utilitarian**

secondary style:

prim style comments:

sec style comments:

primary siding: **Corrugated metal**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

Shop Buildings
Built: 1960s, modified
Evaluation: Non-Historic, Non-Contributing
J. Carpenter Shop
ii. Millwright Shop
iii. Pipe Shop
iv. Auto Shop
This series of modest structures all appear to post-date the historic period and are so counted as noncontributing.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Pipe Shop
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Milwright Shop**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1960** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

orig use comments:

primary style: **Utilitarian**

secondary style:

prim style comments:

sec style comments:

primary siding: **Corrugated metal**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

Shop Buildings
Built: 1960s, modified
Evaluation: Non-Historic, Non-Contributing
J. Carpenter Shop
ii. Millwright Shop
iii. Pipe Shop
iv. Auto Shop
This series of modest structures all appear to post-date the historic period and are so counted as noncontributing.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

SHPO INFO FOR THIS PROPERTY

NR date listed: _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Milwright shop is under red arrow

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Auto Shop**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1960** (c. ☑) secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Corrugated metal**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Survey Update: This building looks to be considerable older. More research is needed to determine when constructed. The build appears in a the 1959 Mill arial photo.**

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

Shop Buildings
Built: 1960s, modified
Evaluation: Non-Historic, Non-Contributing
J. Carpenter Shop
ii. Millwright Shop
iii. Pipe Shop
iv. Auto Shop
This series of modest structures all appear to post-date the historic period and are so counted as noncontributing.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 | Survey & Inventory Project

farmstead/cluster name:

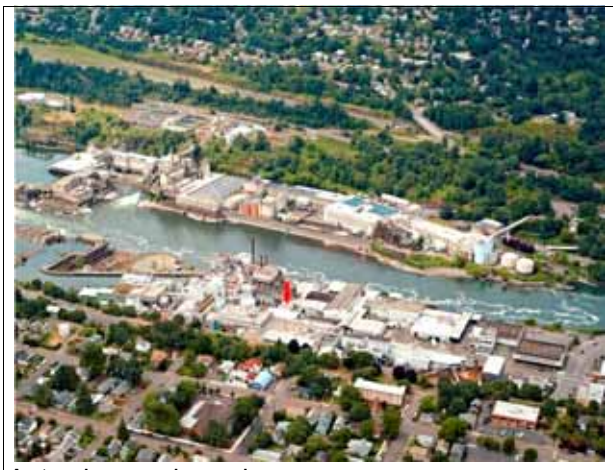
external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date: **1/30/2012**
Gen File date:

106 Project(s)



Auto shop under red arrow

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Woolen Mill Foundation**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1865** (c. ☑) secondary date: **1981** (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style:

secondary style:

primary siding: **Stone:Other/Undefined**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

OREGON WOOLEN MILL FOUNDATION WALLS: Built: 1865, 1872, 1900 modified in 1981
Evaluation: Historic Contributing
i. Mill 0 Covered Storage
ii. Contractor Trailer parking area
This site was originally the location of the Oregon Woolen Mill Building, built in 1865 upon a foundation of tapered "Columbia River basalt" and then rebuilt following a devastating fire in 1872. "In the morning, all that remained was the masonry walls" (Olson &Sutton, 1975). Long operated with sporadic economic success, in 1980-1981 the woolen mill building was demolished however the massive random-coursed basalt foundation was largely retained, framing the sunken cellar area once occupied by this early building. Today these walls define an open parking area designated for "Contractor Trailer Parking," and a second area covered with a metal-framed standing-seam metal roof that is designated as "Mill 0 Covered Storage" area on project maps.
The walls of the Oregon Woolen Mill represent a portion of one of the oldest industrial structures in the Pacific Northwest and retain sufficient integrity to their original purpose to relate the scale and character of this early industrial development.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Woolen Mill Foundation
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

South Substation
419 Main Street
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **South Substation**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **demolished**

primary constr date: **1927** (c. ☑) secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Metal: Other/Undefined**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **The South Substation was added around the same time as the North Substation.**

NRI Global purchased the south substation in October 2011 and will desmantle the structure for scap value in 2012.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 | Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed:

ILS survey date:

RLS survey date: **1/30/2012**

Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Mill "G" Boilers**

current/ other names: **Previously identified as Mill H in 2002 Kramer Report.**

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): ____

elig. evaluation: **eligible/contributing**

primary constr date: **1955** (c. ☑ secondary date: ____ (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use: ____

primary style: **Utilitarian**

secondary style: ____

primary siding: **Corrugated metal**

secondary siding: ____

plan type: ____

total # eligible resources: ____ total # ineligible resources: ____

NR status: ____

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments: ____

prim style comments: ____

sec style comments: ____

siding comments: ____

architect: ____

builder: ____

comments/notes: **2012 Survey Update: Construction photos show the boilers being installed in a steel frame structure, dated 1949.**

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

Mill H [Boiler Plant]: Built: 1955-56
Evaluation: Non-Historic, Non-Contributing
During the historic period this portion of the Oregon City side of the industrial area was occupied by a large structure called "Mill H," operated by the Crown-Willamette/Crown-Zellerbach Paper Company, the entity generally associated with the West Linn side of the area. This structure, in place at least by 1926 continued in operation throughout the 1930s and into the 1940s. Eventually purchased by Publishers Paper Company, successor to the Hawley Pulp and Paper Company, in 1955 the original Mill H was substantial razed and remodeled to its present configuration, serving as the primary boiler location for Publishers Paper and its corporate successor operations.
41.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 Survey & Inventory Project

farmstead/cluster name: ____

external site #: ____
(ID# used in city/agency database)

Oregon Historic Site Form

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Mill "H"**

current/ other names: **Deinker/THP Reject Refining**

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/out of period**

primary constr date: **1970** (c. ☑ secondary date: **1979** (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Concrete Block**

secondary siding: **Corrugated metal**

plan type:

comments/notes:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed:

ILS survey date:

RLS survey date:

Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **No. 1 Paper Machine**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1923** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

orig use comments:

primary style: **Commercial (Type)**

secondary style:

prim style comments:

sec style comments:

primary siding: **Concrete: Other/Undefined**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

PAPER MACHINE NO.1: Built: 1923
Evaluation: Historic Contributing
In 1909 Hawley Pulp and Paper Company's first paper machine was installed in this location in a building that had formerly been occupied by the Portland Flouring Mills. The Hawley company produced its first paper on this site in March 1909. "This machine and building in which it was located were completely destroyed by fire on October 8, 1923. The present building of fireproof construction was then erected and the new No.1 machine installed... " (Oregon City Enterprise, 20August-1936,31:3-6).

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

No. 1 Paper Machine
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Mill #1 Finishing Room/ Beach Plant**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1923** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Commercial (Type)**

secondary style:

primary siding: **Concrete Block**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

MILL #1 FINISHING ROOMIBLEACH PLANT Built: 1923
Evaluation: Historic Contributing
Probably the single most distinctive structure associated with the Hawley Pulp and Paper Company, this four story concrete structure is notable for its stepped parapet, engaged columns and the "Hawley Pulp and Paper" legend still visible under paint on the south-facing elevation. Built on the site of the original David Harvey mill, one of the earliest uses of the Willamette Falls for waterpower, the property was first converted to paper production in 1908-1909 with the establishment of the Hawley company. Burnt in 1923, the present concrete was built upon that site and is documented in the Meldrum map of the area, along with several smaller volumes to the north. The building is now generally referred to at "the Bleach Plant."
The Mill # 1 Finishing Room was long the most photographed of the various structures at the Hawley Plant, its distinctive parapet standing out from the Pacific Highway and so the subject of several postcard views. Although the building has been somewhat modified, its original multi-pane sash windows replaced with the present large panes, the distinctive signage at the parapet remains visible beneath the present paint and the overall character is substantially intact.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Mill #1 Finishing Room/ Beach Plant
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Mill "E"**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1944** (c. ☐ secondary date: **1970** (c.)☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Corrugated metal**

secondary siding: **Concrete Block**

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes:

2012 Survey Update:Log processing building was constructed in 1945. The basic volume may still exist.

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

Mill E [Offices] Built: 1944-45,1970
Evaluation: Historic, Non-Contributing
In the early 20th century this location east of the log pond remained vacant, bisected by the PRL&P rail line that continued through Main Street to downtown Oregon City. In the mid-1940s a sawmill designated as Mill E was erected here, processing logs that were floated into the pond. In the 1970s this structure was significantly modified and re-designed. Today Mill E houses a number of uses, most notably various maintenance shops and the mill offices. While built during the historic period, Mill E retains little visual character with its original design or function

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Looking north from PGE Dam

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Sulphite Plant**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1953** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Corrugated metal**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Survey Update: Older wood frame buildings were replaced. 1956 construction photos show the entire sulphite plant being re-built with steel framing.**
Original wood structure was replaced at the digester portion of the building in 1954 photo.

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

MILL CIDIGESTERISULFITE MILL: Built: pre-1916, as modified
Evaluation: Historic Contributing
This wood-frame volume was built sometime prior to 1916, when it was reported that its "...size was being greatly increased" (Oregon City Enterprise, 22-June-1916, 1:5). The building was originally designated as Mill "c." The structure contains two basic halves, the "digesters" on the north and a sulfite plant on the south. Neither are presently in use. In the Meldrum Survey of the Hawley Pulp and Paper plant, prepared in 1926, the northern portion, 50' x 132' in size, was identified as "Digester and Wet Machine Building," while the southern portion, 40' x lOT in size, was in use as a warehouse. In 1951-1952 significant modernization of Mill C occurred, including the installation of new machines and equipment that likely occurred concurrently with exterior remodeling or alteration to the original structure (See Blue Heron Paper Company, Photo Negatives 3859-3867 et seq.). The Sulfite Mill, apparently the southern portion of the structure, was closed in 1983.
The Mill C/Digester is a large transite-clad volume approximately five stories in height with a monitorlike roof. The southern, "sulfite plant\warehouse" extension in approximately three and half stories in height, with a modified shed roof. The footprint of the building is irregular, following the access street on the west side.

2012 Survey Update:
Steel framed structure replaced grain elevators

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Sulphite Plant
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

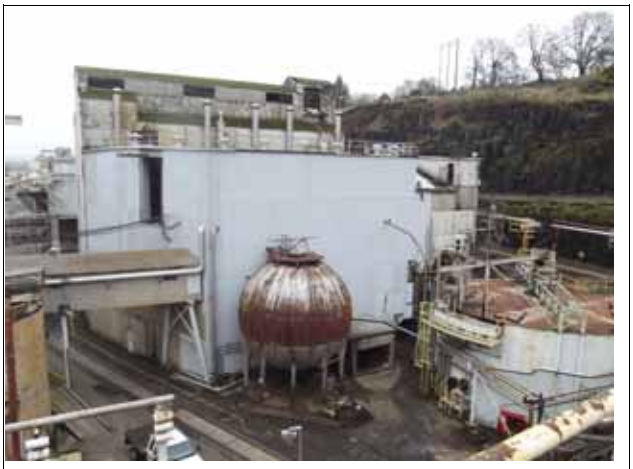
NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **No. 4 Paper Machine Warehouse**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1911** (c. ☑ secondary date: **1925** (c.) ☐
(optional--use for major addns)

primary orig use: **Industrial Storage**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Corrugated metal**

secondary siding: **Concrete Block**

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

NO. 4 WAREHOUSE
Built: 1919, as modified
Evaluation: Historic Contributing
The northern portion ofthis volume, now designated "No.4 Finishing Room and Warehouse," was apparently built jointly with the Paper Machine No.4 building and is of similar concrete construction and design. Subsequent additions expanded the volume to its present footprint at some point prior to the mid-l 940s according to available photographs. Separated from that building by a covered rail spur, the northern end of the No.4 Warehouse is a shipping shed, a later addition built follOWing the closure of 3,d Street and the construction of the northernmost extension to the No.4 building proper.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

No. 4 Paper Machine Warehouse
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Digesters**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1890** (c. ☑ secondary date: **1910** (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style:

secondary style:

primary siding:

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Survey Update:Digesters originally installed in portion of grain elevator. Digester tanks were added through time. The building enclosure was re-built with steel framing in 1954. It appears the lower portion of the building was excavated further into the basalt.**
Mill 'C' rebuilt in 1956, not 1951-52 as dated.

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

MILL CIDIGESTERISULFITE MILL: Built: pre-1916, as modified
Evaluation: Historic Contributing
This wood-frame volume was built sometime prior to 1916, when it was reported that its "...size was being greatly increased" (Oregon City Enterprise, 22-June-1916, 1:5). The building was originally designated as Mill "c." The structure contains two basic halves, the "digesters" on the north and a sulfite plant on the south. Neither are presently in use. In the Meldrum Survey of the Hawley Pulp and Paper plant, prepared in 1926, the northern portion, 50' x 132' in size, was identified as "Digester and Wet Machine Building," while the southern portion, 40' x lOT in size, was in use as a warehouse. In 1951-1952 significant modernization of Mill C occurred, including the installation of new machines and equipment that likely occurred concurrently with exterior remodeling or alteration to the original structure (See Blue Heron Paper Company, Photo Negatives 3859-3867 et seq.). The Sulfite Mill, apparently the southern portion of the structure, was closed in 1983.
The Mill C/Digester is a large transite-clad volume approximately five stories in height with a monitorlike roof. The southern, "sulfite plant\warehouse" extension in approximately three and half stories in height, with a modified shed roof. The footprint of the building is irregular, following the access street on the west side.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Digesters
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **No. 4 Paper Machine Warehouse**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1911** (c. ☑ secondary date: **1925** (c.) ☐
(optional--use for major addns)

primary orig use: **Industrial Storage**

secondary orig use:

primary style: **Utilitarian**

secondary style:

primary siding: **Corrugated metal**

secondary siding: **Concrete Block**

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

NO. 4 WAREHOUSE
Built: 1919, as modified
Evaluation: Historic Contributing
The northern portion ofthis volume, now designated "No.4 Finishing Room and Warehouse," was apparently built jointly with the Paper Machine No.4 building and is of similar concrete construction and design. Subsequent additions expanded the volume to its present footprint at some point prior to the mid-l 940s according to available photographs. Separated from that building by a covered rail spur, the northern end of the No.4 Warehouse is a shipping shed, a later addition built follOWing the closure of 3,d Street and the construction of the northernmost extension to the No.4 building proper.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

No. 4 Paper Machine Warehouse
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

North Substation
419 Main Street
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **North Substation**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **demolished**

primary constr date: **1927** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style:

secondary style:

primary siding:

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **The north Substation was built at the same time as Mill "B" DEINK.**

NRI Global purchased the North substation in October 2011 and will desmantle the structure for scap value in 2012.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed:

ILS survey date:

RLS survey date:

Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☑ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Mill "B" De Ink**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **3**

elig. evaluation: **eligible/contributing**

primary constr date: **1928** (c. ☐ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style:

secondary style:

primary siding:

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Resurvey Update:Significant architectural character. This was a gem of a building when first constructed. It's design compliments the adjacent No. 4 PM built shortly after the completion of Mill 'B'. Both buildings fit into the downtown grid / fabric of historic Oregon City.**

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

MILL B (DE-INKERI:
Built: 1928
Evaluation: Historic Contributing

Constructed following the demolition of a Portland Railway light &Power Company freight shed that long stood on this site at the corner of Main and 3rd streets, this multi-story concrete volume with multi-pane industrial steel sash windows was completed in 1928 and was originally designated as "Mill B." After 1916 this parcel was the only portion on the east side of Main south of Fourth that was not owned by the Hawley company (Oregon City Enterprise, 7-January-1916, 1:5). Company records indicate that Mill B, now known as the "De-Inker" was constructed in connection with the remodeling and expansion of Paper Machine No.4 and the design of both buildings bears a striking similarity. As late as 1979 various drawings continue to use the "Mill B" name.

Mill B is approximately three stories height with cast concrete columns and a Moderne cornice detail. Glass block windows remain on the upper portion with the first floor panels being of plain concrete. Various ancillary uses (tanks, sheds, piping, etc.) are located around the perimeter of the structure.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Mill "B" De Ink
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **Deink ONP Repulper**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1953** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use:

secondary orig use:

orig use comments:

primary style:

secondary style:

prim style comments:

sec style comments:

primary siding:

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.**

De-Inking Annex/Repulper
Built: 1960s
Evaluation: Non Contributing
This metal-clad northern extension of the De-Jnker [Mill B] was built circa 1960.

2012 survey update: It appears the date of construction is 1953 based on site history and photographic doumentation.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

Deink ONP Repulper
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed: _____ _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

historic name: **Clairfier**

Oregon City ☐ vcnt **Clackamas County**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **not eligible/out of period**

primary constr date: **1967** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

orig use comments:

primary style:

secondary style:

prim style comments:

sec style comments:

primary siding: **Concrete: Other/Undefined**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Clarifier Built: 1967**
Evaluation: Non-Historic, Non-Contributing
This large concrete-lined holding tank and processing unit is the first stage in the effluent system of the Blue Heron Paper Company system. Excavation begin in April 1967 and the clarifier was first used in September of that year

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

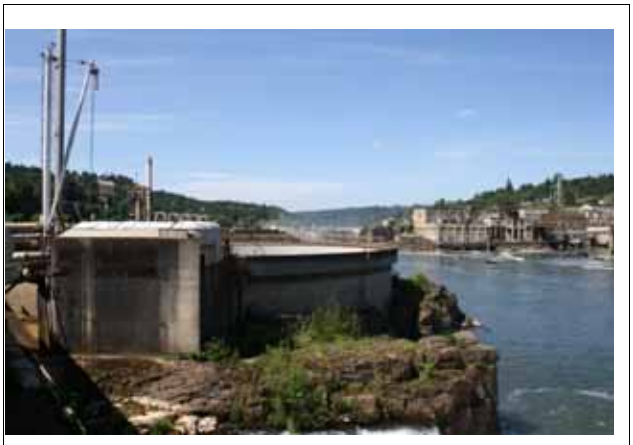
NR date listed:

ILS survey date:

RLS survey date:

Gen File date:

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **PGE Dam Structure**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1943** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use:

secondary orig use:

orig use comments:

primary style:

secondary style:

prim style comments:

sec style comments:

primary siding:

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **The PGE dam is not located on the former Blue Heron Paper Mill Proeprty. However, in many places, it demarks the property line location between the two entities. The North face of dam forms south wall of basement and sub-levels of adjacent buildings.**

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

WILLAMETTE FALLS DAM:2 Built: 1943
Evaluation: Historic Contributing

The earliest attempts to harness the power of Willamette Falls for industrial purposed reportedly occurred in the 1830s at the direction of John McLaughlin. Various small timber crib dams and structures were apparently connected to series of saw, flour, and woolen mills over the next five decades. Between 1889 and 1890, in connection with its plan to develop a pulp mill on the West linn side, to be built upon land leased from the Willamette Transportation and Locks Company, the WiIlamette Pulp and Paper Company "..constructed a timber crib dam on the westerly side of the river extending some 800 feet from the wall of the canal and locks across the main channel of the river to the head of the Falls" (PGE, 1957:Q3) Two years later, in 1892, the Willamette Falls Electric Company, in preparation for the construction of what would become Station B [now the T. W. Sullivan Hydroelectric Plant], constructed a dam spanning the entire river, beginning at the bulkhead of Station A, on the east (Oregon City) side of the channel and continuing around the falls and then over the top of the earlier Willamette Pulp and Paper dam. "This latest section of timber crib dam was approximately 950 feet in length and built sufficiently far upstream from the crest of the falls to serve as a coffer dam when a concrete dam was built later" (PGE, 1957:Q4).

In 1907 the timber crib dam was replaced by a new concrete structure that spanned the entire river. "Fifty thousand dollars has been expended by the Portland Railway light and Power Company in the construction of improvements at the falls of the Willamette that will last for all time. Work was started last May on a new concrete wall, forming the headworks for the basin, and this is now practically complete" (Oregonian, 26-August-1907, 8:1). The 1907 dam was itself improved and expanded several times over the next two decades.

A flood during January 1942 washing out a 160-foot section of the Willamette Falls dam on the east side of the falls and extending northerly from the old Station A plant…the original parts of the flood-battered dam consisted of timber bents faced with heavy plank…Parts of this structure were washed out in 1923. The dam was then reinforced with rock-filled cribs on the downstream side. In 1935, the top was raised and additional cribs were added on the downstream side …For PGE, the Gilpin Construction Company built a cofferdam across the basin to dewater the construction area. In March 1943 the rock bed of the basin was exposed, revealing a millrace excavated in the 1830s for the venerable Dr. John Mclaughlin to serve his waterwheel-powered flour and sawmill at the lower end of the basin area. A new dam of about 875 feet in length and 25 feet in height was constructed of concrete with flood spillway sections provided with stoplogs. The spillway piers supported a bridge connecting the various mill buildings of the Hawley Pulp and Paper Company… [now Blue Heron] (Griesser, 1982:181).
This 1943 concrete dam, with subsequent repairs and maintenance, remains in use today and serves as the connecting feature that supports the individual hydroelectric and paper-making operations that occupy the Willamette Falls Industrial Area

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 — Survey & Inventory Project

farmstead/cluster name:

external site #: _____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: _____

ILS survey date: _____

RLS survey date: _____

Gen File date: _____

106 Project(s)



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **419 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **No 2. Paper Machine**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1910** (c. ☐ secondary date: **1982** (c.)☐
(optional--use for major addns)

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

primary orig use:

secondary orig use:

orig use comments:

primary style:

secondary style:

prim style comments:

sec style comments:

primary siding:

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **2012 survey Update:Building shows up on 1892 Sanborn Map. Description may be correct that earlier building was incorporated into 1910 No. 2 PM building. Careful observation of historic foundations may provide a clue.**

High Cultural Interpretation Value
Damged by fire in 1982
Flour mill foundations c. 1888
Drive shaft and fly wheel located in the basement.

Building descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

Paper Machine No.2 [Site] : Built: 1910, 1982
Evaluation: Non-Historic, Non-Contributing
Paper Machine No.2, built on this site circa 1910 (although possibly an adaptation of an earlier industrial volume on the site) was a brick volume with a gable roof (Smurfit Paper Company, Timeline of Mill Site Events, 1993). In 1982 the machine was shut down and sometime later the building was essentially dismantled. Today, while portions of the exterior brick walls and the concrete floor remain as an interior element of the surrounding volumes, the structure is largely gone.

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Blue Heron Mill Site, 2012 Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

Oregon Historic Site Form

No 2. Paper Machine
419 Main Street
Oregon City, Clackamas County

SHPO INFO FOR THIS PROPERTY

NR date listed:
ILS survey date:
RLS survey date:
Gen File date:

106 Project(s)

SHPO Case #	Date	Agency Effect Eval
	2/3/2012	



Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **415 Main Street** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name: **No. 4 Paper Machine**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: lot nbr: tax lot nbr:

township: range: section: 1/4:

zip:

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories):

elig. evaluation: **eligible/contributing**

primary constr date: **1928** (c. ☑ secondary date: (c.) ☐
(optional--use for major addns)

primary orig use: **INDUSTRIAL: General**

secondary orig use:

primary style: **Modern Period: Other**

secondary style:

primary siding: **Concrete: Other/Undefined**

secondary siding:

plan type:

total # eligible resources: total # ineligible resources:

NR status:

NR date listed: (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **2012 Survey update:The 1916-1919 building enclosure was completely replaced in 1928. There may be some portions of the north and east exterior walls from the 'Finishing House'.First portion of this structure first appears on the Sanborn Map in 1911. North addition appears on 1925 Sanborn Map. South addition was built in 1928, at the same time No. 4 PM was being re-built. Exterior façade style and design match 1928 No. 4 PM.**

See 1927 photo of Mill 'B'. The 1928 Building is substantially larger than the prior building (or group of buildings) The completed building was of uniform appearance, matching the exterior design of Mill 'B', built the previous year. Both No. 4 PM and Mill 'B' are great examples of early 19th century industrial buildings and early incorporation of cast-in-place concrete, daylighitng and natural ventilation

uilding descriptions are taken from the Willamette Falls Industrial Area Request for Determination of Eligibility 2002- George Kramer.

Built: 1916/1919, modified 1928
Evaluation: Historic Contributing
The initial construction of Paper Machine No.4 was a part of a period of massive expansion by the Hawley Paper and Pulp Company. "1916 property was purchased and another building was built for another paper machine, No.4. To make room for this building, the McLaughlin House was moved to present location." (Fosberg, 1967). In 1919 a new "North End" was constructed adjacent to the PM No.4, that was known as the "Finishing House." This facility was built by Hurley-Mason. (See drawing #805-13, dated 13-June-1919, Blue Heron Plan Vault) In 1928 Hawley replaced No.4 with a new newsprint machine, which at the time was the largest and fastest of its type in the western United States. "We have just installed a new paper making machine...which operates at the rate of one thousand two hundred feet a per minute and will produce 120 tons of finished paper a day.. This new machine cost two million dollars" (W. P. Hawley, as quoted in Lockley, 1928:138). It appears from available blueprints that the building was enlarged in conjunction with the installation of the new newsprint machine. V. D. Simons, with offices in the Tribune Tower, Chicago, Illinois, served as the engineer in charge of the project. The Paper Machine No. 4 building has been subsequently remodeled and expanded, with various additions that expand its original footprint. Still, the exposed concrete exterior, engaged columns, large industrial windows, and overall character of the structure remain intact, effectively relating its original period of development.

GROUPINGS / ASSOCIATIONS

Oregon Historic Site Form

No. 4 Paper Machine
415 Main Street
Oregon City, Clackamas County

survey project name or other grouping name: Blue Heron Mill Site, 2012 | Survey & Inventory Project

farmstead/cluster name:

external site #:
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed:

ILS survey date:

RLS survey date:

Gen File date:

106 Project(s)



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: ORD 13-1005

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6c.

From: Community Development Director Tony Konkol

File Type: Ordinance

SUBJECT:
Second Reading, Ordinance No. 13-1005: Legislative File 12-01: Proposed Amendments to the Land Use Appeal Process

RECOMMENDED ACTION (Motion):
Staff recommends that the City Commission approve the second reading and adoption of Ordinance No. 13-1005, amending Chapter 17.50 - Administration and Procedures of the Oregon City Municipal Code.

BACKGROUND:
This amendment application originally included an option, at the City Commission's discretion, to send a land use application appeal to a hearings officer. The City Commission held a work session to discuss this option and determined not to pursue the hearings officer portion of the proposed Oregon City Municipal Code text amendments. All language pertaining to the hearings officer has been removed from the ordinance. The remaining amendments address standing to appeal and the appellate review procedures for Type II hearings to make them consistent with state law under ORS 227.175(10)(a)(C) and (D).

Under the current code, standing to appeal of a Type II decision is limited to those parties who submitted written comments to the Community Development Director within the 14-day comment period. ORS 227.175(10)(a)(C) confers standing on anyone who is "adversely affected or aggrieved" by the decision or is entitled to a notice of decision, which would include those individuals who submitted written comments. Further, ORS 227.175(10)(a)(D) requires that appeals of a decision by the Community Development Director (Type II decisions) be heard de novo by the City Commission.

The Planning Commission reviewed the proposed text amendments at the January 28, 2013 hearing and has recommended that the City Commission approve Legislative File 12-01. The proposed ordinance has been reviewed by the City Attorney and the Community Development Director. The City Commission approved the first reading of the ordinance unanimously at its regular meeting on February 20, 2013.

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: ORD 13-1005

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6c.

From: Community Development Director Tony Konkol

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Community Development – Planning
221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

FILE NO.:	LE 12-01 – Administration and Procedures Amendment
HEARING DATE:	January 28, 2013 - 7:00 p.m., City Hall 625 Center Street Oregon City, OR 97045
APPLICANT:	Planning Division City of Oregon City 221 Molalla Avenue, Suite 200 Oregon City, OR 97045
REQUEST:	To bring our code in compliance with state statute and correct inconsistencies in the code language.
LOCATION:	City of Oregon City
REVIEWER:	Kelly Moosbrugger, Assistant Planner
RECOMMENDATION:	Staff recommends approval of this application based on satisfaction of all required criteria for a Legislative action.

Legislative actions involve the adoption or amendment of the city's land use regulations, comprehensive plan, maps, inventories and other policy documents that affect the entire city or large portions of it. Legislative actions which affect land use must begin with a public hearing before the planning commission.

B. Planning Commission Review.

1. Hearing Required. The planning commission shall hold at least one public hearing before recommending action on a legislative proposal. Any interested person may appear and provide written or oral testimony on the proposal at or prior to the hearing. The planning manager shall notify the Oregon Department of Land Conservation and Development (DLCD) as required by the post-acknowledgment procedures of ORS 197.610 to 197.625, as applicable.
2. Planning Manager's Report. Once the planning commission hearing has been scheduled and noticed in accordance with Section 17.50.090(C) and any other applicable laws, the planning manager shall prepare and make available a report on the legislative proposal at least seven days prior to the hearing.
3. Planning Commission Recommendation. At the conclusion of the hearing, the planning commission shall adopt a recommendation on the proposal to the city commission. The planning commission shall make a report and recommendation to the city commission on all legislative proposals. If the planning commission recommends adoption of some form of the proposal, the planning commission shall prepare and forward to the city commission a report and recommendation to that effect.

C. City Commission Review.

1. City Commission Action. Upon a recommendation from the planning commission on a legislative action, the city commission shall hold at least one public hearing on the proposal. Any interested person may provide written or oral testimony on the proposal at or prior to the hearing. At the conclusion of the hearing, the city commission may adopt, modify or reject the legislative proposal, or it may remand the matter to the planning commission for further consideration. If the decision is to adopt at least some form of the proposal, and thereby amend the city's land use regulations, comprehensive plan, official zoning maps or some component of any of these documents, the city commission decision shall be enacted as an ordinance.
2. Notice of Final Decision. Not later than five days following the city commission final decision, the planning manager shall mail notice of the decision to DLCD in accordance with ORS 197.615(2). (Ord. 98-1008 §1(part), 1998)

IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION, PLEASE CONTACT KELLY MOOSBRUGGER IN THE PLANNING DIVISION OFFICE AT 722-3789.

I. PROPOSED PROJECT

The Planning Division has applied for a text amendment to the Oregon City Municipal Code Chapter 17.50 – Administration and Procedures.

These amendments alter the standing and appellate review procedures for Type II hearings to make them consistent with state law under ORS 227.175(10)(a)(C) and (D). Under the current code, standing to appeal is limited to those parties who submitted written comments to the planning director within the 14-day comment period. ORS 227.175(10)(a)(C) confers standing on anyone who is "adversely affected or aggrieved" by the decision or is entitled of notice of the decision, which would include those individuals who submitted written comments. As such, staff recommends incorporating the standing rules directly from state law. Further, ORS 227.175(10)(a)(D) requires that appeals of a decision by the Community Development Director be heard *de novo*.

The revised language will not alter the scope of work for the Planning Commission.

The proposed amendment to Chapter 17.50 of the Oregon City Municipal Code would impact the following sections of the Oregon City Municipal Code (Exhibit 1).

- 17.50.030 - Summary of the city's decision-making processes.
- 17.50.110 - Assignment of decision-makers.
- 17.50.120 - Quasi-judicial hearing process.
- 17.50.190 - Appeals.

II. FACTS

A. Public Comment

Notice of the Planning Commission and City Commission public hearings for the proposal were published in the Clackamas Review, the Oregonian, and emailed to the Citizen Involvement Council and all neighborhood associations. Notices were additionally posted at City Hall and sent to the Library as well.

A comment was received on the original version of the ordinance, which proposed the option to allow a hearings officer to hear appeals to land use actions. This part of the amendment has been removed from the ordinance. The ordinance no longer contains any language about hearings officers. No other comments were received.

III. DECISION-MAKING CRITERIA:

Oregon City Municipal Code (OCMC) Chapter 17.68 – Zoning Changes and Amendments
17.68.020 – Criteria
A. The proposal shall be consistent with the goals and policies of the comprehensive plan.

Findings: Complies as Proposed. The appeals process amendment remains consistent with the following Comprehensive Plan goals and policies.

> Goal 1.1 Citizen Involvement Program
> Implement a Citizen Involvement Program that will provide an active and systematic process for citizen participation in all phases of the land-use decision making process to enable citizens to consider and act upon a broad range of issues affecting the livability, community sustainability, and quality of neighborhoods and the community as a whole.
>
> Goal 1.2 Community and Comprehensive Planning

Ensure that citizens, neighborhood groups, and affected property owners are involved in all phases of the comprehensive planning program.

Policy 1.2.1
Encourage citizens to participate in appropriate government functions and land-use planning.

Goal 1.4 Community Involvement
Provide complete information for individuals, groups, and communities to participate in public policy planning and implementation of policies.

Goal 1.5 Government/Community Relations
Provide a framework for facilitating open, two-way communication between City representatives and individuals, groups, and communities.

Policy 1.5.1
Support the CIC in initiating and planning events in cooperation with the City on issues of mutual interest. Topics may include such things as working with local schools regarding citizen involvement and stakeholders involved with Comprehensive Plan development and Urban Growth Boundary expansion.

The aforementioned policies encourage participation of Oregon City citizens. The proposed amendment does not change the timing or intent of the land use process available to citizens. The Planning Division will continue to educate the public and encourage involvement of the public in planning-related issues.

B. That public facilities and services (water, sewer, storm drainage, transportation, schools, police and fire protection) are presently capable of supporting the uses allowed by the zone, or can be made available prior to issuing a certificate of occupancy. Service shall be sufficient to support the range of uses and development allowed by the zone.

Findings: Not Applicable. This standard is not applicable to this application. The proposed change to Chapter 17.50 of the Oregon City Municipal Code will not impact the level of service of the existing public facilities and services.

C. The land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the proposed zoning district.

Findings: Not Applicable. This standard is not applicable. The proposed amendments to Chapter 17.50 of the Oregon City Municipal Code will not change the land uses authorized in the underlying zone and will not change the level of service of the transportation system.

D. Statewide planning goals shall be addressed if the comprehensive plan does not contain specific policies or provisions which control the amendment. (Ord. 91-1007 §1 (part), 1991: prior code §11-12-2)

Findings: Complies as Proposed. The Oregon City Comprehensive Plan was adopted in June of 2004 and is consistent with the Statewide Planning Goals. The proposed amendment would not inhibit the ability of the public to participate in land use decisions.

In addition to the land use planning objectives identified within the City's Comprehensive Plan, Statewide Planning Goal 2, Part I, requires that local governments establish planning processes that are "coordinated" and assure that city decisions are supported by an "adequate factual base."

Findings: Complies as Proposed. The proposed amendment does not change the intent or major functions of the land use process. The Planning Division will continue to coordinate planning processes and assure that decisions are supported by an adequate factual basis.

IV. RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the amendment to Chapter 17.50 of the Oregon City Municipal Code to the City Commission for their consideration at the February 20, 2013 public hearing.

V. EXHIBITS

1. Amended OCMC Chapter 17.50 Administration and Procedures

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-160

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6d.

From: City Recorder Nancy Ide

File Type: Resolution

SUBJECT:
Resolution No. 13-07, Agreement with Clackamas County for Use of City Rights of Way

RECOMMENDED ACTION (Motion):
Staff recommends the Commission consider terms of a franchise agreement with the County for use of City rights of way for it's BTOP fiber.

BACKGROUND:
For nearly two years, City staff has been working with Clackamas County staff to reach agreement to authorize the County's use of City rights of way for its BTOP fiber network. The County will use the network to provide, for a monthly fee, dark fiber services to public and private entities in the City and throughout the County. Recently, representatives of the City and County have reached agreement on a draft franchise for consideration by the respective elected bodies. The proposed franchise is based on the City's standard telecommunications franchise agreement, with changes necessary to reflect the unique nature of this public project and the services provided by the County. The agreement would guarantee a minimum annual payment from the County with the possibility of a larger payment of a percentage of the revenue generated by the fiber network in the City. The County will follow applicable provisions of the City Code, including obtaining permits, paying permit fees, providing maps of the location of its facilities in the City, properly restoring any damage to the streets in a timely manner and relocating facilities as necessary to accommodate City projects. The agreement has a twenty year term.

BUDGET IMPACT:
Amount:
FY(s):
Funding Source:

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-160

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6d.

From: City Recorder Nancy Ide

File Type: Resolution

SUBJECT:
Resolution No. 13-07, Agreement with Clackamas County for Use of City Rights of Way

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BUDGET IMPACT:
Amount:
FY(s):
Funding Source:

Right of Way Use and Franchise Agreement
for
Broadband Infrastructure
between
City of Oregon City and Clackamas County

This Right of Way Use and Franchise Agreement ("Agreement") is made and entered into by and between the City of Oregon City, Oregon, an Oregon municipal corporation ("City"), and Clackamas County, Oregon, a political subdivision of the State of Oregon ("County").

RECITALS

WHEREAS, the County received a $7.8 million federal grant to construct an open Broadband infrastructure network throughout the County and to connect about 160 public buildings; and

WHEREAS, the County desires to construct the advanced Broadband infrastructure in the form of a dark fiber optic network through the City, and to connect to public buildings in Oregon City including schools, fire stations, medical facilities, social services, and libraries; and

WHEREAS, because the City is the County seat, the County maintains significant fiber and other infrastructure in City rights of way and the presence of County-owned property in the City significantly impacts the City's tax base; and

WHEREAS, the City acknowledges the significant benefits the County's fiber optic communications facilities will bring to the City and its residents, which benefits are unique among entities that own facilities in the City as of the effective date of this Agreement; and

WHEREAS, the City has reviewed Clackamas County's request to construct the dark fiber network in City rights of way and finds that it has the requisite authority to install facilities in the City and that the level of impact on the City's rights of way will be acceptable, and the City therefore agrees to allow the County the right to use and occupy the rights of way within the City of Oregon City.

NOW THEREFORE, the City and the County agree as follows:

1. Rights Granted

a. Subject to the terms and conditions contained herein, the City authorizes the County to construct, operate, repair, or maintain its fiber optic communications facilities and modify, remove or add additional facilities within the rights of way as defined in Section 13.24.030 of the City Code. For purposes of this Agreement, the fiber optic communications facilities ("Facilities") means those facilities installed in the City by or on

behalf of the County solely to provide public institutions and private service providers access to and use of dark fiber as set forth in the Financial Assistance Award to the County from the United States Department of Commerce, Award No. NT10BIX5570079, and the documents incorporated therein by reference ("Grant").

b. The County agrees to comply with all applicable City, state and federal laws, ordinances, rules and regulations in existence as of the effective date of this Agreement or hereafter enacted. Except as expressly set forth herein, the County agrees to comply with the terms and conditions Chapter 13.24 of the Oregon City Municipal Code ("Code") as though fully set forth herein.

c. This Agreement does not create or vest in the County or any other party any right, title or interest in City easements or rights-of-way, nor does this Agreement create or vest in the City or any other party any right, title or interest in the Facilities.

2. Construction standards

The construction standards of Title 13 of the Oregon City Municipal Code, as well as any other applicable construction standards in existence at the time of this Agreement or hereafter enacted, shall apply to all work performed on or installation of Facilities by or on behalf of the County in City rights of way.

3. Franchise Fees

a. The annual franchise fee payable to the City shall be the greatest of six percent (6%) of the County's gross revenues earned or derived from the Facilities in the City or a minimum annual fee of twelve thousand dollars ($12,000.00). "Gross revenues" shall mean any and all revenue, of any kind, nature or form, without deduction for expense, less net uncollectible, subject to all applicable limitations imposed by federal or state law. The minimum annual fee set forth herein shall be adjusted annually based on the consumer price index for the Portland Metropolitan Area for January 1st of that year, beginning January 1, 2014.

b. The initial franchise fee due from the effective date of this Agreement through December 31, 2013, shall be paid no later than January 31, 2014, and shall include, in addition to the franchise fee required in section 3a for calendar year 2013, one thousand dollars ($1,000.00) as the pro rated minimum annual fee for December 2012. Thereafter, the franchise fee required in section 3a shall be paid quarterly, in arrears, for each quarter during the term of the franchise and shall be due and payable within forty-five (45) days of the end of each calendar quarter. Each quarterly payment shall be the greater of 6% of gross revenues from the preceding quarter or one-quarter of the minimum annual fee, except that the County shall adjust its payment for the fourth quarter of the calendar year as necessary to ensure accurate payment of the franchise fee set forth in section 3a.

c. In addition to the fee set forth in section 3a, the County agrees to pay an interim right of way usage fee and application fee of twenty-one thousand dollars ($21,000.00), paid within fifteen (15) days of the execution of this Agreement by both parties.

4. County's Continuing Obligation

a. The County intends to make the installed Facilities available to other telecommunications carriers. In the event that the County allows another telecommunication carrier to use the Facilities, the County will inform the City of the use and provide assistance to the City in securing any necessary franchise or license from the telecommunications carrier.

b. The County shall instruct all private users of the Facilities to comply with the City's Municipal Code. The County shall provide the City with the names of all private users of the Facilities in the City, subject to any confidentiality or nondisclosure agreement reasonably required by the County.

c. In the event that the County desires to offer telecommunications services other than use of dark fiber as set forth in the Grant or enhancement of existing governmental uses, the County agrees to notify the City and obtain any additional authority, including additional franchises and payment of applicable taxes and fees, as lawfully required by the City.

5. Term and Termination

The term of this Agreement shall be twenty (20) years from the effective date of this Agreement, which shall be as of December 1, 2012. This Agreement may be amended by mutual consent of the parties in writing. The City and County agree to review this Agreement in the 5th, 10th, and 15th year of its term to ensure compliance with applicable law changes and to reaffirm that the Agreement is still mutually beneficial and is not resulting in material loss to either party.

6. Indemnification

Subject to the conditions and limitations of the Oregon Constitution and the Oregon Tort Claims Act, ORS 30.260 through 30.300, the County shall indemnify, defend and hold harmless the City, its commissioners, employees and agents from and against any and all liability, claims, damages, losses, and expenses, including but not limited to reasonable attorneys fees, arising out of or resulting from the acts of the County, its officers, employees, and agents in the performance of this Agreement or arising out of or resulting from the construction, operation, repair and/or maintenance of the Facilities.

7. Authority

The parties acknowledge that the persons executing this Agreement on behalf of each entity have the legal power, right, and actual authority to bind their respective entities to

the terms and conditions of this Agreement

8. Entire Agreement

The parties agree and acknowledge that this Agreement is a complete, integrated agreement that supersedes any prior understandings related to implementation of the Facilities and that it is the entire agreement between them relative to the Facilities, and the City's rights-of-way.

IN WITNESS WHEREOF, the parties have executed this Agreement on the dates set forth below.

Clackamas County

By: _____ Dated: _____, 2013
County Administrator

City of Oregon City

By: _____ Dated: _____, 2013
City Manager

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: RES 13-06

Agenda Date: 3/6/2013

Status: Agenda Ready

To: City Commission

Agenda #: 6e.

From: Economic Development Manager Eric Underwood

File Type: Resolution

SUBJECT:
Resolution No. 13-06, Submitting a Measure Authorizing the Urban Renewal Commission to Issue Ten Million Dollars in Bonds for the Development of Property at Clackamette Cove

RECOMMENDED ACTION (Motion):
Staff recommends that the City Commission approve Resolution No. 13-06, authorizing the Urban Renewal Commission to issue ten million dollars in bonds for the development of property at Clackamette Cove.

BACKGROUND:
The Urban Renewal Commission (URC) and Clackamette Cove, LLC have been working toward finalizing a Disposition and Development Agreement for the development of approximately 36.59 acres of land owned by the URC and Clackamette Cove, along with an adjacent 11.05 acres of privately-owned land. The URC land requires extensive work to prepare the site for development that includes costly site remediation and infrastructure. The URC has determined that it is in the public interest and in furtherance of the Downtown North End Urban Renewal Plan to invest up to $10.0 million of Commission funds from the sale of bonds to pay the extraordinary costs. Initiative 3-407 requires that any issuance of debt by the URC to be amortized beyond one calendar year cannot occur without the approval of a majority of Oregon City voters.

Clackamette Cove, LLC cannot move forward with The Cove project without the urban renewal investment and has requested that the proposed sale of bonds in the amount of $10.0 million be placed on the May 21, 2013 election ballot. On the March 6, 2013 Urban Renewal Commission agenda is proposed Resolution No. UR13-02 requesting the City Commission to call for an election to issue $10 million dollars in bonds for the development of property at Clackamette Cove. If this resolution is approved, the City Commission will then consider whether to approve Resolution No. 13-06 approving the ballot title, explanatory statement, and sending the measure to the May 21, 2013 election ballot.

BUDGET IMPACT:
Amount:$10 million
FY(s): 12/13, 13/14
Funding Source: Urban Renewal

EXPLANATORY STATEMENT

The Oregon City Urban Renewal Commission ("Commission") is considering entering into a Disposition and Development Agreement ("Agreement") with a private developer, Clackamette Cove LLC ("Developer"), for the development of approximately 36.59 acres of land owned by the Commission on the banks of Clackamette Cove ("Commission Land"), along with an adjacent 11.05 acres of privately-owned land. The Commission has not yet reached agreement with the Developer on the final terms of the Agreement.

The project proposed by the Developer consists of 204 apartments (built to condominium standards) on the south bank of Clackamette Cove, 96 garden apartments (on the private land), a recreation building for residents, a bank side public esplanade, trails, a public park, a public parking area and streets and utilities.

The Commission Land requires extensive work to prepare the site for development including: significant fill to bring the site above the 100-year flood plain, re-grading slopes and banks, excavation and re-filling with engineered fill, removing buried construction debris, importing topsoil, relocating power lines, dealing with steel piles and constructing two public streets. The Commission determined that the proposed development would be uneconomic if the Developer paid the costs of the above site remediation activities and the cost of the necessary infrastructure. Accordingly, the Commission determined that it is in the public interest and in furtherance of the Downtown North End Urban Renewal Plan to invest up to $10.0 million of Commission funds from the sale of bonded indebtedness to pay the above-described extraordinary costs. The Commission may not sell the $10.0 million of bonded indebtedness without the approval of a majority of citizens of Oregon City voting at a duly-called election, as required by Initiative 3-407.

The $10.0 million of funds will come from the sale of tax increment revenue-backed bonds. Of that amount, $3.0 million will refinance a $3.0 million investment in the project the Commission made in January 2010, and $7.0 million will be invested to pay the above-described extraordinary costs, but only after the above-described site remediation and infrastructure work has been completed, the Developer has obtained all necessary project financing and construction has commenced on the 204 bank side apartments and the 96 garden apartments. The Commission's consultants have determined that the incremental property taxes from the development itself will be sufficient to pay the principal and interest on the proposed $10.0 million bond issue.

The proposed Agreement is complicated and contains numerous conditions to protect the public's interest and to assure the public of a quality project. The project will be required to pay prevailing wages. In the event the Commission elects to enter into the Agreement, a copy of the final Agreement will be available for public inspection at the Commission office.

A "yes" vote means that the Commission is authorized to sell the above-described $10.0 million of bonded indebtedness, IF THE COMMISSION ENTERS INTO THE AGREEMENT. A "no" vote means that the Commission is not authorized to sell the $10.0 million of bonded indebtedness.

RESOLUTION NO. 13-06

A RESOLUTION SUBMITTING A MEASURE AUTHORIZING THE URBAN RENEWAL COMMISSION TO ISSUE TEN MILLION DOLLARS IN BONDS FOR THE DEVELOPMENT OF PROPERTY AT CLACKAMETTE COVE

WHEREAS, Measure 3-407, adopted by the voters of Oregon City in November of 2012, requires voter approval before the Oregon City Urban Renewal Commission may issue any bonds; and

WHEREAS, the Oregon City Urban Renewal Commission is considering issuing up to $10,000,000 in bonds to allow for the development of property located at Clackamette Cove; and

WHEREAS, the Oregon City Urban Renewal Commission has adopted a resolution asking the Oregon City Commission to send a measure to the voters of Oregon City asking for authority to issue up to $10 million in urban renewal bonds; and

WHEREAS, the Oregon City Commission, as the local governing body is the entity authorized to call an election on this issue;

NOW, THEREFORE, OREGON CITY RESOLVES AS FOLLOWS:

Section 1. A special city election is called in and for the City of Oregon City, to be held Tuesday, May 21, 2013. The Clackamas County Clerk shall conduct the election.

Section 2. At that election, the question of whether to authorize the Urban Renewal Commission to issue up to $10 million of bonded indebtedness shall be submitted o the voters of Oregon City.

Section 3. The City Commission adopts the ballot title attached to this Resolution as Exhibit A to describe the measure and directs the City Manager to file the ballot title with the City Recorder.

Section 4. The City Commission directs the City Recorder to take all actions necessary to hold the election, including publication of the notice of receipt of the ballot title.

Approved and adopted at a regular meeting of the City Commission held on the 6th day of March 2013.

_____
DOUG NEELEY, Mayor

Attested to this 6th day of March 2013:

_____
Nancy Ide, City Recorder

Approved as to legal sufficiency:

_____
City Attorney

EXHIBIT A

BALLOT TITLE

MEASURE No. ____

CAPTION: Authorizes Urban Renewal Commission to issue $10,000,000 of bonded indebtedness.

QUESTION: Shall the Oregon City Urban Renewal Commission be authorized to issue $10,000,000 of bonded indebtedness for development at Clackamette Cove?

SUMMARY: Measure 3-407, adopted by the voters in November of 2012, requires voter approval before the Oregon City Urban Renewal Commission ("Commission") may issue bonded indebtedness. The Commission has requested authorization to issue ten million dollars of bonded indebtedness to allow for the development of property, including property the Commission owns, on the banks of Clackamette Cove.

The bonded indebtedness is expected to fund the infrastructure to allow a developer to build approximately 204 residential units and associated development including apartments (built to condominium standards) on the south bank of Clackamette Cove, 96 garden apartments (on the private land), a recreation building for residents, a bank side public esplanade, trails, a public park, a public parking area and streets and utilities.

The Commission found that the project is unlikely to proceed without the bonded indebtedness because costs to develop the property without it would be too high. The Commission also estimated that the property tax increment from the development itself will be sufficient to pay the principal and interest on the proposed $10.0 million bonded indebtedness.

NOTICE OF BALLOT TITLE – REFERRAL BY CITY COMMISSION

NOTICE IS HEREBY GIVEN that the City Recorder of Oregon City has received a proposal from the Oregon City Commission to authorize the Oregon City Urban Renewal Commission to issue ten million dollars in bonded indebtedness. The City Recorder has determined that the proposal contains only one subject, as required by section 1(2)(d), Article IV of the Oregon Constitution.

NOTICE IS FURTHER GIVEN that any elector of the City who believes the proposed measure contains more than one subject or who believes the ballot title is insufficient, not concise, or unfair may file a petition for judicial review with the Circuit Court for Clackamas County no later than March 18, 2013, which is seven business days after the ballot title was filed with the City Elections Officer.

NOTICE IS FURTHER GIVEN that the Oregon City Commission has submitted the following ballot title for the proposal:

BALLOT TITLE

MEASURE No. ____

CAPTION: Authorizes Urban Renewal Commission to issue $10,000,000 of bonded indebtedness.

QUESTION: Shall the Oregon City Urban Renewal Commission be authorized to issue $10,000,000 of bonded indebtedness for development at Clackamette Cove?

SUMMARY: Measure 3-407, adopted by the voters in November of 2012, requires voter approval before the Oregon City Urban Renewal Commission ("Commission") may issue bonded indebtedness. The Commission has requested authorization to issue ten million dollars of bonded indebtedness to allow for the development of property, including property the Commission owns, on the banks of Clackamette Cove.

The bonded indebtedness is expected to fund the infrastructure to allow a developer to build approximately 204 residential units and associated development including apartments (built to condominium standards) on the south bank of Clackamette Cove, 96 garden apartments (on the private land), a recreation building for residents, a bank side public esplanade, trails, a public park, a public parking area and streets and utilities.

The Commission found that the project is unlikely to proceed without the bonded indebtedness because costs to develop the property without it would be too high. The Commission also estimated that the property tax increment from the development itself will be sufficient to pay the principal and interest on the proposed $10.0 million bonded indebtedness.

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-158

Agenda Date: 3/6/2013

Status: Consent Agenda

To: City Commission

Agenda #: 7a.

From: Finance Director Wyatt Parno

File Type: Resolution

SUBJECT:
Resolution No. 13-05, Adjustments to Fiscal Year 2012-13 Budget

RECOMMENDED ACTION (Motion):
Staff recommends the City Commission approve Resolution No. 13-05, Adjustments to Fiscal Year 2012-13 Budget

BACKGROUND:
The Mayor and City Commission adopted the Fiscal Year 2012-13 Budget with Resolution No. 12-16 on June 20, 2012. Through the course of routine operations, conditions that were not known at the time the budget was prepared have occurred that require adjustments to the Adopted Budget. The adjustments include appropriating for bailiffs to secure Municipal Court operations, the cost of which will be offset by traffic fines revenue, acceptance and appropriation of four grants secured by City staff, and acceptance and appropriation of pass-through funds for the Oregon City School District and South Fork Water Board.

BUDGET IMPACT:
Amount:
Increased Grant Revenue $245,152
Increased Charges for Services Revenue $10,000
Use of Contingency Funds $162,000 (primarily grant matching funds)
FY(s): 2012-13
Funding Source: Grants and Construction Excise Taxes

Oregon City
Request for Budget Adjustments
2013 Budget Adjustments 1

	Account Description	Number	Original Budget	Increase	Decrease	Revised Budget
General Fund						
1	Contingency	300-199-888	945,792		10,000	935,792
1	Part Time Salaries (Bailiffs)	300-041-133	44,064	10,000		54,064
2	Grant Revenue	300-073-322	214,000	9,000		223,000
2	Police Overtime	300-071-151	363,540	9,000		372,540
3	Grant Revenue	300-073-322	214,000	63,247		277,247
3	Small Equipment	300-071-352	58,737		10,000	48,737
3	Service Contract	300-071-381	71,990	11,227		83,217
3	New Equipment	300-071-551	7,000	62,020		69,020
Library Fund						
4	Grant Revenue	318-200-311	-	22,905		22,905
4	Contingency	318-200-888	287,842		2,000	285,842
4	Service Contract	318-200-381	-	24,905		24,905
Community Development Fund						
5	School Excise Tax Revenue	351-061-575	200,000	250,000		450,000
5	School Excise Tax Revenue 4%	351-061-576	8,000	10,000		18,000
5	School Excise Tax Pass Through	351-061-431	200,000	250,000		450,000
5	Contingency	351-061-888	24,326	10,000		34,326
Water Fund						
6	South Fork Water Board SDC Revenue	501-151-551	150,000	250,000		400,000
6	South Fork Water Board Pass-Through	501-151-453	150,000	250,000		400,000
Park Development - SDC Fund						
7	Grant Revenue	611-606-311	100,000	150,000		250,000
7	Contingency	611-606-888	460,967		150,000	310,967
7	Community Park Construction	611-606-574	50,000	300,000		350,000
		Page Total	3,550,258	1,682,304	172,000	5,060,562

Explanations:

1 - Transfer contingency to budget part-time Court bailiffs. Traffic fines revenue will offset cost by the end of the year (BR).
2 - Accept Clackamas County Sheriff's Office Special Investigations Unit grant and appropriate the funds for unit overtime (BR).
3 - Accept ODOT grant, reallocate line item budgets for City match, and appropriate funds for the eCitation program (BR).
4 - Accept Library Services & Technology Act grant and transfer contingency as matching funds for *Early Oregon Voices: Digitizing Historic Oregon City Newspapers* project (BR).
5 - Accept unanticipated School Excise Tax monies, and appropriate pass-through payments to Oregon City School District and City processing fees to contingency (BR).
6 - Accept unanticipated South Fork Water Board (SFWB) system development charges and appropriate pass-through payments to SFWB (BR).
7 - Accept Oregon Parks & Recreation Department grant and transfer contingency as matching funds for Rivercrest Restroom project (BR).

Type: Line Item Transfer (LT), Budget Resolution (BR) or Supplemental Budget (SB).

Department Director: Approved by various directors. Date: 2/26/2013

Finance Director: Date: ✓

City Manager: Date: ✓

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-138

Agenda Date: 3/6/2013

Status: Consent Agenda

To: City Commission

Agenda #: 7b.

From: Public Works Director John Lewis

File Type: Contract

SUBJECT:
Public Improvement Contract with S-2 Contractors Inc. for the Pearl Street Widening and Rehabilitation Project

RECOMMENDED ACTION (Motion):
Authorize the City Manager to execute a Contract Agreement with S-2 Contractors Inc. in the amount of $129,330 to complete the Pearl Street Widening and Rehabilitation Project.

BACKGROUND:
In 2011, the City contracted with Murray, Smith & Associates, Inc. (MSA) to prepare a Five Year Pavement Maintenance Plan to help guide City staff with the management of future pavement maintenance needs. Pearl Street between Molalla and Linn Avenues was identified as needing an overlay and was also identified as one of three future special projects. Its designation as a future special project was a result of the steepness of the roadway just west of Myrtle Street as well as the narrowness of this section of roadway. Before completing the recommended overlay on Pearl Street, the City set out to come up with the lowest cost solution to provide increased lane width to the greatest extent possible.

In April of 2012, the City contracted with Century West Consulting (a consultant on our short-list of prequalified engineering consulting firms) to develop a plan to rehabilitate the aforementioned section of roadway. A geotechnical engineer was brought in to perform a reconnaissance of the site and to determine the best solution for widening the roadway. They determined that in order to widen Pearl Street at the hill, a retaining wall would be necessary. Century West then proceeded to prepare contract documents including a structural drawing for the retaining wall and they developed an engineer's estimate to complete the work of $93,300.

In accordance with City and State contracting procedures, bids were solicited from three firms for the Pearl Street Widening and Rehabilitation based on the engineer's estimate. A fourth contractor with which the City has a good working relationship requested the opportunity to bid on the project so they too were provided a set of bid documents. In the end, four bids were received with the lowest responsive and responsible bid being submitted by S-2 Contractors, Inc. The list of bidders and their bid amounts are provided below:

S-2 Contractors, Inc. - $129,330.00
Canby Excavating, Inc. - $137,343.50
Landis & Landis LLC - $147,120.00
Dirt & Aggregate Interchange, Inc. - $148,888.00

Although these bids were all higher than the engineer's estimate, we feel that because the range was

so close, they were competitive and acceptable to the City. The City therefore recommends award to S-2 Contractors Inc. in the amount of $129,330.

BUDGET IMPACT:
Amount: $129,330.00
FY(s): 2012/2013
Funding Source: Street Fund

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-138

Agenda Date: 3/6/2013

Status: Consent Agenda

To: City Commission

Agenda #: 7b.

From: Public Works Director John Lewis

File Type: Contract

SUBJECT:
Public Improvement Contract with S-2 Contractors Inc. for the Pearl Street Widening and Rehabilitation Project

RECOMMENDED ACTION (Motion):
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Although these bids were all higher than the engineer's estimate, we feel that because the range was

so close, they were competitive and acceptable to the City. The City therefore recommends award to S-2 Contractors Inc. in the amount of $129,330.

BUDGET IMPACT:
Amount: $129,330.00
FY(s): 2012/2013
Funding Source: Street Fund

SECTION IIIA
CONTRACT AGREEMENT

This Agreement, made and entered into this _____ day of _____, 2013, between the CITY OF OREGON CITY ("CITY"), acting by and through the City Commission and S-2 CONTRACTORS INC. ("CONTRACTOR").

Witnesseth, that the CONTRACTOR and the CITY, for the considerations stated herein, agree as follows:

ARTICLE I - Scope of Work

The CONTRACTOR hereby agrees to furnish all of the materials, equipment and labor necessary, and to perform all of the work for the project entitled: **Pearl Street Widening and Rehabilitation** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid	Performance Bond
Scope of Work	Payment Bond
Instructions to Bidders	First Tier Subcontractor Disclosure Form
Bid Proposal and Bid Schedule	State of Oregon Statutory Public Works Bond
Compliance with ORS 279C.840	General Conditions
Resident Bidder Status	Prevailing Wage Rates for Public Works Contracts in Oregon dated January 1, 2013
Certification of Drug Testing Program	
Non-Collusion Statement	Prevailing Wage Apprenticeship Rates dated January 1, 2013
Asbestos Certification	
Registrations	Definitions of Covered Occupations for Public Works Contracts in Oregon dated January 1, 2012
Business License Form	
Certification of Non-Discrimination	Special Provisions
Certification of Compliance with Tax Law	Contract Drawings
Customer Service Acknowledgment	City of Oregon City Standard Details
Disclosure Form	Technical Specifications
Contract Agreement	2008 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents
Oregon City Public Improvement Standard Conditions	Addenda: 1 and 2
Statutory Conditions to Contract Agreement	All items included within these Contract Documents.

The order of items cited above does not constitute an order of precedence different than that established in the special or standard specifications. Equivalent titles, which may be substituted for the above listed items, are included as if specifically named.

ARTICLE II - Time of Completion

The project shall be at substantial completion **45** consecutive calendar days after the Notice to Proceed. The project shall be ready for final acceptance within **60** consecutive calendar days after Notice to Proceed.

ARTICLE III – Contract Amount

The Contract Amount for the work covered by this Agreement is estimated to be **one hundred twenty-nine thousand three hundred thirty and 00/100 dollars ($129,330.00)**.

ARTICLE IV - Warranty and Quality of Work

In addition to all other warranties, express or implied, that are part of this Agreement, the Contractor expressly warrants to the City for a period of one year from acceptance of the

work by the City that all materials and equipment furnished under this contract will be new, unless otherwise specified, and that the work will be of good quality, free from faults and defects and in conformance with the City's specifications. Work that does not conform to these standards shall be considered defective.

Contractor shall, at its own expense, make good and repair any and all defects arising from faulty workmanship or materials, if the defective work is discovered within the one-year warranty period and notice thereof is given to the Contractor within 60 days after the expiration of the warranty period. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used to repair the defect**.**

In witness whereof, the parties hereto have executed this agreement, the day and year first above written.

CITY OF OREGON CITY

by: _____
David W. Frasher
City Manager

by: _____
John M. Lewis, P.E.
Public Works Director

Approved as to Legal Sufficiency:

By: _____
City Attorney

City Commission Award Date:

March 6, 2013

S-2 CONTRACTORS INC.

_____
Printed Name

by: _____
Authorized signature

_____
Title

Federal Taxpayer ID Number:

93-1025924

Address:

6860 S. Anderson Road
Aurora, Oregon 97002

Oregon City GIS Map

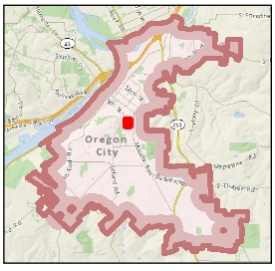


Legend

- Taxlots
- Unimproved ROW
- City Limits
- UGB
- Aerial Photos - 2011

Notes

Overview Map



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

N

0 83 Feet

1: 995

Pearl Street Widening and Rehab Project

Map created 2/26/2013

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.orcity.org

PROJECT NUMBER CI 12-005
PEARL STREET WIDENING AND REHABILITATION
02/21/13

				Engineer's Estimate		S-2 Contractors, Inc.		Canby Excavating		Landis & Landis		Dirt & Aggregate	
Item	**Description**	**Unit**	**Qty.**	**Price**	**Total**	**Price**	**Total**	**Price**	**Total**	**Price**	**Total**	**Price**	**Total**
1	Mobilization	LS	1	$7,500.00	$7,500.00	$15,000.00	$15,000.00	$26,100.00	$26,100.00	$25,000.00	$25,000.00	$7,235.00	$7,235.00
2	Traffic Control	LS	1	$3,000.00	$3,000.00	$1,000.00	$1,000.00	$900.00	$900.00	$1,500.00	$1,500.00	$3,600.00	$3,600.00
3	Temporary Concrete Barricade	LF	210	$15.00	$3,150.00	$18.00	$3,780.00	$18.60	$3,906.00	$22.00	$4,620.00	$17.20	$3,612.00
4	Clearing and Grubbing, Removal of Structures and Miscellaneous Items	LS	1	$2,000.00	$2,000.00	$5,000.00	$5,000.00	$1,420.00	$1,420.00	$1,500.00	$1,500.00	$2,945.00	$2,945.00
5	Concrete Sidewalk Installation, t = 4”	SF	200	$5.00	$1,000.00	$10.00	$2,000.00	$13.95	$2,790.00	$15.00	$3,000.00	$14.65	$2,930.00
6	Concrete Stairs and Handrail	LS	1	$2,500.00	$2,500.00	$2,700.00	$2,700.00	$2,684.00	$2,684.00	$4,000.00	$4,000.00	$5,411.00	$5,411.00
7	Standard Concrete Curb	LF	185	$15.00	$2,775.00	$20.00	$3,700.00	$21.50	$3,977.50	$25.00	$4,625.00	$20.00	$3,700.00
8	Unclassified Excavation and Backfill with 1” minus open-graded rock behind Retaining Wall and 4” dia. perforated drain pipe	LS	1	$20,000.00	$20,000.00	$9,500.00	$9,500.00	$13,430.00	$13,430.00	$15,000.00	$15,000.00	$28,290.00	$28,290.00
9	Type 2A Guard Rail with wood posts and end pieces	LF	185	$25.00	$4,625.00	$60.00	$11,100.00	$46.90	$8,676.50	$50.00	$9,250.00	$43.00	$7,955.00
10	3,000 psi Mix Concrete Footing including keyway, 1” minus crushed rock base and rebar.	CY	55	$400.00	$22,000.00	$900.00	$49,500.00	$903.00	$49,665.00	$880.00	$48,400.00	$1,077.00	$59,235.00
11	3,000 psi Hi-early Mix Concrete Wall 12” thick including rebar	CY	40	$400.00	$16,000.00	$410.00	$16,400.00	$400.00	$16,000.00	$500.00	$20,000.00	$400.00	$16,000.00
12	¾” minus crushed rock base beneath AC Pavement, t = 12”	TN	85	$50.00	$4,250.00	$50.00	$4,250.00	$28.70	$2,439.50	$25.00	$2,125.00	$25.00	$2,125.00
13	Asphalt Concrete Trench Patch including from back of curb to retaining wall, t = 3”	TN	45	$100.00	$4,500.00	$120.00	$5,400.00	$119.00	$5,355.00	$180.00	$8,100.00	$130.00	$5,850.00
	Bid Totals				**$93,300.00**		**$129,330.00**		**$137,343.50**		**$147,120.00**		**$148,888.00**

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: 13-159

Agenda Date: 3/6/2013

Status: Consent Agenda

To: City Commission

Agenda #: 7c.

From: City Recorder Nancy Ide

File Type: Minutes

Minutes of the February 12, 2013 Work Session Meeting

RECOMMENDED ACTION (Motion):

BACKGROUND:

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Minutes - Draft

City Commission

Doug Neeley, Mayor
Kathy Roth, Commission President
Betty Mumm, Carol Pauli, Rocky Smith, Jr.

Tuesday, February 12, 2013 | **5:30 PM** | **Commission Chambers**

Work Session

1. Convene Work Session and Roll Call

Mayor Neeley called the meeting to order at 5:30 PM.

Present: 5 - Mayor Doug Neeley, Commissioner Rocky Smith, Commissioner Betty Mumm, Commissioner Carol Pauli and Commissioner Kathy Roth

Staffers: 12 - City Manager David Frasher, City Attorney William Kabeiseman, Police Chief and Public Safety Director Mike Conrad, Public Works Director John Lewis, Community Development Director Tony Konkol, Community Services Director Scott Archer, City Recorder Nancy Ide, Human Resources Director Jim Loeffler, Finance Director Wyatt Parno, Library Director Maureen Cole, Economic Development Manager Eric Underwood and Attorney Nancy Werner

2. Future Agenda Items

Mayor Neeley suggested a discussion on a social hosting ordinance at a future work session.

Commissioner Roth suggested a future work session discussion on the City's fleet of vehicles using natural gas.

3. Discussion Items:

3a. 13-108 Rights of Way Use Ordinance

Nancy Werner, Franchise Attorney, explained the proposed rights of way ordinance including the current practice of charging franchise fees for use of the City's rights of way, existing franchise agreements, and alternative practice that moved away from franchise agreements to an ordinance that required licenses. The reasons for making the change was reduction in costs and staff time and creating a level playing field for all the providers. She then reviewed the proposed draft ordinance. The right of way usage fee was designed to apply to any entity using the right of way to provide services to customers as well as an attachment fee, registration fee, and license application fee.

There were questions regarding how this would be applied, the benefits of the change, implications for staff, and how it was different from franchise agreements.

William Gifford, resident of Oregon City, asked if the proposed fees were annual.

Ms. Werner responded the registration fee was annual, the license application fee was a one time fee for an application to be done every five years, and right of way usage fee was paid quarterly.

Mr. Gifford questioned increasing the fees by 3% annually and how the attachment fee of $5,000 was determined. Fees should pay for the service, and he did not want it to be perceived as the City trying to get more money from businesses.

Ms. Werner said the rate sheet was a draft and the final product would be clearer. In regard to the attachment fee, it was based off of what other jurisdictions were charging. It was less than paying based on percentage of the revenue. This was only for antennas on poles in the right of way.

David Frasher, City Manager, explained the 3% was historically consistent with what had been the inflation in the region to keep the fee from becoming outdated.

The consensus of the Commission was to proceed with the ordinance.

3b. 13-113 Resolution No. 13-02: A Resolution Submitting a Measure Amending Section 58 of the Oregon City Charter to Revise the Limitation on Increasing Water Rates to the Electors of Oregon City; and Resolution No. 13-03: A Resolution Submitting a Measure Amending Section 58 of the Oregon City Charter to Eliminate the Water Rate Rollback to the Electors of Oregon City.

John Lewis, Public Works Director, reviewed rate rollback issues, projected needs vs. revenue, water rate scenarios, general obligation bond option, and Charter amendment alternatives.

Bill Kabeiseman, City Attorney, clarified what should be included in the caption, question, and summary of the ballot measures.

There was discussion regarding the wording of the question for the water rate limitation.

Commissioner Mumm stated she and Commissioner Roth were heading up the campaign for the measures and she clarified the information on the City's website would be available and who could attend stakeholder meetings.

Commissioner Roth asked staff for information on the difference between using rates to pay for things like a building and using General Fund tax dollars.

William Gifford, resident of Oregon City, questioned some of the phrases in the measures that he found to be redundant and inflammatory.

The Commission thought the wording needed to be included.

Mr. Kabeiseman proposed the question for the water rate limitation to be: Shall the City Charter limit water rate increases to no more than 6% without a vote of the people.

The Commission was in favor of the wording.

3c. 13-109 Introduction to Public Sector Bargaining

Jim Loeffler, Human Resources Director, presented information on public sector

bargaining including an overview of the Public Employee Collective Bargaining Act, bargaining timelines, current contract costs, and what would be looked at in the next contract negotiations which would begin the end of February.

3d. 13-114 Agreement for Williamette Falls Master Planning

Tony Konkol, Community Development Director, provided an update on the agreement for the Willamette Falls master planning. The City was working with the trustee to start the public visioning process and getting the land use entitlement in place. The contract for demolition and salvage work on the property would run through the end of summer/early fall of 2013. The trustee would take over the maintenance of the site after that work was done until May 2014. He was working on creating a Memorandum of Understanding with Clackamas County and another agreement with the trustee for the visioning and master planning process. He then explained the funding for that process including applying for a grant from Metro. He reviewed the proposed agreement including the obligations and financial commitments in the agreement.

There was discussion regarding the risks involved in the process, costs to complete the work, how implementation of the visioning would occur, potential buyers or possible abandonment of the property by the trustee, and role of the tribes in the process.

The consensus was for staff to bring the agreement back to the next Commission meeting for possible action.

3e. 13-110 Clackamette R.V. Park Use Fee Waiver for Disabled U.S. Military Veterans

Scott Archer, Community Services Director, said last year the Citizens Involvement Council brought forward a proposal to the Parks and Recreation Advisory Committee to permit disabled military veterans to use the Clackamette RV Park for up to five days within a 30 day period with no charge. The Parks and Recreation Advisory Committee was in support of the proposal. If the Commission was in agreement, staff would model a policy after the State Parks policy, but tailor it to local needs.

There was discussion regarding how the permit would work.

Larry Hanlon, resident of Oregon City, explained how the idea for the permit had come about. There were many disabled veterans and he thought something should be done for them. If there was a problem with running out of spaces, they could designate a few spaces as handicapped.

The Commission consensus was to move forward with the proposal.

4. City Manager's Report

Mr. Frasher said the City Attorney would bring explanatory statements for the two measures discussed that night to the next Commission meeting. Regarding release of the LGPI report, the City's reason for withholding the report had expired because the pre-disciplinary investigation was completed. However, the union might be seeking an injunction to stop the release. He suggested the City proceed with the release unless a court order was received not to release it.

Mr. Kabeiseman summarized public records law in regard to disclosure of the document.

Mr. Frasher said if the report was released, the Commission should be cautious about making any commentary. He then announced the launching of a new project for greater oversight of the City's financial transactions. An outside auditor would be used for the work to be funded through contingency.

5. Adjournment

Mayor Neeley adjourned the meeting at 8:44 PM.

Respectfully submitted,

_____

Nancy Ide, City Recorder

February 6, 2013

The Honorable Doug Neeley, Mayor of Oregon City,
and Oregon City Commissioners
City of Oregon City
625 Center Street
Oregon City, OR 97045

ENTERED INTO THE RECORD
DATE RECEIVED: 03-06-2013
SUBMITTED BY: Alice Richmond
SUBJECT: Item 4 - Citizen Comments

Dear Mayor Neeley and City Commissioners,

I came west from New York City to settle in Clackamas County in December 1958. Since then, I've been active in one thing or another with the County and the City of West Linn (where I live).

My aspirations are widely known locally, and the reason I am writing this letter is simple: for several years now I've been organizing West Linn's annual 4th of July Independence Day celebration concert and fireworks show held at Willamette Park in West Linn (west of the river we share). This event draws a multitude from both of our cities. In March 2010, I had occasion to speak to The Honorable Alice Norris, then Mayor of Oregon City, on this subject and she was favorable to my prospective motive (and the reason for my letter):

Would Oregon City be willing to graciously share the costs of the fireworks show?

I am a non-profit volunteer, and solely organize and raise funds to purchase all the necessities for this annual fireworks show. This is a labor of love for me, but funding is always a challenge.

So often our cities share events in positive ways and to successful ends. This event is no less important to our residents. It brings the two river cities together and creates joy for the children and parents of our area, promotes community and family values, and provides the opportunity to celebrate our great nation on Independence Day. This event is free to all who attend from both of our cities, and I believe it is the right thing to do. The smiles and hugs are the reward I enjoy for my volunteer endeavor, but this annual festivity depends greatly on the generosity from donors who share my belief that our communities are enriched by this opportunity to gather in an organized celebration.

I am hopeful you will consider sponsoring a portion of this wonderful annual celebration that is so greatly appreciated and anticipated by the residents of both of our cities.

Thank you for the opportunity to present my request.

Respectfully,
Alice Richmond.

Alice Richmond
3939 Parker Road
West Linn, OR 97068
503-723-0101

1913
2013

July 4th
2013

Come
Join Us

Fire Works
with
Military
Veterans
of West Linn

Thank you to our sponsors

West Linn
Central Village
ICON
MINUTEMAN
PRESS OC
SMILE LINN

100 Years
West 4th of July Linn
CENTENNIAL

Willamette Park 1100 12th Street
6:00 to 10:00 PM

142nd Oregon Air National Guard
Salutes West Linn's 100 Years

Masters of Ceremonies
Oregon State Representative **Julie Parrish**
U.S. Senator for Oregon **Ron Wyden**
Oregon State Senator **Richard Devlin**

The Royal Rosarians from West Linn,
Oregon City and the local area
Presenting the National Anthem

Sang by **Summer Tan**
9 year old, West Linn Sunset Primary School.

Concerts
Return Flight

Vendors – Lots of Family Fun

Call Alice for more information at 503.723.0101

February 6, 2013

The Honorable Doug Neeley, Mayor of Oregon City,
and Oregon City Commissioners
City of Oregon City
625 Center Street
Oregon City, OR 97045

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Alice Richmond.

Alice Richmond
3939 Parker Road
West Linn, OR 97068
503-723-0101

1913 – 2013

West Linn Community Concerts and Fireworks
Centennial Celebration

Invoice: #810

Date: _____

Business/Name: _____

Address: _____

_____

Donation: _____

Please make your tax-deductible donation payable to:

"West Linn Community Concerts and Fireworks"

Mail it to:

Alice Richmond
3939 Parker Road
West Linn, OR 97068

Tax ID # 93-6002277 (Keep a copy of this form for your tax records)

Thank you!

Alice Richmond, Volunteer Organizer & Manager, (503) 723-0101

1913 – 2013

West Linn Community Concerts and Fireworks Centennial Celebration

♫ Music unites people like nothing else can ♫

Scheduled Events:

- July 4th — National Independence Day Celebration
  Willamette Park – Fireworks & Concert
- August 30th – 31st — Central Village Summer Days
- September 27th – 28th — Oktoberfest

Bands:

• Return Flight (9 members)	$1,300
• Barbershop Quartets (4 sets) Time After Time ♦ Soundwave ♦ The Tonsorial Four ♦ Cascade Harmony Chorus	$800
• Alpine Echo (2 nights, 11 members)	$1,500

Fireworks:

• Licensed Display	$7,000

Promotional Expenses:

• Posters, Media, Banners, etc.	$1,800

Total Projected Costs: $12,400

For more information, please contact Alice Richmond at (503) 723-0101

Thank you so much for your support!

Next Events:



Central Village



Friday August 24th,2012

Music:

Time: 6:00-8:30

- **Le Mistral &**
- **The Smolens Group– Barber Shop Quartet**

Come enjoy the Friendly Shops!

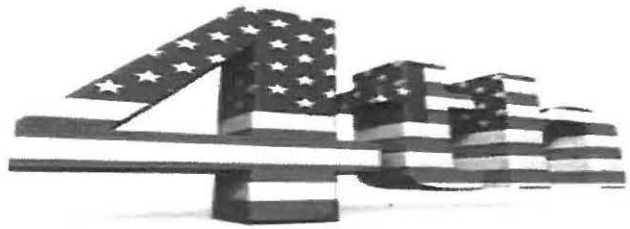
Christmas In the Summer!

Oktoberfest

September 28th & 29th

Willamette District

2012



of July

WEST LINN
CONCERT & FIREWORKS

Willamette Park - 1100 12th Street

6:00pm to 10:30pm

Masters of Ceremonies

State Representative, Julie Parish,

Oregon State Senator, Richard Devlin,

Our Anthem
Claire Newrone

Vendors, Lots of Family Fun!

Alice Richmond, Volunteer Organizer

(503) 723-0101

City of Trees, Rivers, and Hills

Thank You Presenting Sponsors

GRAMOR DEVELOPMENT

Smile Linn Dental
Family Dental Care

City of West Linn

West Linn Tidings

Minuteman Press OREGON CITY
The First & Last Step In Printing.

OREGON'S MT. HOOD TERRITORY™
WWW.MTHOODTERRITORY.COM
800.424.3002

icon Construction & Development, LLC

Supporting Sponsors:

Kahut Waste Services, LLC

Pacific West Bank

Safeway

"Community gives and takes. A great community like West Linn is created by the spirit of those who participate in its many activities. The 4th of July Concert and fireworks are brought to us because these sponsors care for our community."

RAFFLE ITEMS

Sponsors:	Item/Value:
1. Pendleton Woolen Mills	Wool Blanket @ $500
2. Linn City Chiropractic	2 Certificates @ $250 ea.
3. Healthy Pet	3 Gift Baskets @ $120 ea.
4. West Linn Hairport	3 Gift Baskets @ $100 ea.
5. Bodega Spanish Wines	12 bottles @ $26 ea.
6. Sachi Wellness Center	3 Certificates @ $125, $70, $65
7. Timberline Lodge Ski Resort	Package for 2 @ $200
8. Back in the Game	Certificate @ $160
9. Curves	2 Certificates @ $99 ea
10. Les Schwab	Alignment @ $83.50
11. Les Schwab	Road Kit @ $34
12. Thai Linn Restaurant	4 Certificates @ $25 ea.
13. GiGi Hair Salon (for men only)	Certificate @ $86
14. Cayuse Bicycle Shop	Certificate @ $64.99
15. Oregon Dog Club	Gift Basket @ $50
16. Sport Clips	Coupons
17. West Linn Saloon	2 Certificates @ $20 ea.
18. Linn City Pub	Certificate @ $35
19. Thai Rice	2 Certificates @ $15
20. Willamette Falls General Store	Australian Wine @ $26
21. Ego Accessories	Necklace @ $24
22. Dog Club of West Linn	Gift Bag @ $22

Thank you to all of the sponsors & supporters of these events, including those not mentioned here!

MARCH 24-10

Alice Norris
Oregon City MAYOR

Dear Alice,

I hope your Spring-break was enjoyable!

and now I wasn't sure how best to reach you; I decided on this note to see if we could have an hour together to discuss an item that would benefit both of our city.

I promise you: no politics.

I am avaible most any day-time.—

Looking forward to hear from you,

I am your neighbor, the other side of our River.—

With respect

alice Richmond.

503-7230101

Thank you!!

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3-6-13

Item Number From Agenda 4

NAME: Alice Richmond

ADDRESS: **Street:** 3939 Parker Rd

City, State, Zip: West Linn. Oregon - 97068

PHONE NUMBER:

SIGNATURE: Alice K. Richmond

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3/6/2013

Item Number From Agenda 4-citizen comments

NAME: Mike Mitchell

ADDRESS: **Street:** 14582 Walnut Grove Way

City, State, Zip: O.C. 97045

PHONE NUMBER: 503-209-4721

SIGNATURE:

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 3-6-13

Item Number From Agenda 4

NAME: DAVE PRIDEAUX

ADDRESS: **Street:** 310 3rd AV

City, State, Zip: O.C

PHONE NUMBER:

SIGNATURE:

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 3/6/13

Item Number From Agenda 4

NAME: Tom Geil

ADDRESS: **Street:**

City, State, Zip:

PHONE NUMBER:

SIGNATURE: Tom Geil

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3-6-13

Item Number From Agenda COMMENT, PUBLIC

NAME: MICHAEL BERMAN

ADDRESS: **Street:** 316 S. McLOUGHLIN

City, State, Zip: 97045

PHONE NUMBER: 971-645-9169

SIGNATURE:

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 06 MAR 13

Item Number From Agenda 4

NAME: WILLIAM GIFFORD

ADDRESS: **Street:** 1324 BEAVER LP

City, State, Zip: OC OR 97045

PHONE NUMBER: 503.723.3456

SIGNATURE:

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3/6/13

Item Number From Agenda Citizen Com.

NAME: Marjorie Hughes

ADDRESS: **Street:** 12821 Marysville Ln

City, State, Zip: Oregon City Or

PHONE NUMBER: 503-312-4111

SIGNATURE: Marjorie E Hughes

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting _____

Item Number From Agenda ____

NAME: ED DARROW

ADDRESS: **Street:** 30461 RUTH ST

City, State, Zip: WILSONVILLE

PHONE NUMBER: (503) 702 0005

SIGNATURE: _____

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3-06-2013

Item Number From Agenda 6a

NAME: Annette Mattson w/ PGE

ADDRESS: **Street:** _____

City, State, Zip: _____

PHONE NUMBER: _____

SIGNATURE: _____

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting _____ 6b

Item Number From Agenda 3B - Blue Heron

NAME: Paul Edgar

ADDRESS: **Street:** _____

City, State, Zip: _____

PHONE NUMBER: _____

SIGNATURE: _____

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 3-6-13

Item Number From Agenda 6B

NAME: Jerry Herrmann

ADDRESS: **Street:** PO Box 6

City, State, Zip: West Linn 97068

PHONE NUMBER: 503 260 3432

SIGNATURE:

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 3-6-13

Item Number From Agenda 6B

NAME: Bryon Boyce

ADDRESS: **Street:** 13285 S Clackamas River Dr

City, State, Zip: O.C. OR 97045

PHONE NUMBER: 503 799-5887

SIGNATURE: Bryon Boyce

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3-6-13

Item Number From Agenda 6-B

NAME: MICHAEL BERMAN

ADDRESS: **Street:** 316 S McLOUGHLIN

City, State, Zip: 97045

PHONE NUMBER: 503 655 4321 / e 971645-9169

SIGNATURE:

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting March 6, 2013

Item Number From Agenda 6b - Blue Heron Cooperative Planning Agreement

NAME: James J. Nicita

ADDRESS: **Street:** 302 Bluff Street

City, State, Zip: OC

PHONE NUMBER:

SIGNATURE:

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3/6/13

Item Number From Agenda 6.b

NAME: William Becker

ADDRESS: **Street:** 15886 Boynton St.

City, State, Zip: Oregon City, OR 97045

PHONE NUMBER: 503.381.2521

SIGNATURE: William Becker

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting March 6, 2013

Item Number From Agenda 13-157

NAME: Denyse McGriff

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SIGNATURE: Denyse C McGriff

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND ADDRESS
- Limit Comments to ***3 MINUTES***.
- Give to the City Recorder in Chambers ***prior*** to the meeting.

Date of Meeting 3/6/13

Item Number From Agenda 6b

NAME: Marjorie Hughes

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SIGNATURE: Marjorie E Hughes

JERRY's HERITAGE TYPEWRITER NEWS.....

ENTERED INTO THE RECORD
DATE RECEIVED: 3-06-13
SUBMITTED BY: Jerry Herrmann
SUBJECT: Item 6b

PREPARED ON 100% recyled fiber on Jerry Herrmann's TYPEWRITER!

TO: OREGON CITY COMMISSION and STAFF

FROM: JERRY HERRMANN - read by BRYON BOYCE

This letter is written in regards to historic attributes of the Blue Heron Mill site that may not have come to your attention. Apparently there is interest in preserving components of the mill site when possible. I would encourage you to do so.

Besides "station A" electric plant, the Jacobs Woolen Mill, 1829 era sluceways of Dr. M Gloughlin's saw and grist mills, ...some of which clear remnants of structure exist...there is more! There is the work of Tom McCall and his governance team that made this mill the most advanced in recycling technologies in "the world" of the 1960's, 70's and later.

McCall was leading the effort to "save" the Willamette River and restore it. Pulp and paper mills were major contributors to pollution as were 100 cities of the Willamette Valley dumping mostly untreated sewage. Food processors and ultimately "in-water storage of logs" rounded out the problem leading McCall to refer to the river as "a river of death" for fish and wildlife.

He and his first appointed Envrionmental Quality Commission director L.B. Day (who even though being an astute attorney -walked everywhere in "cleated shoes") made the Oregon City millsite the target for "getting one member of industry to commit to changing ways". L.B. Day and the governor could be heard "clomping" down the passages of the mill and adminisrative offices (architecturally unique building to industry still on Main St. and 99E) to reach agreements with mill official on how they might "show off their industry as partner in cleaning up the river".

They often interfaced with Public Affairs and now "envrionmental manager" Pete Schnell - uncle of our own Sha Spady. McCall and Day were very demanding of this Oregon City Mill site.

The resuts of all this should impress a city "of firsts"

1) First ever application of pollution abatement funds, and "energy tax cridits" to any entity in our nation (if the mill would fundemantally change its pocesses to reduce pollution and save energy through "fiber reuse" methods)

2) First in the nation recovery and recycling of "old Newspapers" west of the Mississippi River. (one mill in America-Wisconsin Paper-was recycling in 1960's)

3) First ever (in the world) movement from chemical bleaching processes for virgin fiber to "polishing and brightening" of fiber to make the paper white again

4) First ever in the world recovery of magazine stock and integration of such with old newspapers (this was made possible through this mills proprietary polishing and brightenin methods)

5) First ever in the world (by 1983) recovery of 10,000 tons of phone books and integration of same with old magazines and newspapers. (this was recognized by the young Federal EPA agency as one of the great accomplishments of indusry..... An entry building at the mill entry carries this first ever in the world award of environmental accomplishment)

I hope you will consider these factors in approaching mill redevelopment. Technology and facility elements where these pioneering efforts first took place still exist and can be exhibited. And the "cleated footsteps" of L.B.Day and his boss Tom McCall can stll be heard.....!