Attachment A1 to Scope of Work –

Master Remedial Action Work Plan

MASTER REMEDIAL ACTION WORK PLAN
United States Postal Service Processing & Distribution Center

715 NW Hoyt Street
Portland, Oregon 97209
(ECSI #2183)

Prepared for:
Portland Development Commission
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Portland, Oregon 97209

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May 4, 2016

Sign-off Sheet

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Table of Contents

LIST OF FIGURES

LIST OF APPENDICES

Abbreviations

bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
City	City of Portland
CMMP	Contaminated Media Management Plan
cNFA	Conditional No Further Action
COC	Contaminant of Concern
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EES	Easement and Equitable Servitude
SGC	Supervising General Contractor
HSP	Health and Safety Plan
µg/L	Microgram Per Liter
mg/kg	Milligram Per Kilogram
MGP	Pintsch Manufactured Gas Plant
MRAP	Master Remedial Action Work Plan
NFA	No Further Action
PAH	Polynuclear Aromatic Hydrocarbon
P&DC	Processing and Distribution Center
PDC	Portland Development Commission
PPA	Prospective Purchaser Agreement
Property	715 NW Hoyt Street, Portland, Oregon
RAP	Remedial Action Work Plan
RBC	Risk-based Concentration
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SOW	Scope of Work
Stantec	Stantec Consulting Services Inc.
TGA	Troutdale Gravel Aquifer
TPH	Total Petroleum Hydrocarbons
USPS	United States Postal Service
UST	Underground Storage Tank
VMF	Vehicle Maintenance Facility
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This Master Remedial Action Work Plan (MRAP) is prepared by Stantec Consulting Services Inc. (Stantec) pursuant to the Scope of Work (SOW) under the Prospective Purchaser Agreement (PPA) - Consent Judgment, *State of Oregon, ex rel., Pete Shepherd, Interim Director, Department of Environmental Quality v. Portland Development Commission*, Case No. _____, ("PPA" or "Consent Judgment") which relates to the Portland Development Commission's (PDC's) acquisition of the United States Postal Service (USPS) Processing & Distribution Center (P&DC) property which is an approximately 13.4-acre site located at 715 NW Hoyt Street, Multnomah County, Oregon, in Section 34, Township 1 North, Range 1 East, of the Willamette Meridian (the "Property"), as generally depicted on Figure 1. Capitalized terms used in this MRAP are terms that are defined in Section II of the SOW.

The anticipated transition from current USPS use to a future condition of Redevelopment will involve several phases. The first phase is PDC acquisition of title to the Property during which USPS will lease the Property from PDC ("Lease-Back" phase). The second phase is "Pre-Construction", which includes activities that may help ready the Property for Redevelopment. The third phase is "Redevelopment" of Sub-Parcels of the Property (see definitions for these three phases in the SOW). There may be overlap between these phases, e.g., Pre-Construction activity may overlap both Lease Back and Redevelopment.

As discussed in the PPA, PDC plans to take title to the Property in 2016, but Redevelopment will not likely occur for more than two years and, in some Sub-Parcel cases, will not occur for many years. Between 2016 and 2018 it is PDC's intent to lease-back the Property to the USPS. During the estimated two-year lease-back period, which could be extended, the USPS will construct and then move to a replacement facility located near the Portland Airport ("USPS Replacement Facility," as defined in the SOW). During the USPS Lease-Back tenancy, PDC will be responsible for compliance with the PPA including the obligations to maintain applicable Existing Site Use Remedial Action requirements pursuant to the terms of the SOW. PDC, as part of its lease agreement with USPS, will further require the USPS to abide by the SOW requirements. In addition, during the Lease-Back phase PDC will refine the current conceptual Property development framework to identify more particular Sub-Parcel specific uses. This necessary work will be done by PDC and the City of Portland (City), in part, to make the Property ready for solicitation of private developers of the Private Sub-Parcels. Advancing the Property conceptual development scenario to more specific Sub-Parcel use proposals will involve, among other steps:

- a change in land use code to allow for the multiple uses called for in the conceptual framework, City Council approval of the land use code change, public comment, and a one-year appeal period;

- master planning of Public and Private Sub-Parcel uses;
- survey and definition of Sub-Parcels; and
- designation of preferred rights-of-way for streets and designation of more specific park boundaries and other public infrastructure to support overall Property Redevelopment.

The Remedial Actions that will apply during the Lease-Back period will comply with the Existing Site Use Remedial Actions (as provided in the SOW) which are consistent with the July 12, 2010 Record of Decision (ROD; see Appendix A).

The second phase of the Property transition to Redevelopment is Pre-Construction. Pre-Construction may occur during part of the Lease-Back period as well as the period following USPS relocation to the USPS Replacement Facility. Pre-Construction activity is intended to make the Property and Sub-Parcels more attractive to prospective developers and to expedite later implementation of Sub-Parcel Specific Remedial Actions and Sub-Parcel Specific Redevelopment. Pre-Construction activity may include, but is not limited to, intrusive environmental site inspections, intrusive geotechnical site inspections, and demolition of structures (where such activities will not compromise, or only temporarily breach, the existing Cap), and potential Removal Actions such as removal of underground storage tanks (USTs) or soil Hot Spots. Provided such activities are conducted in accordance with the SOW, this MRAP and other applicable law, there is no specific requirement under the SOW with regard to when such activities must occur. The Pre-Construction activity will follow Existing Site Use Remedial Actions and will include replacement of any Cap that is disturbed with Temporary Capping or Cap-like materials (e.g. asphalt pavement). A work plan for voluntary Pre-Construction activities will be submitted to the DEQ for review and approval if the activities will disturb a significant amount of soil (i.e. >10 cubic yards). If PDC elects to initiate an activity that is identified in the ROD (Hot Spot Removal, certain investigation activities, etc.) as requiring DEQ oversight then PDC will prepare a work plan for such activity. Work plans will contain procedures for contaminated media management during the project that will supersede the 2011 CMMP. Temporary Uses may take place during the Pre-Construction phase and following the Lease-Back period on portions of the Property. Any Temporary Use similar to current USPS operations will not warrant access restrictions except in the Pintsch Manufactured Gas Plant (MGP) and Electrical Utility Vault Areas. For Temporary Uses deemed dissimilar from USPS operations, an evaluation of the need for any access restrictions necessary to protect Property users will be completed and the outcome of said evaluation approved by the DEQ.

The third phase is Redevelopment. Redevelopment will take place on Public and Private Sub-Parcels depending upon whether the Redevelopment is public infrastructure in nature or is the construction of private buildings and associated land improvements. On Public Sub-Parcels, this phase is likely to be conducted by public entities such as PDC or another City Bureau. Types of

INTRODUCTION
May 4, 2016

Public Sub-Parcel Redevelopment may include street right of way, park, commercial development, or others.

On the Private Sub-Parcels, Redevelopment is likely to be conducted by private entities to which PDC conveys a property interest (see SOW Attachment B for a summary of public/private entity Remedial Action obligations). PDC's successors will be bound to the terms of the Consent Judgment applicable to the Sub-Parcel as a matter of title and of their date of acquisition of ownership. To give DEQ advance notice of such transfers and assumptions of PPA/Consent Judgment obligations, the Consent Judgment provides a specific process for Notice of PPA Transfer prior to closing on a Sub-Parcel, on a form (to be agreed upon by DEQ and PDC/Owner) for such assumption.

As defined in the SOW, with regard to either public or private Redevelopment, Redevelopment involves the permanent removal of the Cap with intent to permanently change the existing land use. Consequently, Redevelopment involving removal of the Cap will not begin before consultation with DEQ and the development of a Sub-Parcel Specific RAP. Unlike the Lease-Back and Pre-Construction phases, Redevelopment on a Sub-Parcel is anticipated to invoke a change in Remedial Action scenario required for that particular Sub-Parcel from Existing Site Use to Hypothetical Future Site Use consistent with the ROD.

Redevelopment is anticipated to occur as multiple projects and phases on different Sub-Parcels. It is not currently known which Sub-Parcels will first be subject to Redevelopment. It is possible that Redevelopment of Sub-Parcels will be addressed in sequence or contemporaneously, but the SOW does not provide any specific time requirement for such Redevelopment except as provided in SOW Section II.C.v (regarding zoning, planning, selection of master development partner(s), and certain voluntary Pre-Construction activities).

This MRAP provides the Remedial Action elements that will apply during use and ownership of the Property as it transitions from its current use by the USPS to the Lease Back, Pre-Construction, and finally the Redevelopment state. Existing Site Use Remedial Action requirements will apply during both the USPS Lease-Back and Pre-Construction phases or activities, including Temporary Uses. Via a Sub-Parcel Specific RAP, the Hypothetical Future Site Use Remedial Actions will apply to the Redevelopment phase or to the permanent removal of the Cap for Remedial Action purposes. The MRAP further provides for proper management of contaminated soils during Lease Back and Pre-Construction and under Existing Site Use. The previously-approved Contaminated Media Management Plan (2011 CMMP) (Exponent, 2011) will be applicable during these phases. A copy of the 2011 CMMP is provided in Appendix D. During Redevelopment as part of a Sub-Parcel Specific RAP there will be developed a Sub-Parcel Specific CMMP that will be approved by the DEQ, and which will supersede the 2011 CMMP for that Sub-Parcel. Institutional Controls are in place as described in the 2011 Easement and Equitable Servitude (2011 EES) and will continue to be implemented during the Lease Back and Pre-Construction phases. A copy of the 2011 EES is

provided in Appendix C. Following implementation of a Sub-Parcel Specific RAP (after development has been completed), a new Sub-Parcel Specific EES will be prepared and recorded, and will supersede the 2011 EES for that Sub-Parcel as provided in Section 3.D of the Consent Judgment.

While this MRAP provides the generally appropriate Remedial Action elements for existing use and future development on the Property, additional Sub-Parcel Specific RAPs (as discussed in the SOW) will be required to be prepared and submitted to DEQ prior to commencing any Redevelopment. In this manner, the MRAP establishes a standard that is consistent with the ROD and allows for Pre-Construction activity that maintains the protections of Existing Site Use, whereas subsequent Sub-Parcel Specific RAPs will provide additional detail on implementation of Remedial Actions consistent with Hypothetical Future Site Use at the Sub-Parcel level during Redevelopment.

1.1 PROPERTY LOCATION

The Property is an approximately 13.4-acre, roughly rectangular-shaped parcel located within the Pearl District in Portland, Oregon. The Property is comprised of tax lots 100 and 200 on Multnomah County tax map 1N 1E 34BC. The Property is bounded by the Lovejoy Street Ramp to the Broadway Bridge to the north, by the NW Broadway Ramp to the Broadway Bridge to the east, NW Hoyt Street to the south, and NW 9th Avenue to the west.

The USPS P&DC processes all outgoing mail for the state of Oregon, and includes a 398,000-square-foot P&DC Building, a 10,025-square-foot Vehicle Maintenance Facility (VMF), a 157,400-square-foot multi-story parking structure, and surface parking and maneuvering areas for postal vehicles (Figure 2). The entire Property is covered by either structures or paving, with the exception of a few small landscaped areas along the southern Property boundary adjacent to NW Hoyt Street and NW 9th Avenue. Public access is restricted to all portions of the Property except the post office situated at the south end of the P&DC building along NW Hoyt Street.

The Property is zoned EXd (Central Employment), as is property to the immediate north and west. Property to the immediate east and south is zoned CXd (Commercial). Both the EXd and CXd zones allow residential development. The nearest surface water body is the Willamette River, located at its closest approximately 700 feet to the northeast.

1.2 PROPERTY HISTORY

The eastern area of the Property (9.0-acre tax lot 100) was owned by the Northern Pacific Terminal Company (NPTC, later becoming Portland Terminal Railroad Company or PTRR) from 1882 to 1959. The same entity owned the western portion of the Property (4.4-acre tax lot 200) from 1882 to 1974. NPTC/PTRR used the entire Property for railyard operations. Rail operations included numerous track lines and, for a brief period of time, a railroad turntable. Rail car repair and cleaning were performed along the west side of the Property in the 1890s and early 1900s (Coach Cleaning Area), while freight depots operated in the eastern portion of the Property from the 1890s to later 1950s. A 1901 Sanborn Map depicting the configuration of the Property at that time is provided in Appendix E. A MGP operated in the northwest corner of the Property from approximately 1893 to the 1930s, producing compressed gas from naphtha-grade oil for the lighting of railroad cars. MGP process equipment included an above-ground gas holder, high-pressure tanks, a tar well, and oil tanks. No definitive information has been found regarding operations and waste disposal practices at the former MGP. The historical configuration of the MGP is depicted on the 1901 Sanborn Map included in Appendix E. Also included in Appendix E is a figure from a Phase I Environmental Site Assessment completed by Hart-Crowser in 2008 that depicts the location of historical Property features in relation to the current Property and vicinity configuration.

USPS purchased the eastern half of the Property in 1959, and subsequently sold it in 1960. The USPS then leased and began operation of the P&DC on the eastern portion of the Property in 1962. In 1974 USPS purchased the eastern and western halves of the Property, forming the Property as it is configured today. The P&DC and VMF buildings were constructed in 1962, and the parking structure in 1987. Figure 3 shows selected current and historical Property features.

1.3 PRIOR ENVIRONMENTAL INVESTIGATIONS

A number of phases of environmental investigation and cleanup have been performed largely focused on the following areas associated with hazardous substances from historical (railroad) operations:

- Former MGP;
- Former Coach Cleaning;
- Electrical Utility Vault; and
- Storm Sewers.

USPS also has conducted underground storage tank (UST) investigations related to its operations at the Property in the vicinity of the VMF, and supplemental assessment activities in the Northeast Corner Area. Investigation work completed under DEQ UST and Voluntary Cleanup Programs is presented in subsection 1.3.1, investigation work performed independently of DEQ is presented in

subsection 1.3.2, and work performed under an Intergovernmental Agreement between USPS and DEQ in subsection 1.3.3. Figure 4 shows most historical soil and groundwater sampling locations at and around the Property. References for individual investigations are presented in Section 8.

1.3.1 Investigation Under DEQ UST (LUST #26-92-0068) and Voluntary Cleanup (ECSI #2183) Programs

VMF and South Side of P&DC Building. Six USTs used by the USPS to store diesel, gasoline, waste oil, and heating oil were decommissioned by removal in 1992 and 1993. Five USTs were located at the USPS VMF, and one was located on the south side of the P&DC Building. Contamination was detected in both areas, and soil remediation was completed. DEQ's Northwest Region UST program issued a no further action (NFA) determination for the UST decommissioning activities on June 13, 1997, but noted that some pockets of elevated petroleum contamination were left in both areas because of inaccessibility. Elements of these UST activities are discussed below.

1993 UST Decommissioning Report Review & Soil Investigation. This report, prepared by Dames & Moore, presents the results of soil boring and test pit work that was done at the VMF in the course of decommissioning five USTs: a 300-gallon waste oil UST; a 1,000-gallon and two 5,000-gallon diesel USTs; and a 10,000-gallon gasoline UST. Hand auger borings (B1 through B18, and EX-1) were advanced to a maximum of 4 feet below ground surface (bgs), with one to two soil samples from each analyzed for total petroleum hydrocarbons (TPH). Three deeper test pits were dug south of the VMF, and selected soil samples were analyzed for TPH. In the hand auger samples, TPH was detected at a number of locations to a maximum concentration of 71,000 milligrams per kilogram (mg/kg) (diesel/oil). Deeper test pit samples were generally non-detect.

1994 UST Decommissioning & Soil Investigation Report. A 25,000-gallon Bunker C UST located immediately south of the existing P&DC Building was decommissioned in 1993. In the course of removal, contamination was observed in the area of the product line, which had been hit during shoring activities. No impacts were observed in the UST excavation. Numerous soil samples were collected during decommissioning of the UST. Results from investigation and confirmatory sampling are documented in *Geotechnical Investigation, 25,000 Gallon UST Removal* (June 8, 1993) and *UST Decommissioning & Soil Investigation Report* (February 10, 1994) prepared by Dames & Moore. Impacted soil was removed from this location, and transported offsite for disposal. A pocket of residual contamination (up to 770 mg/kg diesel) was left in place next to the P&DC Building foundation as noted in DEQ's June 13, 1997 NFA letter for the UST removal. A monitoring well was installed in 1993 by Dames & Moore near the southeast corner of the garage associated with the UST decommissioning at this location. Groundwater was analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX). No BTEX was detected in groundwater.

2001 Preliminary Assessment Report. Alisto Engineering Group completed a Preliminary Site Assessment for the Property dated March 8, 2001. Work included the advancement of borings to a maximum of 32 feet bgs at nine locations in the northwest corner of the Property (MGP Area), and the collection of deeper soil samples (8 to 32 feet bgs) and shallow groundwater samples from the same areas. Soil samples were analyzed for TPH, BTEX, polynuclear aromatic hydrocarbons (PAHs), and metals, and grab groundwater samples collected from the boreholes were analyzed for TPH and BTEX. Three monitoring wells (MW-1 to MW-3) were subsequently installed and sampled in August 2000. Sample results are discussed below in subsection 1.3.3.

2006 Northeast Corner Area. Arcadis conducted a supplemental investigation in the Northeast Corner Area of the Property in September 2006. Low levels of diesel-range and heavy oil-range petroleum hydrocarbons (270 mg/kg and 2,000 mg/kg, respectively) were detected at one location in the surface sample collected from EH-6. Petroleum was not detected in the other three samples in the Northeast Corner Area. The concentrations detected at EH-6 were significantly below DEQ's risk-based levels of concern. Lack of field evidence of contamination, discussions with the laboratory, and a review of the gas chromatogram for Sample EH-6 (Attachment 4 in Appendix B) indicates that the low petroleum hydrocarbon detections are likely a mixture of heavy oil and asphalt or coal particles in the soil sample. In any case, soil borings completed for this investigation show that appreciable petroleum hydrocarbon impacts do not extend south and/or west of Boreholes EH-3, EH-4, and EH-5 completed for the RI.

1.3.2 Independent Investigations Reported to DEQ

1987 Parking Garage Geotechnical Investigation. Geotechnical borings (B-1 and B-2 and CC-1 to CC-4) were completed in 1986 and 1987 in association with construction of the Parking Garage. It appears from DEQ records that the 1986 work was completed by Cornforth Consultants and the 1987 work by Geotechnical Resources. Borings were advanced to 45 feet bgs. No visual evidence of contamination was noted. No samples were submitted for laboratory analysis of contaminants.

1993 Geotechnical Investigation. In association with decommissioning of the 25,000-gallon Bunker C UST located south of the P&DC Building, a soil and groundwater sample were collected near the UST. No petroleum hydrocarbons were detected in the samples.

1996/1997 Limited Subsurface Environmental Assessment, Proposed Utility Construction. As a prelude to utility construction west of the P&DC Building, shallow soil samples were collected from three of four soil borings (B-1 through B-4). In addition, a groundwater sample was collected in late1996 from monitoring well MW-A. Soil samples were analyzed for TPH, PAHs, and total metals. The groundwater sample was analyzed for TPH, PAHs, and BTEX. The well was resampled in November 1997. There were no analyte detections in either groundwater sample with the exception of fluoranthene at a concentration of <1 microgram per liter (µg/L) in the 1996

groundwater sample, and dissolved lead at a concentration of 1.5 µg/L in the 1997 groundwater sample.

1997 Work Plan, Excavation Monitoring and Oversight. Additional data from the utility trench was included in GeoEngineers' *Work Plan, Excavation Monitoring and Oversight* (May 16, 1997). A composite sample (SS-1/SS-2) collected from stockpiled soil excavated from the utility trench contained diesel and heavy oil concentrations up to 5,170 mg/kg and 3,880 mg/kg, respectively. Individual PAH concentrations up to 292 mg/kg also were detected in the composite sample. A soil sample collected from the utility trench following excavation (TS-1) had reduced levels of hazardous substances. Soil Sample USPS-1 had elevated levels of hazardous substances.

1997 Report of Excavation Observation and Monitoring. GeoEngineers' report contained confirmatory sampling data from the five shallow utility trenches that were excavated to facilitate utility construction. Confirmatory samples were collected from depths varying from 1.5 to 13 feet bgs, and analyzed for TPH, metals, volatile organic compounds (VOCs), and PAHs. Elevated TPH, metals (arsenic and lead), and PAHs were detected. At location USPS-T#5-2 (3.5 feet bgs), diesel and heavy oil were detected at up to 175,000 mg/kg and 128,000 mg/kg respectively. Benzo(a)pyrene and naphthalene were detected at up to 73.1 mg/kg and 246 mg/kg, respectively.

2000/2001 Natural Gas Line. Soil sampling was completed in 2000 and 2001 in conjunction with rerouting of a natural gas line situated along the east side of the Property and in NW Broadway Street. TPH, PAHs, and metals were detected in the soil samples collected.

1.3.3 Investigations Governed by DEQ/USPS Intergovernmental Agreement

MGP Area. Investigation of the former MGP Area located in the northwest Property corner was initiated in 2000. Initial work focused on soil sampling and VOCs, PAHs, and TPH were detected. Three shallow groundwater wells (MW-1 to MW-3) were subsequently installed and monitored between 2000 and 2003. Contaminants detected in soil and groundwater included primarily petroleum hydrocarbons, VOCs, and PAHs that are likely attributable to MGP operations and historical railyard activities in the area. Impacts to groundwater were primarily located in the vicinity of MW-3.

Petroleum hydrocarbons and VOCs were not detected in MW-1 or MW-2, located south (upgradient) and east (side-gradient) of the MGP footprint. PAHs were detected in both wells at concentrations of less than 1 µg/L. At MW-3, located within the footprint of the MGP, maximum detections of diesel, heavy oil, naphthalene, and benzene were 13,000 µg/L, 3,920 µg/L, 3,900 µg/L, and 1,020 µg/L, respectively. Monitoring of MW-1 and MW-2 was discontinued in 2003 based on a lack of significant detections. Monitoring of MW-3 was discontinued in 2005 when DEQ determined that groundwater impacts had been adequately delineated.

INTRODUCTION
May 4, 2016

In 2004, 12 borings (P-3, P-6, and P-9; PP-1 through PP-7, and SS-2 and SS-3) were advanced in the MGP Area. Samples were collected at depths ranging from 3 to 90 feet bgs. Most borings were advanced for collection of shallow soil samples to assess near-surface impacts in the MGP Area to augment the deeper investigation completed in 2001. Boring PP-6 was advanced to the top of the Troutdale Gravel Aquifer (TGA) to determine the depth (elevation) of the TGA on the Property. Borings SS-2 and -3 were advanced to 32 feet bgs to evaluate conditions in the vicinity of the former (abandoned) Tanner Creek Sewer located west of the Property below NW 9th Avenue. Analysis included BTEX, VOCs, PAHs, and petroleum hydrocarbons.

Petroleum hydrocarbons, and PAHs in particular, were commonly detected, with the highest concentrations found in deeper unsaturated soil and extending into the top of the water table (7 to 16 feet bgs). The presence of elevated contamination at depth was surmised to be from fill placed on the Property subsequent to MGP and railroad activities.

At the presumed location of the former MGP "tar well', a boring was advanced to the top of the TGA at approximately 90 feet bgs, and samples collected from multiple intervals for analysis. Hazardous substances typical of historical MGP and railyard activities were observed in soil and groundwater, but attenuated with depth. Non-aqueous phase liquid was not observed in the TGA. A monitoring well (TGA-1) was subsequently installed near this location, and groundwater samples collected from December 2004 through September 2005. Petroleum hydrocarbons, benzene, and naphthalene were detected up to 0.78 milligrams per liter (mg/L), 1.72 µg/L, and 2.27 µg/L, respectively. Based on a lack of significant impact, USPS requested and received DEQ approval to discontinue sampling of TGA-1.

Storm Sewer. Investigation at the nearby Station Place site and within NW Lovejoy Street during construction of the new ramp in 2003 identified petroleum hydrocarbon, VOC, and PAH contamination in soil and shallow groundwater along the eastern margin of NW 9th Avenue. MGP wastes are considered the likely source of this contamination. Subsequent video survey of the sewer and sampling of stormwater within a 27-inch sewer beneath NW Lovejoy in the mid-2000s identified MGP waste (benzene, naphthalene, and other PAHs) within the sewer, but at low levels that did not exceed risk-based screening values at sample collection points (manholes) downstream of the Station Place site. Ambient water quality samples were collected during both low and high water flow conditions.

INTRODUCTION
May 4, 2016

To evaluate conditions in the northwestern area of the Property and in the vicinity of the former (abandoned) Tanner Creek Sewer, two borings (SS-2 and SS-3) were advanced as close to the sewer line as possible at DEQ's request in 2004. Soil samples were collected from depths between 16 and 32 feet bgs and analyzed for BTEX, VOCs, PAHs, petroleum hydrocarbons, and metals. Petroleum hydrocarbons (up to 1,380 mg/kg), PAHs, and VOCs (excluding benzene and others) were detected, indicating that MGP contamination extends off of the Property and beneath NW Lovejoy Street. Groundwater adjacent to the sewer was similarly impacted.

During construction of the new Lovejoy Ramp in the early 2000s, an unknown petroleum product was observed by DEQ seeping from shallow soil in an excavation sidewall. DEQ recalls that the seepage was observed near the northwest corner of the VMF. In contrast, the City indicated that seeps were observed near the northwest corner of the Property and not near the VMF (City of Portland, 2004 as cited in ARCADIS, 2006). The City noted that the seep was encountered during installation of a light pole adjacent to the Station Place property on the north side of vacated NW Lovejoy Street. According to DEQ staff, the area of seepage was subsequently covered and the source of the contamination not identified.

Contamination from past releases from the Property historically migrated to adjacent properties, generally to the north and west of the northwest corner of the Property. Contamination associated with past MGP releases has been identified within the abandoned Tanner Creek Sewer located below NW 9th Avenue (north of NW Irving Street and extending north towards the Willamette River). DEQ determined in the ROD that additional off-site investigation of MGP-related releases was not warranted by the owner of the Property, anticipating complete of this work by former Property owner PTRR (which was the property owner during MGP operations). A 2015 "Abandoned Tanner Creek Sewer and 9th and Lovejoy Street Investigation Summary Report" (CH2MHILL, 2015) prepared on the behalf of PTRR has been reviewed by DEQ, with the agency noting that impacts from the former MGP operations may extend north to the (City of Portland) Centennial Mills property located adjacent to the Willamette River. DEQ intends to work with PTRR to further investigate the degree to which past releases associated with the MGP may still be impacting the Abandoned Tanner Creek Sewer and an adjacent (active) 27" storm sewer located beneath NW 9th Avenue, and contributing to releases in the sewer system at Centennial Mills and, if such investigations so justify, to take appropriate remedial action. The Consent Judgment does not compel PDC or a subsequent Owner to undertake cleanup or source control activity associated with past off-site releases from the Property.

Electrical Utility Vault. Subsurface petroleum contamination was encountered in 1996 during geotechnical drilling associated with an electrical utility vault expansion west of the P&DC Building. Near-surface soil was visually impacted, and subsequent laboratory analysis identified petroleum hydrocarbons, VOCs, PAHs, and lead in the soil. Impacted soil was excavated and transported offsite for disposal at the Hillsboro Subtitle D Landfill. A monitoring well (MW-A) was installed in the impacted area in 1996 by GeoEngineers and groundwater samples were

collected during low and high water conditions, and in October 2004. Significant groundwater impacts were not observed.

During subsequent investigations completed by ARCADIS in 2004, additional borings (UV-1 through UV-8) were advanced, generally to15 feet bgs, to further delineate the area. One boring (UV-8) was advanced to 30 feet bgs and a temporary shallow groundwater monitoring point was constructed. Soil and groundwater samples from the boring and wells (UV-8 and MW-A) were analyzed for BTEX, PAHs, and petroleum hydrocarbons. Elevated contaminants including PAHs were detected in soil. Two PAHs were detected in groundwater in the UV-8 boring; none were detected in monitoring well MW-A.

Coach Cleaning Area. According to Sanborn Fire Insurance Maps and other sources, the cleaning of railroad passenger (coach) cars was performed in the west-central portion of the Property. To evaluate environmental conditions in this area, seven borings (CC-1 to CC-7) were advanced to 15 feet bgs in this area in 2004, and two samples (surface and subsurface) at each location were collected and analyzed for VOCs, petroleum hydrocarbons, PAHs, and metals. Organic contaminants generally were detected at low concentrations, or were absent. Arsenic and lead concentrations in soil were notably elevated. Detected arsenic ranged from 22 mg/kg to 48 mg/kg, and lead from 244 mg/kg to 1,080 mg/kg. In 2006, three additional borings (CC-8 to CC-10) were advanced in the area. Elevated lead and arsenic were detected up to 3,020 mg/kg and 50.9 mg/kg, respectively.

Parking Garage. As part of the remedial investigation, shallow and deeper soil samples were collected from a boring located immediately south of the Parking Garage on the Property (EH-1) in 2004 and analyzed for petroleum hydrocarbons, VOCs and PAHs. Soil samples were not analyzed for metals. Low levels of a few PAHs were detected.

Northeast Corner. Sampling was completed in the northeast corner of the Property in 2004. Soil samples were collected (surface and at depth) at three locations (EH-3 through EH-5), with notable detections of petroleum hydrocarbons at EH-3. Soil samples were not analyzed for metals. Soil samples were later collected at two additional locations (EH-6 and EH-7). Petroleum hydrocarbons were detected at 2,000 mg/kg at one location (EH-6), and arsenic at both (to 17.2 mg/kg).

1.4 PROPERTY REDEVELOPMENT AND REMEDIAL ACTION IMPLEMENTATION

After purchasing the Property, PDC intends to lease back the Property to the USPS for a period of approximately 2 years - the time estimated for the USPS to build and move into the USPS Replacement Facility. Based on these plans, no Redevelopment is reasonably anticipated on the Property until well after fall of 2018. However, immediately upon acquisition of title to the Property, PDC will maintain the Remedial Actions selected in the ROD for the Existing Site Use scenario (as further described in Section 2.1., below), which will also apply to Pre-Construction activities. The Remedial Actions required for Hypothetical Future Site Use will apply during Redevelopment as provided in this MRAP and the SOW.

PDC has a conceptual development framework for the Property. Figure 5 illustrates this development framework, which includes:

- street development (encompassing approximately 17% of the Property);
- park and open space development (encompassing approximately 11% of the Property); and,
- commercial and urban residential (25% of the housing will be affordable) over ground floor commercial development (encompassing approximately 72% of the Property).

While this conceptual development framework reflects PDC goals for the project and preliminary public sentiment, including the inclusion of parks and affordable housing, the actual composition and layout of the development and placement of infrastructure (i.e., roads, sidewalks, public spaces, etc.) may vary significantly from this framework. Because the actual development that will occur at the Property is not known today, this MRAP has been prepared to provide a Remedial Action implementation framework and general overlay rather than detailed parcel-specific plans for future Remedial Action implementation.

It is anticipated that Remedial Actions will be implemented on different portions of the Property (Sub-Parcels) over the course of many years. When a permanent change in use of a Sub-Parcel is intended and such change necessitates the permanent removal of the existing Cap, then in order to implement the change, a Sub-Parcel Specific RAP (as defined in the SOW) will be prepared. These Sub-Parcel Specific RAPs will include details regarding: 1) the manner in which the Remedial Action requirements in the ROD for the Hypothetical Future Site Use scenario and the SOW will be met and implemented, 2) the health and safety measures that will be implemented during the development project, and 3) methods that will be utilized to manage contaminated media that might be encountered during the project, principally excess contaminated soils generated during construction. Sub-Parcel Specific RAPs are subject to DEQ review and approval. Once approved by DEQ, Sub-Parcel Specific RAP requirements will apply

to specific Sub-Parcels at the time the Redevelopment occurs. Ownership of a Sub-Parcel may change immediately prior to Sub-Parcel Specific RAP implementation, consequently DEQ may review and approve a Sub-Parcel Specific RAP that anticipates a property right conveyance as part of implementation.

As provided in the SOW, PDC will continue to implement Existing Site Use (which includes requirements in the ROD, 2011 EES, 2012 cNFA, and 2011 CMMP) until such time as Redevelopment occurs. For example, when the first development of a Sub-Parcel is undertaken that will change the use of a specific Sub-Parcel, permanent removal of the existing Cap for that Sub-Parcel will trigger a change from the Existing Site Use Remedial Action scenario to the Hypothetical Future Site Use scenario, but only on the affected Sub-Parcel. The Existing Site Use scenario will remain in effect on all other portions of the Property not subject to Redevelopment. Further, during Pre-Construction (and consistent with the ROD [page 22]), if PDC/developer elects to remove an area of the Cap, the Cap can be replaced with like material without requiring approval from DEQ. If a Temporary Capping type other than like material is utilized (i.e. 4 inches of gravel underlain by demarcation layer, as specified on page 22 of the ROD), the PDC/developer must engage with the DEQ to obtain approval of a Temporary Cap specification that is as equally protective of human health as the Cap removed. . Consistent with Existing Site Use, restriction of access to the area via fencing also will occur, if required, to maintain the level of protectiveness provided by Existing Site Use for the affected area. Because the Property use would not change, the Existing Site Use Remedial Actions are appropriate.

As PDC works with a developer considering Redevelopment of a particular Sub-Parcel, PDC or that developer may choose to conduct Pre-Construction activities such as an environmental assessment, geotechnical investigation, or other intrusive site assessment prior to acquisition or prior to Redevelopment. Limited penetration of the Cap will be required in performing this work. This will not trigger Redevelopment Site Use Remedial Actions, but the developer will be required to promptly restore the surface Cap for any borings or test pits (via replacement with like materials or Temporary Capping), and the Existing Site Use Remedial Actions will remain in effect for this portion of the Property. Any investigation-derived waste generated will be properly characterized and disposed off-Property in accordance with applicable law.

For each Private or Public Sub-Parcel Redevelopment project, an entity responsible for Remedial Action implementation (e.g. PDC or developer) will execute a Cost Recovery Agreement with the DEQ. It is anticipated that this entity will be the Owner of the Sub-Parcel, particularly if the Owner is a private party. However, even if PDC is not the Owner of the Sub-Parcel, in some circumstances, it may be the PDC that enters into a Cost Recovery Agreement with the DEQ, at PDC's discretion.

Upon execution of the Cost Recovery Agreement, the DEQ will establish a new and unique Environmental Cleanup Site Information (ECSI) file for the affected Sub-Parcel. A Sub-Parcel

Specific RAP/CMMP will be prepared and submitted to the DEQ for review and approval. Sub-Parcel Specific RAPs will include, at a minimum, a description of Sub-Parcel Remedial Action design and a Sub-Parcel Specific CMMP. The PDC/developer will retain an environmental consultant to prepare the Sub-Parcel Specific RAP/CMMP, provide oversight of Remedial Action implementation activities during Redevelopment, and prepare the Closure Report following the completion of Remedial Action implementation for the development project signed by the Project Manager and Oregon-registered Professional Engineer or Geologist certifying that the Remedial Actions for the Sub-Parcel have been completed in accordance with the Consent Judgment (see Consent Judgment Section 9). Once the DEQ has approved the Closure Report, a Sub-Parcel Specific EES will be prepared and recorded with the deed for the Sub-Parcel, superseding the existing 2011 EES. The DEQ will then issue a cNFA letter and Certificate of Completion for the Sub-Parcel (in accordance with Section 9 of the Consent Judgment), indicating that all PPA requirements have been met, and that Remedial Actions implemented are protective of human health and the environment.

2.0 REQUIRED REMEDIAL ACTION

In the ROD, Remedial Actions were selected by DEQ under two different Remedial Action scenarios, including an "Existing Site Use" scenario and also a "Hypothetical Future Site Use" scenario under which the Property will be redeveloped.

In this MRAP, the term "Existing Site Use" is used to describe the selected Remedial Action scenario elements under the ROD, but as defined in the SOW, the term will also include the Remedial Action elements of the 2011 EES, 2012 cNFA, and 2011 CMMP. The term "Hypothetical Future Site Use" will be used in this MRAP to describe the selected Remedial Action requirements under the ROD for Redevelopment.

2.1 EXISTING SITE USE

The selected remedial actions for soil and groundwater contaminants under the Existing Site Use scenario include:

1. Maintenance of the Cap (paving and buildings over the entire Property).

2. Minimizing occupational worker exposure to impacted soil by maintaining existing limited use in the Former Pintsch Manufactured Gas Plant (MGP) and Electrical Utility Vault areas of the Property.

3. Use of Engineering Controls and Institutional Controls (personal protective equipment as necessary and limitations on Property access) to prevent exposure of excavation workers to contaminated soils and groundwater.

4. Recording of a EES with the Property deed summarizing information on Property contamination, worker notification and protection requirements, cap inspection and maintenance requirements, acknowledging the requirements set forth in the CMMP, and prohibiting use of groundwater for drinking or any other purposes.

These Existing Site Use Remedial Actions have been implemented by the USPS. Upon taking title from USPS PDC will continue to implement these Remedial Actions until Redevelopment commences or a Sub-Parcel is conveyed to another party that assumes the obligations of this PPA. When a Sub-Parcel is conveyed to another party the other party will continue to implement the Existing Site Use until Redevelopment triggers the generation of a Sub-Parcel Specific RAP (and corresponding Hypothetical Future Site Use Remedial Action requirements as described further below).

2.2 HYPOTHETICAL FUTURE SITE USE

Proposed Remedial Actions for soil and groundwater contaminants under the Hypothetical Future Site Use scenario include:

1. Maintenance of the existing Property cover (paving and buildings) until future Redevelopment occurs, and Temporary Capping and access restrictions if cover is compromised or removed.

2. Concurrent with Redevelopment, capping of areas where soil exceeds acceptable risk levels with a demarcation layer and a minimum of two feet of clean fill (landscape areas) or hardscape (buildings and paved areas). Cap specifications for paved/building areas to be determined in a remedial design document and subject to DEQ approval.

3. Excavation of soil exceeding hot spot concentrations (concentration more than 100 times higher than applicable risk-based concentration [RBC] for individual carcinogenic compounds, or 10 times higher for non-carcinogens including petroleum hydrocarbons) in the Electrical Utility Vault and MGP areas. Excavated soil requires offsite disposal at a Subtitle D landfill or other DEQ-approved facility. This action will require confirmatory sampling to ensure that all hot spot soils are removed.

4. Installation of a vapor mitigation system beneath future buildings constructed in the MGP and Electrical Utility Vault areas to prevent potential exposure of future users to contamination via vapor intrusion, or additional investigation to demonstrate that a vapor mitigation system is not needed to protect human health.

5. Removal of two pockets of petroleum contamination beneath existing Property buildings, as described in DEQ's June 13, 1997 approval letter for decommissioning of Property USTs. Alternatively, completion of a risk analysis confirming that the residual contamination does not pose a risk to human health or the environment under the appropriate Property use scenarios also will be acceptable.

6. Implementation of Engineering Controls for soil following hot spot removal and any other soil removal related to Property development to prevent excavation worker exposure to contaminated soils. Implementation of Engineering Controls for groundwater to prevent excavation worker exposure to contaminated groundwater in an excavation in the former MGP Area. Controls are to be outlined in a CMMP, including protocols for worker notification and requirements for personal protective equipment (PPE), dust suppression, soil management protocols, site access restrictions, etc.

7. Recording of a Sub-Parcel Specific EES with the Property deed (unless the 2011 EES recorded by USPS is determined to be adequate), outlining hazards, cap inspection and maintenance requirements, a prohibition of groundwater use for any purpose, and acknowledging the requirements set forth in the CMMP.

Each Sub-Parcel specific Redevelopment will comply with the above Remedial Actions for Hypothetical Future Site Use provisions as specified in this MRAP and the SOW. On Sub-Parcels upon which Redevelopment has not yet been proposed and upon which a Sub-Parcel Specific RAP has not been approved, PDC/Owner will continue to implement all Existing Site Use Remedial Actions.

Further, the ROD also notes a number of assumptions or conditions with respect to Hypothetical Future Use Remedial Actions. These are summarized below.

1. The selected remedial actions for the Hypothetical Future Us scenario assume that under redevelopment, the Property will include an urban residential element, as is the case with nearly all new development in the area. If redevelopment of a Sub-Parcel does not include an urban residential component, re-evaluation of conclusions regarding hot spots, areas of excess risk requiring remedial action, etc. will need to be revisited. Similarly, as described in the selected remedial actions above, removal of significant soil and/or groundwater contamination under Sub-Parcel development (beyond the required hot spot removal) may reduce or eliminate the amount of contamination requiring remedial

action, and thus modify the selected remedy. The DEQ has indicated that modification of the selected remedy is acceptable provided that necessary risk analysis is completed to the DEQ's satisfaction.

2. It is DEQ's expectation that railroad-related shallow soil contamination extends beneath Property buildings and other paved areas where sampling has not been performed. Capping will be required in these areas unless DEQ-approved sampling is performed to confirm the absence of significant contamination.

3. Given the nature of Property contamination (generally surficial in nature and related to historical Property-wide railroad activity), groundwater investigation at the Property has been limited to the areas where deeper soil or groundwater impacts were either observed or inferred (MGP and Electrical Utility Vault areas, and the UST near the south Property boundary). If significant contamination (indicated by visible or olfactory evidence) is encountered during Sub-Parcel redevelopment in areas where analytical data is limited or absent, characterization sampling will be required by DEQ and may include a full range of metals, PAHs, VOCs, and cyanide. If contamination is present at depth, DEQ may require groundwater sampling. Note that unexpected contamination applies both to contamination associated with past railroad and MGP operations, and to contamination associated with USPS operations not specifically addressed in the Property remedial investigation.

4. Following or in lieu of UST pocket-in-place removal, DEQ will require confirmatory sampling to verify that 1) the nature and extent of this contamination have been defined, 2) residual contamination does not pose an unacceptable risk, and 3) contamination does not extend to the water table. Groundwater sampling may be required by DEQ if deeper soil impacts are found.

5. DEQ will not require additional site characterization or remediation of contamination located off-site beneath the adjacent NW 9th Avenue and NW Lovejoy intersection, and extending to the north below NW 9th Avenue within and around the Abandoned Tanner Creek Sewer. The primary source of the contamination appears to be historical releases from the MGP formerly located in the northwest Property corner. Investigation and cleanup, as necessary, will be pursued through the historical MGP owner/operator. As part of Property development, however, DEQ will require that any on-site utility connections to the Abandoned Tanner Creek Sewer be located and abandoned. Operating utility connections that may act as a preferential migration pathway for off-site migration of contaminants will likewise need to be addressed. Any unexpected contamination (beyond that identified under the Property remedial investigation and risk assessment found during this effort will need to be addressed to DEQ's satisfaction.

6. At the discretion of DEQ and with prior approval, reuse of non-hot spot contaminated soil below Sub-Parcel surface cap features will be permitted. DEQ approval of non-hot spot contaminated soil reuse shall not be unreasonably withheld provided a demonstration is made that soil reuse does not exacerbate Property environmental conditions or present an unacceptable risk to human health or the environment. Reuse of Property demolition debris (primarily asphalt and concrete) also will be permitted (no prior DEQ approval required) provided the debris exhibits negligible visual or olfactory evidence of contamination and has negligible contaminated soil adhered to it.

2.3 REMEDIAL ACTION TEAM ORGANIZATION AND RESPONSIBILITIES

It is anticipated that Redevelopment of the Property will occur in multiple phases or projects, and that such Redevelopment will involve Sub-Parcels of the Property. As each Redevelopment phase or project is initiated, a remedial action team for that particular phase (and for the particular Sub-Parcel) will be established by the PDC and each subsequent Sub-Parcel Owner. The team will generally include a developer/Supervising General Contractor (SGC), environmental consultant, PDC and DEQ. The developer/GC will be responsible for all Property demolition or construction activities. The developer/GC and environmental consultant will provide DEQ a draft Sub-Parcel Specific RAP (which shall include all appropriate specific elements for the Redevelopment pursuant to the SOW and as identified in this MRAP). The environmental consultant will be responsible for collecting documentation of the execution of the Sub-Parcel Specific RAP. This documentation will eventually be used to prepare a Closure Report at the completion of a Redevelopment project. The Owner of the specific Sub-Parcel will bear ultimate responsibility for Remedial Action implementation, and DEQ will oversee implementation consistent with the PPA and Sub-Parcel Specific RAP. To ensure that PDC and DEQ are aware of actions taken during development, good communication between the parties will be very helpful during the development process.

3.0 SURFACE CAPPING

3.1 GENERAL APPROACH – EXISTING SITE USE

As indicated in the cNFA issued for the Property on September 25, 2012, the Existing Site Use Remedial Action scenario surface capping has been implemented to the satisfaction of the DEQ. It is our understanding that the current surface capping at the Property is comprised primarily of buildings (VMF, Parking Garage, and P&DC Building) and asphalt/concrete pavement. In June 2011, exposed soil in an area along the western wall of the parking garage was capped with demarcation layer overlain by a few inches of river rock. Small areas of landscaping also remain along the southern boundary of the Property (Figure 2). Until all development phases have been

completed, it is anticipated that this Existing Site Use remedial action will continue to be implemented by the PDC on portions of the Property unaffected by development projects as provided in the SOW and this MRAP. It is desirable to the PDC to retain the existing surface Cap to the maximum extent practicable to ensure the protection of human health and to minimize alteration of the existing stormwater management system at the Property during the Lease-Back and Pre-Construction phases/activities.

In areas of the Property where the existing Cap is removed (e.g., via demolition that removes building foundations, existing pavement, concrete, etc., to prepare a Sub-Parcel for Redevelopment) in a manner that exposes contaminated soil, Temporary Capping will be installed as an Engineering Control if restoration of the Cap with like material is not implemented or such removal does not lead to Remedial Actions under the Hypothetical Future Site Use remedy. Temporary Capping will be implemented to bring the Property back into conformance with Existing Site Use upon completion of the Pre-Construction activity executed (with appropriate erosion controls in place pending installation of Temporary Capping), and will only be used when a schedule for Redevelopment of the effected Sub-Parcel has been established. Temporary Capping will include, as a minimum design specification, demarcation layer overlain by four inches of clean gravel, which is consistent with the specification for Temporary Capping described on page 22 of the ROD. Prior to implementation of Temporary Capping, the DEQ will be consulted, and its approval obtained, regarding Temporary Capping specifications, with the expectation that the level of protectiveness of the Temporary Cap will be equal to, but not higher than, that of the surface capping removed in consideration of existing and planned use of the affected Sub-Parcel. Temporary Capping also may include the replacement of the Cap with like material. Replace of Cap with like material does not require DEQ pre-approval. Any area where Temporary Capping is utilized that does not include replacement with like material will be secured with fencing, if required, to prevent unacceptable exposure to COCs as provided in Section 8.4.4 of this MRAP. The use of Temporary Capping will allow the Existing Site Use Remedial Action scenario to remain in effect on parcels that have not transitioned to Redevelopment.

3.2 GENERAL APPROACH – HYPOTHETICAL FUTURE SITE USE

Permanent surface capping will be installed as an Engineering Control in all areas of the Property, unless a demonstration is made to the DEQ's satisfaction that such surface capping is not necessary to protect human health and the environment. Schematic diagrams for each typical permanent cap type that may be used at the Property for Private and Public Sub-Parcels are illustrated on Figure 6, but other cap configurations may also occur if DEQ agrees that such other cap specifications would be equally protective. New buildings may also be utilized as a type of surface cap, with no special requirements for demarcation layer, or material types or thicknesses. As indicated in these diagrams, geotextile as a demarcation layer will be installed to mark the boundary between potentially contaminated soil and clean materials placed as part of the

surface cap. Subsurface utilities to be installed in contaminated soil below permanent Sub-Parcel surface cap (except under buildings) must be lined with demarcation material "tied into" the overlying surface cap demarcation material and backfilled with clean material. For public streets, City of Portland surface cap specifications must be utilized. As depicted in Figure 6, current City requirements include a surface cap comprised of clean fill, sub-base, and asphalt with a minimum thickness of 5 feet. All surface cap specifications will be revisited on a Sub-Parcel Specific basis during the preparation of Sub-Parcel Specific RAPs, include checking in with the City regarding the current City requirements for public street surface capping. The specification for demarcation material for all cap types is Mirafi 500X (a woven geotextile) or equivalent. Rolls of Mirafi 500X are 17.5 feet in width. An overlap of 12 inches is required during its installation. Four general cap types (illustrated on Figure 6) will be utilized: Street Areas, Hardscape Areas, Landscape Areas, and Asphalt Paved Areas (i.e., surface parking lots). As each individual development project or phase occurs, a capping plan will need to be developed and included as part of a Sub-Parcel Specific RAP. Each capping plan will include a drawing illustrating the footprint of each cap type, overlain with the development plan for the project.

The Property is occupied by several existing buildings with a total footprint of approximately 565,000 square feet. Portions of the Property beneath buildings have not been assessed for environmental contamination. When existing buildings are removed, close inspection of underlying soil must be performed. If visible or olfactory evidence of contamination is noted, DEQ must be informed of the presence of such evidence, and if required by DEQ, sampling of the suspect contamination must be completed. The ROD stipulates that these areas must either be capped, or that confirmation soil samples are collected to demonstrate that surface capping is not required to protect human health and the environment in these areas. At this time, it is anticipated that portions of the Property beneath buildings that exhibit negligible visible or olfactory evidence of contamination will be capped using the general approach described above, and that confirmation soil sampling in these areas will not be conducted. However, PDC or a developer may conduct focused site assessments to demonstrate that surface capping is not required in these areas in the future through the collection and testing of confirmation soil samples, subject to DEQ review and approval.

3.3 CONTAMINANTS OF CONCERN MITIGATED

Based on historical environmental investigations, contaminants of concern (COCs) detect in shallow subsurface soils at the Property at concentrations above potentially applicable risk-based concentrations (RBCs) are listed below:

- lead, iron, and arsenic;
- diesel- and heavy oil-range petroleum hydrocarbons;
- ethylbenzene; and
- polynuclear aromatic hydrocarbons (PAHs) including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, and naphthalene.

3.4 SITE EXPOSURE MODEL

A surface cap will eliminate urban residential and occupational worker receptor direct-contact exposure to COCs in surface and shallow subsurface soil. By eliminating direct-contact exposure to COCs in Property soils, unacceptable risk to urban residential and occupational worker receptors is effectively mitigated. Surface capping will not limit or prevent direct contact with soil by construction or excavation workers because the depth of construction-related excavation may extend beneath the base of surface capping. Except beneath buildings, a demarcation layer will be installed to clearly indicate the boundary between potentially contaminated soil and clean fill. This demarcation layer will serve to inform future construction/excavation workers when they penetrate the surface cap, and that expanded worker protection and soil management protocols are required.

4.0 SOIL HOT SPOT AND POCKET-IN-PLACE EXCAVATION AND OFFSITE DISPOSAL

4.1 GENERAL APPROACH – EXISTING SITE USE

Under Existing Site Use, no Hot Spot Removal or pocket-in-place soil contamination removal is required. Surface capping currently in place at the Property serves to prevent exposure to hot spot and pocket-in-place soil contamination. On portions of the Property unaffected by Redevelopment (or pending Redevelopment), PDC may continue to use the existing Cap as a means to restrict exposure to hot spot and pocket-in-place soil contamination.

4.2 GENERAL APPROACH – HYPOTHETICAL FUTURE SITE USE

DEQ cleanup rules express a preference for treatment of hot spots. As a result, the ROD requires that soil hot spots present in the Electrical Utility Vault and MGP Areas of the Property be excavated and transported offsite for disposal. The ROD also provides that inaccessible contaminated soils impacted by USTs previously decommissioned at the Property be excavated and transported offsite for disposal. The approximate footprints of soil hot spot and pocket-in-place soil contamination requiring removal are illustrated on Figure 7.

Hot spot and pocket-in-place contaminated soil removal actions may be performed prior to (during Pre-Construction) or as part of one or more Sub-Parcel Redevelopment phases. Under either of these scenarios, a removal action work plan will be prepared and approved by the DEQ prior to the initiation of the removal action work. The removal action work plan, which may be part of a Sub-Parcel Specific RAP will specify:

- Soil excavation, transport, and disposal methods that will be utilized;
- The approximate area and volume of hot spot/pocket-in-place soils anticipated to be removed;
- Cleanup levels for each hazardous substance present in soil to be removed; and
- Confirmation soil sample collection and laboratory testing methods.

4.3 CONTAMINANTS OF CONCERN MITIGATED

COCs present at concentrations exceeding hot spot levels include the PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. COCs present in the pocket-in-place areas include petroleum hydrocarbons.

4.4 SITE EXPOSURE MODEL

Risk results from the exposure of receptors to hazardous substances according to the following formula:

RISK = EXPOSURE X CONCENTRATION

The higher the concentration, or the more frequent the exposure, the higher the risk. DEQ's objective in establishing a preference for the treatment/removal of hot spots is to ensure that the concentrations of hazardous substances that are not treated/removed are below a threshold that would create a high risk scenario. In the removal action work plan that will be prepared prior to soil hot spot and/or pocket-in-place removal in the future (sometime after summer 2018 when the USPS has vacated the Property), an analysis of the benefits of the removal action will be completed, and a plan for a soil removal action proposed for DEQ review and approval. The analysis will be conducted in accordance with the DEQ document *Guidance for Identification of Hot Spots*, dated April 23, 1998. The removal action work plan will also identify cleanup values for each COC being mitigated by a specific removal action.

5.0 MGP AND ELECTRICAL UTILITY VAULT AREA VAPOR MITIGATION

5.1 GENERAL APPROACH – EXISTING SITE USE

Under the Existing Site Use scenario, no Remedial Actions are required to address the vapor intrusion into building exposure pathway. No buildings are currently located within the MGP and Electrical Utility Vault areas where RBC exceedances for the vapor intrusion pathway have been documented. Until a Redevelopment phase in these areas occurs, no action by PDC is required to address vapor intrusion.

5.2 GENERAL APPROACH – HYPOTHETICAL FUTURE SITE USE

Under the Hypothetical Future Site Use scenario, a vapor mitigation system will be used to mitigate vapor intrusion into buildings in the MGP and Electrical Utility Vault Areas (Figure 3) as stipulated in the ROD, unless a demonstration is made that such mitigation is not necessary to protect human health. A risk assessment completed in August of 2009 (ARCADIS, 2009) has indicated that vapor intrusion is an exposure pathway that requires mitigation to protect urban residents and occupational workers from unacceptable risk. Prior to the construction of a new building in the Electrical Utility Vault and/or MGP Areas, the developer and its consultant will engage with the DEQ (as part of the Sub-Parcel Specific RAP) in determining: 1) whether a vapor mitigation system is needed for a planned building, 2) the specifications for the vapor mitigation system, 3) what sampling will be required to determine the type of vapor mitigation system required, or as part of a demonstration that a vapor mitigation system is not required for the building.

Whether or not a vapor mitigation system is required may depend upon the use of the planned building, and primarily the ground floor use of the building. For example, if the ground floor use of the building is a parking garage, a vapor mitigation system is less likely to be required. If the ground floor use is urban residential, a vapor mitigation system is more likely to be required. As part of Sub-Parcel-Specific RAP development in areas of the Property with potential soil vapor concerns, contaminant concentrations (including any new data) will be compared to current DEQ RBCs for human exposure in evaluating whether remedial action is necessary to address the vapor intrusion exposure pathway. Again, such decisions will be memorialized via a Sub-Parcel Specific RAP.

The ROD (page 15) states that "Additional sampling will be necessary in the MGP Area to better delineate the area of soil and groundwater [vapor intrusion] risk exceedance." This additional sampling has been identified by PDC as an activity that it may implement during

Pre-Construction, as a means to allay developer concerns regarding uncertainty as to the need for vapor intrusion preventive measures. Alternatively, this sampling may be performed after a development plan for this portion of the Property has been prepared. Information regarding the location of a building's footprint and the types of use within the building (e.g., commercial, residential, etc.) is integral to an evaluation of risk. Regardless of the timing of the additional sampling, the PDC and/or a developer will work with the DEQ to develop a plan to ensure that vapor intrusion risk in the MGP Area is addressed, including conducting additional sampling (if necessary) as specified in a Sampling and Analysis Plan (SAP) prior to the construction of a building of any kind in this area. Prior to sampling, Consent Judgment Section 4.F requires "every reasonable effort to notify DEQ of any excavation, drilling, sampling, or other fieldwork to be conducted" under the Consent Judgment at least five working days before such activity, but in no event less than 24 hours before such activity.

5.3 CONTAMINANTS OF CONCERN MITIGATED

COCs present at concentrations exceeding vapor intrusion RBCs include ethylbenzene and naphthalene.

5.4 SITE EXPOSURE MODEL

Vapor intrusion is the migration in the vapor phase of volatile compounds through the floor of a building, where occupants of the building may then exposed through the inhalation of the volatile compounds. A vapor mitigation system reduces risk to building occupants by preventing the migration of volatile compounds into the building. The type of vapor mitigation systems utilized often depends on the concentration of volatile compounds present in soil and/or groundwater beneath the building. If volatile compound concentrations are high, both a vapor barrier and an active or passive venting system might be used. If the volatile compound concentrations are low, vapor mitigation is generally limited to installing a vapor barrier during building construction. As indicated above in Section 5.1, prior to initiating a Redevelopment project in either the MGP or Electrical Utility Vault Areas, the developer must work with the DEQ in developing a plan to address vapor intrusion risk.

6.0 VETTING OF PILING METHODS

Because multiple-story buildings are anticipated as part of Redevelopment of the Property, and based upon soil conditions in the area, it is anticipated that piles will be required as part of the foundation system for all buildings constructed on the Property. Pile driving has the potential to exacerbate contamination is soil and groundwater by providing a preferential migration pathway for contamination to move vertically downward. The MGP Area is likely an area of focus

as both deeper soil and groundwater impacts have been documented. A discussion of piling methods and why the planned method is not anticipated to exacerbate contamination will be included in the Sub-Parcel Specific RAP/CMMP for each development project.

7.0 ABANDONMENT OF TANNER CREEK SEWER CONNECTIONS

The abandoned Tanner Creek Sewer is located beneath NW 9th Avenue adjacent and west of the Property, from NW Irving Street to NW Lovejoy Street. This abandoned sewer was identified in earlier environmental investigations as a potential preferential migration pathway for contaminants to reach the Willamette River. As such, the ROD (page 24) requires that as part of Property development, any connections to the abandoned Tanner Creek Sewer be located and abandoned. This requirement will be addressed in a Sub-Parcel Specific RAP/CMMP for any Sub-Parcel development project located along NW 9th Avenue, north of NW Irving Street.

8.0 INSTITUTIONAL CONTROLS

8.1 GENERAL APPROACH – EXISTING SITE USE

As stipulated in the ROD Existing Site Use scenario, Institutional Controls are currently being implemented at the Property. Further, the 2011 EES includes additional details regarding Institutional Control continuing obligations. Institutional Controls currently implemented under the ROD (for the Existing Site Use Remedial Action scenario), and the 2011 EES at the Property, comprise the following.

- A description of site hazards, which have been implemented by completing a CMMP and Sub-Parcel Specific EES for the Property.
- Restricting public access to the Property (except the USPS retail store located on NW Hoyt Street).
- A restriction prohibiting use of the Property in any way the will or likely will penetrate the existing cap or jeopardize the existing cap's protective function as an Engineering Control that prevents exposure to contaminated soil.
- Annual inspection of the existing Property surface cap.
- Maintenance of the existing Property surface cap.
- A prohibition on the use of groundwater.

As provided in the SOW, these Institutional Controls will remain in effect for the entire Property during the USPS Lease-Back period. Further, after the Lease-Back period, PDC will maintain these

Institutional Controls for all parts of the Property pending Redevelopment, as provided in the SOW and this MRAP. For individual parcels undergoing development, a Parcel-Specific RAP prepared for that development project will specify and require Institutional Controls to be implemented during Redevelopment, and any additional Institutional Controls that are necessary following the completion of the development project. Following completion of Redevelopment, these controls will be memorialized via a Sub-Parcel Specific EES (to be approved by DEQ and recorded in Multnomah County deed record).

8.2 GENERAL APPROACH – HYPOTHETICAL FUTURE SITE USE

As provided in the ROD, Institutional Controls will be utilized as a Hypothetical Future Site Use Remedial Action element. Institutional controls that will be applied under Hypothetical Future Site Use for the Property during Redevelopment will include, where relevant, the following.

- A description of site hazards. Hazards associated with development activities will be described in a project-specific RAP/CMMP prepared for each Redevelopment phase. Hazards associated with each developed parcel will be addressed by completing a Sub-Parcel Specific CMMP, and an EES recorded on the deed for the Sub-Parcel.

- Restricting public access to any parcel during its Redevelopment.

- Annual (the frequency may be decreased after five years) inspection of the surface cap constructed during Redevelopment of each Sub-Parcel, and timely submittal of a report documenting the inspection to the DEQ for review and approval.

- Maintenance of the surface cap constructed during Redevelopment of each parcel. Any maintenance carried-out should be described in an inspection report submitted to DEQ for review and approval.

- A prohibition on the use of groundwater.

For individual parcels where vapor mitigation systems are utilized, an Institutional Control regarding inspection and maintenance of the vapor mitigation system also will be included, and details of this control will be provided in the Sub-Parcel Specific RAP/CMMP and EES. As provided in the SOW and this MRAP, Institutional Controls will be identified in a Sub-Parcel Specific RAP and implemented during Redevelopment activities. Inspection and maintenance continuing obligations will be described in a Parcel Specific EES and recorded in the Multnomah County deed record.

8.3 CONTAMINANTS OF CONCERN

COCs detected in soil and groundwater at the Property that will be mitigated in part through the use of Institutional Controls are listed below:

- lead, iron, and arsenic;
- diesel- and heavy oil-range petroleum hydrocarbons;
- volatile organic compounds including ethylbenzene; and
- PAHs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, and naphthalene.

8.4 SITE EXPOSURE MODEL

Each Institutional Control selected for the Property will mitigate a specific risk. A brief description of the risk mitigated by each Institutional Control is provided below.

8.4.1 Prohibition of Groundwater Use

It has been determined that there are no current or reasonably likely future uses of groundwater or surface water within the locality of the facility for the Property. Based upon this determination, it is inferred that the groundwater ingestion exposure pathway is incomplete for all receptors. To ensure that receptors are not exposed to groundwater, a deed restriction prohibiting the use of groundwater will be imposed on the Property.

8.4.2 Activity Restrictions and Engineering Control Inspection and Maintenance

Maintaining the integrity of Engineering Controls is critical to their effectiveness in mitigating risk. Sub-Parcel-specific (including any parks and, if necessary, public rights-of-way) plans for Engineering Control inspection and maintenance will be developed for each affected parcel on the Property and will be documented in a Sub-Parcel Specific EES. This form of Institutional Control will identify activities that are incompatible with the Engineering Controls, and will document inspection and maintenance activities and schedules. Requirements and responsibility for Engineering Control inspection and maintenance will be established for each Redevelopment project in Sub-Parcel documents approved by the DEQ including a RAP, Closure Report, and EES.

8.4.3 Description of Site Hazards

A Sub-Parcel Specific EES, if required by DEQ, will include a reference to any Sub-Parcel Specific RAP/CMMP prepared for each parcel that contains information regarding: 1) the nature, extent and concentration of contamination, and 2) means and methods for Engineering Control

implementation, and 3) contaminated media management. This Institutional Control is intended to mitigate risk to receptors that may be exposed to residual hazardous substances in soil and groundwater in the future by providing notification of potential hazards. Notification regarding the nature of Property contamination will enable workers to implement Engineering Controls and/or a health and safety program that will help ensure that workers are protected during their contact with contaminated media at the Property. A description of site hazards also will help ensure that any excess contaminated soil or groundwater generated during future construction or maintenance projects is managed in a way that will not result in changes to the Property risk framework. Further, the site hazard description will help ensure the appropriate management of excess contaminated soil and groundwater that may be generated during construction activities.

8.4.4 Access Restriction

This Institutional Control will help ensure that uncontrolled access to the Property does not occur in areas where such access may result in an exposure potentially resulting in unacceptable risk. The ROD specifically indicates that limiting use in the portions of the MGP and Electrical Utility Vault Areas is required under the Existing Site Use Remedial Action scenario. At a minimum, access restrictions in the form of fencing will continue in these two areas until these areas have undergone Remedial Action or Redevelopment. During the Pre-Construction phase, Temporary Uses are anticipated. Any Temporary Use similar to current USPS operations will not warrant access restrictions except in the MGP and Electrical Utility Vault Areas. For Temporary Uses deemed dissimilar from USPS operations, an evaluation of the need for any access restrictions necessary to protect Property users will be completed and the outcome of said evaluation approved by the DEQ.

During development projects, uncontrolled access to the Property by the general public will be implemented to mitigate the potential for exposure to contaminated soil and construction hazards in general. Following the completion of a development project, Remedial Actions will have addressed all risks, and access restrictions will no longer be required.

9.0 CONTAMINATED SOIL MANAGEMENT

Contaminated soil requiring management may be generated during Pre-Construction and Hypothetical Future Site Use including during Removal Actions or other Remedial Action implementation and/or development of the Property. The purpose of this section of the MRAP is to establish a framework for the proper management of contaminated media, both during development and/or remedial action implementation projects, and during post-development construction/maintenance projects. In addition, for each remedial action or development project or phase, a Sub-Parcel Specific RAP/CMMP will be prepared. The Sub-Parcel Specific

RAP/CMMP will follow the framework outlined herein, and will include additional details regarding the means and methods that will be utilized for the specific parcel of land that it is prepared for. The Sub-Parcel Specific RAP/CMMP will be subject to DEQ approval prior to implementation. Prior to excavation, Consent Judgment Section 4.F requires "every reasonable effort to notify DEQ of any excavation, drilling, sampling, or other fieldwork to be conducted" under the Consent Judgment at least five working days before such activity, but in no event less than 24 hours before such activity."

9.1 DISPOSAL FACILITY PROCUREMENT

Prior to the generation, transport, and disposal of contaminated media, the PDC or developer must identify and procure permits for disposal. In order to procuring disposal permits for soil, it is likely that additional sampling and testing will be required due to the age of soil data previously collected at the Property. A plan for disposal permit procurement, including soil sampling and testing methods, if required by DEQ, must be included in the Sub-Parcel Specific RAP/CMMP prepared for each Remedial Action/Redevelopment phase.

9.2 PROJECT SITE LAYOUT

Project site traffic including construction workers and heavy equipment must be managed to ensure that contaminated media are adequately controlled. Minimizing traffic to the extent practicable is a preferred best management practice. Erosion controls (e.g., silt fences and catch basin filter socks) should be used to prevent soil erosion from the project area onto adjoining properties and into the City's stormwater management system. Track-off of contaminated soil on vehicles must be minimized. Preferred options for the control of track-off include 1) the construction of a wheel-wash that can be utilized by trucks exiting the Property, and 2) the construction of gravel pads at construction exits.

9.3 EXCLUSION ZONE AND DECONTAMINATION

Before beginning excavation of contaminated soil as part of either Pre-Construction or Redevelopment, or a remediation activity, the GC must establish an exclusion zone around the excavation area where contaminated soil is located. Entrance and exit locations to the exclusion zone must be established and documented in the daily field logs. The boundaries of individual exclusion zones will be located wholly within the Property boundaries, and generally will be limited to the portion of the Property affected by Redevelopment/Remedial Action activities.

Equipment may operate freely within the exclusion zone. The GC will use hand tools to remove any significant quantities of adhered soils from equipment exiting an exclusion zone. Cleaning of equipment is not required for movement of equipment within the exclusion zone.

9.4 MANAGEMENT OF CONTAMINATED SOILS

Excess contaminated soils typically are generated during development projects, and always are generated during soil removal actions such as a soil hot spot cleanup. Sources of excess soil generated during development projects include stripping and other grading required to achieve design subgrade elevations, and constructing subsurface elements of building foundations such as pile caps and grade beams. Generally, excess contaminated soil can be reused on the same parcel, and potentially on other portions of the Property that have not yet been redeveloped subject to limitations under DEQ regulations and guidance including groundwater levels, concentration of COCs, suitable locations for on-site soil relocation, and other factors). Contaminated soil reuse and relocation on the Property is subject to DEQ approval. 1.6. However, DEQ approval of non-hot spot contaminated soil reuse shall not be withheld provided a demonstration is made that soil reuse does not exacerbate Property environmental conditions or present an unacceptable risk to human health or the environment. Reuse of Property demolition debris (primarily asphalt and concrete) also will be permitted (no prior DEQ approval required) provided the debris exhibits negligible visual or olfactory evidence of contamination and has negligible contaminated soil adhered to it. Excess soils and demolition materials that cannot be reused must be transported offsite for disposal (see Section 9.1 regarding soil disposal facility procurement). Any staging and/or stockpiling of excess soils by the GC should be approved by the project environmental consultant and may require DEQ approval (see Section 9.6 for details regarding contaminated soil storage means and methods). The soil management means and methods to be employed for each Redevelopment or Remedial Action phase must be described in a Sub-Parcel Specific RAP/CMMP prior to the start of the project.

9.5 EXCAVATION AND LOADING OF SOILS

The following procedure will be used to load contaminated soils during Redevelopment and Remedial Action projects, unless otherwise approved by DEQ:

- GC will notify environmental consultant no less than 24 hours prior to beginning excavation of contaminated soil.
- The GC will use water as necessary to prevent the generation of visible dust during excavation activities.
- Maintain excavation equipment in good working order. The GC will immediately clean up any contaminated soil resulting from spilled hydraulic oils or other hazardous materials from equipment.
- Wet soils with free water will not be loaded into trucks.
- Load trucks in a manner that prevents the spilling, tracking, or dispersal of soil. All loads will be secured with tight-fitting covers prior to exiting the Property.

- All soil will be removed from the exterior of each truck (including truck tires) before the truck leaves the loading area. Any soil collected in the loading area will be placed back into the truck. If necessary, wheel wash or other measures will be implemented to prevent off-site tracking of contaminated soil from the site.
- Specific truck haul routes will be established before beginning off-Property contaminated soil transport. On-Property truck routes also will be developed to minimize or prevent movement of trucks over contaminated areas.
- The GC will ensure that loaded truck weights are within acceptable limits.

9.6 TEMPORARY STORAGE OF SOILS

Contaminated soil (e.g. soil containing contaminants at concentrations exceeding DEQ clean fill criteria) may be temporarily stored at the discretion and with pre-approval by an environmental consultant, and may be subject to DEQ approval. All temporary stockpiles will be removed from the Property shortly following the completion of each significant grading or excavation phase, unless on-site reuse of the soil is planned. Contaminated soil storage on the Property is generally allowed only within lined and bermed containment areas or within roll-off bins. However, temporary storage of non-hot spot contaminated soil on a non-hot spot soil surface is permitted provided that the DEQ is kept apprised of soil volumes, erosion control measures, and planned final disposition of the soil. Contaminated soils stockpiled on the Property will be covered with impermeable, reinforced tarps (10-mil minimum) during periods of rain, wind, or inactivity to prevent soil transport. Stockpiles will remain covered whenever not in use. The edges and interior portions of the tarps will be tied down with sand bags and rope, as necessary, to maintain their integrity.

As directed and authorized by the environmental consultant, unanticipated and unknown contaminated soil may temporarily be stockpiled at a pre-approved location until laboratory results required to profile the soil are received. Such soil will be placed atop impermeable, reinforced plastic sheeting (10-mil minimum) and surrounded by a berm of clean soil or other suitable material. Stockpiled material will also be covered with reinforced tarps (10-mil minimum) during periods of rain, wind, inactivity, or when not adding or unloading soil to prevent soil transport. The edges and interior portions of the tarps will be tied down with sand bags and rope, as necessary, to maintain their integrity. Analytical results will be used to determine the appropriate disposition of the soil.

9.7 TRANSPORTATION OF SOILS

When transporting soils offsite, the GC will comply with all applicable federal, state, or local laws, codes, and ordinances that govern or regulate solid/hazardous waste transportation. Prior to any significant cleanup activity that involves off-site transport of contaminated media, information

shall be provided to DEQ on truck routes that will be used, and public outreach may be necessary. The GC will ensure that all drivers hauling soil have in their possession all applicable state and local vehicle insurance requirements, a valid driver's license, and vehicle registration and license documentation. The GC will use trucks to transport contaminated soil that are substance-compatible, licensed, insured, and permitted pursuant to federal, state, and local statutes, rules, regulations and ordinances. Drivers of haul vehicles transporting contaminated soil off-Property will be informed of:

- The nature of the material hauled.
- The required routes to and from the disposal site and/or disposal staging area.
- The applicable City street regulations and requirements, and State of Oregon Department of Transportation (DOT) codes, regulations and requirements.
- The legal maximum load limits per vehicle.

Prior to trucks leaving the Property, the GC will decontaminate the equipment to prevent soil from being spilled or tracked offsite. Decontamination will include broom cleaning and wheel washing or similar methods to remove all contaminated soil from the exterior of the truck. The loads of each truck will be covered with a well-secured, tight fitting tarp prior to trucks leaving the Property. Trucks will not travel offsite if free liquids are draining from the load. If visible track-off is noted on any adjoining streets, the GC will immediately have the street cleaned.

9.8 DISPOSAL OF CONTAMINATED SOILS OR OTHER SOLID WASTES

Contaminated soils will be transported to a Resource Conservation and Recovery Act Subtitle D Landfill, unless another disposal option or location is approved by the DEQ. The GC will provide the environmental consultant at least 72-hour notice prior to initial transport of soil off the Property, and at least 48-hour notice for all subsequent soil transportation events.

The disposal contractor will prepare bills of lading or other related documents required by the selected disposal facility and submit all receipts of disposal or treatment within two days of receipt of the soil at the disposal facility.

Concrete and other debris will be disposed at a demolition debris landfill or reused on site. The GC must ensure that any soil adhered to demolition material has been removed prior to off-Property transport of such material or on-site reuse. If visible or olfactory evidence that demolition material is contaminated is noted, testing of the material may be required, at the discretion of the DEQ, prior to its off-Property transport and disposal or on-site reuse.

9.9 UNANTICIPATED AND UNKNOWN CONTAMINATED SOILS

The DEQ states in the ROD (page 24) that "if significant contamination is encountered during Property development in areas where analytical data is limited or absent, characterization sampling will be required by DEQ. If contamination is present at depth, DEQ may require groundwater sampling." The GC will perform the following steps in response to suspected unanticipated or unknown contaminated soil indicated by the monitoring procedures described in Section 9.12:

- Upon discovery of suspected unanticipated and unknown contaminated soil, immediately suspend all construction activities in the vicinity and notify the environmental consultant and GC.

- Upon notification, the environmental consultant will promptly mobilize to the Property (if not already on Property) to evaluate whether unanticipated and unknown contaminated soil has been encountered.

- After an initial reconnaissance of the suspected unanticipated and unknown contaminated soil encountered, the environmental consult will notify the DEQ of the conditions encountered. The consultant will then work with the DEQ to determine the appropriate action to address the condition encountered.

The consultant and DEQ will develop a plan to address the potential unanticipated and unknown contaminated soil. Plans may include:

- Classification of the soil as contaminated without further analysis, in which case the soil must be managed in accordance with CMMP requirements.

- Working with the GC to conduct an assessment of the soil, potentially including exploratory backhoe test pits to evaluate its extent, and the collection and analysis of soil samples to evaluate the nature and concentration of contamination.

- If exploratory test pits indicate the extent of the potential unanticipated and unknown contaminated soils is limited, the consultant may direct the GC to excavate and stockpile the soil to limit any construction delays. If this occurs, the consultant will then rapidly characterize the soil to determine the appropriate method for management of the soil.

If suspect unanticipated and unknown contaminated soils require temporary storage, such storage must take place within drop boxes, unless lined and bermed soil stockpiles are pre-approved by the DEQ).

In the unlikely event that the consultant determines that potentially hazardous unanticipated and unknown contaminated soil may have been encountered, the GC will comply with the following (in addition to otherwise complying with all applicable regulations):

- Secure the area as necessary to restrict access and protect workers and the public from exposure.

- Modify the Health and Safety Plan (HSP), including designation of an exclusion zone for the area where the potentially hazardous unanticipated and unknown contaminated soil has been encountered. The environmental consultant will provide unanticipated and unknown contaminated soil sampling and analysis results to the GC to assist in making appropriate HSP modifications.

If the GC encounters an unknown abandoned UST, they will immediately inform the environmental consultant, and with assistance from the consultant, will manage the UST in accordance with Oregon Administrative Rules 340-122.

9.10 SITE ACCESS CONTROLS

Areas where Redevelopment work has commenced will be fully enclosed by fencing for the duration of the Redevelopment/Remedial Action to minimize access by unauthorized persons. As the development of individual parcels or areas are completed (including implementation of any applicable requirements under a Sub-Parcel Specific RAP/CMMP or EES) fencing may be removed or reduced. Any lots that remain undeveloped will remain enclosed by fencing until development occurs, unless a demonstration is made (and approved by DEQ) that fencing removal will not result in unacceptable risk to human health or the environment. Lockable gates will be provided at construction entrances and exits, and no trespassing signs will be posted on the fencing.

9.11 HEALTH AND SAFETY

A site-specific HSP will be prepared by both the environmental consultant and GC prior to initiating each development project. The environmental consultant may be useful as a resource to the GC in the preparation of its HSP. At a minimum, the HSP must describe the nature and concentration of COCs present in soil/groundwater on and under the parcel at issue, and describe the means and methods that will be utilized to minimize worker exposure to this contamination. Copies of all HASPs must be submitted to DEQ for review and administrative record- keeping a minimum of 30 days prior to the start of work.

9.12 REMEDIAL ACTION OVERSIGHT ACTIVITIES

Remedial actions will be overseen by an environmental consultant on behalf of PDC or developer. DEQ must be provided the name and contact information for the environmental consultant and PDC/developer project manager a minimum of two weeks prior to the start of work. Meetings will be help prior to the start of work, and at appropriate intervals during the work, to discuss environmental requirements for the project. The DEQ must be invited to attend and participate in these meetings. The environmental consultant or a PDC/developer representative will be on-site to observe a portion of all significant phases of Remedial Action implementation outlined in the ROD. This may include observation of hot spot removal, surface cap installation, vapor mitigation system installation, and abandoned Tanner Creek Sewer connection decommissioning. The environmental consultant and GC will coordinate preparation and collection of remedial action implementation documentation, including daily field reports and photographs. The level of oversight will depend upon the type of activities executed on a given day. Initially, oversight may need to be nearly full-time, until the GC is fully aware of its corrective action and contaminated media detection responsibilities. The amount of time spent overseeing the GC will decrease over time, and eventually may be only a few hours per week.

9.13 RECORD KEEPING AND REGULATORY UPDATES

The GC will be required to prepare and maintain documentation describing activities related to the excavation, on-site management, transportation, and disposal of contaminated soils generated during its development project.

Daily field reports will be prepared by the GC on the same day in which activity has occurred and will be submitted to the PDC/developer as provided in the Sub-Parcel Specific RAP. The daily field reports will: 1) document excavation and management of soil, including locations and depths where contaminated soil was excavated; 2) describe the volume of soil placed in, or removed from, temporary soil stockpiles; 3) describe the location, depth, and nature of any unanticipated and unknown contaminated soil encountered or observed and the response taken; and 4) describe any placement of contaminated soil as fill to raise grade outside of right-of-way areas. Wherever contaminated fill is excavated, the GC also will provide estimates of in-place volumes that were excavated.

The GC will ensure that contaminated soil bills of lading for each offsite shipment of soil are prepared. The bills of lading will include the date and time of shipment, the name of the hauling company, the name of the truck driver, and the name and location of the disposal site. A copy of the bill of lading and the associated weigh slips from local scales and the disposal facility where the soil is accepted showing the weight of the soil transported offsite must be provided to the PDC/developer.

The environmental consultant or PDC/developer will provide weekly updates to the DEQ following the start of work (i.e. the first day of field work in the case of an investigation or Removal Action or ground-breaking in the case of Redevelopment), up to and until a decrease in the frequency of such updates has been approved by the DEQ. It is anticipated that an update frequency of weekly will occur only while substantial Remedial Action and/or soil management activities are occurring, and will not be required for the entire duration of Redevelopment.

10.0 CONTAMINATED GROUNDWATER MANAGEMENT

Benzo(a)pyrene and naphthalene have been detected in shallow groundwater in the MGP Area at concentrations exceeding groundwater in excavation RBCs. Limited groundwater sampling has been performed across the rest of the Property. As a result, DEQ must be notified in advance of excavation work anticipated to encounter groundwater. Groundwater is most likely to be generated during dewatering required for 1) installation of deep utilities, and 2) the construction of subsurface structures (e.g. elevators or grade beams/pile caps). Any water removed from trenches or excavations must be properly characterized and appropriately managed. A framework for groundwater management is provided below. Additional detail regarding groundwater management protocols will be included in a Sub-Parcel Specific RAP/CMMP prepared for each Redevelopment/Remedial Action project. The Sub-Parcel Specific RAP/CMMP will be subject to DEQ approval prior to implementation.

10.1 GROUNDWATER HANDLING AND STORAGE

If dewatering of trenches or excavations is required, the groundwater must be pumped from the trench or excavation into a temporary holding tank. Prior to disposal, the water must be tested to determine an appropriate disposal method. The most probable disposal method for relatively small volumes of water is anticipated to be an oil recycler. If this disposal method is pursued, the environmental consultant should contact the oil recycler and discuss its testing requirements in advance. Once testing results have been received and approved by oil recycler, the water may be picked up and transported to the recycling facility. Transport of water to the recycling center should be via a vacuum truck, or within DOT-approved containers. Equipment used to store or transfer groundwater should be decontaminated before demobilization. Any liquid waste generated during equipment decontamination should be managed in the same manner as groundwater.

If large volumes of groundwater are generated, it may be prudent for the GC to investigate other water disposal options, such as discharge to the City sewer system (subject to any City Industrial Pretreatment Discharge Permit requirements).

10.2 DISPOSAL FACILITY PROCUREMENT

Procurement of a contaminated groundwater disposal facility should also be undertaken prior to any Redevelopment or Remedial Action phase where encountering groundwater is anticipated. If the volume of groundwater generated is small (e.g. less than a thousand gallons), temporary storage, testing, and disposal at an offsite facility is the preferred management/disposal option. If larger quantities of groundwater are anticipated to be generated, then obtaining the necessary permits from the City to facilitate groundwater disposal to the sanitary/storm sewer system may be desirable, but advance planning is recommended.

10.3 RECORD KEEPING

The GC will be required to provide documentation describing all groundwater management activities. At a minimum, the GC must provide the following information to the PDC/developer: 1) a description including a map illustrating the location of trenches/excavations from which groundwater was removed, 2) estimated volumes of groundwater removed, including receipts from the disposal facility (if appropriate), 3) copies of related permits, and 4) a copy of analytical laboratory reports obtained in characterizing groundwater.

11.0 REPORTING

11.1 PRE-CONSTRUCTION ACTIVITY REPORTING

Various investigation and/or Remedial Action activities may occur during Pre-Construction, as discussed in other sections of this MRAP and in the SOW. Work plans describing these activities will be prepared prior to their implementation, and reports documenting these activities will be prepared following their completion. Work plans and reports for investigation or Remedial Actions required by the DEQ, or activities that disturb a significant amount of soil (>10 cubic yards) are subject to DEQ review and approval. Reports for minor voluntary investigation or Remedial Action activities also will be provided to the DEQ.

11.2 CLOSURE REPORT

At the conclusion of each Redevelopment/Remedial Action implementation project, the environmental consultant will complete and submit to DEQ a Closure Report summarizing and documenting all Remedial Action implementation activities (including documenting compliance with any Sub-Parcel Specific RAP and/or CMMP). The report will include, at a minimum, the following information:

1. documentation of all surface capping activities;
2. documentation of all vapor mitigation system installation activities;

3. documentation of any hot spot/pocket-in-place soils removal actions;
4. a description of any abandoned Tanner Creek Sewer connection decommissioning activities;
5. the volume and location of soil reused during the project, and the amount of soil excavated and hauled off-Property;
6. soil and groundwater transport manifest and disposal information;
7. representative photographs documenting Remedial Action implementation and contaminated media management activities.
8. Signatures and certification by Project Manager and Oregon-registered Professional Engineer or Geologist that the Remedial Action has been completed in accordance with the Consent Judgment (see Consent Judgment Section 9).

In addition, the Closure Report must include as-built drawings for any Engineering Controls (e.g., vapor mitigation system, surface cap, etc.). A draft Closure Report must be submitted to the DEQ within 60 days of completion of all remedial actions including documenting compliance with any Sub-Parcel RAP and/or CMMP.

12.0 REFERENCES

ARCADIS, 2008. Focused Feasibility Study, USPS Portland P&DC. June 30, 2008. (Includes supplemental Risk Assessment for Urban Resident Exposure).

ARCADIS, 2009. Technical Memorandum, Reclassified Compounds. August 21, 2009.

CH2MHILL, 2015. Abandoned Tanner Creek Sewer and 9th and Lovejoy Street Investigation Summary Report. January 2015.

Dames & Moore, 1993. UST Decommissioning Report Review & Soil Investigation, Portland Main Post Office (GMF/VMF). September 23, 1993.

Dames & Moore, 1994. UST Decommissioning & Soil Investigation Report, Portland General Mail Facility. February 10, 1994.

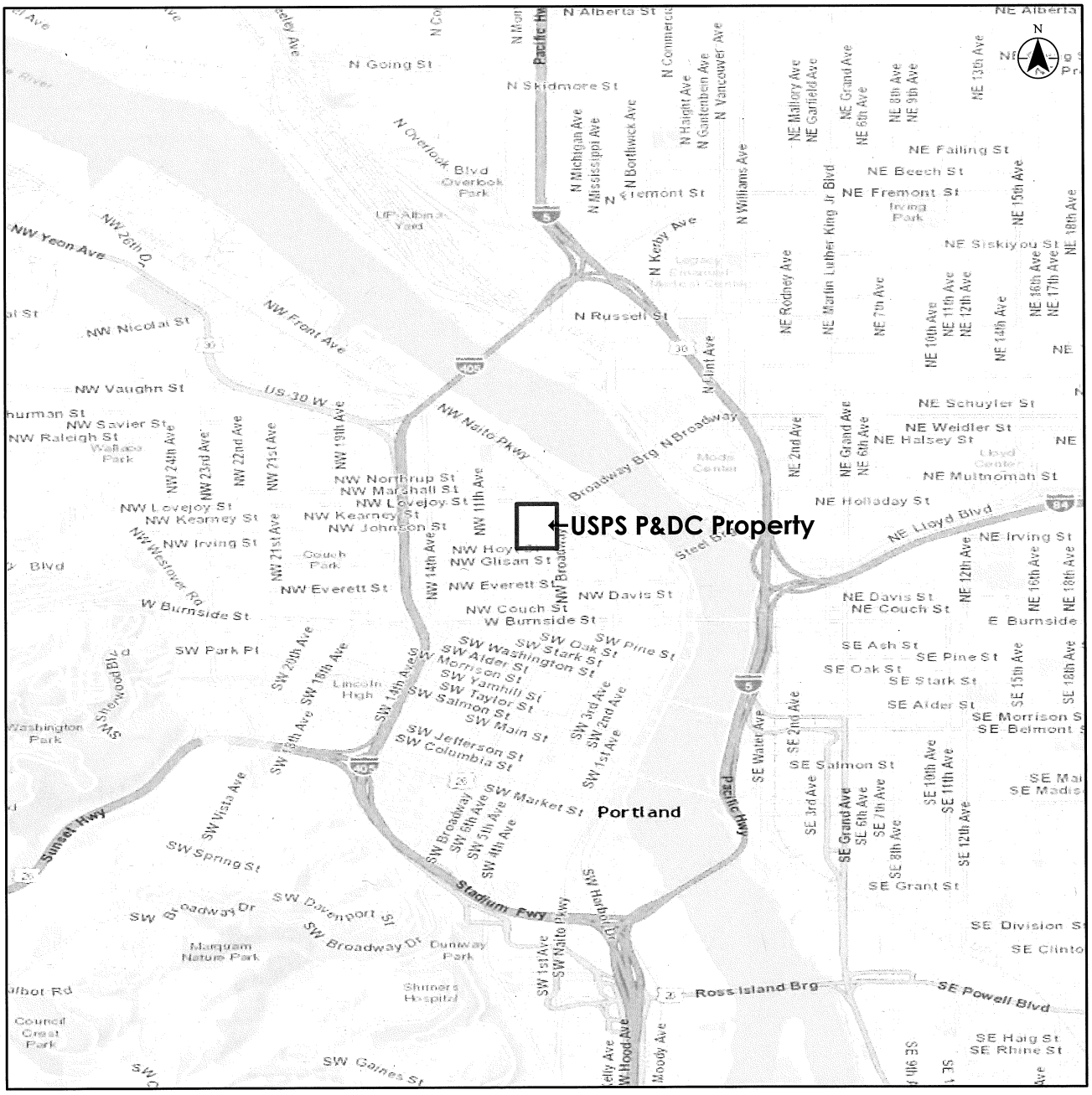
DEQ. Record of Decision for the USPS-P&DC Site, Portland, Oregon. July 14, 2010.

DEQ. Conditional No Further Action Determination, USPS Portland Processing and Distribution Center (P&DC), ECSI 2183. September 25, 2012.

Exponent. Final Contaminated Media Management Plan, USPS Portland P&DC. April 2011.

Figures

U:\Pre_MED\AD\OR\Clients\Portland Development Commission\fig-1_site_location_map.mxd Revised: 2016-03-04 By: dahutchins



Legend

Approximate Site Boundary

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Miles

1:40,000 (At original document size of 8.5x11)

Stantec

Project Location	1857
715 NW Hoyt Street Portland, Oregon	Prepared by DH on 2016-01-25 Technical Review by LF on 2016-01-26 Independent Review by MS on 2016-01-26

Client/Project

Portland Development Commission
715 NW Hoyt Street, Portland, OR
Phase I ESA

Figure No.

1

Title

Project Location

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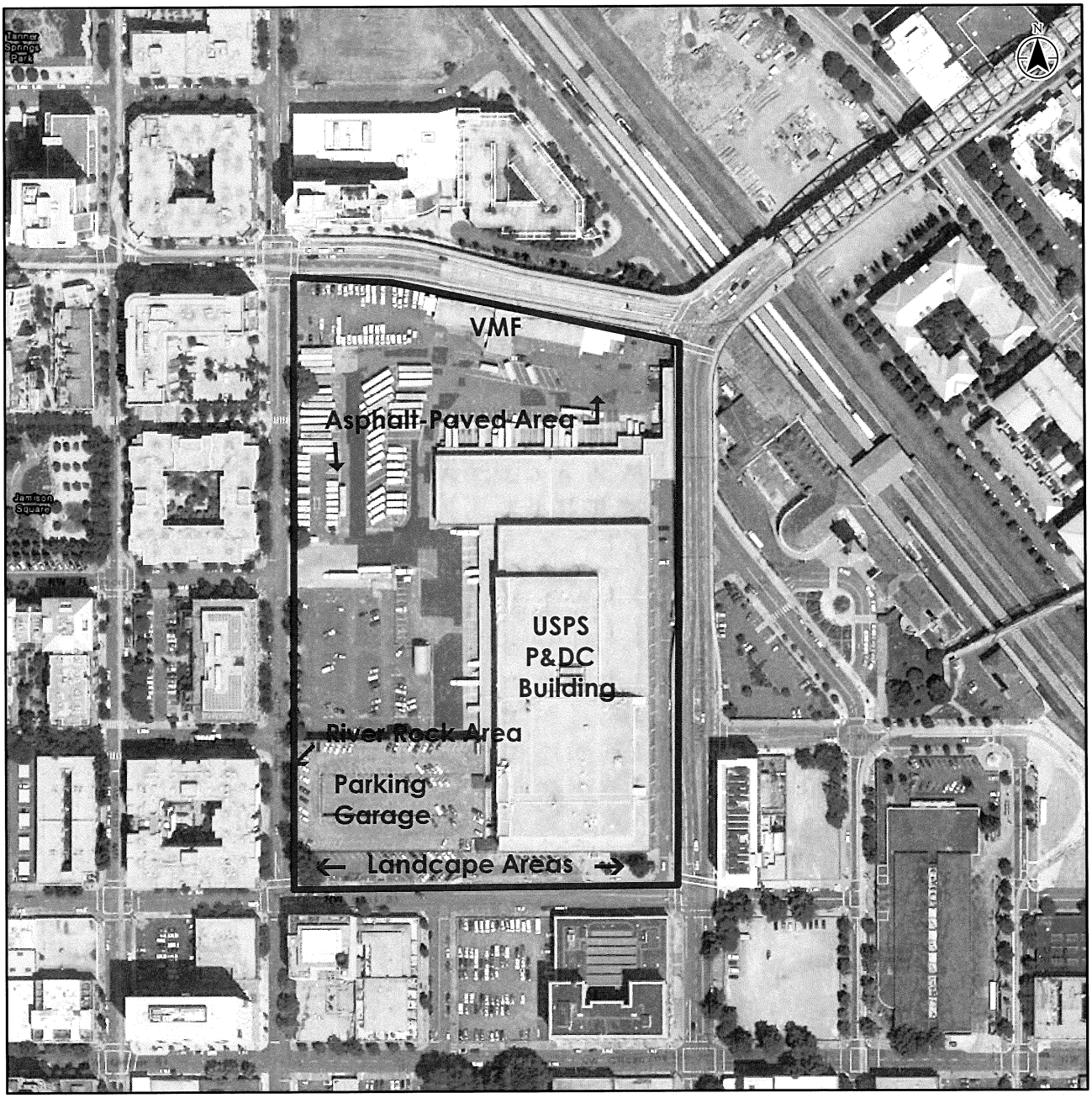

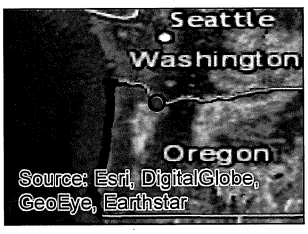

Approximate Site Boundary

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Feet

1:3,000 (At original document size of 11x17)

Stantec

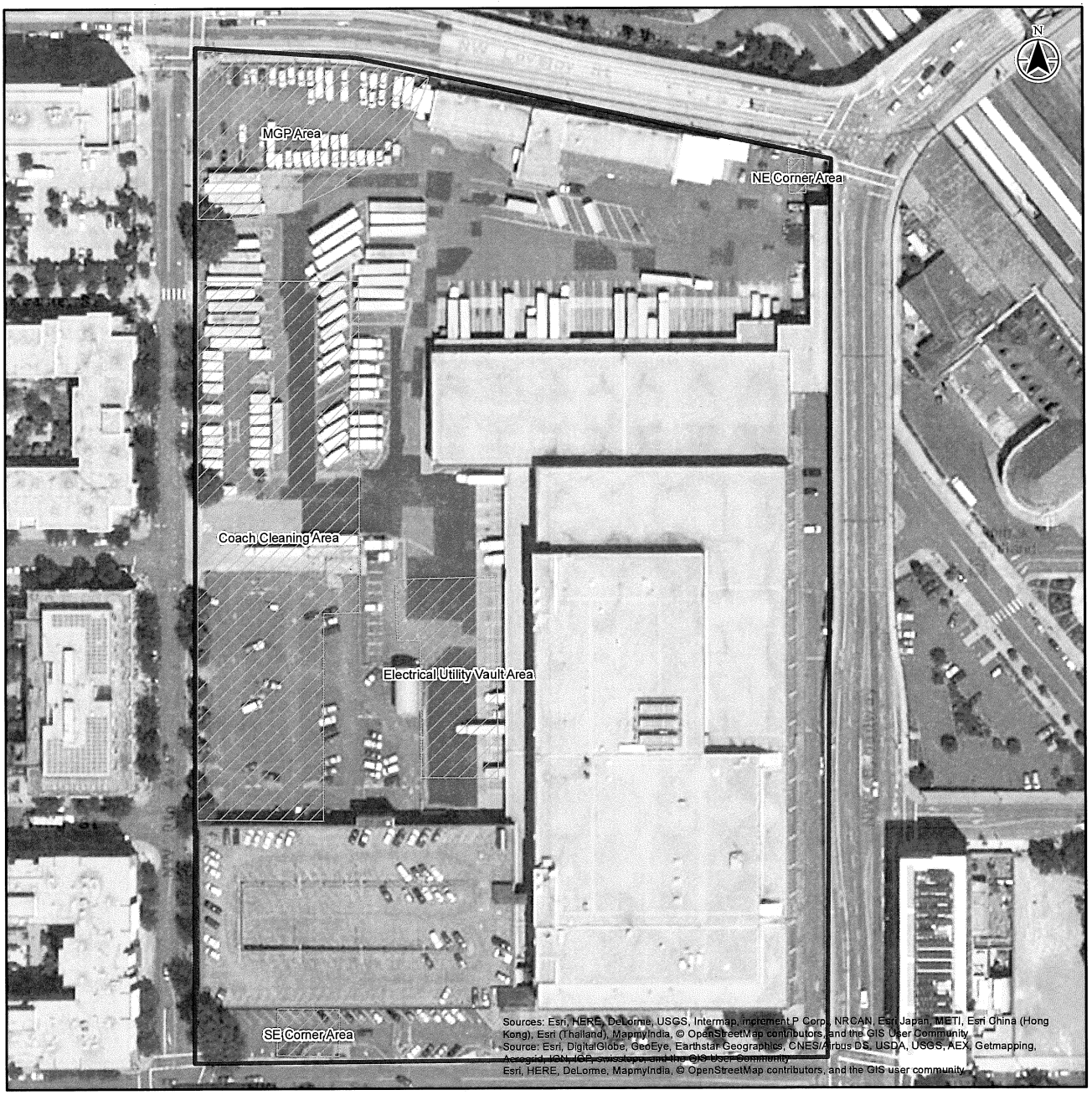
Project Location
715 NW Hoyt Street
Portland, Oregon

1857
Prepared by DH on 2016-01-25
Technical Review by LF on 2016-01-26
Independent Review by MS on 2016-01-26

Client/Project
Portland Development Commission
715 NW Hoyt Street, Portland, OR
Phase I ESA

Figure No.
2

Title
SITE LAYOUT



Legend

- Approximate Risk Exeedance Areas
- Approximate Site Boundary

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Feet

1:1,800 (At original document size of 11x17)

Stantec

Project Location
715 NW Hoyt Street
Portland, Oregon

1857
Prepared by DH on 2016-01-25
Technical Review by LF on 2016-01-26
Independent Review by MS on 2016-01-26

Client/Project
Portland Development Commission
715 NW Hoyt Street, Portland, OR
Master RAP

Figure No.
3

Title
Site Layout with Areas of Soil/Groundwater Risk Exceedance

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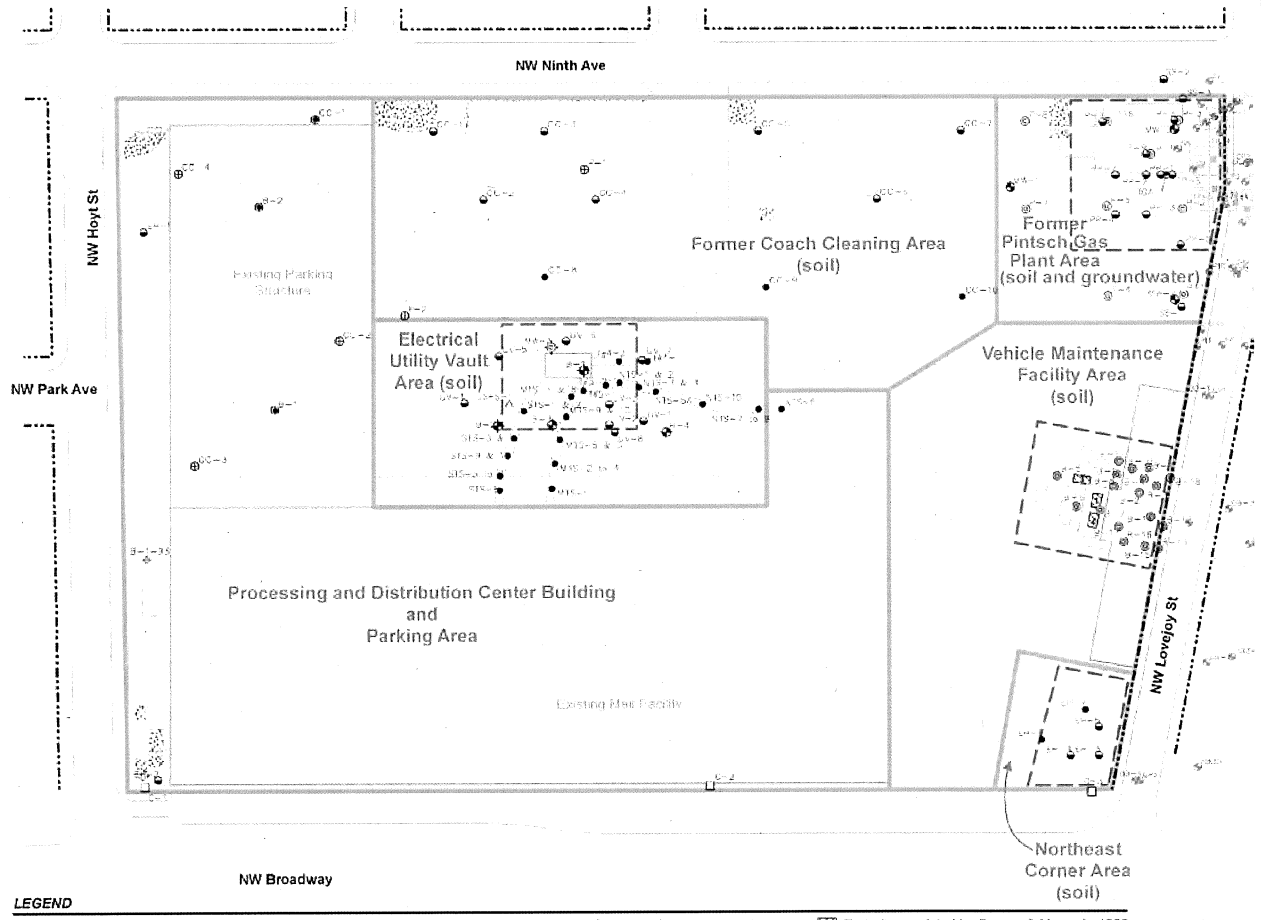
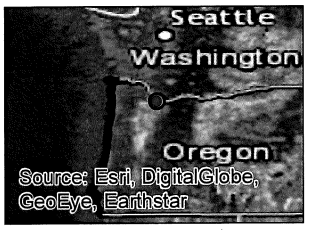


LEGEND

- Trench soil sample collected by GeoEngineers in 1997
- Boring completed by GeoEngineers in 1996
- Shallow monitoring well completed by GeoEngineers in 1996
- Shallow monitoring well completed by Alisto in 2000
- Boring completed by Alisto in 2000
- Monitoring well completed by Dames & Moore in 1993
- Hand auger boring completed by Dames & Moore in 1993
- Boring completed by Cornforth Consultants in 1986
- Boring completed by Geotechnical Resources in 1987
- Boring completed by ARCADIS in 2004
- TGA well completed by ARCADIS in 2004
- Boring completed by Alisto in 2000
- Trench sample by Dames & Moore in 1997
- Test pit completed by Dames & Moore in 1993
- Building
- Area where significant concentrations of hydrocarbons can be expected
- Removed underground storage tank
- Landscaped areas

Source: Adapted from ARCADIS (2006) final remedial investigation



Not To Scale

Stantec

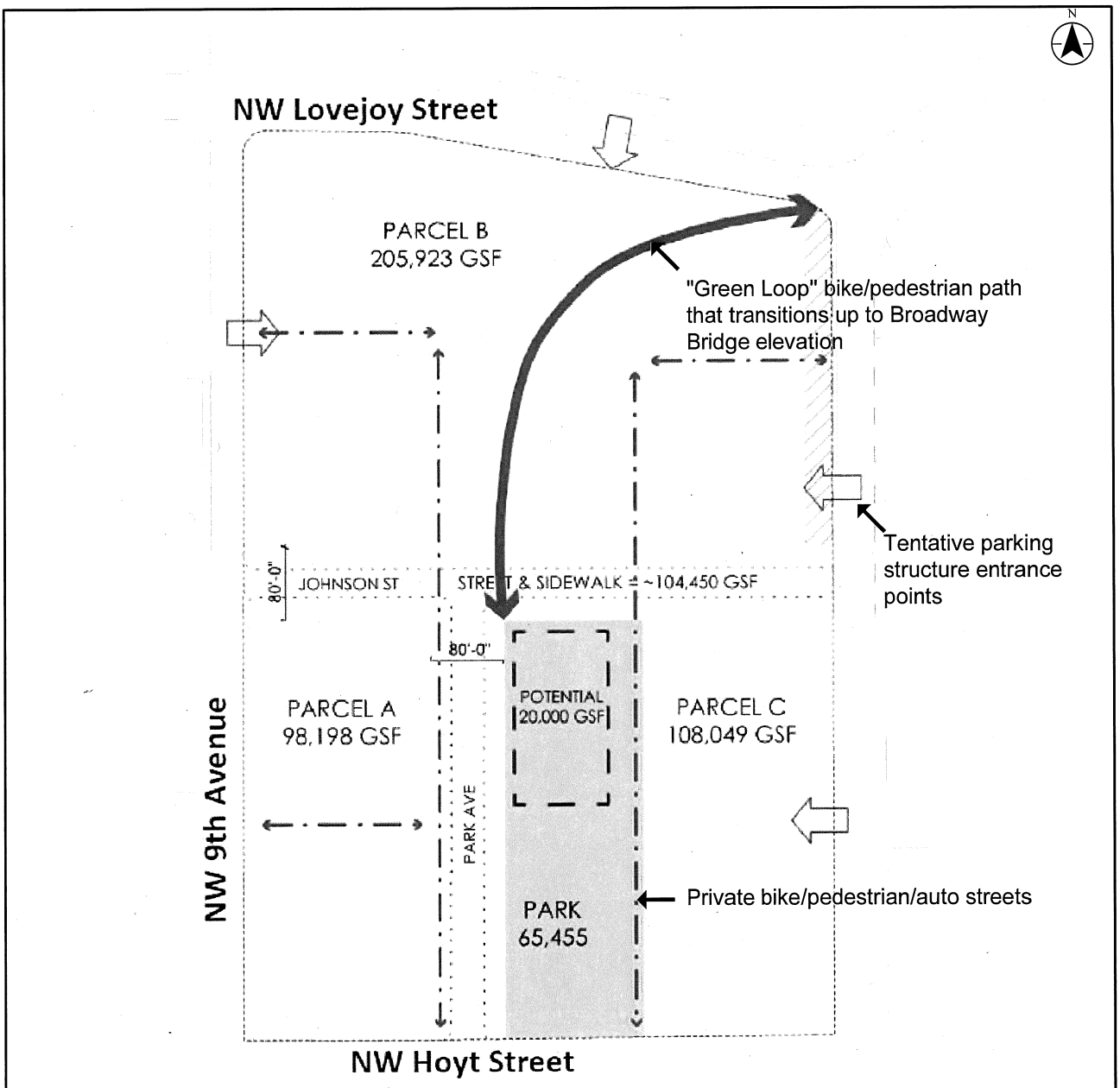
Project Location	1857
715 NW Hoyt Street Portland, Oregon	Prepared by DH on 2016-01-25 Technical Review by LF on 2016-01-26 Independent Review by MS on 2016-01-26

Client/Project
Portland Development Commission
715 NW Hoyt Street, Portland, OR
Master RAP

Figure No.
4

Title
HISTORICAL SAMPLING LOCATIONS

U:\Pre_MED\PDX\OR\Clients\Portland Development Commission\fig-5_Development-Framework_20160203.mxd Revised: 2016-02-03 By: dahutchins



Source: PDC Board of Commissioners Report Number 16-04

Not To Scale

Stantec

Project Location	1857
715 NW Hoyt Street Portland, Oregon	Prepared by DH on 2016-01-25 Technical Review by LF on 2016-01-26 Independent Review by MS on 2016-01-26

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Portland Development Commission
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Figure No.
5

Title
Conceptual Development Framework

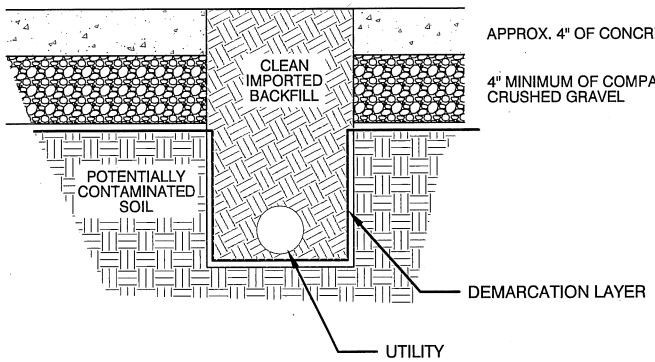
FOR PUBLIC STREET AREAS

FOR HARDSCAPE AREAS

FOR LANDSCAPE AREAS

FOR ASPHALT PAVEMENT

FOR UTILITY TRENCHES
(UNDER HARDSCAPE)



Not to Scale

Stantec

Project Location
715 NW Hoyt Street
Portland, Oregon

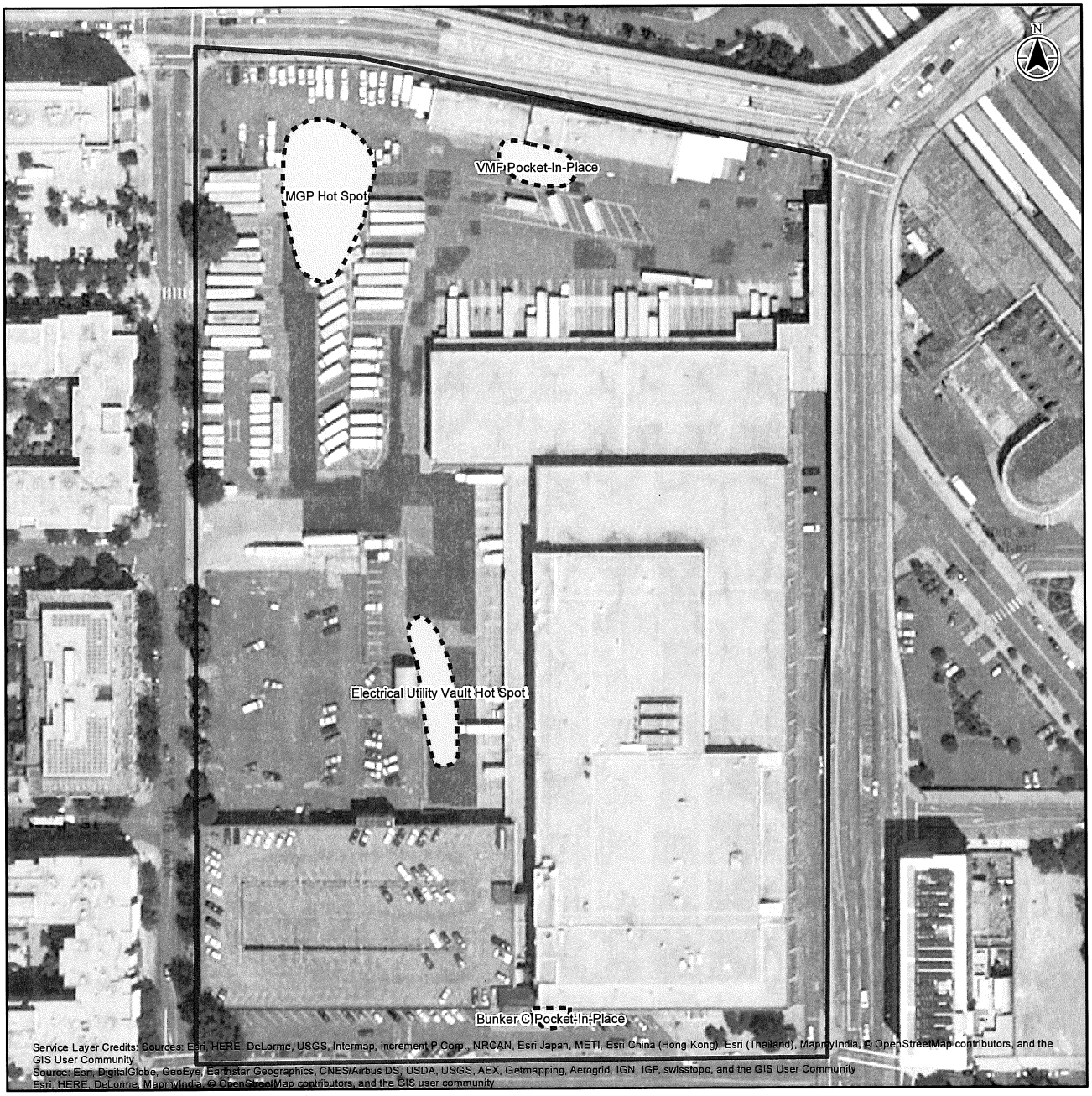
Prepared by LH on 2016-01-26
Technical Review by LF on 2016-01-26
Independent Review by MS on 2016-01-26

Client/Project
Portland Development Commission
715 NW Hoyt Street, Portland, OR
Master RAP

Figure No.
6

Title
CONCEPTUAL SURFACE CAPPING DETAILS

Page 01 of 01



Legend

- Approximate Hot Spot/ Pocket-In-Place Areas
- Approximate Site Boundary

0 75 150

Feet

1:1,800 (At original document size of 11x17)

Stantec

Project Location
715 NW Hoyt Street
Portland, Oregon

1857
Prepared by DH on 2016-01-25
Technical Review by LF on 2016-01-26
Independent Review by MS on 2016-01-26

Client/Project
Portland Development Commission
715 NW Hoyt Street, Portland, OR
Master RAP

Figure No.
7

Title
Site Layout with
Hot Spot and
Pocket-In-Place Locations