Completion Summary for City of Portland Outfall Basin 47

1 Summary

The City of Portland (City) has been addressing source control concerns related to the City conveyance systems for more than four decades, and several programs have evolved to meet changing regulatory requirements and watershed health objectives. Following the 2000 listing of Portland Harbor on the National Priorities List, the City initiated a new partnership with the Oregon Department of Environmental Quality (DEQ) Cleanup Program to identify specific sources of contaminants to City stormwater conveyance systems in the harbor that were not being adequately controlled. This report summarizes the results of this collaborative effort in Outfall Basin 47.

This Completion Summary includes a weight-of-evidence evaluation to demonstrate that source identification in the current basin is complete and a summary of source controls (implemented or planned) that will control future contaminant discharges to the Willamette River.

Basin 47 is located on the east side of the Willamette River at approximately River Mile (RM) 9.9, just upstream of Swan Island. Outfall 47 discharges stormwater from a small basin that includes two sites: Federal Express and the City's new Swan Island Pump Station. An area of heavy industrial land occupied by a portion of the Union Pacific Railroad (UPRR) Albina Yard formerly discharged to the Basin 47 conveyance system; however, this part of the system was diverted to the Columbia Boulevard Wastewater Treatment Plant (WWTP) in late 2006 as part of the City's Combined Sewer Overflow (CSO) Abatement Program.

Early inriver sediment data collected by the Lower Willamette Group (LWG) in the vicinity of the outfall included one sample upstream of the outfall in which polychlorinated biphenyls (PCB) were elevated, but data were not collected at or immediately downstream of Outfall 47. Therefore, the City conducted an inline solids source investigation in the basin to determine whether Basin 47 is a potential pathway for discharge of PCBs to the river. This work led to an expansion of the remedial investigation being conducted at the UPRR site to include areas discharging to Basin 47 before the CSO diversion. The City also collected stormwater samples from the current basin and analyzed samples for a broad array of contaminants to verify that additional source tracing was not warranted. The results of the inline solids investigation indicated that there were no major contaminant sources in the basin, and the stormwater sampling results confirmed that additional source tracing was not needed. Additional sediment data collected by the LWG adjacent to the outfall showing low PCB concentrations also confirmed this conclusion.

The City concludes that major contaminant sources are not present, further source investigation is not warranted, and future discharges from the basin are unlikely to represent a significant source to the Willamette River. Implementation of programmatic source control measures (SCM) in the basin is sufficient for ensuring discharges from Outfall 47 are protective of the river. Therefore, the City has met the remedial investigation (RI)/SCM objectives for Basin 47.

2 Introduction

This Completion Summary presents a weight-of-evidence evaluation of whether further source investigation is needed in Basin 47, and the rationale for concluding that current and future discharges from the basin are not likely to be significant sources of contaminants to river sediment. The purpose of this report is to demonstrate that for Basin 47 the City has met the joint RI/SCM objectives of the August 13, 2003, intergovernmental agreement (IGA) between the City and DEQ. Together the City and DEQ are using their respective authorities to ensure that source controls are implemented where needed.

This report is included in Appendix A of the *Municipal Stormwater Source Control Report for Portland Harbor* (Municipal Report), which provides additional background and detail regarding the City's harborwide source control efforts, including regulatory and non-regulatory programs to address current and future sources and to minimize recontamination potential.

3 Outfall and Basin Setting

3.1 Basin Location and Configuration

Outfall 47 discharges to the east side of the Willamette River at approximately River Mile 9.9. Before the 2006 CSO diversion, the stormwater conveyance system consisted of two main branches; a western branch (conveying discharges from light industrial operations), and an eastern branch that conveyed discharges from the northern portion of the UPRR Albina Yard. The City diverted the entire eastern branch in late 2006.

The drainage area for the current Basin 47 conveyance system is approximately 9.5 acres. Figure 1 shows the location of the outfall and drainage basin boundary and provides an overview of the associated stormwater conveyance system. Additional detail on the Outfall 47 stormwater conveyance system and associated drainage basin is included in the technical memorandum *City Outfall Basin 47 Inline Solids Sampling* (BES, 2007).

3.2 Land Use and Potential Upland Sources

Zoning in Basin 47 is general employment, which is a Portland zoning category that is predominantly industrial, but allows for a mix of uses (see Figure 1).[1] Only two properties are located in the current basin: Federal Express and the City's Swan Island Pump Station. Land use at both sites is light industrial. The remaining area in the basin consists of N. Port Center Way. Land use in the portion of the basin that was diverted in 2006 was mainly heavy industrial (i.e., a portion of the UPRR Albina Yard) and rights-of-way (sections of N. Going Street and N. Greeley Avenue).

Sites that were identified as potential sources to the eastern branch (which has since been diverted to the City's WWTP) included UPRR Albina Yard– the only DEQ Cleanup Program site identified on DEQ's Environmental Cleanup Site Information (ECSI) database. This site was evaluated as a potential PCBs source to the system during the City's pre-diversion 2006 inline solids investigation. Table 1 lists this site and the associated contaminants of interest

[1] General employment is a Portland zoning category that allows a range of employment opportunities but emphasizes industrial and industrial-support uses. The zones can allow for the transition to a less industrial overall nature.

(COI) and status of the stormwater pathway evaluation. No DEQ Cleanup Program sites are located within the current basin.

Table 1. DEQ Cleanup Program Sites in Pre-diversion Basin 47

DEQ Cleanup Program Site	Site Contaminants of Interest	Site Stormwater Pathway Evaluation (1)
UPRR – Albina Yard (ECSI #178)	PAHs, TPH, metals(2)	Source Control Evaluation In Progress

Notes:

PAHs = polycyclic aromatic hydrocarbons; TPH = total petroleum hydrocarbons; DEQ = Oregon Department of Environmental Quality; UPRR = Union Pacific Railroad; ECSI = Environmental Cleanup Site Information

(1) Source: DEQ Milestone Report, Figure 1b, "Status of Stormwater Source Control Evaluations, January 2013" (DEQ, 2013).

(2) Site contaminants of interest are those identified in Appendix Q (Source Control Inventory Tables) of the Portland Harbor RI/FS Draft Feasibility Study (FS) (Anchor et al., 2012).

Industrial sites covered or historically covered by National Pollutant Discharge Elimination System (NPDES) stormwater regulations also were considered as potential sources of pollutants to the City conveyance system. One site within the basin, Federal Express, had an NPDES permit to discharge to the Basin 47 conveyance system between 1998 and 2011. No sites in the basin currently are covered under NPDES stormwater permits. Note that the City operates under an NPDES Municipal Separate Storm Sewer System (MS4) stormwater permit that also covers basin drainage areas.

3.3 Outfall Setting

Outfall 47 discharges to an area of potential concern (AOPC 23) identified by the U.S. Environmental Protection Agency (EPA) based on elevated concentrations of PCBs and other contaminants in river sediment (EPA, 2010). In addition to Outfall 47, four non-City outfalls discharge to AOPC 23.

4 Basin Screening and Source Investigations

Early inriver sediment data collected by the LWG in the vicinity of Outfall 47 included one sample upstream of the outfall in which PCBs were elevated, but data were not collected at or immediately downstream of Outfall 47. Therefore, the City conducted the initial basin source investigation in 2006 to assess the potential presence of PCB sources. The investigation consisted of collecting and analyzing stormwater solids from both branches of the basin. This investigation occurred before the City diverted the eastern branch of the conveyance system to the WWTP, and the City included sampling locations downstream of UPRR's Albina Yard connections in the investigation. The results indicated that major sources of PCBs were not present in Basin 47 (BES, 2007). Subsequent sediment data collected by the LWG adjacent to the outfall indicates low PCB concentrations, which also supports this conclusion (Integral et al., 2011).

In 2008, as part of the City's stormwater screening evaluation (BES, 2010), the City collected stormwater samples from the downstream end of the current basin (i.e., representing all collective discharges to the system) and analyzed samples for a broad array of contaminants to

verify that further investigation was not needed. Based on the evaluation of these data and using a conservative screening approach, no analytes were identified as warranting further source tracing in Basin 47 because concentrations of all analytes were low in the stormwater samples (BES, 2010).

Table 2 lists investigations and evaluations completed by the City in the Basin 47 conveyance system.

Table 2. City Investigations in the Basin 47 Stormwater Conveyance System

Data Collection Period	Purpose	Documentation
2006	Evaluate the potential presence of PCB sources in the basin.	City Outfall Basin 47 Inline Solids Sampling. Technical Memorandum No. OF 47-1 (BES, 2007)
2008	Evaluate stormwater data from City outfalls to identify additional source tracing needs.	Stormwater Evaluation Report, City of Portland Outfall Project (BES, 2010)

Notes:
PCB = polychlorinated biphenyl

The City's investigation work did not identify any major sources of contaminants in Basin 47.

5 Completion of Source Identification

All of the heavy industrial area formerly within Basin 47 was diverted to the City's WWTP in 2006. The lines of evidence evaluated to verify that source tracing within the current basin boundary is complete include (1) source investigation results, (2) drainage basin characteristics, and (3) land use. Findings from this evaluation are summarized below.

- *Source Investigation Results*. The City's 2006 stormwater solids investigation (BES, 2007) and 2008 stormwater screening evaluation (BES, 2010) did not indicate the presence of major sources of PCBs or other contaminants in Basin 47.
- *Drainage Basin Characteristics and Land Use:* Basin 47 is relatively small and now consists of two sites with light industrial land use. One site is a Federal Express warehouse with minimal outdoor operations, and the other is the City's Swan Island Pump Station property. Both have stormwater controls in place. Current and future industrial activities exposed to stormwater will be addressed by the DEQ Water Quality NPDES Program, and non-industrial activities are not a known or suspected major source of contaminants to the City stormwater conveyance system.

Based on these lines of evidence, the City concludes that Basin 47 source investigation is complete and there are no major contaminant sources in the basin.

6 Basin Source Controls

Source control for minor sources in Basin 47 includes ongoing City and DEQ programs that are described in the Municipal Report and displayed in Figure 2 (see key to figures provided at beginning of this Appendix). As shown in Table 3, both sites have stormwater controls. The Federal Express site currently holds an NPDES no exposure certification, which indicates the elimination of stormwater exposures to industrial activities. At the Swan Island Pump Station site, the City constructed an ecoroof and stormwater treatment as part of the site redevelopment.

Table 3. Basin 47 Source Controls

Site/Area	Source Controls	Implementation Timeframe
Programmatic Source Controls(1)		
City's Swan Island Pump Station	**Stormwater Management Manual Requirements**. Site stormwater treatment includes an oil-water separator, infiltration basin, drainage swale along the site perimeter, and ecoroof on the operations building.	Ongoing
Federal Express	**City Discharge Authorization(2)**	Ongoing
Federal Express	**NPDES No Exposure Certification**.	Ongoing

Notes:

NPDES = National Pollutant Discharge Elimination System

(1) Programmatic source controls are described in the Municipal Report.

(2) Additional site-specific stormwater pollution controls required and implemented under City Code.

Other municipal programs (e.g., illicit discharge monitoring, street sweeping, etc.) likely provide additional source control benefits in the basin and will help to address minor sources for which specific control measures have not been required. City programs that control current and future contaminant discharges to the conveyance system are described in the Municipal Report.

7 Conclusion

The City completed source tracing in Basin 47, no major sources of contaminants to the City conveyance system were identified, and both sites in the basin have stormwater controls. Therefore, future discharges from Outfall 47 are unlikely to represent a significant source of contaminants to the river. The City concludes that it has met the RI/SCM objectives of the IGA and requests a source control decision from DEQ for Basin 47.

8 References

Anchor et al. 2012. Portland Harbor RI/FS Draft Feasibility Study. Prepared for The Lower Willamette Group by Anchor QEA, LLC, Windward Environmental, LLC, Kennedy/Jenks Consultants, and Integral Consulting, Inc. February 2012.

BES. 2007. City Outfall Basin 47 Inline Solids Sampling. Technical Memorandum No. OF 47-1. City of Portland, Bureau of Environmental Services. October 19, 2007.

BES. 2010. Stormwater Evaluation Report. City of Portland, Bureau of Environmental Services. February 2010.

DEQ. 2013. Milestone Report, Upland Source Control at the Portland Harbor Superfund Site. Prepared by the Oregon Department of Environmental Quality. January 2013.

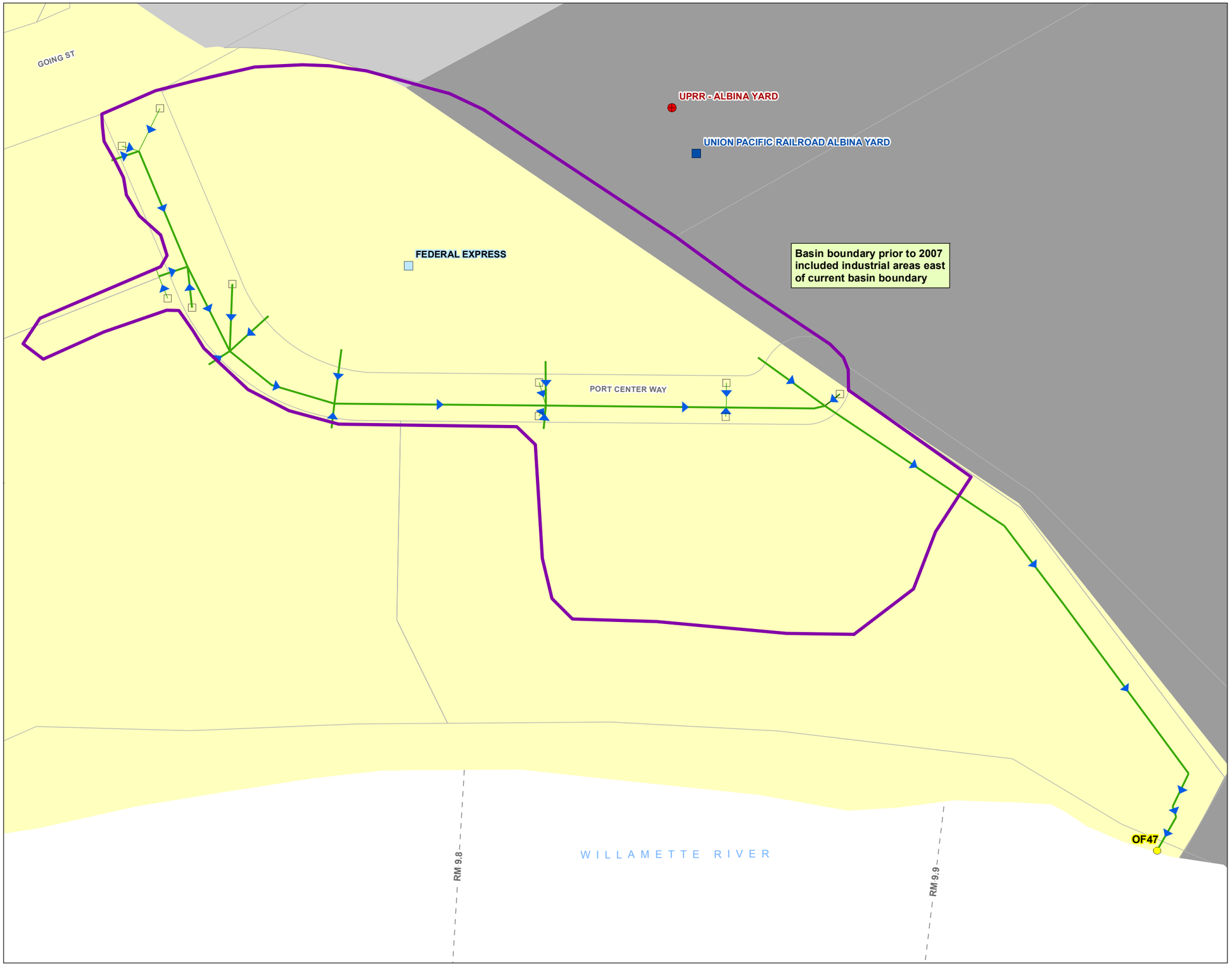
EPA. 2010. Re: Portland Harbor Superfund Site; Administrative Order on Consent for Remedial Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240. Portland Harbor Feasibility Study Source Tables. Letter from EPA to Mr. Bob Wyatt, Chairman, Lower Willamette Group. November 23, 2010.

Integral et al. 2011. Portland Harbor RI/FS, Remedial Investigation Report. Prepared for the LWG. Prepared by Integral Consulting Inc., Windward Environmental LLC, Kennedy/Jenks Consultants, and Anchor QEA, LLC. August 29, 2011.

List of Figures

FIGURE 1

Basin 47
Overview



- Basin 47
- DEQ ECSI Site
- NPDES Stormwater Permit
- NPDES No Exposure Certification

Conveyance System

- Storm Line
- Catch Basin
- City Outfall
- Non-City Outfall

Land Use/Zoning

- Heavy Industrial
- Light Industrial
- General Employment

All Other Data

- River Mile (RM)
- Tax Lot
- Discharges to City Outfall
- Portland Harbor Hydroboundary

N

0 60 120 180
Feet

MAP NOTES:
Date: December 31, 2013
Data Sources: BES, METRO

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CITY OF PORTLAND
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204 - 1912

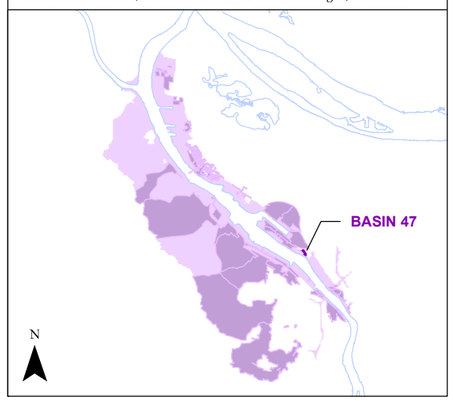
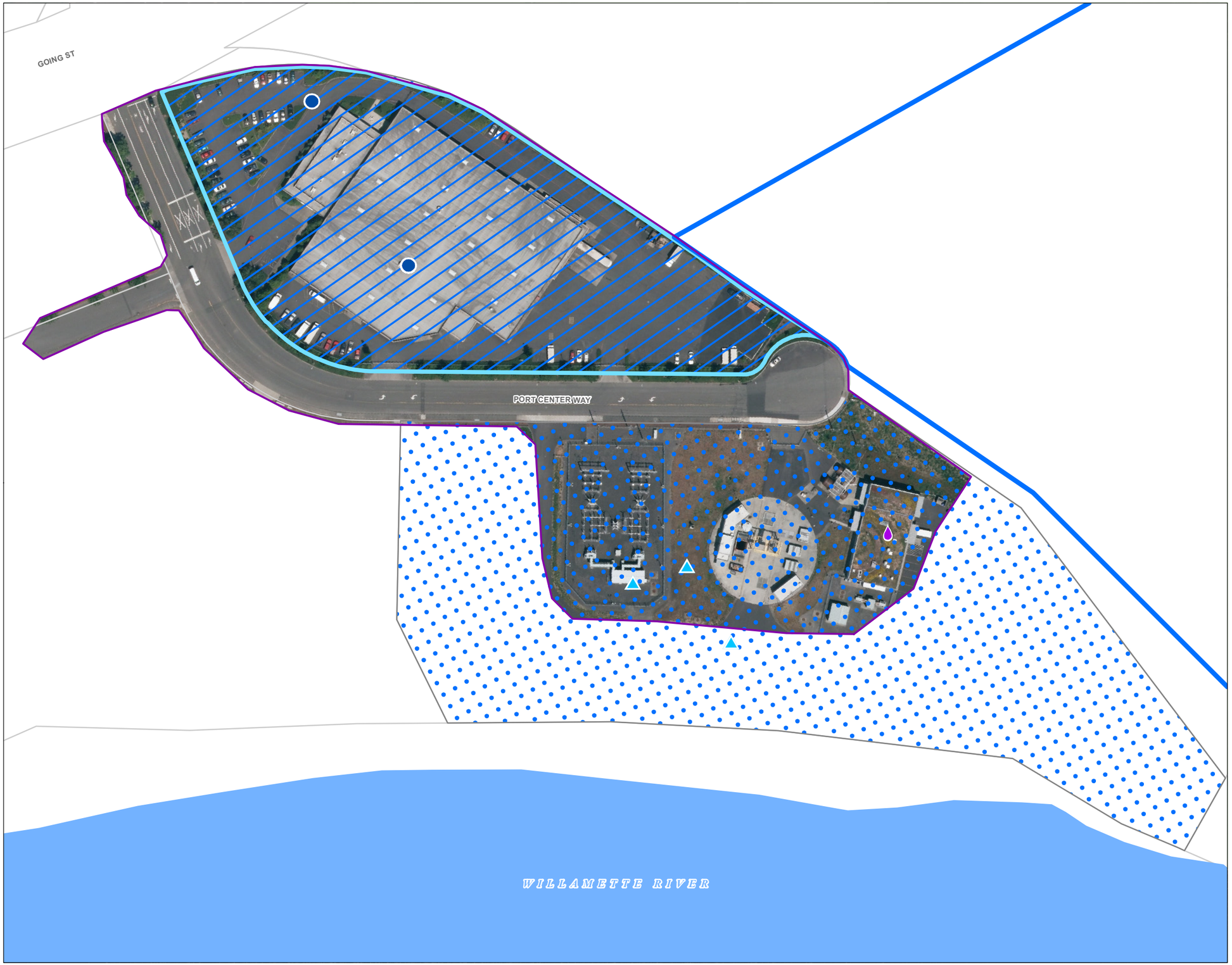


FIGURE 2

Basin 47
Upland Site Source Controls



- Basin 47
- Tax Lot

All Other Features

- NPDES Stormwater Discharge Permit
- City Discharge Authorization
- NPDES No Exposure Certification
- >50% of Site Area Redeveloped Under City SWMM
- Stormwater Treatment Facility
- Ecoroof
- Site Inspection - BES Industrial Stormwater Program
- Discharges to City Outfall
- Portland Harbor Hydroboundary

N

0 55 110 165

Feet

MAP NOTES:

Date: December 31, 2013
Data Sources: BES, METRO, Aerial Photo Taken 2012

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