

Completion Summary for City of Portland Outfall Basin 53

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 a number of City 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 53.

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

Basin 53 is located on the east side of the river in the St. Johns district in north Portland. St. Johns is one of Portland's oldest neighborhoods and includes a mix of industrial operations along the riverfront and residential development starting just east of the shoreline properties. This drainage basin is entirely within a residential area up on the bluff above the Port of Portland's (Port) Terminal 4 (T4) Auto Storage Facility. The basin primarily consists of residential streets and the outfall discharges at approximately River Mile (RM) 5.2. River sediment in the vicinity of the outfall does not contain elevated concentrations of any contaminants (i.e., the U.S. Environmental Protection Agency [EPA] has not identified the potential need for sediment remediation).

Data collected by the Port as part of its T4 recontamination evaluation suggested that sources of polychlorinated biphenyls (PCB) were present the basin. Because the basin is entirely residential and includes no sites with known PCB contamination, the City conducted an investigation along N. Lombard Street to determine if PCBs may be migrating to basin inlets from areas outside of the basin. Results of this investigation indicate that vehicle contaminant tracking from nearby industrial sites is a likely pathway for PCBs into the basin. Source control measures (SCM) to address contamination in erodible soils have been implemented or are being determined under DEQ oversight at a number of DEQ Cleanup Program sites near the basin.

Given that major sources of contaminants are not present in the basin, and the potential sources of PCBs in the vicinity of the basin have been identified and are implementing SCMs under DEQ oversight, future discharges from Outfall 53 are unlikely to represent a significant source of contaminants to the river. Therefore, the City has met the remedial investigation (RI)/SCM objectives for Basin 53.

2 Introduction

This Completion Summary presents a weight-of-evidence evaluation of whether further source investigation is needed in Basin 53, and the rationale for concluding that 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 the City has met the RI/SCM objectives of the August 13, 2003, intergovernmental agreement (IGA) between the City and DEQ. The City and DEQ have identified all potential major sources of contaminants to the basin and 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 53 discharges to the east side of the Willamette River at approximately RM 5.2. The outfall basin drains approximately 21 acres of residential land (mostly streets) in the St. Johns district. Figure 1 shows the location of Outfall 53 and the current drainage basin boundary and provides an overview of the associated stormwater conveyance system. The City worked with most residential properties within the basin to disconnect downspouts and infiltrate roof drainage, as part of the City's Combined Sewer Overflow Abatement Program.

As shown in Figure 1, the conveyance system includes stormwater treatment features in the northern part of the basin. In 2003, as part of a residential development on vacant land, a private party constructed two sedimentation manholes to treat stormwater runoff from the new residential properties and portions of N. Decatur and N. Edison Streets. In addition, as part of a street improvement project, the City installed a water quality swale in the right-of-way on N. Reno Avenue. The swale, installed in 2005, is designed to infiltrate stormwater runoff from a portion of N. Reno Avenue to reduce total suspended solids loading to Outfall 53. City programs that result in these types of stormwater improvements are described in the Municipal Report.

Additional detail on the Outfall 53 stormwater conveyance system and associated drainage basin is included in the *Programmatic Source Control Remedial Investigation Work Plan for the City of Portland Outfalls Project* (CH2M HILL, 2004) and the *Outfall Basins 52C and 53 North Lombard Street PCB Source Investigation Report* (BES, 2012).

3.2 Land Use and Potential Upland Sources

Outfall 53 discharges adjacent to the Port's T4 Auto Storage Facility, but the drainage basin for this outfall is on the bluff east of T4, entirely within a residential area of the St. Johns district. Most of the basin drainage area consists of residential streets, with several residential properties, and an approximately 0.25-mile section of N. Lombard Street. N. Lombard Street is a designated truck route serving adjacent industrial areas in the T4/International Slip area. Although a small area in the northern part of the basin is zoned general employment,¹ land use in this area is also residential. Portions of the basin are within the St. Johns Plan district, which

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.

provides a framework for strengthening St. Johns' role as the commercial and civic center of the North Portland peninsula.²

No DEQ Cleanup Program sites or industrial sites covered, or historically covered, by National Pollutant Discharge Elimination System (NPDES) stormwater regulations are located in Basin 53. Note that the City has an NPDES Municipal Separate Storm Sewer System (MS4) stormwater permit that covers basin drainage areas.

3.3 Outfall Setting

Outfall 53 is located adjacent to the Port's T4 Auto Storage Facility. The outfall is not located within or adjacent to any reach identified by the EPA as an area of potential concern (AOPC) for contaminant concentrations in river sediment (EPA, 2010). Eight non-City outfalls are located in the immediate vicinity of Outfall 53, and T4 dock operations surround the outfall area (see Figure 1).

4 Basin Screening and Source Investigations

The City identified Basin 53 as a Priority 4 for source tracing, based on the lack of elevated contaminant concentrations in the vicinity of the outfall (CH2M HILL, 2004). Priority 4 basins are considered the lowest priority for source investigation.

The Port conducted stormwater and sediment trap sampling in the basin during 2007 as part of a recontamination analysis for T4 (Ash Creek/Newfields, 2009; Anchor and Integral, 2008). These data also were also used by the Lower Willamette Group (LWG) as part of a harborwide land use loading evaluation (Anchor QEA, 2011). Results indicated the presence of PCB source(s) to Basin 53. The City evaluation of these data identified some data quality concerns (BES, 2008) and, in 2008, the City collected additional stormwater samples from Outfall 53 to develop a more robust data set. Specifically, the City's objectives for stormwater sampling in Basin 53 were to obtain additional data to further evaluate contaminant concentrations detected in the Port samples and to facilitate statistical analysis of stormwater discharges from the basin as part of the City's Portland Harbor stormwater screening effort (BES, 2010). Although concentrations were not significantly elevated, PCBs were detected in one of the City's three stormwater sampling events at concentrations higher than expected, given the absence of identified or suspected PCB sources in the basin and the long-term residential land use.

Based on a conservative analysis of City and Port data, the City determined that further source tracing was warranted in Basin 53 to identify possible sources of PCBs³ (BES, 2010).

² The St. Johns Plan district describes the mixed-use development goals in this area (see <http://www.portlandoregon.gov/bps/index.cfm?&a=53424>).

³ The *Stormwater Evaluation Report* also identified heptachlor epoxide as potentially needing source tracing based on the exceedance of the conservative fish consumption screening level value. The City later determined that source tracing was not warranted for this pesticide residue that has been banned since 1988. The basin mean and geomean for stormwater did not exceed ambient water quality criteria and it was not detected in the Port sediment trap sample. Additionally, the area adjacent to Outfall 53 was not identified as an AOPC, based on the risk assessments in the Portland Harbor Remedial Investigation.

In 2010, the City conducted an investigation to evaluate potential pathways by which PCBs could be migrating to the conveyance system from sources outside the basin (BES, 2012). The investigation included collecting catch basin solids and surface solids (sweepings) along the N. Lombard Street right-of-way, both inside and outside of the basin. N. Lombard Street is a trucking route for industrial properties in the T4/International Slip area with known PCB soil contamination. Results of this investigation indicated that offsite migration of contaminated solids (e.g., vehicle drag-out) from nearby facilities with documented PCB contamination to N. Lombard Street inlets is a likely pathway for PCBs to Basin 53 (see *Outfall Basins 52C and 53 North Lombard Street PCB Source Investigation Report* [BES, 2012] for information about these offsite sources). This information was conveyed to the DEQ program managers of the identified DEQ Cleanup Program sites so that offsite migration would be included as part of the site source control evaluations. Because the potential sources of PCBs to system have been identified and are in appropriate DEQ programs to select and implement source controls, the City concluded that no further City source investigation was needed in this basin (BES, 2012).

Table 1 lists investigations completed by the City and others in the Basin 53 conveyance system.

Table 1. Investigations in the Basin 53 Stormwater Conveyance System

| Data Collection Period | Party | Purpose | Documentation |
|------------------------|-------|---|--|
| 2000 | City | Compile basin background information to identify potential sources. | Preliminary Evaluation of City Outfalls (Eastshore) (BES, 2000) |
| 2002 | City | Evaluate inriver sediment data near City outfalls to prioritize basins for source tracing. | Programmatic Source Control Remedial Investigation Work Plan (CH2M HILL, 2004) |
| 2007-2008 | Port | Collect stormwater and sediment trap samples representative of discharges from the basin as part of the T4 recontamination evaluation and the Lower Willamette Group land use loading evaluation. | Field Sampling Procedures Report, Storm Water Sampling Program Terminal 4 Upland Facility (Ash Creek Associates / Newfields, 2009) Portland Harbor RI/FS, Round 3A and 3B Stormwater Data Report (Anchor and Integral 2008) |
| 2008 | City | Collect stormwater samples representative of discharges from the whole basin and evaluate stormwater data from City outfalls to identify additional source tracing needs. | Stormwater Evaluation Report, City of Portland Outfall Project (BES, 2010) |
| 2010 | City | Collect catch basin and surface soil samples along N. Lombard Street to evaluate potential pathways and sources of PCBs to the basin. | Outfall Basins 52C and 53 North Lombard Street PCB Source Investigation Report (BES, 2012) |

5 Completion of Source Identification

The lines of evidence evaluated to verify that source tracing is complete and major sources are not present in the basin include (1) inriver sediment concentrations near the outfall, (2) land use, and (3) source tracing results in the basin. Findings from this evaluation are summarized below.

- *Inriver Sediment Concentrations.* River sediment in the vicinity of Outfall 53 does not contain elevated concentrations of any contaminants (i.e., the outfall does not discharge to an AOPC).
- *Land Use:* Basin 53 consists entirely of residential land with no historical industrial use that could be a source of legacy contamination. Non-industrial activities are not a known or suspected major source of contaminants to the City stormwater conveyance system.
- *Source Tracing Results:* Relatively low concentrations of PCBs were detected in stormwater samples at the outfall. Source investigation results along N. Lombard Street show higher concentrations of PCBs along this major truck route north of the basin and decreasing concentrations south into the basin, indicating that offsite migration of PCBs in erodible soils (e.g., via vehicle dragout) from industrial sites to basin inlets on N. Lombard Street is a likely pathway for PCBs to the basin (BES, 2012). There are a number of industrial sites north of the basin with known PCB contamination.

The City has provided its investigation results to DEQ so that sites outside of the basin will evaluate potential offsite migration of site contaminants via tracking of erodible soils and appropriate source controls will be implemented under DEQ Cleanup Program oversight.

Based on these lines of evidence, the City concludes that Basin 53 source tracing is complete, no major sources within the basin are present, and nearby sources with potential offsite migration of PCBs to the basin have been identified.

6 Basin Source Controls

Source control for Basin 53 includes ongoing City and DEQ programs that are described in the Municipal Report and specific controls implemented within the City's shared stormwater conveyance system. Given the likelihood of contaminant tracking into the basin from sources outside of the basin, SCMs completed (or planned) at nearby contaminated sites under DEQ Cleanup Program agreements likely will result in source control benefits in Basin 53. Source controls implemented within Basin 53 are displayed in Figure 1. Table 2 summarizes source controls implemented in the basin. Source controls implemented at sites outside the basin that are affecting N. Lombard Street are not itemized below: See Table 1 of the *Outfall Basins 52C and 53 North Lombard Street PCB Source Investigation Report* (BES, 2012) for information about source controls at these offsite sources.

Table 2. Basin 53 Source Controls

| Site/Area | Source Controls | Timeframe/Status |
|--|---|------------------|
| City Conveyance System | | |
| N. Decatur Street and N. Edison Street | Two stormwater treatment facilities were constructed in the City system in conjunction with new residential development of adjacent properties. These facilities are designed to reduce suspended solids loading to Basin 53. | 2003 |
| N. Reno Avenue | The City constructed a water quality swale to reduce suspended solids loading to Basin 53. The swale treats stormwater discharged from a portion of N. Reno Avenue, between N. Edison Street and N. Willamette Boulevard. | 2005 |

The City NPDES MS4 stormwater permit covers basin drainage areas. Other municipal programs (e.g., street sweeping, illicit discharge monitoring, 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 53 and determined that major sources of contaminants are not present within the basin. However, source investigation results indicate that vehicle tracking of contaminated erodible soils from nearby industrial sites is a likely pathway for PCBs into the basin. Necessary source controls at identified sources in the vicinity of the basin have been implemented or are being determined under the DEQ Cleanup Program. Future discharges from Outfall 53 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 53.

8 References

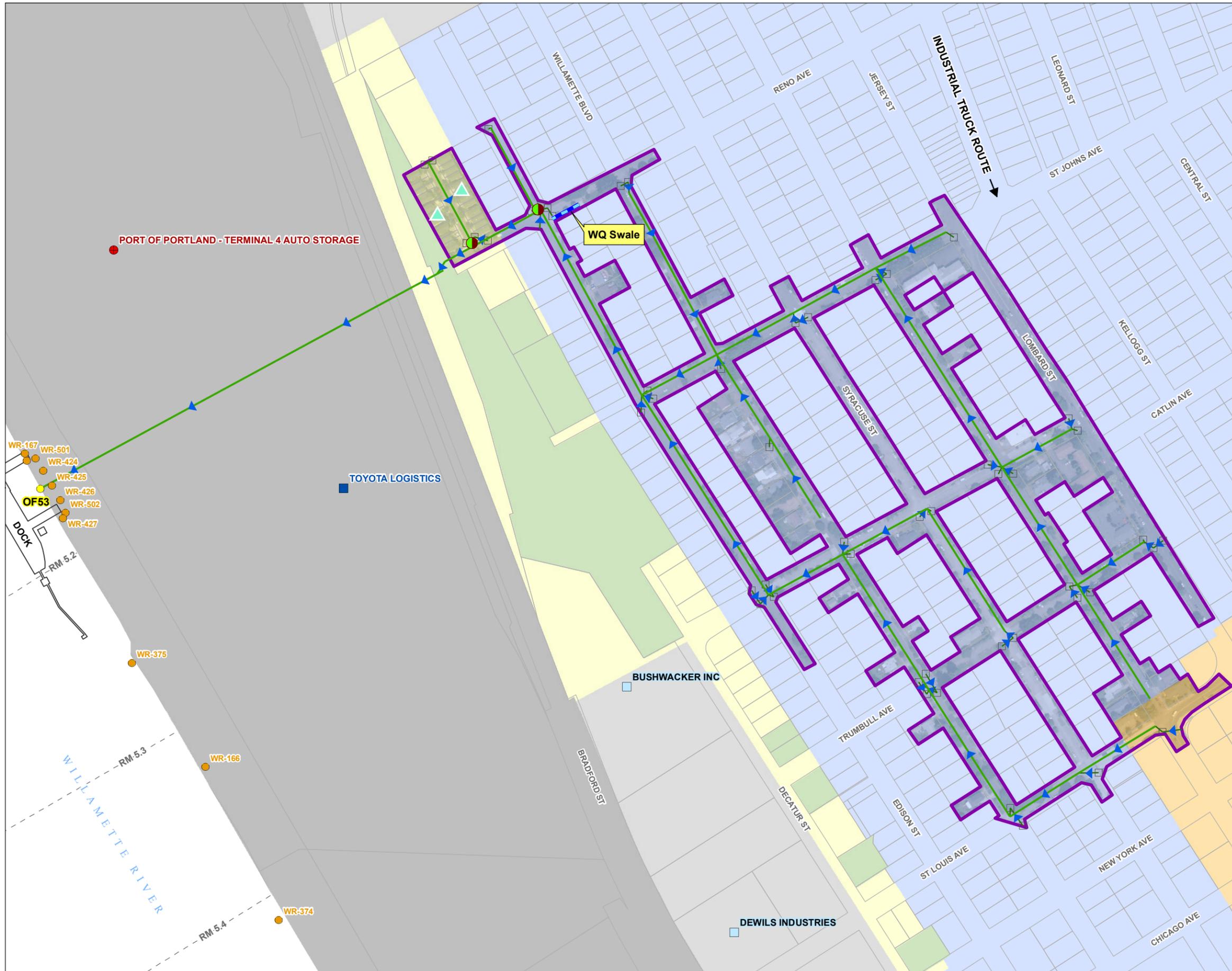
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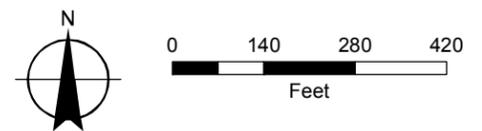
List of Figures

Figure 1: Basin 53 Overview and Conveyance System Source Controls

FIGURE 1
Basin 53
Overview and Conveyance
System Source Controls



- Basin 53
 - DEQ ECSI Site
 - NPDES Stormwater Permit
 - NPDES No Exposure Certification
 - ▲ Met stormwater treatment requirements with offsite treatment
- Conveyance System**
- Storm Line
 - Water Quality (WQ) Swale
 - Catch Basin
 - Sediment Removal Structure
 - City Outfall
 - Non-City Outfall
- Land Use/Zoning**
- Heavy Industrial
 - Light Industrial
 - General Employment
 - Commercial
 - Residential
 - Parks and Open Space
- All Other Data**
- River Mile (RM)
 - Tax Lot
 - Discharges to City Outfall
 - Portland Harbor Hydroboundary



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

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