

# working for clean rivers



## Pollution Prevention Services Supplementary Material



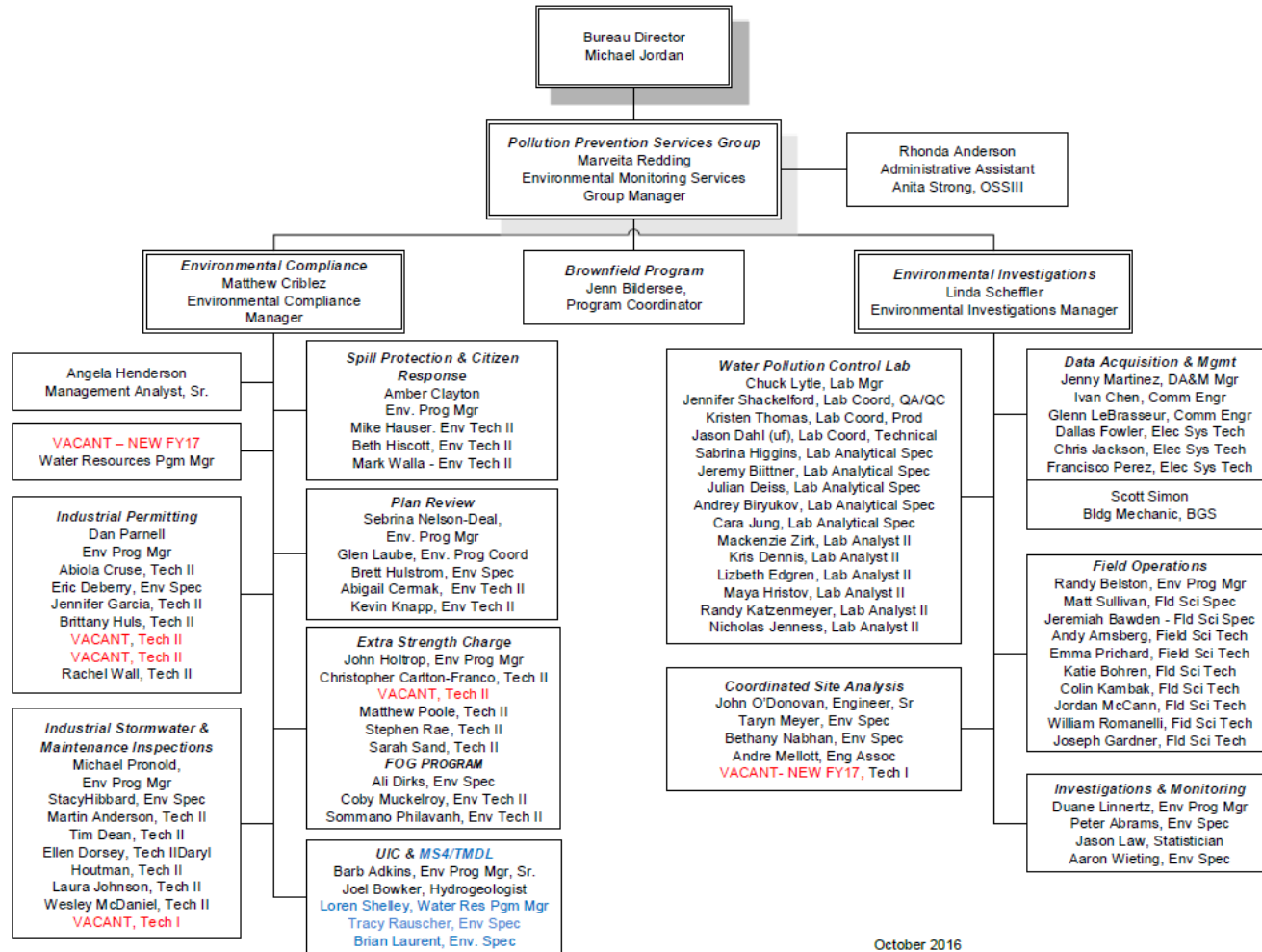
ENVIRONMENTAL SERVICES  
CITY OF PORTLAND

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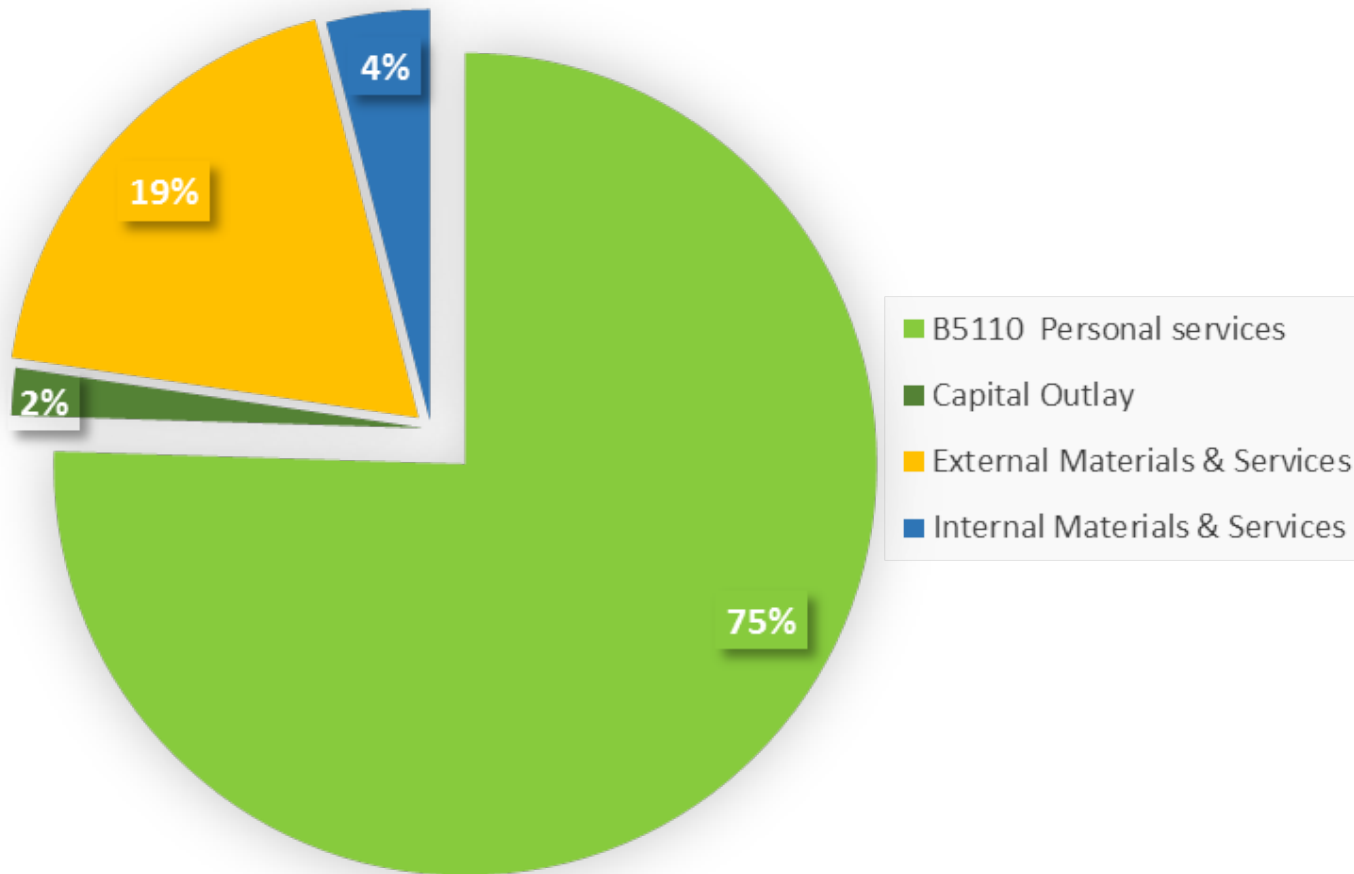
# Pollution Prevention Services Group



October 2016



# Pollution Prevention Services Budget \$13.6M\*



*\*includes cost recovery for internal M&S, and Brownfield grant funding*



# Environmental Compliance Division

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**Staff: 43**

**FY17 Budget: \$6.5M**

**FY16 Revenue: \$11M**

- Division manages compliance of 2 Treatment Plant permits and MS4 and UIC stormwater permits.
- Treatment Plant permits include requirements for Pretreatment and FOG programs and SSO response and reporting.
- Treatment Plant permits include effluent limits on BOD and TSS and related Extra Strength charges.
- MS4 and UIC permits include requirements for Erosion Control, Industrial Stormwater Management, Private Stormwater Facility Inspections, and Illicit Discharge Detection & Elimination programs.



# Wastewater Treatment Plant Permits

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## Columbia Boulevard and Tryon Creek Plants

**Staff: 1 (new FY17)**

**Budget: See Division**

- Manage and assure compliance with treatment plant (Columbia Blvd. and Tryon Creek) NPDES permits. Enforce provisions of city, state and federal regulations such as sanitary sewer overflows (SSO).
- In current negotiations with DEQ on Columbia Boulevard and Tryon Creek NPDES permit renewals.
- Administers other CBWTP permits: Triangle Lake Solid Waste, Air Discharge, and 1200 COLS.



# Municipal Separated Storm Sewer System (MS4)

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**Staff: 2.5 + Use of various BES staff**

**FY17 Budget: \$391,000**

- Manage the City's separated stormwater system compliance under the Clean Water Act.
- Manage 428 miles of storm pipes, 144 miles of stormwater channels and ditches that drain approximately 15,000 acres in the City.
- The Portland Stormwater Management Manual is required to comply with the federal NPDES MS4 permit post construction requirements.
- Verify compliance of the permit required Erosion Control Program implemented by Bureau of Development Services.
- Implement strategies to comply with TMDL requirements.



# Underground Injection Control (UIC)

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**Staff: 2.5 + Use of various BES staff**

**FY17 Budget: \$693,000**

- Manage the City's stormwater UIC compliance for discharges to groundwater under the Safe Drinking Water Act.
- Manage over 9,000 UICs throughout the City.
- Implement a UIC stormwater monitoring program to ensure numerical standards are met at the point of discharge to the UIC for the protection of groundwater.
- Implement structural and non-structural corrective actions required in the WPCF UIC permit.



# Pollution Prevention Plan Review

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**Staff: 5**

**FY17 Budget: \$580,000**

**FY16 Revenue: ~\$253,000**

- Reviews new and redeveloped properties and tenant improvements through the building permit review process and in accordance with the Source Control Manual.
- Requires specific measures and structures at commercial and industrial facilities to ensure the discharge will be protective of the City collection system and surface and ground waters.
- **FY 2015-16**
  - Performed over 2,042 plan reviews.
  - Provided technical and design assistance for more than 2,000 customers.





# Industrial Permitting (Pretreatment & Submeter)

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**Staff: 8**

**FY17 Budget: \$1.4M**

**FY16 Revenue: ~\$544,000 permit fees  
~\$460,000 submeters**

- A federally required program to control or eliminate harmful toxics from industrial properties to the sewer system. Designed to eliminate pass through or damage to the treatment or collection systems.
- Submeters are used at commercial and industrial facilities to provide credit or to assess charges for their discharge.
- Manage 130 permitted industrial facilities.
- Regulatory activities by the City has resulted in substantial declines in pollutant discharges from industries.



# Extra Strength Charge

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**Staff: 6**

**FY17 Budget: \$1M**

**FY16 Revenue: \$10.5M**

- Identify users with high biological oxygen demand (BOD) or total suspended solids (TSS) and collect fees to cover the extra treatment required.
- Assess charges on 52 industries by monitoring BOD and TSS discharges.
- Assess charges on 3,400 industries through Class Average (not monitored).
- Over a 4.5 year period, BES met with 4,500 businesses and provided technical assistance to identify potential rate reductions prior to assessing class average charges.



# Fats, Oils, & Grease (FOG)

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**Staff: 3**

**FY17 Budget: included in Extra Strength Charge**

- Regulate businesses that discharge materials that clog the sewer pipes, cause sewage overflows, and upset treatment processes. Performance objective is to eliminate FOG related SSOs.
- FOG-Related SSOs
  - FY 2011-2012 = 12
  - FY 2015-2016 = 4
- Total feet of sewer lines in all Accelerated Grease Cleaning Areas. The goal is to reduce accelerated sewer line cleaning as a result of uncontrolled FOG discharges.
  - FY 2012-2013 = 65,600
  - FY 2015-2016 = 67,347



# Industrial Stormwater and Private Stormwater Facility Inspections (MIP)

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**Staff: 9**

**FY17 Budget: \$984,000**

**FY16 Revenue (DEQ): \$80,000**

- Permit and inspect commercial and industrial sources of stormwater. Provide technical assistance in assessing and removing sources of legacy contamination in Portland Harbor and Columbia Slough.
- Inspect private stormwater facilities to ensure system-wide function. Private facilities are required to improve function of City collection system.
- Manage 436 industrial facilities with a permit or No Exposure Certification.



# Maintenance Inspection Program

- Track, map, and inspect all privately maintained stormwater facilities with Operations and Maintenance Plans – New development and redevelopment
- 6,712 properties with 11,475 facilities as of 2016
- ~300 O&Ms added per year
- FY 15-16
  - 1,189 Properties Inspected
  - 32 WNs, 5 NOVs

Land Use	No.	Percentage
Single Family Residence	3788	58
Commercial	1066	16
Multi-Family	996	15
Industrial	394	6
Institutional	369	5
Total	6613	100

Facility Type (11,057)	No.	Percentage
Flow Through Planter	2266	20.5
Soakage Trench	1825	16.5
Dry Well	1713	15.5
Manufactured Facilities	979	8.9
Swales	893	8.1
Trees	758	6.9
Infiltration Basins	600	5.4
Sedimentation Manholes	572	5.2
Sand Filters	436	3.9
Porous Pavement/Pavers	311	2.8
Eco-Roofs	299	2.7
Infiltration Planters	214	2.0
Detention Facilities	109	1.0
Ponds	47	0.4
Reuse	35	0.3

Fiscal Year	# Inspected Properties	# Total Properties in Program
2003-2004	249	3540
2004-2005	152	3964
2005-2006	233	4278
2006-2007	184	4524
2007-2008	468	5127
2008-2009	602	5265
2009-2010	647	5473
2010-2011	609	5526
2011-2012	533	5619
2012-2013	567	5812
2013-2014	580	6047
2014-2015	647	6343
2015-2016	1189	6613



# Spill Protection/Citizen Response (SPCR)

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**Staff: 4**

**FY17 Budget: \$606,000**

- Provide 24-hr reporting notification for sanitary sewer releases and combined sewer overflows
  - 500 releases per year (66% private responsibility, but still reported)
- Provide 24-hr investigation on spills, slicks, suspicious discharges and collection system complaints
  - 800 complaints or reports per year investigated or logged
- Identify and eliminate illegal discharges to the City's stormwater system
  - 113 outfalls require monitoring between 1 and 3 times per summer



# Spill Protection/Citizen Response (SPCR)

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- Investigate and enforce against prohibited discharges to City's storm or sanitary system, damages to City infrastructure, and non-construction erosion control
- FY 2015-2016
  - 94% (127 of 134) of all SSOs were reported to DEQ within 24 hours (federal permit requirement).  
Subtracting 4 delayed responses due to extreme weather of December 7, 2015:  $127/130=98\%$
  - 30 enforcement cases issued with an average issuance time of 2 months



# Enforcement

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**Staff: 1**

**FY17 Budget: See Division**

**FY16 Revenue/Penalties: \$233,420 (Annual Avg.)**

- Enforcement actions are issued and civil penalties are assessed for violations of local, state, and federal environmental laws or permits designed to protect City of Portland resources, public health and safety, and the environment.
- Cost recovery is levied against violators for costs the City incursto abate violations of City Codes or repair damage to City assets that is caused by violations of City Codes.
- FY 2015-16
  - Issued 611 enforcement actions, 5 associated with cost recovery
  - Assessed \$219,084 in civil penalties
  - 4 Businesses received penalty reductions by agreeing to upgrade facility and enhance compliance.





# Environmental Investigations Division

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**Staff: 41**

**FY17 Budget: \$6.6M**

**FY16 Revenue: \$3.1M** offsets expenditures

- Division collects, evaluates, and reports environmental and engineering data to support critical bureau decisions such as:
  - Permit compliance (e.g., NPDES, MS4, UIC)
  - Watershed assessment
  - Engineering design and construction
  - Sediment remediation (e.g., Colombia Slough, Portland Harbor)
  - Property acquisition and management
- The WPCL facility is also managed (by the DAM manager) within the division and its budget.



# Investigations and Monitoring Section (IMS)

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**Staff: 4**

**FY17 Budget: \$586,000**

- Liaison between customers and Field Operations and Laboratory staff.
- Monitoring and investigation project development and oversight, coordination and design for use of WPCL resources or outside lab contract.
- Analytical and flow monitoring data management.
- Detailed reporting of monitoring results.
- Statistical consulting services.
- Project budgeting assistance and monthly billing.



# Field Operations Section

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**Staff: 10**

**Budget: \$1.2M**

**Revenue: ~\$1.1M** offsets expenditures

**Equipment Value: \$1.5M**

- Industrial Wastewater Sampling
- Surface Water and Stormwater Sampling
- Groundwater Monitoring
- Soils and Sediment Sampling
- Short-term Flow Monitoring
- Watershed Health Surveys
- Stormwater Management Facility (SMF) Performance Assessment
- Environmental Investigations
- Environmental Monitoring Consultation



# Coordinated Site Analysis Section (CSA)

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**Staff: 5**

**FY17 Budget: \$1.0M**

**FY16 Revenue: \$344,000** offsets expenditures

For BES construction-related activities, property acquisitions, special investigations, and consultations:

- Evaluates site conditions for potential contamination
- Provides remediation services and contaminated materials management
- Utilizes WPCL resources
- Reduces customer liabilities/risks at construction sites
- Ensures compliance with applicable environmental laws, rules, policies

Additional City customers and partners include: Transportation, Water, Parks & Recreation, OMF, City Attorney, Police, and Fire



# Lab Section

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**Staff: 15**

**FY17 Budget: \$2.3M**

**FY16 Revenue: ~\$1.9** offsets expenditures

**Equipment Value: \$1.8M (2010 Dollars)**

- Full service environmental laboratory generates high-quality data in a cost-effective manner
- Analysis of all matrices except air and tissue:
  - Organics (PCBs, PAHs, etc.)
  - Metals (lead, mercury, etc.)
  - Microbiology (*e. Coli*, fecals, etc.)
  - Nutrients (phosphorus, nitrogen, etc.)
  - General Chemistry (pH, oil and grease, etc.)



# Lab Section

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- Received national accreditation (NELAC) for wastewater in September 2013 (Oregon primacy state).
- Received NELAC accreditation for drinking water (lead and copper) in June 2016 to facilitate assistance to Water Bureau and Portland Public Schools.
- Accuracy checked by third parties:
  - Quarterly: > 99% Acceptable  
(Over 11 years and for 230 analytes)
  - Biennial: 97.5% Acceptable  
(over 4.5 years and for > 2,000 analyses)



# Data Acquisition & Management Section (DAM)

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**Staff: 6**

**FY17 Budget: \$1.1M**

**Equipment Value: \$5.12M**

Provides electronic data collection services to support BES asset design, operation, and maintenance.

- Three Electronic System Technicians design, construct, maintain, and repair 200 remote sites which include:
  - 42 rain gauges
  - 90 pump stations
  - 71 sewer monitors
- Two Communications Engineers design, construct, maintain and support:
  - 2 micro-data centers
  - 6 radio repeaters/master sites
  - Distributed virtual servers to deliver data to bureau staff



# DAM Section

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- Provides 24/7 CSO & Pump Station emergency notification for compliance with State and Federal regulations.
- Collects data from a citywide system of rain gauges, flow monitors, and pump stations.
- Delivers data reports to customers via interconnected servers and networks.
- Manages monitoring system assets and evaluates data quality to identify and apply system upgrades where needed.
- Facilitates internal and external collaboration to assess cybersecurity risk for automation assets and develops policies and procedures for operation and implementation.





# Brownfield Program

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**Staff: 1**

**FY17 Budget: \$168,000 / \$568,000** with grant funding

- Program manages an EPA grant for Brownfield environmental site assessment and a \$1M revolving loan fund for cleanup
- Provides technical and financial assistance on both public and private contaminated properties
- Brownfield remediation directly protects surface water by reducing non-point source pollution
- A key pollution prevention tool in communities that employ green infrastructure and infiltration
- In 2014 the Brownfield program provided assistance on 12 properties throughout Portland

