37244

SALMON-SAFE INC.

City of Portland Mayor's Challenge

REPORT OF THE SCIENCE TEAM REGARDING SALMON-SAFE CERTIFICATION OF THE CITY OF PORTLAND'S BUREAU OF ENVIRONMENTAL SERVICES, BUREAU OF TRANSPORTATION, WATER BUREAU, OFFICE OF MANAGEMENT AND FINANCE, AND PORTLAND FIRE AND RESCUE

Portland, Oregon

August 16, 2016

Salmon-Safe Inc.
317 SW Alder, Suite 900
Portland, Oregon 97204
(503) 232-3750
info@salmonsafe.org

www.salmonsafe.org

SALMON-SAFE INC.

City of Portland Mayor's Challenge

REPORT OF THE SCIENCE TEAM REGARDING SALMON-SAFE CERTIFICATION OF THE CITY OF PORTLAND'S BUREAU OF ENVIRONMENTAL SERVICES, BUREAU OF TRANSPORTATION, WATER BUREAU, OFFICE OF MANAGEMENT AND FINANCE, AND PORTLAND FIRE AND RESCUE

Portland, Oregon

August 16, 2016

Project funded in part by Spirit Mountain Community Fund

Contents

RECOMMENDATION SUMMARY

The Salmon-Safe Science Team is pleased to recommend the City of Portland's Bureau of Transportation, Bureau of Environmental Services, Water Bureau, Office of Management and Finance, and Portland Fire and Rescue be certified Salmon-Safe, subject to conditions detailed in this report. Over a two-year process working across the city, the Science Team evaluated Portland's management policies and programs related to watershed impact and concluded that these core Portland bureaus meet Salmon-Safe's requirements for certification, thereby serving globally as an example of environmental innovation.

Background

Salmon-Safe has, since 1996, successfully defined and promoted ecologically sustainable land management practices at more than 800 agricultural and urban sites throughout the Pacific Northwest, including the City of Portland's 10,000-acre system of parks and natural areas, Salmon-Safe's first urban project. In 2013, Portland Mayor, Charlie Hales, called for the City of Portland service-delivery bureaus to transition toward Salmon-Safe certification. Salmon-Safe is approaching the conclusion of a thirty-month, multi-phase assessment of key city operations and facilities with coordination by the city's Bureau of Planning and Sustainability (BPS). To our knowledge, the Salmon-Safe City Project represents the first time that a city anywhere in the world has worked with an environmental NGO to systematically and holistically evaluate its impacts in its watershed.

The project's first year focused on three bureaus that construct facilities or manage land and whose operation have a direct impact on water quality or habitat—the Portland Bureau of Environmental Services (BES), the Portland Water Bureau (PWB) and the Portland Bureau of Transportation (PBOT). The project's second year focused on an operational assessment of the Office of Management and Finance's (OMF's) divisions of Procurement Services, Facilities Services and CityFleet Services, plus Portland Fire and Rescue (PF&R). The project expanded to include, on a pilot basis, the Portland Development Commission (PDC) and Home Forward.[1]

Starting in 2014, Salmon-Safe convened a Science Team with expertise in aquatic ecosystems, stormwater management, land management, site development and integrated pest management (IPM) to evaluate the impact the five targeted city bureaus, as well as PDC and Home Forward's pilot sites, were having on local watersheds. In November 2015, the Science Team began conducting comprehensive field reviews and bureau-specific assessments of overall management plans and practices relating to habitat and water quality protection. Roughly 715 acres of city property was inspected

[1] Please refer to the appendices for the Home Forward/St. Francis Park Apartments Certification Report and PDC 9101 S.E. Foster pre-assessment guidance memo.

across the five bureaus. Salmon-Safe staff received and reviewed more than 80 documents and interviewed 24 city staff members through the course of the two-year effort. The information garnered from these documents and interviews was used by the Science Team together with notes from field visits to prepare this report.

OVERVIEW OF BUREAU MANAGEMENT RESPONSIBILITIES

The **Portland Bureau of Environmental Services** works with residents and businesses to protect water quality, public health and the environment through wastewater collection and treatment, sewer construction and maintenance, stormwater management, and stream and watershed restoration. BES acquires land for conservation and restoration purposes and is responsible for managing numerous natural areas and restoration sites, often in close cooperation with other city bureaus, such as Portland Parks and Recreation (PP&R), PWB and PBOT.

The **Portland Bureau of Transportation** maintains the city's roads, sidewalks and other transportation facilities and infrastructure. Managed properties include the PBOT Operations Facility, the Albina Storage Yard and roads, right-of-ways and associated stormwater treatment systems.

The **Portland Water Bureau** manages over 100 individual properties totaling approximately 1,200 acres. These properties include the bureau's main office, North Interstate Boulevard facility and yard, numerous groundwater pump stations, including seven hydroparks, plus water storage reservoirs at Kelly Butte, Powell Butte, Mount Tabor and Washington Park. (Note: The city's Bull Run Reservoir system in the Mount Hood National Forest is not included in this certification assessment.)

The **Office of Management and Finance** is composed of a number of divisions. This assessment focuses on three divisions with the most potential for influencing watershed health and fish habitat—CityFleet Services, Facilities Services and Procurement Services.

> ***CityFleet*** manages and maintains the over 3,000 vehicles and other pieces of equipment in the city's diverse fleet, which performs critical cleaning, fueling, maintenance and repair functions. CityFleet operates from its main shop at the Kerby Yard and from six other satellite shops where maintenance, car washing and other operations are performed indoors. At its main shop, CityFleet is working with its neighbor, PBOT, on a master plan that includes making improvements to stormwater management.
>
> ***Facilities Services*** owns 11 structures and actively manages over 50 others, including parking garages, downtown high-rises, police precincts and other

buildings in highly urbanized locations. Facilities Services also manages structures, such as Smart Park garages, for other city bureaus.

Procurement Services creates RFQ's and RFP's for all city contracts over $5,000 and manages, upon request, work of other bureaus, such as landscaping, professional design and engineering services, and construction. Environmental management considerations are, to some extent, included in RFP criteria and contract language.

Portland Fire and Rescue includes 30 fire stations, the Training Facility and the Logistics Center, where a capital planning project is underway to relocate the logistics facility. Live-in personnel at each firehouse take care of landscaping and janitorial services as residents with PP&R or other contractors handling larger landscape projects. Fire trucks are washed indoors and runoff goes to an oil/water separator. Landscaped areas around City of Portland fire stations are, in general, small and non-irrigated.

THE ASSESSMENT PROCESS

Site Assessment Dates

The pre-assessment visits to properties managed by BES, PBOT and PWB occurred on December 8–9, 2014. The full field inspection and evaluation of BES-, PBOT- and BES-managed sites took place March 10–13, 2015. Field inspections and evaluations of OMF- and PF&R-managed sites took place November 16–18, 2015. Site assessment of Home Forward's pilot site occurred on April 25, 2016

The Salmon-Safe Science Team

To conduct the certification assessment, Salmon-Safe convened a Science Team with expertise in aquatic ecosystems, stormwater management and integrated pest management. This is the same core team that assessed PP&R beginning in 2003, with the addition of water quality scientist, Tad Deshler, who joined the team for the Home Forward and PDC pilot projects.

Peter Bahls: *Aquatic Ecologist and Salmon Biologist, Northwest Watershed Institute.* Mr. Bahls received an M.S. in Fisheries Science and Aquatic from Oregon State University and a B.S. in Environmental Studies-Biology from Middlebury College, Vermont. He worked for six years as the salmon habitat biologist for the Port Gamble S'Klallam Tribe, followed by three years as the principal fish biologist for David Evans and Associates. In 2001, he founded Northwest Watershed Institute, a nonprofit organization that provides scientific

and technical assistance in watershed assessment and restoration. Mr. Bahls was the scientific lead for the development of Salmon-Safe's park and corporate campus standards and served as team leader for the initial assessment and 2014 re-certification assessment of Portland's Parks system.

Salmon-Safe assessment team leader, Peter Bahls (far left) and team stormwater expert, Rich Horner, PhD (far right) discuss Bureau of Transportation logistics with Rich Grant, PBOT. *Photo: Salmon-Safe Inc.*

Carrie Foss: *Urban IPM Director, Washington State University (WSU) Puyallup.*
Ms. Foss manages the WSU Urban IPM and Pesticide Safety Education Program in western Washington. Landscape maintenance personnel are trained in plant problem diagnosis, integrated pest management, personal safety and environmental protection through lectures and workshops. Carrie earned a Bachelor of Science degree in botany from the University of Washington and a Master of Science degree in plant pathology from the University of Hawaii. Her background includes plant problem diagnosis, research on beneficial microorganisms and management strategies for turf and ornamental diseases. Carrie has been evaluating IPM practices for Salmon-Safe urban projects, starting with the Portland Parks assessment in 2003.

Dr. Richard Horner: *Stormwater Management Expert, University of Washington.*
Dr. Horner received BS and MS degrees in Engineering from the University of Pennsylvania and, in 1978, a PhD in Civil and Environmental Engineering from the University

of Washington. Following 13 years of college teaching and professional practice, he joined the University of Washington research faculty in 1981, where he held appointments in Civil and Environmental Engineering, Landscape Architecture and the Center for Urban Horticulture. His principal research interests involve analyzing the effects of human activities, especially in urban areas, on freshwater ecosystems and solutions that protect these resources. Dr. Horner founded the Center for Urban Water Resources Management in 1990 to advance applied research and education in these areas. He is now emeritus research associate professor and splits his time between private practice and some continuing university research.

Tad Deshler: *Environmental Scientist, Coho Environmental*. Mr. Deshler's practice focuses on environmental assessment and impact analysis, with particular focus on the interaction between built and natural environments. Much of his project work has centered around aquatic sites, or at the interface between aquatic sites and the adjacent upland environments, where understanding the transport mechanisms that connect upland and in-water environments is paramount. Tad earned a BA degree in Aquatic Biology from the University of California at Santa Barbara and an MS degree in Animal Science from the University of California at Davis. Tad advises Salmon-Safe regarding water quality impacts from urban development.

Science Team Field Reviews

In December of 2014, the Science Team met with BES, PBOT and PWB staff members. The team heard presentations, had an opportunity to ask questions and briefly inspected various properties under bureau management. The Science Team inspected PBOT's Operations Facility and Albina Storage Yard, the newly installed rain gardens of the BES-managed Tabor to the River project and PWB's Interstate Facility.

During the March 2015 full assessment return visit, the Science Team visited additional sites managed by each of the three bureaus. The team inspected BES's Foster Floodplain restoration project, the Glencoe Rain Garden, salmon restoration and green infrastructure projects at Westmoreland Park and Crystal Springs, Tabor to the River stormwater infrastructure sites under construction, the Columbia Boulevard Waste Water Treatment Plant and a planned erosion control project at a recently installed pipeline in Marquam Nature Park. With PBOT staff, the team inspected a sewer pipe construction site, revisited the Albina Storage Yard and inspected the Sunderland recycling facility. Finally, accompanied by PWB staff, the Science Team inspected Powell and Kelly Buttes, two pump stations and Hazelwood hydropark. They also re-inspected the Interstate Yard where stormwater treatment infiltration swales and galleries were being installed.

On November 16-18, 2015, during the field assessments of OMF and PF&R, the Science Team met with OMF and PF&R staff for an orientation and overview of various departments. They then inspected a number of OMF- and PF&R- managed facilities. At OMF, the team met with Stacey Foreman (Procurement Services), Marina Cresswell and Molly Hatfield (Facilities Management) and toured the Emergency Communications Center.

Salmon-Safe team in the field with Bureau of Environmental Services to assess Westmoreland Park culvert replacement and riparian restoration. *Photo: Northwest Watershed Institute 2015.*

They also met with Don DePiero and Marv Navarro (CityFleet Services) after which they inspected the Kerby Garage, CityFleet's main shop, and observed a graffiti removal project with Juliette Muracchioli (Office of Neighborhood Involvement—ONI) as an example of a contracted service through Procurement Services. At PF&R, the team met with Captain Greg Ennis and inspected PF&R's Logistics Facility, Training Center and Fire Stations 6, 9, 20, 21 and 27.

Bureau staff accompanied the Science Team throughout all of the field inspections. The Science Team had the opportunity to interact with employees who have a range of responsibility and different levels of authority with their respective bureau's landscape management. At the conclusion of the site assessments, Science Team members, with support from Salmon-Safe staff, met to review certification criteria against notes taken during the process. The team decided it could complete its deliberations without first receiving more specific information from each bureau. Over the course of the next several months, each bureau provided additional information for evaluation by Science Team members. Salmon-Safe staff then met with each bureau to discuss the Science Team's draft findings, certification conditions and recommendations.

Based on additional information gained through discussion and subsequent written feedback, the Science Team and Salmon-Safe staff finalized certification conditions and the Science Team reached its final unanimous decision for granting certification to the five city bureaus on June 27, 2016.

Salmon-Safe team reviews construction-phase stormwater runoff prevention practices at Kelly Butte with Portland Water Bureau. *Photo: Salmon-Safe Inc.*

Salmon-Safe team site inspection of BES Columbia Boulevard Wastewater Treatment Plant. *Photo: Northwest Watershed Institute 2015.*

GENERAL OBSERVATIONS AND CONCLUSIONS

It is the judgment of the Salmon-Safe Science Team that the operations of BES, PBOT, PWB, OMF and PF&R, as currently practiced, are in accord with Salmon-Safe standards and demonstrate a high-level engagement with natural resource stewardship. The Science Team recognizes that individual bureau budgets for habitat protection, stormwater improvements, facility retrofits, and restoration activities are limited and that fully meeting Salmon-Safe standards across the five bureaus is a challenge. At the same time, the team noted an organizational motivation and enthusiasm across the bureaus for assuming a regional leadership role (by example) in meeting commitments to Salmon-Safe certification. The team considers the high level of coordination and partnership among bureaus impressive and is optimistic that BES, PBOT, PWB, OMF and PF&R can make the adaptations and improvements necessary to establish and sustain a model Salmon-Safe certified program.

Cross-bureau General Observations

All five bureaus impressed the Science Team in several respects—

- excellent coordination and partnership among bureaus;
- commitment to environmental innovation and advancement within each bureau's work (area of specialization); and
- amenability for dialogue concerning continuous improvement of practices and operations

The City of Portland, however, has additional opportunities to further its commitment to cross-bureau leadership in environmental management in accord with Salmon-Safe standards by—

- further reducing pesticide use through bureau-specific addenda to the excellent PP&R integrated pest management (IPM) plan which currently serves as a template for BES, PBOT and PWB but does not fully address those multiple landscape functions specific to each bureau;
- prioritizing key opportunities for further installation of green stormwater infrastructure across each bureau's properties with the goal of reducing runoff from city properties and serving as an example of innovation in stormwater treatment for private property owners;

- identifying key opportunities for high-value habitat restoration action across bureau properties plus prioritization of habitat protection and restoration opportunities;
- prioritizing temporary erosion control practices during construction to prevent construction-phase pollution;
- further reducing water use in irrigation, equipment cleaning and other operations, especially during periods of drought; and
- improving guidance and temporary erosion control methods at construction projects.

Bureau-specific Observations and Conclusions

Key bureau project and practice that is consistent with Salmon-Safe management standards deserves specific mention. The following sections of this report summarizes, by bureau, the areas that the Science Team identified where individual bureaus demonstrate environmental leadership or need improvement in order to achieve full compliance with Salmon-Safe standards.

Bureau of Environmental Services—General Observations

The Science Team commends BES for the scope of its watershed restoration efforts and for the science-based approach it employs, which includes or involves—

- BES's legacy of leadership as Portland's "environmental" bureau, supported by strong in-house science expertise and staff;
- consideration of social equity issues in watershed and climate planning;
- comprehensive, science-based watershed planning developed to guide restoration activities for water quality, habitat and ecosystem health;
- impressive progress in restoring floodplains and salmon habitat along Johnson Creek, Crystal Springs and other city waterways, with many major projects completed in recent years;
- dramatic reductions in water pollution through successful large-scale stormwater projects, such as the Big Pipe, and large-scale application of on-site retention and infiltration projects, such as the Tabor to River project;
- strong commitment to minimal use of herbicides, fertilizers and irrigation where feasible;

- excellent coordination and partnership with other bureaus—particularly PP&R—in jointly managed sites;

- the newly rolled out Watershed Report Card system for Portland rivers, streams and watersheds—a useful distillation of monitoring data that will help the public and policy makers become and stay informed regarding restoration priorities; and

- BES's largely effective role as the city's advocate for a clean and healthy river.

BES, however, has opportunities to further its commitment to leadership in environmental management in accord with Salmon-Safe standards by—

- more tightly linking watershed assessment and project planning to quantitative ecological and water-quality goals and objectives, increasing accountability and long-term public support for watershed restoration programs;

- strengthening the city's Stormwater Management Manual with respect to development—to align it with Salmon-Safe practices and further establish a model of environmental innovation for private developers; and

- conducting "adaptive management" reviews of completed restoration projects, including reviews of project success relative to re-establishing ecological functions, habitats, plant communities and species with a goal to identify areas for improvement in existing and future projects.

Portland Bureau of Transportation—General Observations

PBOT employs significant management practices and programs that are innovative and consistent with Salmon-Safe standards, including—

- an innovative stormwater wetland treatment system recently installed on a two-acre section of the Albina Storage Yard;

- the Sunderland facility, a well-managed facility for bulk composting large quantities of leaves from street sweeping and onsite stormwater treatment through a swale and rain garden;

- there is minimal input of herbicides, fertilizers and irrigation in green space areas;

- good coordination and partnership with other bureaus in jointly managed sites;

- long-time commitment to innovation, as illustrated by PBOT's first ever application by a municipality of pervious pavers as street surface;
- leadership in the use of liner technologies to fix sewer pipe leaks, thereby reducing the need to dig up roads (the potential for erosion and for impacting water quality are similarly reduced); and
- commitment to environmentally sensitive design, as illustrated by PBOT's Street-by-Street Improvement Standards.

To comply with Salmon-Safe standards, however, PBOT will need to undertake two significant new projects:

1. the Albina Storage Yard requires a significant overhaul to provide adequate stormwater treatment; and
2. all PBOT properties need a comprehensive, system-wide assessment of restoration opportunities.

Portland Water Bureau—General Observations

PWB is implementing major environmental management projects on its lands. Similarly, it is implementing operational practices that exemplify the Salmon-Safe approach, including—

- the recent retrofit of the Interstate Yard, with excellent infiltration swale and gallery stormwater treatment facilities;
- use of site-specific management to reduce irrigation, herbicide and fertilizer use where feasible;
- large-scale native planting and ecosystem protection and restoration projects currently underway at Kelly and Powell Butte Reservoir sites;
- good coordination and partnership with other city bureaus at jointly managed sites;
- operational sensitivity to water quality protection, as illustrated by the de-chlorination of water during routine hydrant flushing.

PWB has, however, an opportunity to further its commitment to leadership in environmental management in accord with Salmon-Safe standards by—

- expanding stormwater treatment upgrades to include the entire Interstate Facility, including the Kerby Yard;

- conducting assessments of all PWB properties, identifying and prioritizing needs for stormwater treatment, erosion control and habitat restoration; and
- establishing and implementing standard protocols to ensure the ongoing monitoring and maintenance of stormwater facilities, such as rain gardens, on PWB properties.

Office of Management and Finance—General Observations

The Science Team commends the OMF Service Divisions—CityFleet, Facilities and Procurement—for the quality and diversity of programs and policies already in place that are consistent with Salmon-Safe certification.

CityFleet Services

- The excellent fueling station at Kerby Yard includes double wall tanks and pipes plus an alarm system for leak detection.
- A plan is in place to upgrade all remaining fuel stations to the same level as the Kerby Yard station.
- CityFleet provides safe driver training which includes spill cleanup protocols.
- Greenfleet and Ecobiz certifications demonstrate CityFleet's commitment to environmental stewardship.
- The use of biodegradable engine lubricating oil and hydraulic oils in key equipment reduces risk of water quality contamination.

Facilities Services

- The Emergency Communications Center is an excellent example of innovative environmental design and incorporates the use of pervious pavement, rainwater harvesting, bioswales, low-flush toilets and low-water-use native landscape plantings.

Procurement Services

- Procurement offers contractor-training sessions in the use of "green" methods.
- Targeted sustainability criteria are included in scoring responses to RFP's.

OMF, however, has an opportunity to further its commitment to leadership in environmental management in accord with Salmon-Safe standards by—

- **CityFleet**
  Improve vehicle leak detection and prevention.

- **Facilities**
  Prohibit use of building materials containing zinc, copper or other materials that can contaminate stormwater and are toxic to aquatic life.

- **Facilities and Procurement**
  Add Salmon-Safe specifications to standard contract language to ensure contractors use an IPM approach when treating pest issues.

- **Procurement**
  Incorporate applicable Salmon-Safe elements into city sustainability training.

Don DePiero and Marv Navarro (OMF CityFleet) providing an overview of runoff filtration and treatment at the Main Shop. *Photo: Salmon-Safe Inc.*

Salmon-Safe Science Team observing graffiti removal with the Office of Neighborhood Involvement, a service contracted with the aid of OMF Procurement Services. *Photo: Salmon-Safe Inc.*

Salmon-Safe Science Team inspecting PF&R's impact on the watershed at riverboat Station 21, where operations meet the Willamette River. *Photo: Salmon-Safe Inc.*

Portland Fire and Rescue—General Observations

PF&R employs management practices and programs that are innovative and consistent with Salmon-Safe certification standards—

- Vehicle washing occurs indoors. Drains lead to oil/water separators.
- Recently developed sites, such as Fire Station 21 and retrofit projects such as Fire Station 6, include green stormwater infrastructure.
- Recently constructed Fire Stations are LEED Gold certified.
- Landscaping includes native plants at some Fire Stations.
- There is ongoing fire incident communication with BES regarding potential stormwater runoff issues when fighting fires with large amounts of water and fire retardant.
- Fire fighter training with Clean Rivers Cooperative, Inc., includes oil spill response and river clean-up procedures.
- An informal, but broadly applied program of low inputs of fertilizer, chemicals and water in landscaping is in place.

To comply with Salmon-Safe standards, however, PF&R will need to prepare and implement:

1. a water conservation and drought management plan; and
2. a system-wide PF&R IPM policy and plan for landscape beds, turf areas and invasive weeds.

CERTIFICATION CONDITIONS AND RECOMMENDATIONS

Cross-bureau General Observations

All five bureaus must meet the two pre-conditions and four conditions detailed below to achieve Salmon-Safe certification. All conditions are subject to annual verification by Salmon-Safe. Timelines for achieving certification objectives begin with the date Salmon-Safe certifies each bureau. Salmon-Safe recognizes compliance with a number of these conditions will require additional funding but will consider the bureaus' due diligence when determining when and whether the intent of conditions are met.

Pre-Condition 1

Provide Salmon-Safe a signed statement stating the bureaus are not knowingly in violation of national, state or local environmental laws, or associated administrative rules, or requirements as determined by a regulatory agency in an enforcement action, per General Standard A.1.

Timeline
Compliance is a pre-condition of certification, then subject to annual verification by Salmon-Safe.

Pre-Condition 2

Provide Salmon-Safe a signed letter confirming the city has a mechanism in place to ensure Salmon-Safe standards, including model permanent and construction-phase stormwater standards, are adhered to for expansion or redevelopment of bureau-owned properties.

Timeline
Compliance is a pre-condition of certification, then subject to annual verification by Salmon-Safe.

Condition 1

Conduct integrated stormwater management assessments for all managed properties. A qualified stormwater expert, or BES (which is already planning a stormwater assessment for properties managed by other bureaus) shall evaluate opportunities for providing additional quantity and quality treatment of stormwater runoff across properties. The goal of the plan is on-site treatment of stormwater runoff generated by precipitation events equal to 95% of the average annual runoff for priority locations. The bureau shall prepare a report identifying and prioritizing such opportunities. The report shall also include a proposed timeline or timelines for project completion. The project selection and prioritization method used shall be at the discretion of the bureau but must be based on criteria related to existing water quality and aquatic habitat risk levels, e.g., the size of the area drained; the potential for contamination in stormwater drainage caused by industrial activities or vehicles; and drainage to separated or combined sewer areas.[2]

Properties may include—

1. locations where industrial-type activities occur (e.g., the maintenance yards) and where drainage flows to separated or combined sewer areas;
2. facilities with vehicle traffic, draining to separated areas (ranked by size);
3. pervious or impervious areas with chemical application or exposure, draining to separated sewer areas (ranked by size);
4. facilities with vehicle traffic, draining to combined sewer areas (ranked by size);
5. pervious or impervious areas with chemical application or exposure, draining to combined sewer areas (ranked by size);
6. other impervious areas, draining to separated sewer areas (ranked by size);
7. other impervious areas, draining to combined sewer areas (ranked by size); and
8. any other bureau-managed areas, draining to separated or combined sewer areas (ranked by size).

[2] **PBOT:** This requirement does not apply to all PBOT rights of way, only PBOT-operated facilities. **BES:** BES may assess BES properties under this condition as a component of a unified stormwater system plan for the city (see BES Condition 2). **PF&R:** PF&R-specific Condition 3 supersedes this cross-bureau condition. However, the bureau may find helpful the guidance on prioritizing opportunities outlined in this condition.

Condition 1, continued

Projects may include one or more approaches to improve stormwater management. These approaches may include, but are not limited to—

1. removal of excess impervious parking lot areas and replacement with pervious landscaping (e.g., natural plantings, rain gardens or bio-retention cells);

2. use of pervious pavement (asphalt, concrete and/or open-graded pavers) in locations that should be paved, do not carry heavy vehicle traffic (e.g., walkways and other areas with relatively high levels of foot traffic or customer parking areas such as the existing impervious parking lot) and that will not contribute to or exacerbate existing urban heat island effects;

3. rainwater harvesting, with uses in irrigation, toilet flushing, etc.;

4. use of green roofs or rooftop gardens, green walls, bioswales or infiltration swales and rain gardens;

5. land acquisition and restoration to create natural infrastructure facilities; and

6. additional opportunities to slow runoff through surface dispersal.

Once individual bureaus have prioritized projects or basins, the city will share the results of its analysis and develop a proposed implementation strategy for selected projects. The strategy will include submittal timelines for each bureau's respective Capital Improvement Project (CIP) evaluation and funding process. This is necessary to ensure projects remain consistent with bureau missions, standards and protocols for capital projects.

Timeline

Within one year, BES shall complete the stormwater methodology template and an assessment of its properties. Within three years, the assessment will be completed for the other bureaus. A proposed implementation strategy and timeline will be submitted to Salmon-Safe for review and acceptance. Within five years, at least four high-priority projects will have been initiated subject to bureau CIP evaluation and funding.

Condition 2

Assess all largely vegetated bureau-managed and city-owned properties occupying an area of one acre or more to identify and prioritize habitat protection and restoration opportunities while recognizing use mandates for each. Sites within the city's Natural Resource Inventory (NRI) are an acceptable focus for the assessment. Completion of a comprehensive assessment across all bureau-owned properties may satisfy this condition.

Protection options shall include:

- long-term protection formalized in written plans, and
- implementation of on-the-ground management measures, such as fencing or signs.

Restoration options shall include improvements such as:

- invasive species removal;
- eroding ditch or channel stabilization;
- native plant area or ecosystem restoration (i.e., riparian areas, wetlands and uplands); and
- key location identification for stormwater treatment facilities, such as constructed wetlands or rain gardens *(see Cross-bureau Condition 1)*.

Use certain specific criteria[3] for habitat protection and restoration to prioritize sites. Such criteria include—

- size of existing or potential habitat area;
- quality and suitability of existing or potential site as fish and wildlife habitat;
- connectivity of site to surrounding habitats and migration corridors;
- connectivity of site to on-site or downstream river and stream habitat;
- benefit of proposed protection or restoration project to native fish and wildlife;
- benefit of proposed project relative to restoring long-term ecological functions habitat; and
- potential benefit to habitat vs. project cost comparison.

[3] **BES:** The bureau has satisfied cross-bureau Condition 2 through documentation submitted in August 2015. The bureau-specific restoration conditions stated in later sections of this report take the place of this cross-bureau condition for BES. **OMF:** This condition applies only to Facility Services, since Procurement does not have direct control over property and CityFleet does not manage any sites with habitat value that cover more than one acre. **PF&R:** If the bureau believes there is greater opportunity for habitat protection and restoration opportunities at a site covering less than one acre, Salmon-Safe will accept these sites for consideration as part of this cross-bureau condition.

Condition 2, continued

Timeline

Within two years, the assessment shall be completed and a list of prioritized projects with a proposed timeline for budgeting and implementation shall be submitted to Salmon-Safe for review and acceptance. The strategy and timeline shall propose at least four high-priority projects for initiation within five years, pending budget approval.

Condition 3

Prepare an updated, stand-alone, water conservation plan that may include plans for reducing irrigated acreage, priority zoning of irrigation, use of native plants with low water requirements and expanded use of high efficiency irrigation systems. Footnote 4 outlines bureau-specific objectives.[4]

Timeline

The water conservation plan shall be completed and implemented within two years.

---

[4] **BES:** (a) Prepare a stand-alone, irrigation management plan for BES-owned properties.
(b) Prepare a drought contingency plan as part of the irrigation management plan.

PBOT: Prepare an updated, stand-alone water conservation plan as follows:

1. Prepare a water conservation plan with the objective of reducing water use, as feasible, through such methods as (a) reducing water used for cleaning pipes, and investigating mechanical (non-water) methods to reduce water use to clean out fog seal equipment, (b) reducing irrigated acreage, (c) priority zoning of irrigation, (d) use of native plants with low water requirements, and (e) expanding use of more efficient irrigation systems. The water conservation plan shall be completed within two years.

2. Continue to obtain measurements or firm estimates of outdoor water use demonstrating how each bureau is meeting quantitative goals for water use reduction as part of the comprehensive water conservation plan. This task shall be executed annually during the five-year certification period.

3. Prepare a drought contingency plan as part of the water conservation plan, demonstrating how PBOT will reduce water use during periods of drought.

PWB: (a) Prepare an updated, stand-alone irrigation management plan for PWB-owned properties with the objective of formalizing the no irrigation use policy.
(b) Prepare a drought contingency plan as part of the irrigation management plan.

OMF: This condition applies only to Facility Services, since neither Procurement nor CityFleet have exterior water use.

(a) Prepare a stand-alone, irrigation management plan for OMF-owned properties.
(b) Prepare a drought contingency plan as part of the irrigation management plan.

PF&R: Prepare a stand-alone, water conservation plan that includes the Fire Stations and the Fire Training Center. The water conservation plan shall include a summary of annual water use at each Fire Station separated into indoor and outdoor irrigation use, as feasible; water conservation policies applicable to all Fire Station sites; and specific measures to be taken at individual Stations to reduce water use, as feasible, (i.e., limiting irrigation to the plant establishment period; reducing existing irrigated acreage; use of native plants with low water requirements; expanding use of more efficient irrigation systems; and rain water storage for irrigation). The plan shall include a drought management plan detailing additional measures required during drought.

Condition 4

Provide a signed letter to Salmon-Safe stating the construction of future bureau-managed buildings will not include exterior zinc or copper roofing or siding, which can be harmful to salmon and water quality. A cross-bureau amendment to the city's Green Building Policy could include a prohibition on zinc and copper roofing and siding.

Timeline

The letter shall be provided within one year.

Recommendations

The Science Team identified eight additional opportunities for the City of Portland to further advance environmental management across multiple bureaus:

1. Consider engaging outside experts, conservation organization representatives or an advisory committee to conduct an independent review on the watershed scoring process and the interpretation of results.

2. Shift formally, where feasible, to pesticide-free management of city lands.

3. Renew city support and funding to continue fostering the growth of Green-works projects and keep Portland a leader in green infrastructure development. Potential projects include additional district stormwater plans (similar to Division Street), renewal of the Friends of Trees contract, increased support for urban tree planting programs, continuation of the Grey to Green program, floodplain protection and restoration, and prioritizing projects utilizing eco-roofs.

4. Organize an advisory committee made up of scientists and conservation groups to advise the city on Superfund/Port of Portland issues.

5. Develop mitigation banks to help fund habitat restoration and green infrastructure from Superfund sites, development projects and enforcement actions.

6. Set city-wide goals for natural area restoration/setbacks along the Willamette River establishing a new priority for new city park/natural area acquisition and management.

7. Build city support and funding for continued land acquisition for natural area protection and restoration, especially along streams and floodplains.

8. Initiate a BES and independent advisory committee review of "big picture" restoration opportunities now available to the City of Portland, including restoration of the floodplain at Heron Golf Course and others.

BUREAU-SPECIFIC CONDITIONS AND RECOMMENDATIONS

BUREAU OF ENVIRONMENTAL SERVICES

Certification Recommendation: The Science Team recommends BES be certified Salmon-Safe subject to the previously stated cross-bureau conditions plus the following eight bureau-specific conditions.

BES | Condition 1

BES shall create a companion document to the Stormwater Management Manual for application to city projects that explores how to go beyond current requirements and serve as a mechanism for leading the private sector by example over time. The document should address:

1. safely increase, if possible, on-site infiltration in areas currently exempt from full on-site infiltration (<2"/hour tested or assumed infiltration rate). This includes (a) increasing use of full or partial infiltration facilities on the west side of Portland, (b) incorporating structural soil or amended soil concepts, and (c) increasing use of more accurate infiltration tests.

2. documentation of when projects should utilize continuous-flow-rate models (e.g., Hydrologic Simulation Program—FORTRAN or the Western Washington Hydrologic Model) for hydrologic analysis under the SWMM Performance Approach; and

3. uniform monitoring and maintenance requirements for stormwater management facilities.

Timeline

The companion document shall be created and implemented within five years.

BES | Condition 2

BES shall conduct an integrated stormwater management assessment and develop a unified stormwater system plan for the city. The assessment shall include watershed health goals (quantitative and measurable, where possible) for hydrology, surface and groundwater water quality, habitat, flooding, erosion and routes of conveyance. Include an evaluation comparing quality and quantity of stormwater management against the watershed health targets established in the Watershed Health Index and the bureau's Levels of Service.

The plan shall link to a prioritized list of stormwater projects *(see Cross-bureau Condition 1).*

BES shall include, as a separate component of the larger, system-wide assessment, an additional evaluation of BES-owned properties. The evaluation should specifically consider retrofit opportunities. For BES-owned properties, the assessment shall establish a goal of on-site stormwater treatment for all events equal to 95% of the average annual runoff.

BES shall identify and prioritize highest risk areas, including retrofit needs. Once prioritized, projects identified for immediate design and construction will include a review of stormwater treatment alternatives and options including, but not limited to:

- removal of excess impervious parking lot area and replacement with pervious landscaping (e.g., natural plantings, rain gardens, bio-retention cells);
- pervious pavement—asphalt, concrete and/or open graded pavers—in locations that should be paved and do not carry heavy vehicle traffic (e.g., walkways and other areas with relatively high levels of foot traffic or customer parking areas such as the existing impervious parking lot) and the use of which will not contribute to or exacerbate urban heat island effects;
- rainwater harvesting, with uses in irrigation, toilet flushing, etc.;
- use of green roofs or rooftop gardens, green walls, bioswales or infiltration swales, and rain gardens;
- land acquisition and restoration to create natural infrastructure facilities; and
- additional opportunities to slow runoff with on-site dispersion and infiltration.

BES Condition 2, continued

Timeline
The plan shall be completed within three years.

BES | Condition 3

BES shall document how it ensures long-term performance of stormwater facilities by establishing Levels of Service for green streets. This includes identifying maintenance areas (by amount and type) and plant cover (by frequency and acceptable amounts). BES shall share this documented process with the other bureaus—PBOT, PP&R, PWB, OMF, PF&R and other bureaus, as applicable—with the goal of it becoming an element in their respective long-term performance programs for stormwater treatment facility monitoring and maintenance.

Timeline
The document shall be completed and distributed within two years.

BES | Condition 4

BES shall develop a comprehensive, consistent project-monitoring program for stream habitat restoration projects. The program shall evaluate the effectiveness of each project in meeting its own objectives and, more generally, improvements in environmental conditions such as enhanced water quality, ecological functions, habitats, plant communities and native species. The project-monitoring program shall include a list of questions the monitoring answers and, specifically, test specific design elements, such as large wood installation, stream geomorphology and plantings.

Timeline
The project-monitoring program shall be completed and implemented within three years.

BES | Condition 5

BES shall commission an independent evaluation of recently completed restoration projects by a team of outside experts in restoration ecology and related fields. This is not intended to serve as a substitute for quantitative assessment or a monitoring program, but as an opportunity to (1) derive benefit from external review and expert opinions on the large number and wide range of projects already completed, (2) gain insight through which future project designs may be informed, and (3) develop recommendations for maintenance and monitoring of specific projects. The intent of this initial review is to assist BES in developing a useful long-term monitoring program for habitat restoration sites (see BES Condition 4 above). The evaluation shall include, but is not limited to, the following design elements—large wood installation, stream geomorphology and plantings.

Timeline

The commissioned independent review shall be completed and implemented within three years.

BES | Condition 6

BES shall identify strategies and verification measures to help the Bureau of Development Services (BDS) ensure adherence to permitting requirements regarding control of erosion, sediment and construction materials and activities at all construction sites city-wide; encourage BDS to implement new fast-track public reporting tools including adding erosion reporting to Portland's public reporting Smartphone app.

Timeline

A written summary of measures shall be submitted to Salmon-Safe within one year.

BES | Condition 7

BES shall initiate an evaluation of "big picture" restoration concepts within the City of Portland. The evaluation shall include the Columbia River floodplain at Heron Golf Course, Tryon Creek headwaters and others. BES shall consider initiating an advisory committee review of restoration opportunities.

Timeline

The list of concepts, including brief concept descriptions, shall be completed, submitted for Salmon-Safe review and approval and implemented within two years.

BES | Condition 8

Crystal Springs Creek is unique in the City of Portland and perhaps the western United States for its outstanding potential for supporting salmon runs restoration in a highly urbanized environment. This is primarily due to its largely spring-fed source streams that help support high water quality and its cold-water temperatures suitable for salmonids. Long-term restoration efforts in the region would be remiss without a strong fish use and water-quality monitoring component focusing on the Crystal Springs Creek system.

BES shall facilitate or undertake a program to investigate and monitor salmonid use and watershed water quality in the Crystal Springs Creek system for the purpose of (1) informing ongoing and future restoration efforts, (2) serving as a baseline for long-term monitoring, and (3) evaluating the success of restoration efforts in this high priority system. Specifically, the assessment of fish use shall investigate actual salmonid use of the Crystal Springs Creek system, including use of habitat by juvenile Coho for summer and winter rearing.

The assessment shall also consider existing and potential salmonid use in the contexts of summer water temperatures and dissolved oxygen; occurrence of predatory fish; habitat structure and existing fish barrier issues (and potential areas for improvement). This type of fish and water-quality assessment/monitoring program shall be expanded, as and where feasible, to other high-priority stream systems and restoration projects. Fish survey methods may include minnow traps, electrofishing and/or installing seasonal weir traps to count migrating smolts.

Timeline

The salmonid use and watershed water-quality assessment shall be completed within three years.

BES | Recommendations

The Science Team identified seven additional opportunities for BES to improve landscape management practices. They are not mandatory, but recommended.

1. The Science Team recommends BES work with the Bureau of Development Services (BDS) during the next scheduled update of the City of Portland's Erosion Control Manual in order to incorporate Salmon-Safe's feedback in the Salmon-Safe Assessment, Phase 1—Gap Analysis, issued January 20, 2015. The Erosion Control Manual is, in general, consistent with Salmon-Safe's construction erosion standards, except where noted in the gap analysis.

2. The team recommends BES maintain and expand its Early Detection and Rapid Response Invasive Species Management Program.

3. The team recommends BES continue its effort to increase coordination among city bureaus—with bureaus working together to overlay and combine individual plans into a more integrated strategy (e.g., integrating systems plans from multiple bureaus).

4. The team suggests BES consider prioritizing stormwater treatment in areas with the greatest potential impact on water quality, such as high-use transportation corridors and roadways with particularly high usage rates (e.g., the I-5 corridor and arterials).

5. The team suggests BES shift priorities to allow increased funding for green infrastructure and habitat restoration projects which restore ecological function; where the total benefits may be greater than for single-focus stormwater management projects (e.g., a restoration project that may significantly benefit habitat but does not rank highly in the areas of health and safety).

6. The team suggests BES consider conducting an independent review of the watershed scoring process and the interpretation of scoring results.

7. The team recommends BES advocate for further policy tools promoting increased setbacks along the Willamette River and its tributaries.

8. The team recommends BES consider the following general recommendations as it designs future stream restoration projects:

    - **LARGE WOOD INSTALLATION**—Increase the diversity of log positions (bed logs, bridge logs, partially buried logs) to diversify stream structure, natural appearance and function at a variety of flows. In addition, increase the size range of installed wood. Finally, where the ends of logs are exposed

in the stream, floodplain or where installed as snags, require the ends be broken by the excavator rather than cut for aesthetic reasons.

- **STREAM GEOMORPHOLOGY**—Underestimating the appropriate level of sinuosity is a common shortcoming in the design of many stream channel projects in the Pacific Northwest. Increased sinuosity is highly possible in spring fed systems like Crystal Springs Creek and other similar systems. Constructing channels with a greater variety of channel widths and morphology is feasible in many cases. Where possible, err toward decreasing channel depth and width while relying more heavily on floodplain connectivity when constructing stream channels.

- **PLANTING**—To re-establish shaded, forested conditions and to reduce invasive weed issues, increase the density of conifer plantings in areas such as the Foster Floodplain. Also, consider increased reliance on plantings in the 1-3 gallon pot size, rather than bare root plantings.

- **MONITORING**—Beyond photo-points, establish simple, formal test trials to compare various planting and weed control methods at restoration sites. This will inform the development of future planting plans and maintenance methods.

BUREAU-SPECIFIC CONDITIONS AND RECOMMENDATIONS

PORTLAND BUREAU OF TRANSPORTATION

Certification Recommendation: The Science Team recommends PBOT be certified Salmon-Safe subject to the cross-bureau conditions stated previously and the following three bureau-specific conditions.

PBOT | Condition 1

Develop a bureau-specific IPM addendum to the Portland Parks IPM plan and Salmon-Safe certification standards. This plan may be a stand-alone document or a Chapter addition to the Portland Parks IPM plan. The plan shall identify areas where bureau properties deviate from PP&R with respect to management priorities and shall:

- include an approved pesticide list—reviewed annually and updated as needed— as well as an annual pesticide use summary (i.e., Pesticide Application Records). Use of a pesticide not appearing on the approved pesticide list requires justification, similar to Salmon Safe requirements;
- prohibit volunteers from applying pesticides to bureau-managed property (including PBOT's "Adopt-a-Landscape" program);
- provide guidance for further herbicide use reduction, as feasible, through such methods as chip mulching around trees; identify low- or no-herbicide-use zones and properties; and establish low-maintenance landscaping;
- designate certain low-input bureau sites "pesticide-free" accompanied by public education programs (e.g., signage) about the benefits of transitioning sites to pesticide-free landscaping; and
- address methods for handling "on-call contracts".

Timeline
The IPM plan addendum shall be implemented within one year.

PBOT | Condition 2

The Science Team recognizes an entirely new yard may replace the Operations Facility in the future. In the short term (and at least), the existing yard needs retrofitting to address significant deficiencies in stormwater treatment. The needed improvements involve or include—

1. The "Building H" cleaning area at the Albina Storage Yard itself needs regular cleaning and containment under cover (no exposure to runoff). Extending the walls and curbs of the existing building may be an effective short-term fix;

2. The "hog pond", exterior truck wash and bed wash stations, as well as the street sweeping storage area needs retrofitting in order to contain and treat sediment on site. Constructing infiltration swales or rain gardens in adjacent unoccupied areas are possible retrofit solutions;

3. Material storage areas for soil and debris need to be retrofitted so sediment may be contained on site by such means as material covers, onsite infiltration treatment and regular sweeping of the Yard's streets;

4. The Yard needs a program that regularly monitors oil leaks caused by parked trucks. This program should include promptly placing oil pans beneath all leaking vehicles;

5. An evaluation of employee parking lot stormwater treatment options using perhaps an infiltration swale (or some other device) along part of the curved access road below the lot; and

6. Completion of a full assessment of on-site catch basins and the development of a plan to immediately address severely clogged, non-functional catch basins, such as those located near the aggregate piles in the Albina Yard.

Timeline

A plan and timeline for these retrofits and improvements shall be completed within one year. Implementation guidelines shall be completed within two years. Measures to address immediate water quality concerns (including #1, #3, #4 above) shall be implemented within two years. Retrofitting not completed within this timeframe must be incorporated into a new master plan for site redevelopment, which Salmon-Safe will review when completed.

PBOT | Condition 3

Develop and implement a comprehensive stormwater management plan for the entire Operations Facility, as part of a new site master plan. All stormwater treatment options shall be built to meet or exceed the Stormwater Treatment Standards included in Appendix B of the Salmon-Safe certification standards.

Timeline

The stormwater management plan shall be completed and implemented as part of the new site master plan within five years. The draft storm-water and master plan shall be submitted to Salmon-Safe for review immediately upon completion.

PBOT | Recommendations

The Science Team identified two additional opportunities for PBOT to improve its landscape management practices. They are not mandatory, but recommended.

1. Expand public outreach efforts to inform and engage the public in keeping their neighborhood streets clean, thereby avoiding stormwater contamination and reducing stormwater pollution in streams.

2. Work with DEQ to obtain a Beneficial Use Determination that permits, to the greatest extent possible, the sorting and composting of street-swept residue and other material.

BUREAU-SPECIFIC CONDITIONS AND RECOMMENDATIONS

PORTLAND WATER BUREAU

Certification Recommendation: The Science Team recommends PWB be certified Salmon-Safe subject to the previously stated cross-bureau conditions plus the following seven bureau-specific conditions.

PWB | Condition 1

Develop a bureau-specific IPM addendum to the Portland Parks IPM plan and Salmon-Safe certification standards. This plan may be a stand-alone document or a Chapter addition to the Portland Parks IPM plan. This plan shall identify areas where bureau properties deviate from PP&R with respect to management priorities and shall:

- include an approved pesticide list—reviewed annually and updated as needed— as well as an annual pesticide use summary (i.e. Pesticide Application Records). Use of a pesticide not appearing on the approved pesticide list requires justification, similar to Salmon Safe requirements;
- prohibit volunteers from applying pesticides to bureau-managed property (including PBOT's "Adopt-a-Landscape" program);
- provide guidance for further herbicide use reduction, as feasible, through such methods as chip mulching around trees; identify low- or no-herbicide-use zones and properties; and establish low-maintenance landscaping;
- revise the current Pesticide Use Policy as outlined in Appendix 1.[5]
- address methods for handling "on-call contracts".

Timeline
The IPM plan addendum shall be implemented within one year.

---

[5] PWB Pesticide Use Policy – Suggested Revisions *(footnote continues on pp. 39-40)*

(1) There is inconsistency in the zone names in the policy and attached maps. For example, on the Mount Tabor map on page 4, the 'Pesticide Use Restriction Zone' is labeled a 'No Pesticide Zone'. It appears there are four zone designations, 'No Pesticide Zone', 'Pesticide Use Restriction Zone', 'Special Precaution Zone' and 'Pesticide Use Notification Zone'.

Suggested change: Define the zone designations and pesticide-related requirements only once in the policy, before the Category Descriptions appearing on page 4. Under Pesticide-related requirements for the 'Special Precaution Zone', include the statement "Only licensed pesticide applicators are authorized to make these determinations." This statement did not appear in the Category 2 zone definition on page 4.

PWB | Condition 2

PWB shall develop and implement a stormwater management and water quality plan for the Kerby Lot section of the Interstate Facility as part of a redevelopment plan for the entire Interstate Facility. Assess the Kerby Lot in the interim to determine whether any additional stormwater treatment measures need immediate implementation. All stormwater treatment and water quality improvements shall be built to meet or exceed the Stormwater Treatment Standards included in Appendix F of the Salmon-Safe Urban Certification Standards.

Timeline

The interim plan for stormwater treatment at the Kerby Lot shall be completed and implemented within one year. The permanent stormwater plan, as part of the redevelopment plan for the Interstate Facility, shall be completed and implemented within five years.

---

(2) The PWB Pesticide Policy states "The Water Bureau has been following the Parks program's principles on an informal basis for several years. Some portions of Park's IPM program are not applicable to Water Bureau Grounds Maintenance operations. The Water Bureau has a narrower range of applications (no playing fields, for example) and uses fewer pesticide products. It is the intent of the Water Bureau to formally adopt the applicable and appropriate policies and procedures of the Portland Parks and Recreation Integrated Pest Management Program (latest revision) with the modifications as described in this policy."

The IPM definition, zone definitions, site categories, pesticide-related requirements, the property matrix and the maps included in the pesticide policy outline the PWB's IPM program and are consistent with the Portland Parks IPM Program and Salmon-Safe standards. Policy 17 on page 46 of the Portland Parks IPM Program document provides guidance on coordinated pest management between Parks and the PWB. However, the PWB does not have an approved pesticide list specific to their sites.

Suggested change: Revise the PWB Pesticide Policy to include or refer to an approved, annually updated pesticide list. Use of a pesticide not on the approved pesticide list would require justification, similar to Salmon-Safe requirements. Add an annual pesticide use summary to the policy.

(3) The property matrix spreadsheet identifies the site category and maintenance level for each PWB property and provides guidance to grounds maintenance employees on appropriate IPM protocols. However, there is inconsistency between the PWB pesticide policy and property matrix. An example on Page 7, the policy states "...and require a medium level of care and frequency of maintenance. Carolina Pump Station and the Vermont Hills Tanks are examples of this level of maintenance." The property matrix has these PWB properties coded as 'highly managed'.

Suggested change: Revise the policy and/or matrix with appropriate and consistent maintenance levels.

(4) The PWB utilizes citizen volunteers to assist with property maintenance. There are no allowable maintenance procedures for volunteers specified in the PWB pesticide policy.

Suggested change: Revise the policy to include IPM procedures for volunteers performing maintenance activities on PWB property. Stipulate a 'no pesticide use' policy for volunteers and require that volunteers sign an MOU.

PWB | Condition 3

PWB shall complete the following stormwater management projects at the Interstate Facility, including the Kerby Lot—

1. Evaluation of the bioswale located along North Larrabee Avenue to ensure its design exemplifies current best management practices for stormwater treatment and its performance is consistent with Salmon-Safe principles.

2. Installation of an oil-water separator, or better treatment capacity, for the lower yard vehicle wash area, which currently drains directly into the sewer system.

3. Temporary mitigation or immediate discontinued use of the lower yard vehicle wash area until such time loose, temporarily stored fill material located directly adjacent to the wash area can be relocated or permanently mitigated. Current vehicle washing procedures carry fine particulates away, allowing them to drain directly into the sewer system.

Timeline

These protective measures shall be completed within two years.

---

(5) The PWB is required to comply with Bureau of Development Services requirements at mitigation sites, such as Powell and Kelly Buttes, for invasive species removal, site restoration and monitoring. The permit documents contain construction and mitigation plans, requirements and maps. The methods described for invasive species removal, restoration and maintenance are consistent with Salmon-Safe standards, however, the IPM methods for mitigation sites are not included in the PWB pesticide policy.

Suggested change: Revise the pesticide policy to include IPM protocols for mitigation sites.

PWB | Condition 4

PWB shall prepare and implement a protocol for visually inspecting and maintaining stormwater systems under PWB management, such as bio-swales. Monitoring includes ensuring systems are designed to function correctly and making corrections as and when feasible. Maintenance involves regular cleaning of blocked inlets or basins to allow the storm-water system to function as designed.

Timeline
The protocol shall be prepared and implemented within two years.

PWB | Condition 5

PWB shall identify low-maintenance sites it will transition to pesticide-free. To this end, we recommend PWB develop a formal plan to further reduce—and eventually phase out—use of glyphosate (or any other herbicide) for weed control, replacing its use by employing field labor to perform weeding by hand, increasing mulch in beds and around trees, changing some planting beds to lower their maintenance needs, and increasing tolerance for weeds in specified zones or types of properties.

Timeline
The protocol shall be prepared and implemented within two years.

PWB | Condition 6

PWB shall develop a written protocol for using polishing agents on the Benson bubblers that specifies care be taken they not be released into the environment.

Timeline
The protocol shall be completed and distributed through a personnel-training program within one year.

PWB | Condition 7

PWB shall develop a maintenance plan for above-ground water features, such as the reservoirs at Mount Tabor and Washington Park, that ensures their cleaning and draining has negligible impact on water quality; provides annual water use monitoring at each feature; and minimizes water use, in accord with City Council requirements for managing water features.

Timeline

The maintenance plan shall be completed and implemented within two years.

PWB | Recommendations

The Science Team identified two additional opportunities for PWB to improve landscape management practices. They are not mandatory, but recommended.

1. The Science Team recommends PWB meet with the Portland Bureau of Development Services (BDS) on a regular basis (e.g., every two years) to better tailor future land use requirements to projects involving mitigation and restoration and evaluate any potential (unintended) consequences of enforcement.

2. PWB shall annually publish public reports on potable water use by city water features (retired reservoirs) at Mt. Tabor and Washington Park. The reports shall inform the public and city leaders on the potential water conservation gains associated with the removal of these features.

BUREAU-SPECIFIC CONDITIONS AND RECOMMENDATIONS

OFFICE OF MANAGEMENT AND FINANCE

Certification Recommendation: The Science Team recommends OMF be certified Salmon-Safe subject to the previously stated cross-bureau conditions plus the following seven bureau-specific conditions.

CITYFLEET SERVICES

OMF | Condition 1

CityFleet Services shall improve and/or coordinate training that is more frequent for city drivers on vehicle leak detection and prevention, ensuring pre-trip and post-trip inspections occur and rapid repairs are made when they are needed.

Timeline
CityFleet shall establish and implement an improved training program within one year.

OMF | Condition 2

CityFleet Services shall evaluate the feasibility of transitioning to "Bull Run" water quality protection practices across the entire fleet. This shall include a system-wide shift to using vegetable-based oil, food-grade oil or other environmentally comparable oil products, where available, and biodegradable hydraulic fluids.

Timeline
CityFleet shall complete the feasibility study within one year.

OMF | Condition 3

CityFleet Services shall carry out the proposed plan to upgrade all fueling stations to meet the design standards associated with the Main Shop fueling station.

Timeline
CityFleet shall complete the fueling station upgrades within two years.

FACILITIES SERVICES

OMF | Condition 4

Facilities Services shall add Integrated Pest Management (IPM) specifications for landscape, turf and other vegetation management to new contracts and contracts with more than two years remaining that require contractors to follow IPM management practices when managing weeds or other pests.

The specifications shall include:

- a list of pests to be managed,
- chemical and non-chemical management strategies
- identification of buffer areas for minimizing the aquatic impact of pesticides

Note: *The IPM, Nutrient and Chemical Management Plan Guidance (Appendix D) within Salmon-Safe's urban certification standards and Portland Parks & Recreation's IPM Plan may be helpful resources in satisfying this IPM specification requirement.*

Timeline
Contracts shall be revised to incorporate the above IPM requirements, then submitted to Salmon-Safe for review and approval within one year.

PROCUREMENT SERVICES

OMF | Condition 5

Procurement Services shall check for inclusion of Salmon-Safe compliant IPM requirements in all solicitations for landscape, turf and other vegetation management services. Procurement Services will refer bureau staff requesting these services to the applicable Salmon-Safe IPM guidelines, model specifications and other related resources.

Note: *The IPM, Nutrient and Chemical Management Plan Guidance (Appendix D) within Salmon-Safe's urban certification standards and Portland Parks & Recreation's IPM Plan may be helpful resources in satisfying this IPM specification requirement.*

Timeline

Begin checking for Salmon-Safe compliant IPM requirements upon formalization of certification.

OMF | Condition 6

Procurement Services shall work with the cross-bureau task force updating the Standard Construction Specifications for consistency with Salmon-Safe sediment runoff guidelines in city contracting for construction projects, as appropriate.

Timeline

Zero sediment runoff standards shall be included in the Standard Construction Specifications committee deliberations during the 2017 update.

OMF | Condition 7

Procurement Services shall incorporate content specific to Salmon-Safe certification and accreditation standards into internal and external training materials on the City of Portland's sustainability policies. This content shall include topics such as green building and landscape management. Training should include, at minimum, an overview of Salmon-Safe in sessions related to green building, including LEED trainings or training about other, similar certifications.

Timeline

Incorporate content on Salmon-Safe certification and accreditation standards into future Procurement Services training related to the City of Portland's sustainability policies upon formalization of certification.

OMF | Recommendations

- Consider "Healthy Watershed" purchasing initiative a follow-up to Procurement Services "Toxics Reduction" and "Health Product" initiatives.
- Consider strategies to elevate environmental sustainability to "must have" status across all city purchasing activities, ensuring higher level, more consistent environmental performance by city bureaus.

BUREAU-SPECIFIC CONDITIONS AND RECOMMENDATIONS

PORTLAND FIRE AND RESCUE

Certification Recommendation: The Science Team recommends PF&R be certified Salmon-Safe subject to the previously stated cross-bureau conditions plus the three following bureau-specific pre-conditions and conditions.

PF&R | Pre-Condition 1

PF&R shall not allow use of pesticides with ingredients listed on Salmon-Safe's "high risk" pesticide list per Standard G.6.1.1 unless justified in a written variance request, approved by Salmon-Safe, or as part of an integrated pest management plan approved by Salmon-Safe. Establishing justified use of a "high risk" pesticide involves demonstrating (1) a clear need for use of the pesticide exists, (2) that no safer alternatives exist, and (3) that the application methods—timing, location, and amount used—represent negligible risk to water quality and fish habitat.

Timeline
Compliance is a pre-condition of certification, then subject to annual verification by Salmon-Safe.

PF&R | Condition 1

With the assistance of a qualified IPM expert, PF&R shall prepare landscape management policies applicable to all PF&R Fire Stations to minimize pesticide and fertilizer use. The policy shall only permit the purchase and application of pesticides by licensed pesticide applicators, with PP&R or contractors, and only in the context of an IPM approach to controlling weeds and pests. The plan shall designate at least five fire stations "pesticide free", if feasible, depending on their specific landscaping requirements.

Timeline
The IPM plan shall be completed and implemented within two years.

PF&R | Condition 2

Any new Fire Bureau station or other facility, or any such property undergoing major modification (i.e., renovation, expansion, etc.) within the 5-year term of certification shall apply Salmon-Safe's infrastructure stormwater guidelines to assess design opportunities to use green stormwater practices to achieve the major goal stated in those guidelines of avoiding, or minimizing to the maximum possible extent, storm runoff discharge to a water body, a storm sewer leading to a water body, or a combined sewer. The results of the assessment shall be reported to Salmon-Safe as completed, with justification if the major goal cannot be achieved and a plan and schedule to implement the results to approach goal achievement as closely as possible.

Any Fire Bureau station or other facility not undergoing major modification within the 5-year term of certification shall apply Salmon-Safe's infrastructure stormwater guidelines to assess retrofit opportunities to manage runoff from buildings, parking areas, and other surfaces with green stormwater practices to achieve the major goal stated in those guidelines of avoiding or minimizing to the maximum possible extent storm runoff discharge to a water body, a storm sewer leading to a water body, or a combined sewer. The results of the assessment shall be reported to Salmon-Safe by the end of Year 4 of certification, with an account of the extent to which the major goal can be achieved and a plan and schedule to implement the results to approach goal achievement as closely as possible.

For those cases where the assessment of a station or other facility does not identify widespread opportunities for green stormwater practices, the Fire Bureau shall assess properties where building roofs are connected to a storm or sanitary sewer for opportunities to disconnect to disperse that roof runoff on pervious ground around the station. The results of the assessment shall be reported to Salmon-Safe by the end of Year 4 of certification, with a plan and schedule to implement the results.

Timeline

The stormwater retrofit opportunities assessment, along with a plan and schedule to implement the results shall be completed and submitted to Salmon-Safe within four years.

PF&R | *Recommendations*

- Consider implementing additional environmental education initiatives or an incentive program to ensure broad compliance with PF&R policy of washing equipment indoors.

CONCLUSIONS

As the first city in the world (we know of) to undertake a comprehensive third-party assessment of the impact its operations have on watersheds, we congratulate the City of Portland for having the environmental vision and commitment to undertake Salmon-Safe certification. Salmon-Safe and the Science Team commend all five city bureaus for their commitment to Salmon-Safe landscape management.

We appreciate the commitment each bureau is making toward implementing the conditions listed in this report and to responsibly managing city properties with the goal of continuing to improve water quality and fish and wildlife habitat over the course of the next five years.

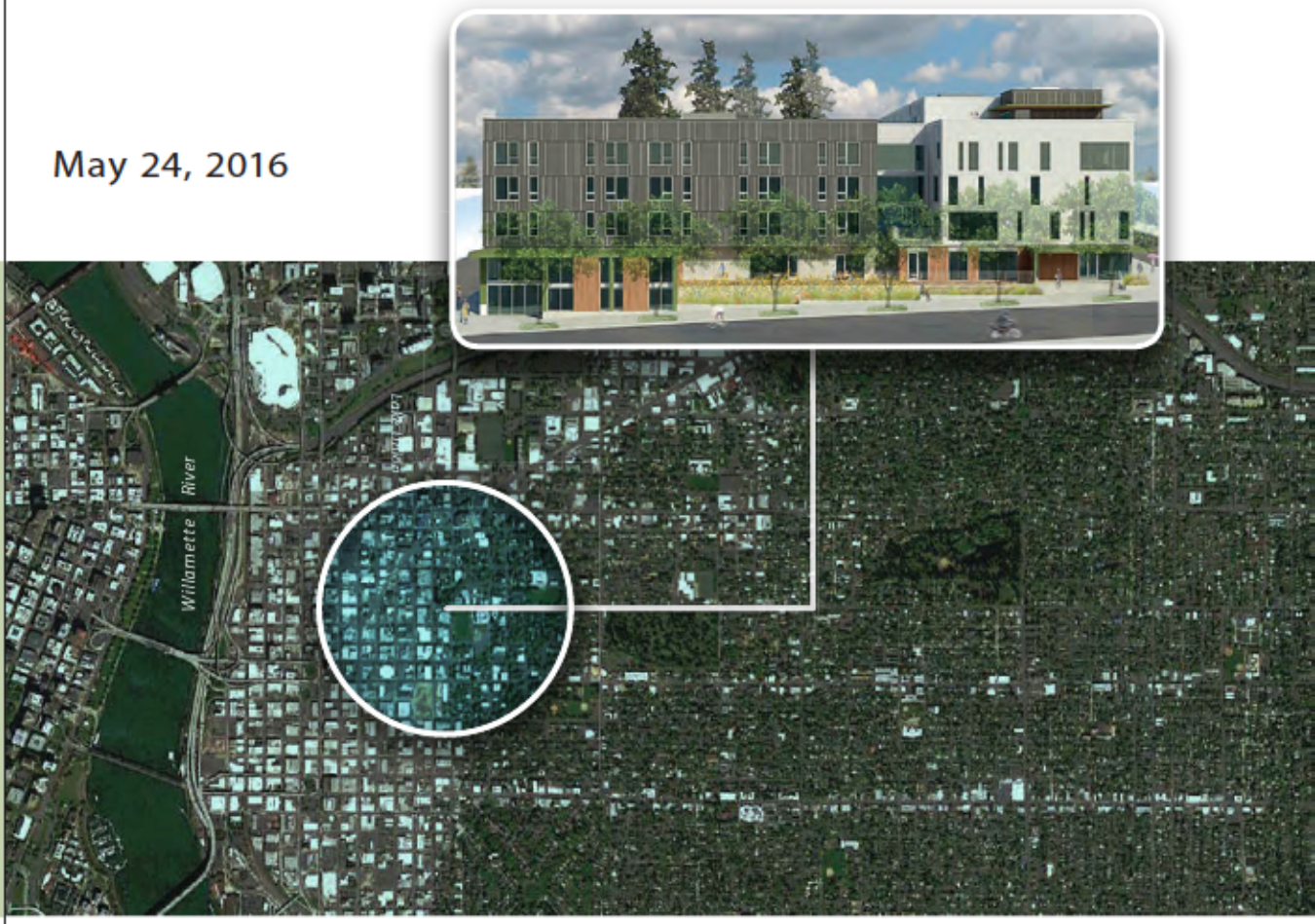
APPENDIX A

Home Forward / St. Francis Park Apartments Certification Report

SALMON-SAFE INC.

REPORT OF THE EVALUATION TEAM REGARDING SALMON-SAFE CERTIFICATION OF THE ST. FRANCIS PARK APARTMENTS PORTLAND, OREGON

May 24, 2016



Salmon-Safe Inc.
317 SW Alder, Suite 900
Portland, Oregon 97204
503.232.3750
info@salmonsafe.org

www.salmonsafe.org

RECOMMENDATION SUMMARY

The Salmon-Safe evaluation team is pleased to recommend the St. Francis Park Apartments development, located on the current site of St. Francis Park along SE Stark Street, between SE 11th and 12th Avenues in Portland, Oregon, be certified Salmon-Safe, subject to the conditions detailed in this report. Through its extensive use of flow-through planters and by minimizing the amount of impervious surfaces on site, this project exemplifies Salmon-Safe's philosophy of utilizing low-impact practices that go beyond environmental regulations.

Background

In 2000, Salmon-Safe expanded beyond agricultural land certification to apply the Salmon-Safe assessment and certification process to land and water management within the urban realm. This initiative significantly advanced restoration efforts in urbanized watersheds by developing urban aquatic protection guidelines and a citizen education campaign throughout the Pacific Northwest.

Working closely with independent scientists and technical experts, Salmon-Safe developed a comprehensive certification framework oriented towards reducing the impact of urban land and water management practices on water quality and fish habitat. Since 2005, more than 35 urban sites have transitioned to Salmon-Safe certification in Oregon and Washington, including Nike World Headquarters, Toyota at the Port of Portland, University of Washington Seattle and Bothell Campuses, Oregon Convention Center and other institutional, corporate and residential development sites.

In 2014, Salmon-Safe developed certification standards for highly urbanized sites which revised and updated the Campus Standards completed in 2005. These Urban Certification Standards (https://www.salmonsafe.org/getcertified/development) are applicable across a variety of urban development landscapes ranging from high-density urban infill to corporate campuses. While the standards are designed as a stand-alone program, they can also complement other leading certification standards such as LEED, Sustainable Sites, Envision and Earth Advantage, providing a water quality and habitat-focused bioregional overlay.

An interdisciplinary team of scientists with expertise in innovative stormwater treatment, landscape architecture, and integrated pest management (IPM) conducts the certification evaluation for Salmon-Safe. The evaluation team conducts a comprehensive assessment of the overall management policies and planning related to habitat and water quality protection across the urban development site. As part of the Salmon-Safe assessment, the evaluation team also conducts a field review of the site management practices and stormwater infrastructure to evaluate for consistency with Salmon-Safe's site-specific standards for enhancing urban ecological function.

OVERVIEW OF THE PROJECT

Artist's rendering of the proposed development at St. Francis Park Apartments.

St. Francis Park was a private urban park owned and managed by the adjacent St. Francis of Assisi Catholic Parish. After careful review of resources, the parish concluded the park had been under-utilized and would better serve the community by providing affordable rental housing. Catholic Charities and Home Forward purchased the site in 2014 and created the design for St. Francis Park Apartments. The development will include 106 affordable apartments, 86 of which will be reserved for people earning 60% median family income (MFI) or lower and 19 units will be deeply subsidized for people earning 30% MFI and lower.

In addition to the apartments (77 studios, 28 one-bedroom and 1 two-bedroom), a property management office will be located at one corner of the building and a large community room providing meeting space on the other. An interior courtyard will provide recreational and community garden space for residents. The previously vacated street, SE Oak (located on the northern margin of the site), will remain open to the public (pedestrians and bikes) and will include a seating plaza, stormwater planters, green street landscape, permeable pavers and an artistic labyrinth feature. An existing grove of mature trees will be maintained as a natural area providing users a reflection of the former park's history.

CERTIFICATION EVALUATION OF ST. FRANCIS PARK APARTMENTS

Assessment Date

The field inspection and evaluation of the St. Francis Park Apartments took place on April 25, 2016.

Evaluation Team

The interdisciplinary team conducting the assessment on behalf of Salmon-Safe was composed of Tad Deshler, Dr. Richard Horner, Peter Bahls and Carrie Foss.

Tad Deshler: *Environmental Scientist, Coho Environmental.* Mr. Deshler's practice focuses on environmental assessment and impact analysis, with particular focus on the interaction between built and natural environments. Much of his project work has centered around aquatic sites or at the interface between aquatic sites and the adjacent upland environments where understanding the transport mechanisms connecting upland and in-water environments is paramount. Tad earned a BA degree in Aquatic Biology from the University of California at Santa Barbara and an MS degree in Animal Science from the University of California at Davis. Tad also has specialized expertise in sediment assessment and management, risk assessment and chemical transport and fate studies.

Dr. Richard Horner: *Stormwater Management Expert, University of Washington.* Dr. Horner received BS and MS degrees in Engineering from the University of Pennsylvania and, in 1978, a PhD in Civil and Environmental Engineering from the University of Washington. Following 13 years of college teaching and professional practice, he joined the University of Washington research faculty in 1981, where he held appointments in Civil and Environmental Engineering, Landscape Architecture and the Center for Urban Horticulture. His principal research interests involve analyzing the effects of human activities, especially in urban areas, on freshwater ecosystems and solutions that protect these resources. Dr. Horner founded the Center for Urban Water Resources Management in 1990 to advance applied research and education in these areas. He is now emeritus research associate professor and splits his time between private practice and continuing university research.

Peter Bahls: *Aquatic Ecologist and Salmon Biologist, Northwest Watershed Institute.* Mr. Bahls received an MS in Fisheries Science and Aquatic Ecology from Oregon State University and a BS in Environmental Studies-Biology from Middlebury College, Vermont. He worked for six years as the salmon habitat biologist for the Port Gamble S'Klallam Tribe followed by three years as the principal fish biologist for David Evans and Associates. In 2001, he founded Northwest Watershed Institute, a non-profit organization that provides scientific and technical assistance in watershed assessment and restoration.

Carrie Foss: *Urban IPM Director, Washington State University (WSU) Puyallup.* Ms. Foss manages the WSU IPM Certification Program and the Pesticide Safety Education Program in Western Washington. Landscape maintenance personnel are trained in plant problem diagnosis, integrated pest management, personal safety and environmental protection through lectures and workshops. Carrie earned a BS degree in Botany from

the University of Washington and an MS degree in Plant Pathology from the University of Hawaii. Her background includes plant problem diagnosis, research on beneficial microorganisms and management strategies for turf and ornamental diseases.

Trevor Thompson, Assistant Superintendent with Walsh Construction, discusses construction-phase pollution prevention with the Salmon-Safe science team and staff.

Assessment Process

The St. Francis Park Assessment project team from Home Forward, MWA Architects, KPFF and Walsh Construction assembled documentation that was reviewed by the Salmon-Safe evaluation team members prior to, during, and after the field inspection phase of the assessment process. The evaluation team met with project team members inside the construction office at the site, toured the project site, and had an opportunity to discuss specific site attributes. At the end of the day, the evaluation team members, supported by Salmon-Safe staff, met to review the certification criteria against notes taken during the process.

On May 24, 2016, the team and Salmon-Safe staff finalized conditions for certification and reached a final, unanimous decision on certification.

GENERAL OBSERVATIONS

In the judgment of the Salmon-Safe evaluation team, the project designed by the Home Forward team incorporates many elements in accordance with Salmon-Safe standards, particularly related to stormwater management and maintenance/creation of urban habitat.

A view of construction in progress (looking east).

Approximately 62% of the development footprint, not counting the proposed future natural area to be constructed in the currently vacated Oak Street, will be impervious surfaces—primarily roofs. Stormwater from 98% of these impervious surfaces will drain initially to flow-through planters, flow-through basins or landscaped areas that act like vegetated filter strips. Any stormwater that drains through these features will flow to an underground detention gallery before ultimately being discharged to the city's combined sewer system, where it typically would receive additional treatment. Stormwater reaching this system will have received treatment through the stormwater control features described above, likely making it cleaner than stormwater from the city streets surrounding the development.

The 2% of site impervious features that don't drain to the control features described above will drain to adjacent rights-of-way. This project has compensated for this minor additional contribution to the rights-of-way by establishing green street planter swales

at each corner of the development. Code does not require the installation of these features, but stormwater quality may be slightly improved and stormwater quantity may be slightly reduced as a consequence.

With respect to construction-phase stormwater practices, the evaluation team noted the potential for construction runoff during the April 25th site visit, particularly along the site's western perimeter. In addition to discussing concerns on site with a construction manager, Salmon Safe, on April 28th, forwarded Home Forward a memo outlining recommended practices (see Appendix A). An informal follow up visual inspection of the site by Salmon-Safe indicated compliance with Salmon-Safe management standards.

The Salmon-Safe science team getting a project overview with Patrick Rhea (Home Forward), Hunter Rains (Walsh Construction) and Ian Flood (MWA Architects).

The project utilizes a range of native and adapted species that provide drought-tolerant vegetation for the site area, including roof terrace, site landscaping and bioretention in street rights-of-way. The species diversity includes a range of habitat-friendly species including resources for pollinators endemic to this region. The irrigation system consists of a combination of drip zones and spray zones that use high-efficiency nozzles and an evapotranspiration-enabled controller, contributing to water efficiency and reduced potable water use.

To fully meet certification requirements and provide a tool to guide future operations and maintenance of the site, Home Forward needs to ensure that Salmon-Safe standards are embedded in construction-phase practices and in landscape maintenance contracts.

The evaluation team recognizes Home Forward's role in providing a high-quality residential space to fulfill the demonstrated need for public housing must be a primary objective for management of the site. However, the evaluation team took note of a

strong organizational motivation and enthusiasm for accomplishing this objective in an environmentally sustainable manner. The project's goal of seeking Earth Advantage Gold and Salmon-Safe certifications is a testament to this commitment to environmental sustainability. The evaluation team is enthusiastic about providing guidance to Home Forward to inform the construction of the St. Francis Park Apartments and its long-term maintenance.

RECOMMENDATIONS AND DISCUSSION

Certification Recommendation: The evaluation team recommends the St. Francis Park Apartments be certified Salmon-Safe, subject to two pre-conditions and three conditions detailed below. All conditions are subject to annual verification by Salmon-Safe. Timelines for accomplishing objectives are measured from the official date of this Salmon-Safe conditional certification.

Pre-Condition 1: *Ensure environmental regulatory compliance*

Home Forward shall provide a signed statement to Salmon-Safe stating that construction or operation of the site is not in violation of national, state or local environmental laws, or associated administrative rules or requirements as determined by a regulatory agency in an enforcement action, per General Standard A.1.

TIMELINE
Compliance is a pre-condition of certification, then subject to annual verification by Salmon-Safe.

Pre-Condition 2: *Ensure all further development meets Salmon-Safe design standards*

Home Forward shall provide Salmon-Safe a signed letter stating that, beyond the initial site development, any further development, construction or expansion of the St. Francis Park Apartments during the five-year certification cycle will be consistent with Salmon-Safe standards, per General Standard A.8, and model permanent and construction-phase stormwater standards.

TIMELINE
Compliance is a pre-condition of certification, then subject to annual verification by Salmon-Safe.

Condition 1: *Develop water use reduction strategy and plan*

Home Forward shall formally document the strategy for minimizing water use during construction and operation of the St. Francis Park Apartments. A report shall be prepared that describes the existing site water infrastructure inventory (Standard U.2.1) and evaluates the feasibility of various water use reduction strategies (Standard U.2.2), potentially including water recapture, improved irrigation efficiency, and low-flush toilets. Home Forward should consider developing a numeric water use goal so that water use reduction strategies can be measured against a baseline. One or more of these or other strategies should be implemented to the extent operationally feasible and as permissible by building codes and other regulations.

TIMELINE

A construction-phase water use plan shall be provided to Salmon-Safe and implemented within three months of certification. An operation-phase water use plan shall be provided to Salmon-Safe within one year of certification, then subject to annual verification by Salmon-Safe.

Condition 2: *Adhere to Salmon-Safe standards pertaining to construction practices*

During construction, the contractor shall adhere to Salmon-Safe standards pertaining to construction practices, specifically U.1.9 (avoid negative stormwater impacts), U.2.8 (no surface water withdrawals), U.3.4 (limit soil erosion), U.4.1 (identify high-risk areas where chemical use and storage should be avoided), U.4.2 (locations for temporary storage of chemicals are outside of high-risk areas), and U.4.8 (equipment and vehicle cleaning, fueling and maintenance plan is followed). Adherence to these pollution prevention practices should ensure measurable sediment or pollutants do not exit the site.

TIMELINE

Subject to field verification during construction.

Condition 3: *Incorporate Salmon-Safe landscape management practices in landscape management contract*

Home Forward shall ensure that the future landscape management contract explicitly includes Salmon-Safe landscape management practices. Specifically, the contract should require the development of an IPM plan for the site and include a prohibition against the use of any pesticides on the Salmon-Safe High Risk Pesticide List (see Appendix E of the Urban Certification Standards).

TIMELINE

The landscape management contract shall be submitted to Salmon-Safe for review within one year of certification.

Condition 4: *Provide education and training to community garden users*

Home Forward shall arrange for residents involved with gardening activities in the community garden space to receive training on Salmon-Safe best practices with regard to pest management and fertilizer application. Such training should include information on the impact of hazardous substances, such as fertilizers and herbicides, on water quality and aquatic life.

TIMELINE

The training should be conducted before the community garden beds are used by residents to grow edible produce. Training materials should be submitted to Salmon-Safe for review 30 days or more before training begins.

RECOMMENDATIONS

In addition to the conditions for certification listed above, Salmon-Safe offers the following continuing improvement recommendations, adoption of which are not mandatory to achieve certification, but are considered Salmon-Safe best practices:

- **Strive for pesticide-free landscape and garden maintenance**

  Given the relatively small size of the development, we recommend you establish a pesticide-free policy for landscape and garden maintenance. It should be feasible to control weeds using manual methods. Residents can be engaged in this activity, particularly in the community garden, and educated about its environmental benefits, thereby fostering principles of environmental stewardship.

- **Consider opportunities to enhance whole-site ecological function**

  including the parish and school campuses through creation and retention of connected habitat and landscape patches that provide for food, forage and refuge for key indicator species.

  Such strategies could include:

  a. creation of pollinator pathways of vegetation through the apartment and parish sites to attract bees, butterflies and other species of interest;
  b. promotion of the use of street tree species that provide biological diversity and consistent food, forage and refuge for urban species;
  c. extension of street planters and use of larger bulb-outs at corners to maximize street landscape coverage and diversity; incorporation with stormwater facilities to provide intermittent water, mud and nesting materials; and/or
  d. integration of large patches of green roof with specific habitat elements into designs, i.e., woody debris, gravel/cobble and other elements typically not found in urban settings.

CONCLUSIONS

Salmon-Safe and the evaluation team commend Home Forward and their project team for their commitment to implement the conditions listed in this report, and to manage the site to continue to improve the health of the urban Willamette River watershed over the next five years. We extend appreciation and congratulations to the Home Forward project team for their work in preparing for the certification assessment and assisting the evaluation team in its assessment.

APPENDIX A

Dan Kent (Salmon-Safe) Letter to Patrick Rhea (Home Forward)
April 28, 2016

April 28, 2016

317 SW Alder, Ste. 900
Portland, OR 97204
503.232.3750

Patrick Rhea, Senior Project Manager
Home Forward
135 SW Ash Street
Portland, Oregon 97204

Dear Patrick:

Thank you for inviting us to conduct the Salmon-Safe site assessment at the St. Francis Park Apartment site on April 25, 2016.

Based on our initial assessment, it appears that this site is on track to receive Salmon-Safe certification, subject to several conditions that will be outlined in a forthcoming certification report. One of those conditions will be to comply with Urban Standard U.3.4, which requires that construction practices limit soil erosion such that no visible soil or sediment exits the site or enters the public right-of-way. During our April 25 assessment we noted that this standard is not fully met in ongoing construction. These observations led us to send this letter in advance of the certification report, in the hopes that soil control practices can be improved as soon as possible in accordance with Standard U.3.4.

We noted the presence of straw wattles, a commonly used soil erosion control device, at the site's western perimeter along SE 11th Ave, but these devices were installed at ground level, flush with the adjacent sidewalk. Straw wattles installed in such a manner may in some cases permit some soil erosion underneath them, particularly if the underlying surface in uneven. We noted small patches of straw and soil surrounding the catch basin outside the site perimeter at the corner of SE 11th Ave and SE Stark St, which indicates that current erosion control practices are not entirely effective. One relatively simple remedy you might consider is to dig small trenches around the site perimeter such that the straw wattles can be recessed below site grade level.

We did not observe any erosion control devices along SE 12th Ave. Perhaps the grade at this margin of the site slopes to the west, toward the center of the site, but given the amount of active soil working that we observed near the eastern edge of the site, we would ask you to reexamine whether your erosion control practices on that side of the site are sufficient. Our recommendation described above for a minor recessing of the grade at the perimeter of the site may be appropriate on the eastern edge of the site as well.

We also noted a minor amount of soil trackout on SE 12th Ave, just outside what appears to be an alternate construction entrance. We recommend that you limit truck traffic to the primary construction entrance on SE 11th Ave, which is constructed appropriately with a rock base, to eliminate such trackout.

Once again, thanks for the opportunity to assess your site for Salmon-Safe certification. Please contact me if you have any questions about the suggestions that we have made.

Best regards,

Daniel Kent
Executive Director

Credits

Report & MSM Guidelines design : Jay Tracy Studios, Portland, Oregon
Cover inset image and architectural rendering (page 3) : courtesy Home Forward
Evaluation team and field photos : © Salmon-Safe 2016


SALMON
SAFE

APPENDIX B

PDC / 9101 S.E. Foster Pre-Assessment Memo

37244

SALMON SAFE

317 SW Alder Street
Ste. 900
Portland, OR 97204
503.232.3750
f 503.228.3556

June 27, 2016

Amy Nagy
Portland Development Commission
2020 SW 4th Ave #100
Portland, OR 97201

Dear Amy:

We appreciated the opportunity conduct a comprehensive drawing review of the 9101 SE Foster 90% permit set. Based on Salmon-Safe's review of the project, the current design appears generally consistent with Salmon-Safe principles, except with respect to stormwater design. To elevate the project's stormwater design to Salmon-Safe standards, we propose that PDC and its design team might consider "beyond code" design refinements that could include the addition of green stormwater infrastructure to increase onsite infiltration. In addition to aligning this project with Salmon-Safe requirements, we believe that a Salmon-Safe certified 9101 SE Foster has the potential to inform the design of future PDC projects with the goal of reducing development impacts on Portland's urban watershed. Below you will find an outline of kudos and suggestions for your consideration to align the project with Salmon-Safe certification standards.

Kudos –

- The proposed irrigation will be a high-efficiency system with a rain sensor
- The landscape planting schedule proposes native and adapted species that will minimize long-term irrigation needs
- A large dry well has been located in the north-center of the site, which will reduce peak stormwater runoff rates during rain events
- A Contech filter is proposed for stormwater treatment

Considerations and questions –

Stormwater Management

- How much stormwater is the Contech filter system treating and why?
- What consideration, if any, has been given to rain gardens, cisterns, permeable paving, etc.?
- Salmon-Safe's Model Stormwater Management guidelines should be adhered to in order to ensure that the project's stormwater design is consistent with Salmon-Safe principles (see attached)
- Avoid use of steel, copper and galvanized steel for roof materials or building cladding, as these are sources of water quality contaminants harmful to downstream aquatic life

Erosion Prevention and Sediment Control

- Protect soil from erosion and generation of sediment that could enter storm drains
- Specify the use of a Salmon-Safe accredited contractor or request that the contractor follow Salmon-Safe's Construction Management Standards to ensure that Salmon-Safe's zero sediment runoff goal is achieved during construction

If there is an opportunity to talk by conference call or regroup in-person, Dan and I can further discuss these design and construction considerations.

Salmon-Safe appreciates the opportunity to work with PDC on this project and explore how Salmon-Safe standards might be adopted on future developments.

Thank you for your commitment to water quality and a healthy watershed.

Kind regards,

Anna Huttel
Certification Manager

Cc: Dan Kent, Executive Director

photography credits (see photo captions) | report design + cover illustration : *Jay Tracy Studios*


SALMON
SAFE