

**Final Report of the Evaluation Team
Salmon-Safe Certification for
Portland Parks & Recreation**

20 January 2003

INTRODUCTION

In 2000, Salmon-Safe began an initiative to apply the Salmon-Safe label to urban restoration efforts and land management. Salmon-Safe implemented this initiative with the objective of significantly advancing urban restoration efforts while developing urban aquatic protection guidelines and a citizen education campaign that can be transported throughout the Northwest.

Working closely with our independent scientists and a project team from the city of Portland, Salmon-Safe developed a comprehensive urban parks certification framework oriented towards reducing water quality and fish habitat impacts from park operation and management.

The Salmon-Safe urban standards are a peer reviewed system-wide approach that relies on a comprehensive evaluation of a land management agency's overall management policies and planning related to habitat and water quality protection. The system-wide evaluation is backed by rigorous assessment of individual sites to evaluate whether management is consistent with best management practices for avoiding harm to stream ecosystems.

In June 2003, Salmon-Safe conducted test field assessments at a variety of Portland park sites including both urban parks and natural areas. Portland Parks & Recreation (PP&R) formally applied for certification in fall 2003 as the first municipality to seek certification under the Salmon-Safe urban standards. This report pertains to the December 2003 evaluation of the land management practices of PP&R by Salmon-Safe.

OVERVIEW OF THE PROJECT

The city of Portland is the largest provider of parks and open spaces in the metropolitan region. Within the city are more than 10,000 acres of parkland managed by PP&R, representing 9.6 percent of Portland's total land area. An additional 2,500 acres of open space in the city of Portland are owned by Metro and Oregon State Parks.

As a system-wide certification, Salmon-Safe evaluated PP&R's entire operation, which includes 98 neighborhood parks, 6 public gardens, 25 community gardens, 35 community parks, 5 golf courses, 47 habitat parks, 12 regional parks, 12 urban parks, and thousands of acres of urban forest. The certification process, including site assessments by the inspection team, included a particular focus on sites managed by PP&R that are adjacent to the Willamette River and key tributaries containing salmonid habitat within the city.

CERTIFICATION EVALUATION OF PORTLAND PARKS AND RECREATION

Assessment Dates

The inspection and evaluation of Portland Parks & Recreation took place December 9 – 12, 2003.

Evaluation Team: The interdisciplinary team conducting the inspection and evaluation on behalf of Salmon-Safe was composed of the following individuals:

Ron Garst: Salmon Biologist, Retired, U.S. Fish and Wildlife Service, Portland, OR. Mr. Garst retired as the Aquatic Resources Branch Manager of the U.S. Fish and Wildlife Service, Portland, Oregon Field Office in 2001. He oversaw staff work for hydropower re-licensing, fish passage improvements,

watershed restoration, wetlands fill permits, and major federal water resource development projects. Ron has over 30 years of field experience evaluating and reporting the impacts of water resource developments on fish and wildlife resources, with an emphasis on habitat impact evaluations. His background includes specific work on major fish passage projects, basin-level watershed planning, emphasizing wetland, floodplain, and riparian restoration, and large-scale hydropower project re-licensing to protect and restore aquatic resources. Ron earned a Bachelor of Science degree in Fisheries Science from Oregon State University.

Carrie Foss: Urban IPM Coordinator, 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 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.

Tim Rhay: Mr. Rhay retired as Parks Maintenance Manager for Eugene, OR in 2003. A 1971 graduate of the University of Oregon, he has thirty-one years of experience in parks maintenance management. This has included the care of both developed parks and natural areas in both rural and urban-based parks agencies at levels of responsibility from field worker through first-line supervision to program management. In a parallel career, Tim has been a speaker, author, and consultant on various aspects of parks maintenance for more than two decades.

Assessment Process

Documentation assembled by PP&R staff was reviewed by team members prior to, during, and after the field inspection phase of the assessment process. Following a meeting with Salmon-Safe staff and board members, the team met with PP&R staff responsible for the various programmatic park maintenance operations, heard a presentation about each, and had an opportunity to ask questions. On that afternoon and over the course of the next day and a half, the team visited a pre-selected, representative sample of PP&R park sites. The team was accompanied by PP&R staff throughout the field inspection and had the opportunity to interact with a range of employees having a variety of responsibilities and levels of authority for parks maintenance programs. In the final day and a half of the assessment process, team members, supported by Salmon-Safe staff, met to review the certification criteria against notes taken during the process and come to a consensus.

Site Visits

Forest Park – Balch Creek Trail	Ed Benedict Park & Memory Garden
North Park Square	Creston Park
Eastmoreland Golf Course	Gabriel Park
Westmoreland Park	Willamette Park
East Side Field Office	Willamette Moorage – Stephens Creek

General Observations & Conclusions

In the judgment of the Salmon-Safe evaluation team, PP&R's management of the Portland park system serves as an outstanding example of exemplary management of an urban public recreation and natural area resource. The organization's management and park maintenance staff understand, support, and implement a stewardship vision for the lands under their care.

The point was made and taken that the mission of the Portland Bureau of Parks and Recreation is multi-faceted and extends well beyond the protection of salmon. The evaluation team recognizes that provision of well-maintained parks and gardens and the provision of recreational opportunities for Portland's citizens and visitors must be a primary focus of the organization. This being said, we also took note of an organizational motivation and enthusiasm to accomplish the primary mission in such a way as to avoid negative impacts on salmonid populations and the habitat on which they depend.

The size and history of PP&R and the park system it maintains have established the value of the organization within the greater Portland community. There is considerable volunteer support of park maintenance and stewardship efforts. Staff with whom the team had interaction consistently expressed a commitment to the community, the organization, and the areas under their care. The team readily gained the impression that staff feel both they and the work they do are valued by the organization and the community and view themselves as stewards of a public resource.

The flow of information and ideas between the field and the office appears to be smooth and effective. Written policies such as those for IPM, irrigation, and fertilizer use are understood and followed throughout the organization. Parks maintenance staff members were very much at ease discussing their accomplishments, ideas, or challenges with the evaluation team in the presence of their supervisors and management staff. Supervisors and managers seemed equally responsive and willing to assist and follow-through. All seemed to have a realistic grasp of the limitations on their available resources coupled with a “can do” attitude that actively sought means to accomplish necessary projects within that framework.

RECOMMENDATION AND DISCUSSION

Recommendation: The evaluation team recommends that the Portland Bureau of Parks and Recreation be awarded Salmon-Safe certification upon completion of the specified pre-condition, and subject to the conditions given below.

PRE-CONDITION: Salmon-Safe certification standard B.5.1.2 requires a pre-condition for non-conformance. This standard states: “*Vegetative Cover – No area larger than 100 square feet within individual park sites is comprised of bare or disturbed soils that show evidence of sediment transport to streams or off-site stormwater.*” While the team recognizes Portland Parks and Recreation’s efforts to date to address this problem, the larger part of the riparian area of the stream course within the forested portion of Gabriel Park clearly fails to meet this standard. A notable exception is that portion of the stream and adjacent banks protected by a fence, behind which re-vegetation has been significantly and obviously more successful. Therefore, the team recommends the following pre-condition to awarding PP & R Salmon-Safe certification:

Pre-Condition I: Implement a plan to protect the stream banks and adjacent exposed soil areas along the forest stream in Gabriel Park, possibly combining fencing with interpretive signage, overlook points, or similar features.

CONDITIONS: In the opinion of the evaluation team, the following ten conditions should be met by the Portland Bureau of Parks & Recreation to maintain Salmon-Safe certification. The first seven are system-wide conditions and the last three are site specific.

SYSTEM-WIDE CONDITIONS:

Condition I: A system-wide, watershed-based strategic restoration plan should be prepared, including a prioritized list of projects with their objectives and desired ecological outcomes. The plan should include all known infrastructure issues and habitat restoration opportunities within the park system, including all needed improvements to crossings of fish-bearing streams. Invasive species infestations should likewise be identified and their management prioritized. The format of the plan, project list, and the priority system are to be designed by PP&R staff for maximum usefulness within the City of Portland’s operational, administrative, and funding systems. Further reference to this condition will be made during the discussion of Part A and B certification standards, below.

Timeline: The timeline for meeting Condition I is five years, subject to annual verification of progress by Salmon-Safe.

Comment: The following statement appears on page 17 of the Portland parks 2020 Vision Document: “*There is no comprehensive management plan for parks that sets priorities and strategies for all the elements to be considered. Decisions about acquisition, management, programming, and protection of park resources are largely ad hoc. Park resources are often managed independently rather than holistically.*” It is this need that the first condition seeks to address. The team saw several examples of

excellent restoration and stewardship efforts and was favorably impressed with the ecosystem planning process used by PP&R. The team also recognizes that opportunities for completion of specific projects may not arise in the same order as given priorities, and implementation opportunities should be taken as they become available. The list(s) and plan should help to focus restoration activity, not inhibit it.

Condition II: The current water-quality monitoring program, including stormwater runoff monitoring, should be peer reviewed by USGS, NOAA, and other scientists. The program should be revised based on the recommendations of such peer reviews.

Timeline: The timeline for meeting Condition II is two years, subject to annual verification of progress by Salmon-Safe

Condition III: Field-verify existing fish habitat and habitat impact inventory information and expand this to include such items as open channelized ditches within the park system.

Timeline: The timeline for meeting Condition III is five years, subject to annual verification of progress by Salmon-Safe.

Condition IV: Complete the inventory and estimate of impervious surface and report of special stormwater mitigation projects for each park.

Timeline: The timeline for meeting Condition IV is twelve months, subject to verification by Salmon-Safe.

Condition V: Gain a better understanding of connections between existing artificial ponds and other waterways or associated wetlands. These can impact other waters through groundwater or via overflow during flood events, for example, even where connections via an active stream course are not present. Where connections are found to exist, a management plan should be developed to monitor temperature, nutrients, and bacteria in pond water.

Timeline: The timeline for meeting Condition V is five years, subject to annual verification of progress by Salmon-Safe.

Condition VI: Improve data recovery and summary reporting of annual water use for irrigation. Determine reliable and accurate figures for irrigation water use by PP&R that can be used to document trends, or demonstrate significant progress toward this goal.

Timeline: The timeline for meeting Condition VI is five years, subject to annual verification of progress by Salmon-Safe.

Comment: The team recognizes the significant logistical and administrative obstacles that could limit PP&R's ability to fully realize the goal of accurate comprehensive irrigation water use data. Still, water consumption is a factor with a high potential to impact salmonid populations, and its monitoring over time should be part of an effort to minimize negative ecological impacts. Progress toward the goal of accurate, system-wide reporting might include adding more irrigation systems to the MAXICOM control system, which collects data on water use, and/or demonstrated improvements in recovery of water use data for systems that are not connected to MAXICOM.

Condition VII: Examine mechanical controls for weeds such as flammers, radiant energy, scalding water, and hot foam and utilize proven technologies where practical. Similarly, continue and expand examination of mulch as a means of reducing the need for pesticides in applications such as tree rings. It may be most effective to examine these in the context of demonstration projects or research trials so that results can be verified and shared within the organization.

Timeline: The timeline for meeting Condition VII is five years, subject to annual verification of progress by Salmon-Safe.

SITE SPECIFIC CONDITIONS:

Condition VIII: Develop an educational plan as part of the effort to restore the forest-remnant riparian area in Gabriel Park, possibly working with nearby schools and/or community groups.

Timeline: The timeline for meeting Condition VIII is two years, subject to annual verification of progress by Salmon-Safe.

Comment: As human activity is the dominant factor impeding the continuing effort to restore riparian vegetation and improve stream channel conditions here, addressing this is essential to success. Informational signage, a display at the nearby recreation center, and interfacing with local schools are tools to be considered. The team does not presume to specify exact program design, as PP&R staff has the best understanding of available resources and opportunities that could be utilized.

Condition IX: Implement a bio-filtration system for runoff from parking lot and other impervious surfaces at Westmoreland Park.

Timeline: The timeline for meeting Condition IX is five years, subject to annual verification of progress by Salmon-Safe.

Comment: The Section 206 stream restoration project scheduled for Westmoreland Park provides an opportunity to satisfy this condition by incorporating construction of the needed bio-filtration systems into that project.

Condition X: Correct erosion potential from suspended outfall to trail interceptor drain pipes along the Balch Creek Trail through relocation or modification to disperse and slow outfall runoff.

Timeline: The timeline for meeting Condition X is two years, subject to annual verification of progress by Salmon-Safe.

Part A: General Standards for Certification

A.1 No violations of national, state, or local environmental laws, rules, or requirements

No information was presented or came to the attention of the evaluation team indicating that Portland Parks & Recreation had any issues with violations of environmental laws or regulations. The Oregon Department of Agriculture, contacted in this regard, had high praise for Portland's staff and their pesticide policy. Team consensus is that this standard is met.

A.2 Identification and protection of salmonids and their habitat in parks

The consensus of the evaluation team was that the documentation supplied by Portland Parks & Recreation prior to and during the inspection process, the opening meeting/presentation, and field inspections conducted by the team were sufficient to establish conformance with this standard by PP&R. Some additional comments concerning inventory and mapping will be included in the discussion of Part B.

A.3 Management practices used in park maintenance do not jeopardize salmon or their habitat.

Again, the documentation, presentation, and field visits make clear that PP&R has policies in place with this intent and has expended considerable effort to insure they are known and followed system-wide. Staff with whom the team interacted displayed an understanding of and sensitivity to habitat impact issues. Team consensus is that the standard is met. Some additional discussion of specific management practices will be included in the discussion of Part B below.

A.4 An IPM program guides any/all use of pesticide

Substantial documentation establishes the longstanding existence and highly developed nature of such a program at PP&R. This policy obviously translates into the day-to-day operational methodology for field

staff, based on the team's inspections and discussions with parks maintenance staff. Team consensus is that this standard is met. Some additional discussion of IPM, pest-control, and/or pesticide use will be included under Part B, below.

A.5 Satisfactory progress in addressing landscape design and infrastructure features that degrade habitat

The team was favorably impressed by several examples shown of such efforts, both completed and planned for the near future. It was clear that PP&R staff is attuned to design and infrastructure features having negative impact on salmonids and their habitat, avoid these in planning future park development, and have made good use of opportunities to correct them as funding or other resources became available. At the same time, consensus of the team was that a more strategic and/or systematic approach to addressing remaining park infrastructure issues, as called for in Condition I, could enhance PP&R's ongoing efforts.

A.6 System-wide summary reporting is adequate to document compliance with Salmon-Safe standards

The team recognizes the challenge of assembling the necessary information for a park system of 10,000 acres and PP&R's efforts to accomplish this task. Team consensus is that this standard is met. However, the team felt improvements to summary reporting were possible. These are addressed in Conditions I – IV and Condition VI.

A.7 Park system management allows and cooperates with monitoring by a third party authorized by Salmon-Safe

The team commends PP&R for their expressed willingness to meet this standard and feels its application to the water-quality monitoring program would be appropriate and helpful. See Condition II.

A.8 A policy requires new park development be consistent with Salmon-Safe standards

A policy statement by Portland Parks & Recreation Director Zari Santner, dated December 1, 2003, requires this. Further, designs for new park development reviewed by the team were consistent with Salmon-Safe standards. Team consensus is that PP&R is meeting this standard.

Part B: System-Wide Standards Regarding Specific Management Practices

B.1 Stream Channels

Team consensus is that standards B.1.1.1 – B.1.2.2, concerning stream channels, are met, subject to conditions I, III, and X.

Observations & Recommendations:

- The team commends the considerable effort undertaken by PP&R in compiling the documentation necessary to meet this standard. Skilled use was made of available technology and resources.
- The stream classification system utilized by PP&R in compiling inventory information does not match the classifications set out in the Salmon-Safe standards. However, the team recognizes that the classification system used is a significant, good faith effort based on the best-available information. Therefore, the team considers the information acceptable for recommending certification.
- The team suggests that overlaying an active floodplain map on stream inventory information already compiled could enhance the utility of that information to guide restoration efforts.
- The team supports the current effort by PP&R to develop standards for trail crossings of fish-bearing streams.

- Balch Creek Trail in Forest Park is an example of historic intrusion of the stream channel by the nature of the trail and non-park infrastructure – the trash rack near the entry to the park & trail. Park staff is aware of these issues and takes them into account in targeting maintenance and restoration efforts. The team recognizes the efforts of staff and volunteers in caring for this area.
- Native vegetation is present along Balch Creek, but invasive species including English ivy, holly, and clematis are a significant problem. Finding effective control and restoration strategies to suppress invasives and replace them with native riparian vegetation is important to the management of this resource.
- At some points where the trail is close to the edge of Balch Creek, constructed features restrict the channel in the active floodplain. While it is clear that the intention of these improvements was to protect both the stream course and the trail, there would be definite benefit to relocating the trail at these points in such a way that the constructed features could be removed and the stream allowed to use the full active floodplain. Adding large woody debris (as has been done at other points along the stream) could further enhance habitat value.
- The new channel constructed to bypass the dam at Eastmoreland G.C. is a good example of a successful restoration effort. Staff is sensitive to the presence of fish populations in streams on the course and takes this into account in course management. The team recognizes this good management.
- It may be useful to conduct more intensive monitoring of fish populations in the streams and ponds on the Eastmoreland G.C. Partnering with a wildlife agency or community group might be a way to accomplish this.
- Staff at Eastmoreland G.C. is obviously aware of the importance of large, woody debris in stream restoration/improvement efforts. While LWD are present, there may be additional opportunities to place them in the stream course and/or lakeshore. Some of the logs and root wads stockpiled by PP&R for future restoration projects could be used here.
- The stream restoration project planned for Westmoreland Park will have a significant positive impact of the habitat value of the steam course there. The team commends this effort.

B.2 Riparian Areas

Team consensus is that standards B.2.1.1 – B.2.2.3, concerning riparian areas and wetlands are met, subject to Condition I. Note: Conditions III, V, and X are also relevant here.

Observations and Recommendations:

- The team recognizes and commends Portland Parks & Recreation’s efforts to inventory and map riparian areas within the park system.
- The management of invasive vegetation in riparian areas should be included as part of the systematic, strategic restoration plan called for in Condition I.
- Evaluate the relationship between Eastmoreland G.C., the lake, and Johnson Creek. Determine opportunities to increase riparian buffers and increase wetlands.

B.3 Irrigation Water Use

The consensus of the team is that standards B.3.1.1 – B.3.2.3, concerning the use of water for irrigation of parks and recreational facilities, are met subject to Condition VI.

Observations and Recommendations:

- Portland’s previous experience with water conservation serves it well in meeting these standards.

- PP&R has expended considerable effort and resources to improve irrigation water conservation. This effort is continuing and is supported by the evaluation team.
- The MAXICOM system installed by PP&R in modernized irrigation systems, beginning in the 1990's, represents state-of-the-art technology and is understood and employed to good effect by irrigation staff and supervision. The team supports its installation on all new irrigation system construction. As resources can be made available, it also would be beneficial to install this technology on the 75 automatic irrigation systems that have not been connected to MAXICOM. See Condition VI.
- Irrigation system audits, coupled with adjustments or repairs based on these to maximize efficiency of existing irrigation infrastructure, are a best management practice that should continue to be employed and expanded as resources allow.
- Water use monitoring for irrigation systems controlled by the MAXICOM system is excellent and helpful in determining compliance as it was installed first on larger systems using the most water. Monitoring for irrigation systems without MAXICOM is lacking or significantly less useful, though PP&R has made efforts to accomplish this within available resources. The team supports and encourages improvements to the process of recovering accurate water use data for irrigation systems not yet connected to MAXICOM as called for in Condition VI.

B.4 Stormwater Runoff Treatment

Consensus of the evaluation team is that standards B.4.1.1 & B.4.2.1, concerning stormwater runoff treatment are met, subject to Conditions IV, IX and X.

Observations and Recommendations:

- The team recognizes the considerable effort expended by PP&R staff to assemble and compile the documentation needed to meet these standards and expresses confidence in their ability to see it through to completion within the timeframe specified for Condition IV.
- Impervious surface inventory information and opportunities for stormwater treatment should be included in the system-wide strategic restoration plan called for by Condition I.
- The restored bio-filtration area that captures and treats runoff from the parking lot at Willamette Park is a demonstration/model of the practicality of capturing and treating stormwater from similar large parking lots elsewhere in the parks system.
- Bio-filtration for runoff from the parking lot at Westmoreland Park should be addressed as called for in condition IX
- Seek an opportunity to establish bio-filtration of stormwater from the parking lot at Creston Park, especially if effective alternatives to turf ground cover cannot be established under the conifer stand on the steep slope above the lot. See B.5, below.
- The team recommends discussion/exploration of low-stream issues with the communities above Balch Creek in Forest Park with the goal of developing a plan to reduce sediment inflow and increase water flow when needed.
- The East Side Field Office is an excellent demonstration of the practicality of capture and on-site treatment (bio-filtration) of stormwater runoff.
- The team recognizes and supports PP&R staff's efforts to broaden the palate of acceptable plant materials for bio-filtration plantings by finding natives with a more suitable appearance for landscaping as well as examining non-native varieties for bio-filtration effects.

B.5 Soils Protection

Consensus of the team is that standards B.5.1.1 – B.5.1.3, concerning soils protection, will be met upon completion of Pre-Condition I.

Observations and Recommendations:

- Site visits and interaction with PP&R staff provided evidence of active efforts to prevent erosion from earthen trails and address problems promptly as time and resources allow.
- Team members observed a few locations along the Balch Creek Trail where pipes installed to address/prevent trail erosion had a suspended outfall above the steep slope. These outfalls should be relocated or modified to eliminate outfall onto steep banks as called for by Condition X.
- Team members expressed some concern that ivy removal methodology employed by volunteer groups could result in large bare soil areas and sediment transport issues such as those addressed by Salmon Safe standard B.5.1.1. However, no evidence of erosion or sediment transport was seen at such sites during our field visits.
- At Ed Benedict and Creston Parks, team members observed areas where turfgrass had been planted under conifer stands that had matured and now blocked substantial sunlight, making turf survival difficult to impossible. We were informed that these areas were over-seeded in an attempt to maintain the turf cover, likely because of an historic community expectation that grass would be present there. However, low-light conditions inhibited the success of these efforts. The Creston site was steeply sloped, with runoff collecting in a parking lot at the base, destined ultimately for a storm drain in that lot. No evidence of erosion or sediment transport was seen during our site visits, but the condition was of sufficient concern to make note of it and encourage PP&R staff to develop different treatments, such as mulch or ground cover plantings, as alternatives to turf at such sites when this can be done without compromising their mission.

B.6 Pesticide, Fertilizer, & Other Contaminants

Evaluation team consensus is that standards B.6.1.1 – B.6.3.3, concerning pesticide, fertilizer and other contaminants, are met. The team compliments the Portland Bureau of Parks & Recreation on its longstanding, proactive efforts to address these issues.

Observations and Recommendations:

- Pesticide use within Portland’s well-established IPM program is minimal and well justified. Pest management decisions and methodology are based on sound scientific information. The Portland program has served as a model for others that IPM is practical and effective as well as ecologically responsible.
- Portland’s standards for pesticide application within riparian buffer zones were incorporated into NMFS 4d Rules for protection of endangered salmon populations.
- Staff is familiar with minimum-impact application techniques such as spot spraying, cut and paint, and injection. When pesticide use is found to be necessary, these and similar methods are often employed.
- The team recognizes past efforts by PP&R to find management practices that minimize the need for pest control and to use effective alternatives to pesticide when control is required.
- The practice of maintaining bare soil “tree rings” was observed in several parks visited by the team. Apparently this is not the only treatment utilized in these situations and is undertaken within the guidelines of the IPM program where it is used. The team supports continued analysis of this practice and the employment of practical modifications as they are developed in an effort to reduce pre-emergent herbicide applications, potential soil movement into adjacent streams and to improve appearance. See condition VII.

- All fertilizer elements are addressed by a system-wide plan. Material selection and application rates are based on current and sound scientific information. Soil testing is utilized to determine nutrient needs of turf areas. The amount of fertilizer applied annually is low compared to acreage maintained. Application rates meet the Salmon-Safe standards. A summary report of annual fertilizer use is provided.
- Naturally derived organic fertilizers are being employed on a trial basis at a golf course and riverfront park. The team commends PP&R staff's willingness to try different materials and maintenance regimens and suggests that new procedures are initially implemented as demonstration projects or controlled experiments if scientific data is currently lacking. Then the outcomes can be documented and the data may support adoption of the approach throughout the PP&R system. Partnering with an educational institution to conduct research trials may be helpful here.
- Grasscycling and on-site mulching of leaves are practiced to promote turf health and reduce the need for supplemental nutrients.
- Grass seed varieties used for turf installation and maintenance are selected for wear tolerance, drought resistance, and minimal need for supplemental nutrients based on current research trial information. Only certified seed is utilized.
- There is an emphasis on cultural techniques such as aeration, over-seeding, and top-dressing to promote healthy turf and reduce the need for fertilizer. Available resources (staff, equipment, & material) limit PP&R's ability to apply these as often or as widely as they would like. As resources can be made available, the team encourages expanded use of these cultural methods.
- The team commends PP&R's efforts to educate user groups as to realistic expectations for athletic field appearance, ability to withstand damage from regular play, and requirements for success of maintenance practices employed in athletic field care.
- Obvious efforts have been made to educate the public to the need to keep dogs on a leash in park areas. Educational signage is posted and fenced areas are provided where dogs may be exercised off-leash. At the same time, team members observed unleashed dogs in many of the park sites we visited. A notable exception was Gabriel Park, where staff informed us a focused enforcement effort had recently taken place. The efficacy of such an approach being obvious, the team recommends its continued use as resources permit, with an emphasis/focus on areas with a greater potential for stream pollution, such as Gabriel Park and Forest Park.
- Trained personnel and an effective program are in place to deal with chemical spills/dumping.
- Staff is aware of the potential for contamination of streams or stormwater by wildlife waste and takes steps to mitigate this within available resources. Expansion of riparian buffers at Eastmoreland G.C. and similar sites would be of assistance in managing this issue and should be addressed as part of the restoration plan called for in Condition I.

Expert Review

A draft version of this report was reviewed by Peter Bahls, salmon biologist, Northwest Watershed Institute. Review comments were considered in the process of producing this final version of the evaluation report.