

## Substantive Updates Made to IPM Policy and Operations Manual

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the March 2009 version to the April 2010 version.

Update Number	Description
1	Added the concept of proactive control of very small populations to prevent larger, harder to control outbreaks, to the description of “prevention” in the IPM policy (Section 2).
2	Comprehensively updated and expanded the Community Garden section (Section 3.17).
3	Added a new appendix that goes with Community Gardens program (Appendix K).
4	Added a new section for Small Mammals (Section 3.20).
5	Added a new section for Waterfowl (Section 3.21).
6	Updated the Pesticide-Free Parks Program appendix to reflect changes in program (Appendix A).
7	Updated the No Pesticide Zones appendix to clarify the zones and allow for flexibility (Appendix B).
8	Updated the Pesticide Notification and Posting Policy so that the policy is the same for all park areas and natural areas (Appendix C).
9	Added a new appendix for Mode A Prairies (Appendix E).
10	Updated Appendices E-K to ensure that BMPs are up to date, scientific names are correct, pests are sorted by “class” and then by “scientific name”, and that most pesticide trade names are replaced with the active ingredient name.
11	Simplified the Maintenance Mode descriptions for developed parks in Section 1.2.3.
12	Added language in every “Action Threshold” section (Sections 3.1 – 3.21) that allows for proactive control of very small infestations and “no action” if resource constraints are too great.
13	Modified the way Maintenance Modes are described for Trails and Pathways (Section 3.10). They are now dictated by the Maintenance Mode of the surrounding areas (i.e., they do not have their own Maintenance Mode designations).
14	Reclassified Class 4 weeds as either Class 2 or 3 weeds in Appendices G-J to create more consistency throughout the document in how these weeds are addressed.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the April 2010 to the May 2012 version.

Update Number	Description
1	Added a new section for Laurelwood Golf Course (Section 3.22) and the associated Appendix L.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the May 2012 and the June 2013 version.

Update Number	Description
1	Added a new section for the Native Plant Nursery (Section 3.23) and the associated Appendix M.

2	Updated the No Pesticide Zones appendix (Appendix B) to clarify the temporary exception statement.
3	Updated the Pesticide Notification and Posting Policy (Appendix C) to clarify the language about waiving the 24-hour advance notification guideline when there is a threat to public health or safety.
4	Updated Appendix F to ensure that BMP's are up to date.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the June 2013 version to the April 2015 version.

<b>Update Number</b>	<b>Description</b>
1	Combined Appendices G, H, and I into a new Appendix G: Weed Classifications and BMPs for Developed Parkland and Right-of-Way. Then, eliminated Appendices H and I, since they were combined into Appendix G.
2	Added information on poison oak action thresholds for each of the natural area types in Sections 3.12, 3.22, and 3.32 and added information to the BMP's in Appendix F.
3	Added information on restoration site preparation and the maintenance of prairie and savanna structure with regard to controlling woody vegetation in Section 3.1 and Appendix E.
4	Added information in the BMP's in Appendix F for native shrubs or trees.
5	Referenced City Council Resolution No. 5101 on IPM in Section 2. Policy on Integrated Pest Management (IPM).
6	Replaced the term "Bioswale" with "Vegetated Stormwater Facilities" throughout the manual. Vegetated Stormwater Facility is a more generic term that describes all types of vegetated storm water treatment facilities maintained by POS, which are allowed in the City's Stormwater Management Manual (Stormwater Planters, Grassy Swales, Rain Gardens/Dry Detention Ponds, Wet/Extended Wet Ponds).
7	Updated the list of Vegetated Stormwater Facilities in Section 3.4 and revised the rankings for defined service levels.
8	Added City View/Cleveland property and Wildwood Park to the table of Vacant Lands in Section 3.5.2
9	Revised Section 3.6 New Park Construction to include park development actions within the context of the IPM Policy.
10	Added information on surface cleaning and crack sealing for Hard Surfaces in Section 3.7.4.
11	Added Section 3.9.2 Invasive Tree Species and revised the BMP's for invasive trees and shrubs and native shrubs or trees in Appendix F.
12	Revised Section 3.19 and Appendix J to include all Floral Gardens. Modified the maintenance modes of the gardens to recognize that larger gardens are maintained at three maintenance levels as opposed to one. Revised Appendix J to include two classes of insects, class 1 and class 2. Class 1 insects are now new invaders (Azalea lace bug), while class 2 insects are the ones previously classified as Class 2 with a 30% threshold. Class 1 and 2 insects now align well with Class 1 and 2 weeds (new serious invaders versus common serious pests).
13	Changed some of the language in section 3.20 to include more small mammals and added information on safety issues they can cause in park settings.

14	Removed the text regarding the recording of pesticide applications in a specific log book in Appendix C: Pesticide Notification and Posting Policy to recognize that applicators may use different methods to record applications.
15	Added the requirement that applicators must notify the supervisors and section manager in their work section on the day a site is posted for application and clarified requirements for the approval of new pesticides in Appendix D: Pesticide Use Guidelines.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the April 2015 version to the October 2015 version.

<b>Update Number</b>	<b>Description</b>
1	Made several updates to Appendix C, including: <ul style="list-style-type: none"> <li>• Added new template pesticide application postings. These postings have a standardized look, and contain information on: <ul style="list-style-type: none"> <li>○ the scope and scale of the application,</li> <li>○ the phone number of the supervisor responsible for the pesticide application.</li> </ul> </li> <li>• Changed the advance notification period for pesticide applications from 24 to 48 hours.</li> <li>• Added the requirement for POS staff to notify known active citizen groups active in the care of a park site prior to a scheduled pesticide application in an effort to give the groups an opportunity to provide an alternative method for controlling the pest.</li> </ul>

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the October 2015 version to the October 2016 version.

<b>Update Number</b>	<b>Description</b>
1	Added a new Special Requirements section 3.32. This section outlines the definition of a riparian buffer zone in which staff will be limited the type of application equipment used, reduced wind speeds for herbicide applications to minimize the possibility of drift, and a limited list of the herbicides available for controlling invasive species.
2	Changed the language in 3.4.1 to reflect the current design of vegetated stormwater facilities
3	Added a sentence to 3.4.2 to allow a control action in the event that vegetation is impeding the designed operation of a vegetated stormwater facility. Included the riparian buffer zone protections for vegetated stormwater facilities
4	Table in 3.4.2 was updated to include all current vegetated stormwater facilities that are being managed
5	The Section 3.5, Vacant Lands Intended for Future Park Development, was updated in include new park maintenance standards. The name of the maintenance classification for these parks changes from “Mode 5” to “Naturalized Landscapes” and “Naturalized Turf”. There is no change to the weed cover thresholds for these parks.
6	Bobolink and Royal Elizabeth Parks, acquired in 2016, were added to the “Vacant Lands” list.

7	Changed the term “Mode” to “Service Level” throughout the document to reflect adoption of Parks and Open Spaces, Park Operations Maintenance Standards in 2015. Updated all descriptions of modes to reflect the descriptions of the service level based on the new standards. See Sections: 3.8 through 3.18.
8	Removed information on Turf and Landscape management from Section 3.19 because they are covered in Section 3.8 Landscape Beds and Section 3.11 Turf Areas. Updated information on Fungal/Insect Pests to reflect the new service levels/thresholds.
9	Removed acreages from the chart in Section 3.11.2. It was agreed that there is no useful information to be gained from the acreages either for applicators or the public.
11	Changed all mode designations in the charts in Section 3.8, 3.9, 3.10, 3.11, 3.14, 3.16, 3.17 to their respective new service level and added a key to the terminology.
12	In Appendix, C changed the application postings at citizen request to make the easier to read at a distance. The pre-application postings now have an orange header and post-application postings now have a blue header; the signage has changed in response to citizen request.
13	In Appendix C, added an exemption for trained City employees not possessing pesticide applicators licenses to spray approved insecticides on aggressive stinging insect (not honeybees) nests which threaten public safety.
14	Updated table in Appendix F to include BMP suggestions from Cleanwater Services IPM for <i>Clematis vitalba</i>
15	Updated BMP for thistles in Appendix F
16	Added new appendix for approved pesticide list and changed appendix letters. Made Approved Pesticide List Appendix M and Ocular Estimation Charts Appendix N.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the October 2016 version to the October 2017 version.

<b>Update Number</b>	<b>Description</b>
1	Added two new chapters, 1.2.4 and 1.2.5 to describe maintenance service levels in vegetated stormwater facilities and medians respectively.
2	Made the following changes in chapter 3.9, Medians and Rights-of-Way Plantings: <ul style="list-style-type: none"> <li>• Removed special section on invasive trees. These pests are not common and didn’t need their own section in the document.</li> <li>• Changed from the lettered mode system used in natural areas to the high, medium, low service level system used in developed parks.</li> </ul>

3	Added a new chapter to section 3 to create a special section for aggressive stinging insects. This recognizes that these pests cross over every park asset area and would be better addressed through a standalone chapter.
4	Changed the language in appendix C to reflect policy of placing a new sign after a pesticide application.
5	Changed the language in appendix C to reflect the pesticide application and posting requirements for the Agricultural lease at Golden Garden Park. Permanent signs are to be posted with the approximate annual spray schedule and a list of chemicals that may be used. No temporary posting will be made in this area prior to applications
6	Changed the following in appendix E: <ul style="list-style-type: none"> <li>Removed Carex ovalis, Triphysaria versicolor, Calystegia sepium</li> </ul>
7	Changed the following in appendix F: <ul style="list-style-type: none"> <li>False brome and shining geranium changed from class 1 to class 2 weeds due to</li> </ul>
8	Added Azalea Lacebug to Appendix H.
9	Changed Appendix L to a new appendix for Aggressive Stinging Insects, Other appendices after appendix L were changed to the subsequent alphabetical letter. Table of
10	Changed the following in appendix N: <ul style="list-style-type: none"> <li>Removed the following pesticides considered High Hazard by Salmon Safe:</li> </ul>

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the October 2017 version to the October 2018 version.

Update Number	Description
1	Additions/ changes to Section 3: Added Whilamut to forest list in Section 3.2; Added Creekside to waterways list in Section 3.3; Updated the list to include new vegetated stormwater facilities in Section 3.4; Added Creekside park to turf areas in Section 3.11
2	Appendix D: Clarified approval process for new pesticides to be a panel of Operations supervisors to ensure that pesticides are checked against Salmon Safe High Hazards list and the 'least toxic most effective' standard.
3	Appendix G: Added Poison Oak to the Weed Classifications and BMP's list for Developed parkland, Rights-of-Way, and Future Developed Park Sites.
4	Appendix F: Changed BMP's for Teasel, Fennel, and Yellow Flag Iris. Added Prunus Sp.( <i>Prunus domestica</i> etc.) To the list of invasive trees.
5	Appendix N: Added language to allow "equivalent formulations" of pesticides not listed in the document as an approved alternative to the exact brand names listed in Appendix N. Added pesticides used in Golden Gardens Grass Seed Agricultural Lease and approved through Salmon Safe Variances.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the October 2018 version to the September 2019 version.

<b>Update Number</b>	<b>Description</b>
1	Chapter 2 (Policy on Integrated Pest Management) added the May 2019 Moratorium on the use of Roundup™/ glyphosate use in developed parks and active-use areas.
2	Appendix M: Added Burnout™ Herbicide to the list of approved pesticides. Burnout is an acetic acid-based broad-spectrum herbicide.
3	Appendix M: Added Callisto, Dicamba, Express, and Zidua herbicides for use in agricultural lease sites for grass seed production.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the September 2019 version to the December 2019 version.

Update Number	Description
1	Added fuels reduction as a reason for managing native trees and shrubs as a pest in certain landscapes in Chapter 1.1
2	Modified the paragraph at the end of Chapter 2, Policy on Integrated Pest management (IPM), on the moratorium on the use of glyphosate-based herbicides to limit the moratorium to neighborhood Parks. Natural areas, specialty landscapes in ornamental gardens are now added to median islands in Right-of-Way areas as areas that are exempted from this moratorium.
3	Added a mode A classification to Amazon Park Wetland Prairies in section 3.1.2
4	Added management of hazardous fuels as a reason to take action to prevent the regrowth of woody species in woodlands and forests in Section 3.2.2; Added Hawkins Heights, Melvin Miller, and Ribbon Trail Parks as Mode C Woodlands and Forests.
5	Added the new properties Empire Park Pond, River Loop Park, and Riverfront Park to Section 3.3.3 Waterways.
6	Added Alder Spring, Amazon & 29 <sup>th</sup> , Audel, LTD EmX Planters 6 <sup>th</sup> , 7 <sup>th</sup> & 11 <sup>th</sup> , Plumley Green, Roosevelt Yard Rain Garden, The Nines to Section 3.4.3 Vegetated Stormwater Facilities; Removed Videra and Walnut Grove Park from list because these features are not water quality features.
7	Added Owen Rose Garden as a Specialty Landscape to the list of Landscapes in Section 3.8.2.
8	Added Augusta and Floral Hill and removed Willow Brook from the list of medians
9	Added Section 3.25 Street Trees in Public Rights of Way to enable staff to use a growth regulator on high value street trees in confined rooting zones to help prolong their life.
10	Added section 3.26 Forest Health to address use of pheromone traps to reduce the damage Fir Beetles cause to firs in valuable or important fir forests or stands. Added Beetleblock MCH, a natural pheromone insecticide, to approved pesticides list (appendix N).
11	Added an exception to the posting policy (Appendix C) for long-duration pest control actions in large natural areas, such as use of Beetleblock MCH on Douglas fir beetles that allows staff to post information on an informational kiosk and on the web rather than use of temporary postings at trailheads.
12	Added grass specific herbicides to the list of BMPS for control of invasive grasses in Appendix F.
13	Added drill and Fill as a control method for Invasive tree species and included language prohibiting applying herbicides to trees and blackberries bearing edible, ripe fruit in Appendix F.
14	Added triclopyr and aminopyralid as herbicides that can be used on Lesser celandine in Appendix F
15	Added Nogall and Gallex, a crown gall agrobacterium and bactericide respectively, to the approved pesticide list (Appendix N) to help us manage crown gall at the Owen Rose Garden.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the December 2019 version to the December 2020 version.

<b>Update Number</b>	<b>Description</b>
1	Added language broadening the scope of land managed by POS to included medians, vegetated stormwater facilities, and street trees in Chapter 1
2	The action threshold for mode A prairies was modified to include an Early Detection Rapid Response (EDRR) clause allowing staff to address high threat new weed invasions at covers less than 2% in section 3.1.2 Mode A Prairies.
3	Added new Black Oak Basin park as a Mode C Mixed Forest and a Mode B Oak Woodland in Section 3.2.2.
4	Added several new median and vegetated stormwater facilities to section 3.4
5	Added Nortron SC to the approved Pesticide List (Appendix N) for grass seed agricultural lease at the Amazon Prairie Wetland Mitigation site.

The table below documents the substantive updates that were made to the IPM Policy and Operations Manual from the December 2020 version to the December 2021 version.

<b>Update Number</b>	<b>Description</b>
1	Chapter 2. Removed the paragraph outlining the 2019 moratorium on the use of glyphosate in neighborhood parks and active use areas. This moratorium has been removed due to lack of scientific evidence. The moratorium been replaced with language that reflects the current direction to restrict the use of all herbicides in the developed areas of neighborhood parks. The new policy exempts natural areas (including those in neighborhood parks), specialty landscapes in ornamental gardens, community parks, and median islands in the public Right-of-Way. The Park Operations Manager may approve a special application request if the request sufficiently describes why herbicide-free approaches have not worked and the threshold and maintenance standards cannot be otherwise met.
2	In Section 3.1.2 added Andrea Ortiz Park as having a Mode C wetland prairie, added Nolan Mitigation site as a Mode A wetland prairie, and upgraded the quality of prairies in Razor park from Mode D to Mode C due to the number of plantings and habitat management the site has received.
3	In Section 3.2.2 changed the forest types in Wayne Morse Family Farm as having a Mode C conifer forest and a Mode B oak woodland.
4	In Section 3.3.3 changed the names of several waterways to correct inaccurate information.
5	In Section 3.4.3 added several new medians and vegetated stormwater facilities and corrected names and service levels.
6	In Section 3.5.2 changed the name of Royal Elizabeth to Andrea Ortiz Park.
7	In Section 3.9.2 added several medians and Rights-of-way.
8	In Section 3.10.2 added and removed several turf areas to correct inaccurate information.
9	Added Lock Out molluscicide to the approved Pesticide List (Appendix N) for grass seed agricultural lease areas.
10	Replaced the Herbicide Post Spraying Posting for Developed Parks with a posting that works for both Developed Parks and Right-of-Ways.