Urban Forest Restoration project

Three Year Maintenance and Monitoring Plan
The purpose behind requiring a Three-Year Maintenance and Monitoring Plan and the Annual Monitoring Reports is to help you think through what happens next after project work is complete to increase long-term, sustainable success. The UFRP crew, volunteers and staff work hard on project sites—and it’s important work. We want you to have the tools to protect that investment, continue the work as effectively as possible, and tell your story well.

Jurisdiction/Organization: City/Town/County/Organization

IAA Number: DNR InterAgency Agreement number

Site Name: Individual site name or management unit

Site Description: Briefly describe the site: acreage; soils; climate; slope; aspect; etc.

Project Description: Briefly describe the project site in terms of whether it’s a neighborhood park, open space, etc. Include a brief history of the site if you like. Please mention any neighborhood or volunteer stewardship involvement at the site.

Goals/Desired Outcomes List the community’s long-term goals for the project site. For example, the desired native plant community, desired level of control of invasive non-native plants, end uses of site, etc.

Work Accomplished Briefly describe the work done by Puget SoundCorps crews, local staff and volunteers over the course of the project year toward the goals listed above: undesirable plants removed; how much of each plant; how much area was impacted by the work; list any plant materials installed (numbers and names); installation methods (depth, distance, pattern, etc.); aftercare at the time of planting (mulching, staking, watering, etc.).

Three-Year Maintenance Plan: Not all of the items below may be pertinent to your project. For example, if the crew performed structural pruning on street trees, staking and mowing may not need to be included or discussed in the Three-Year Plan. Include all items that relate to the care—and success—of the project site. Possible factors are included under each topic below; again, not all of these may be applicable to your particular project, but are listed for your consideration.

Water How often will new plants be watered? By whom? How will water be delivered to the project site? Are alternate methods available if necessary? Who will determine when to start and stop watering? What quantity of water will be applied at each watering?
**Mulch**  What kind of mulch will be used? How often will mulch be renewed? By whom? Maximum and minimum thickness of mulch? Size of mulch beds for planting areas/individual trees?

**Pruning**  What pruning may be needed during the 3-year reporting period? Who will perform the pruning? What are the credentials of those performing the work? Are these established credentials (such as ISA Certification), local designation (such as trained volunteers or Master Gardeners with special training) or other? What time of year will pruning be done? What are the pruning goals? What pruning standards will be used?

**Staking/Mowing/Other activities**  If trees have been staked or ‘tubed’ for protection when planted, when will those materials be removed? By whom? If grass or undesirable invasive plants will be controlled by mowing, how often and by whom? Will grass be kept out of mulch beds or away from young plants? If so, when, how, and by whom? Details for any other maintenance activities that may be necessary for the particular site should be described in this section.

**Control of Undesirable Plants**  List invasive plant species that have been controlled and are likely to be ongoing concerns. List other potential undesirable plants that may be common in the area that should be kept in mind during monitoring and volunteer activities. What control methods will be used? Will different methods be used for different invasive plants? How often will the area be reviewed for invasive plant regrowth? Who will do that review? How will regrowth be addressed? At what point will intervention occur and who will do the work?

**Inspections**  Establish a regular inspection schedule to check for establishment, pests, disease, or other problems. How will you determine if a tree is healthy or has established well? What pests and/or diseases are possible for the trees planted, or prevalent in your area? How will you determine infestation? Are there other tree health factors that should be considered as well?

**Monitoring Plan:**  Monitoring is a ‘snapshot’ of data gathered on a particular date that is evaluated against previously set criteria to assess whether current practices are effective and successful. The point of the exercise is to determine the success—or failure—of the practices that are being used, so that those can be tweaked to work better if necessary. The only way to determine if current practices work or not is to set reasonable benchmarks and evaluate against them on a regular basis in a consistent fashion.

**Schedule and Timing**  How often will monitoring take place (annually, bi-annually, etc.)? What time of year? For example, “Each year on October 13, we will count the number of plants still living and compare to the number installed to determine the survival rate of plants installed.”

**Protocol**  Outline the monitoring procedure. This does not have to be elaborate, but does need to be described in enough detail that monitoring can be performed consistently every year so results can be compared effectively. How will the monitoring be conducted? Who will perform the monitoring? What, if any, training may be needed? It is important that a consistent procedure be used so that results may be compared year-to-year with confidence. For example, “Each year on October 13, we will check survival rate of installed plants by counting individual live plants and comparing that number to the number of plants installed during the initial project work.” This will necessitate keeping records of how many plants were planted, what those plants were and where they were planted.

**Establish criteria**  Set criteria or benchmarks for the project site that are appropriate for the site and your particular set of circumstances and resources. Criteria [benchmarks] should help manage the
site: are the methods used clearly putting the site on a trajectory for success or not? Benchmarks should also help you focus stewardship activities, plan ongoing work, and tell your story. Think about what will tell you whether your project work is succeeding; it may be only one or two items that are easy to track (see examples below). Make sure that goals and criteria/benchmarks are practical and workable for the resources you have available.

Example: Survival of planted materials – Establish a target percentage for survival of each plant species installed; lower survival rates may trigger a change in maintenance and/or aftercare. For example, “Year 1 = 90% survival; Year 2 = 85% survival; Year 3 = 80% survival” of the total planted in the initial project work.

Alternate benchmarks that might be appropriate here include growth rate, appearance of health and vigor, etc. Think about how you will define and determine these types of benchmarks so that they are easily understandable and measurable.

Example: Regrowth of undesirable plants – Establish a target percentage for each undesirable plant of concern that is tolerable; above that percentage, intervention takes place. While the long-term goal is eradication of undesirable plant species, for the purposes of this plan, what are feasible goals for the project site over the next three years? For example, if the UFRP crew has reduced English ivy from 100% coverage of the project site to 20% of the project site, perhaps the first year’s goal might be to maintain that 20% cover, or allow a small increase to 25%. Benchmarks for subsequent years might reduce the percent cover of the target species to work toward the long-term site goal of eradication.

Photo Monitoring Photomonitoring is a tool that helps illustrate the progress made on the project site; photomonitoring can also help tell the story of the work that’s being accomplished. By having a set of photographs taken at the same location over time, progress toward goals can be shared in a visual manner with others such as staff, volunteers or decision-makers. Not all projects will have established photomonitoring points; for example, street tree planting and pruning projects typically do not. If photomonitoring points were established by the crew during their work on the project site, those coordinates will be contained in the DNR project report. Feel free to establish your own photomonitoring points if none were established by the crew. Please document self-established photomonitoring points in the Plan along with baseline photos, and be prepared to submit photos for each established point in the Annual Monitoring Reports. Photographs should be taken from the established photomonitoring points during the annual monitoring event so that a consistent area is shown over time.

Appendices Maps or other materials may be useful for illustration purposes, or to provide detail regarding planting plans and plant lists.