DESIGN STANDARDS FOR: SITE RESTORATION OF NATURAL AREAS

This document serves to establish the minimum acceptable requirements for restoration of vegetation on the Seattle Parks and Recreation (SPR) properties where SPR owned vegetation is removed and mitigation is required. The erosion control measures in these standards shall also apply to SPR property areas where restoration is required to mitigate loss of erosion control and resulting water quality degradation. For more information about how to proceed when intending to do restoration or any other work on or immediately adjacent to SPR properties, refer to the website @ www.seattle.gov/parks/projects/nonparklanduse.

RESTORATION SHALL ADDRESS:

Criteria and considerations that shall be incorporated into the restoration process include but are not limited to the following:

- **Environmentally Critical Areas (ECAs):** City of Seattle Regulations for Environmentally Critical Areas (ECAs) applies to sites that include landslide-prone, flood-prone, riparian corridor, wetland, and steep slope environmentally critical areas. Activities on these areas require preparation of a Surveyed Site Plan and submittal of additional information relating to the critical areas and their buffers as part of the application and review process for development proposals. This information is required in addition to technical reports described in Section 25.09.060 of the Seattle Municipal Code and plot plan requirements outlined in Client Assistance Memo (CAM) 103. For additional information about environmentally critical area site plan requirements refer to the DPD website @ www.seattle.gov/DPD/Publications/cam/cam103B.
- **Best Management Practices (BMPs):** Appropriate erosion control measures shall be adhered to as required for any and all areas that are denuded of vegetation for any period of time until the new plantings are completed and the bare ground is covered. Those measures shall include but not be limited to; silt fencing, protection of drainage structures, mulching, or hydroseeding, etc. For more information about the BMP's refer to the website @ www.cityofseattle.net/parks/projects/bmp.
- **Erosion Control:** Most vegetation contributes to the control of erosion with the above ground foliage/stems plus, the below ground root structure also contributes to the overall erosion control benefits. The removal of existing vegetation results in the loss of erosion control benefit and can be mitigated by replanting in a manner that meets or exceeds the loss.
- **Buffering:** Vegetation serves an important purpose, particularly in the urban environment, in buffering or screening conflicting land uses or to separate or delineate properties from each other. Restoration measures serve to address this benefit for properties impacted by the vegetation loss.
- **Environmental Balance:** Vegetation provides a number of benefits associated with urban wildlife habitat, air quality, water quality, etc. Revegetation materials (native vegetation/seed or

fruit bearing) and methods of installation shall be provided to ensure that the final result meets or exceeds the loss in terms of plant diversity and relative value.

QUANTIFING THE LOSS:

SPR Urban Foresters shall be consulted to determine the extent of the damage or loss of value to the landscape affected by the proposed work. For more information about the SPR Tree Policy and Permits refer to the website @ www.seattle.gov/parks/environment/treepolicy.

- **Loss of erosion control:** Shall be quantified in square feet of area by field observation of the area of disturbance and by estimation of the extent impact below ground (root loss). These observations and the final area to be restored shall be defined by SPR or defined by the applicant and approved by SPR.
- **Loss of buffering:** Shall be determined with input from neighboring properties. The applicant shall contact affected neighbors to determine the buffering effect lost.
- **Environmental balance:** Is a function of the development of vegetation over time. The more mature landscape typically has larger trees, more diversity, greater habitat value, and is self sustaining. Loss of environmental balance shall be determined by measuring the size of trees and other plant materials removed or damaged and by documenting species significance (i.e. slower growing, rare, difficult to transplant).

PLANTING STANDARDS:

- **Trees:** Shall be installed as required or approved by SPR to provide equal trunk area (in sq. inches) to the trunk area lost. Example: a 6" caliper tree, having a trunk measured at @ 28 sq. inches would be equal to (9) 2" caliper trees each having a trunk measured at @ 3 sq. inches. In situations where a multi-stemmed or shrub-like tree species is desirable, one 5 gallon plant will be considered equivalent to a 2" tree.
- **Shrubs:** Shall be installed as required or approved by SPR to provide a minimum of (1) 1-gallon shrub for each 2.5 s.f. of shrub area disturbed.
- **Groundcovers:** Shall be installed as required or approved by SPR to provide a minimum of (1) 1-gallon groundcover plant or (2) 4" potted groundcover plants for every 2.5 s.f. of disturbed area requiring erosion control that is not already planted with a tree or shrub.

SPR Standard Specifications and Details for landscape planting shall be used for all plantings. For more information about these standards refer to the SPR standards website @ www.seattle.gov/parks/projects/standards.

PLANT MATERIALS:

Plant materials intended to be used for restoration shall be as directed by SPR with native species required unless otherwise approved (non-natives may sometimes be desirable to better associate with existing site conditions). The following species list includes native selections for restoration - subject to review and approval for each site in order to best match specific site conditions.

- **Coniferous trees/4' min ht, B&B or container grown (smaller trees usually have better survival rates):** Thuja plicata (Western Red Cedar), Pseudotsuga menziesii (Douglas Fir), Tsuga heterophylla (Western Hemlock), and Pinus contorta (Shore Pine).
- **Deciduous Trees/ 1" min. caliper, B&B or 5 gallon container grown:** Acer macrophyllum (Bigleaf Maple), Alnus rubra (Red Alder), Prunus emarginata (Bittercherry), Populus tremuloides (Quaking Aspen,) Acer circinatum (Vine Maple), Corylus cornuta (Hazelnut), Rhamnus purshiana(Cascara), Sambucus racemosa (Elderberry), and Amelanchier alnifolia (Serviceberry).
- **Evergreen Shrubs/ 1 gallon container min.:** Gaultheria shallon (Salal), Vaccinium ovatum (Evergreen Huckleberry), Mahonia aquifolium (Oregongrape), Mahonia nervosa (Longleaf Mahonia)
- **Deciduous Shrubs/ 1 gallon container min.:** Holodiscus discolor (Oceanspray), Ribes sanguineum (Red-Flowering Currant), Red Huckleberry (Vaccinium parvifolium), Osmaronia cerasiformis (Indian Plum), Physocarpus capitatius (Ninebark), Lonicera involucrata (Honeysuckle), Rosa nutkana (Nootka Rose), Rosa woodsii (Woods Rose), Rubus parviflorus (Thimbleberry), Rubus spectabilis (Salmonberry), Spirea douglasii (Douglas Spirea), Symphoricarpos albus (Snowberry)
- **Groundcover/ 4" pot min, 1 gallon preferred:** Arctostaphylos uva-ursi (Kinnik-Kinnik), and Mahonia repens (Creeping Mahonia).

Certainly, there are other native plants that may be approved for use as restoration material, but the above list covers enough variety to achieve diversity and provide for many important functions.

FINAL PLAN REVIEW & APPROVAL:

The applicant shall be responsible for the development of a revegetation plan according to these standards. It is recommended that a qualified landscape design professional (usually a Registered Landscape Architect) shall prepare the plan and shall include at least the following information:

- **A plan-view representation of the area requiring revegetation:** The plan shall be as delineated in the field or otherwise directed by SPR. This representation shall be to scale at 1" = 20' unless otherwise approved. The plan shall also indicate where on the site the areas are that will be restored that are in sun or shade and where the areas are that are either wetter or dryer than normal.
- **A list of the plant material species, sizes, and spacing shall be provided:** These materials shall be represented by symbol on the plan. This plan will be used to approve the restoration work, and to monitor the installation until plant materials are adequately established.
- **A specification and/or detail to show soil preparation:** The use of Decomposed Organic Mulch (Compost) Soil Amendment at the rate of ¼ CY per tree (or 5-gallon shrub) and 1 gallon per each 1 gallon shrub. This material shall be blended with native soil to create a 50/50 mix around the rootball area. This detail shall also show mulch topdressing for all new plantings – min 4' diameter ring for trees and 2' diameter ring for shrubs and groundcover plants.

The plan shall be submitted for review and approval, along with signatures from adjacent affected property owners indicating that the plan provides adequate restoration to replace the loss of buffering, etc. Upon approval a permit for Non-Park Use of Park Land (Revocable Use Permit) will then be issued. For more information about how to obtain a permit refer to the SPR Real Property website @ www.seattle.gov/parks/reservations/parkpropertyuse.

MAINTENANCE & ESTABLISHMENT REQUIREMENTS:

- **Watering:** During dry weather conditions as required maintaining adequate soil moisture. New plants have little ability to draw moisture from native soil until initial roots are developed after planting. It is necessary to maintain moist conditions by thoroughly watering at least three times per week during dry weather.
- **Weeding:** Around individual plants will be necessary to ensure that plants get established instead of weedy species, especially where Blackberries, Horsetail, Knotweed or Ivy are concerned.
- **Mulching:** Around all plants at least 4' diameter circles around trees and 2' diameter circles around all shrubs and groundcover plants. Mulch will work on behalf of the plants to control weeds and retain moisture.
- **Pesticides and Herbicides:** Use of chemical means for controlling unwanted plants and pests is strictly prohibited on or immediately adjacent to Parks' properties. Written permission from the Owner is required before use of any chemicals will be allowed and only granted when no other reasonable means for removal are identified.
- **Establishment:** One year minimum but typically takes from 3 to 5 years depending upon the plant material involved and level of maintenance provided in the first few growing seasons.

END OF SECTION