May 27, 2016

Colman Park Vista Project - Arborist Review for Slope Re-vegetation Plan

1. Goals and assumptions

- Naturalized landscape in the Olmstead style utilizing native and ornamental species
- Restore views to the lake and into the lower park and trails
- Sustainably built landscape in terms of long-term function and ease of maintenance
- Use of plant types applicable to stabilizing upper soil layers on a steep slope

2. Plant selection recommendations

- Emphasis on plants with colonizing habits and/or dense broad root systems
- Placement of plants according to their mature size to foster long term clearance and visibility without routine pruning requirements
- Diversity of species in evergreen and deciduous forms
- Multi-layered plantings with canopy-midstory-understory for all canopy height classes to maximize rain interception and soil protection
- Plant forms adapted to naturalized setting and prevailing soil and sun exposure

3. Re-vegetation considerations

We contacted Seattle Tree Preservation to get some insight on the logistics of removing the stand of maples on the steep slope area. They have worked on tree management for view clearance of a nearby slope along the south side of the stairs at the foot of S. Dose Terrace near 34th Ave. S. since 1997. This is nearby the Coleman slope project. It was done in coordination with residents and Parks. It might be helpful for us to look at this site.

John Hushagen said that the growth that came back after the big leaf maples were cut was overwhelming to the new plantings, and that it required far greater routine maintenance to address unwanted growth of brush and a series of invasive species than they anticipated. Blackberries went wild in the open sunlight. In hindsight, he said he would remove fewer of the large trees at a time to avoid the flush of unmanageable regrowth.

John indicated the logistics of removing all the wood and brush from the site would be difficult and costly given the limited access to the slope. Over years of doing tree removals on steep slopes, they now advise cutting the logs and slash up - a technique he called "lop and scatter" - and installing replacement trees with that material in place. It provides some shelter for new plantings and acts as an immediate mulch cover to protect the soil. This may not be fully

15119 McLean Road
Mount Vernon, WA 98273

Office: 360.428.5810
Fax: 360.428.1822
Cell: 360.770.9921

Email: jim@urbanforestryservices.com
www.urbanforestryservices.com

appropriate for this planting site, but we may want to retain some of the material as part of the slope cover.

For Discussion:

A. Removal of all the big leaf maples and other tall trees in one operation may offer the benefit of immediate change in light and views, but will have significant trade-offs in the amount of effort that will be required to plant and maintain a new landscape.

- Immediate change in light and exposure to the slope, as well as view corridors
- Stumps will need to be treated with an herbicide to prevent re-sprouting. This will need to be researched for overall safety to adjacent vegetation and potential run-off issues to below slope areas (P-Patch).
- Clearing out all larger vegetation from the slope allows for immediate change to a new landscape scheme appropriate to greater sun exposure.
- The immediate change in light could result in suppression or loss of existing desirable shade species.
- Higher levels of weeds, invasive plants, and brush can be expected.
- Likely an increase in aftercare demand to water and weed new plantings
- Difficulty of access on the steep slope for repeated rotations of maintenance during the many years post-planting

B. Removal of the big leaf maples and other tall trees in an organized sequence of stages offer benefits of allowing intermittent light and changing the vegetation content with less severe ecological and maintenance impacts over the long run.

John Hushagen indicated that while removing trees around new plantings can be a challenge, it can still be done. Consideration could be given to the logistics of each stage of tree removal in designating which trees are removed at each sequence. We should do a more thorough count of the trees and their locations to identify a reasonable scheme for a staged tree removal option.

One approach may be to do selective tree removal and thinning to let in more light and open views between the trunks, then plant the exposed areas broadly with sword fern and herbaceous groundcovers. This would create a planting scheme of low cover and high canopy with sightlines between the two. When the remaining trees are removed, the next grouping of plants that may have been vulnerable to damage during tree removal can be installed amid the sword fern and groundcovers. Advantages are:

- The potential for excessive undesirable growth is avoided

- There will be less water stress to newly establishing plantings than with a completely cleared slope.
- Plant selection will need a good balance of plants that can tolerate some shade and sun for long term performance as the maple canopy is phased out.
- This offers greater potential for establishing strong vegetative cover with less demand for workers to traverse the slope for maintenance.

4. Vegetation Management Plan Considerations

- Install jute netting on steep slope sections and place wood chip mulch over top before plants are installed. Benefits: soil protection before and during planting operations, weed suppression, greater efficiency. There is the potential to have wood chip mulch blown into place (Pacific Topsoils does this).
- Plant selection emphasis on selections that can naturalize and mass together to provide dense soil coverage without intensive pruning and weeding.
- Right plant habit and mature sizes for each landscape zone - trail sides, view corridors, slope elevation
- Install larger nursery stock of shrub species
- Include densely planted groundcover and low shrub layers
- Include consideration for maintenance access and functions in the design
- Account for at least a 3-year landscape establishment maintenance plan, with the most intensive schedule the first year after installation (especially weed and irrigation management), with less frequent maintenance rotations each subsequent year
- Organize landscape plant pallet to fully colonize the soil to eliminate repeated needs to apply mulch.
- Include an annual rotation of inspection for tree saplings (big leaf maple, Oregon ash, cherry laurel, etc) that occur in the "low height" zones to remove them while they are under 2" trunk diameter and may be pulled manually with a weed wrench or spade fork.

Listed below are some excerpts from Parks VMP's that have relevance to this site:

Maintain clear areas next to pathways that are easy to see over, under, around or through – for a distance of 6-8 feet from the path edge, select and maintain vegetation that is generally no more than 2-3 feet in height, or trimmed up to 8-feet from the ground.

Figure 11 Typical Trail Corridor Vegetation Management *(from Orchard St. Ravine VMP, City of Seattle, 2006)*

Stairways	Create safe and aesthetically pleasing pedestrian corridors using native vegetation.	• Trees should be planted no closer than 25' OC to staircase • Large and medium sized shrubs should be planted no closer than 10' OC to staircase. Existing shrubs that grow into the staircases should be removed • Groundcovers and very small shrubs (<2' spread) may be planted up to staircase

Lake Washington Boulevard Vegetation Management Plan January 2010

In all cases, stairways should be managed for active and regular removal of invasive plant species and restriction of native or ornamental shrubs growing into staircase pedestrian corridors. Shrub vegetation planted within 10' OC of stairways must be below three feet height and two feet in spread. Following CPTED (Crime Prevention Through Environmental Design) guidelines for safety, all tree species must have lower limbs that grow into stairways pruned to no less than 10' height. Ideally species will be selected with natural growth forms that have major branching starting over 8 feet tall.

Colman Park Existing Slope Conditions:
Existing ferns and other desirable slope vegetation could be retained if selective staged removal of the maples is done. Additional sword fern and companion groundcovers, possibly other shrubs, would be planted at the same time.

Example of slope preparation for restoration planting after a slide event on a steep slope:

Example of vegetation competition around new plants on a site that was completely cleared before planting:

Example of mulch applied over jute netting as pre-planting preparation:

Example of planting rapidly spreading groundcovers (Oregon oxalis, woodland strawberry) between well spaced sword ferns on a newly planted naturalized slope:

At WPA Winter Garden:
Cornus sanguinea 'Midwinter Fire' - natural habit and color with no pruning, showing how it will colonize, a good feature for slope plantings. Grows up to 5-feet tall.
Planted with Iris foetidissima - an iris that grows in sun to light shade; it is easily grown from seed. Bright red seed pods in winter.

WPA Visitor Center
Example of trail edge planting with good setback, using low spreading groundcover (Rubus pentalobus) dwarf European cranberry viburnum (V. opulus var. nana), and taller growing salal in the back.