

TECHNICAL MEMORANDUM

TO: Megan Campbell, Harbor Consulting Engineers
FROM: Brad Thiele, Northwest Environmental Consulting, LLC
DATE: August 21, 2019
SUBJECT: Slope Re-vegetation Approach
PROJECT: Knopf Steep Slope Stabilization

INTRODUCTION

Ed and Donna Knopf are stabilizing a slope that failed in early 2019. The City of Mercer Island requires that a re-vegetation plan be completed to stabilize disturbed areas. This technical memorandum summarized the replanting efforts and establishment.

KNOPF PROPOSED SLOPE RE-VEGETATION APPROACH

Planting Plan

The proposed mitigation will restore approximately 15,000 square feet of disturbed steep slope with native vegetation. Table 1 lists the plant species that will be installed. See Drawings W-1 for additional details.

Table 1. Proposed native species to be used in the planting plan

Common Name	Scientific Name
Cascara	<i>Rhamnus purshiana</i>
Pacific crabapple	<i>Malus fusca</i>
Serviceberry	<i>Amelanchier alnifolia</i>
Vine maple	<i>Acer circinatum</i>
Black hawthorn	<i>Crataegus douglasii</i>
Snowberry	<i>Symphoricarpos albus</i>
Sword fern	<i>Polystichum munitum</i>
Red flowering currant	<i>Ribes sanguineum</i>
Nootka rose	<i>Rosa nutkana</i>

Tall Oregon grape	<i>Berberis nervosa</i>
Choke cherry	<i>Prunus virginiana</i>
Thimbleberry	<i>Rubus parviflorus</i>
Red elderberry	<i>Sambucus racemosa</i>

Mitigation Goals

Mitigation goals are as follows:

- Plant approximately 15,000 square feet with native plants to expand to restore the steep slope disturbance.
- Control Himalayan blackberry and other invasive plant species in the restored area.

Performance Standards

Plantings shall maintain a 100% survival for the first year and achieve 80% survival in years 2 and 3. For proper functioning, species diversity will be maintained. The planting areas will maintain a minimum of 4 shrub species for the 5-year monitoring period.

Invasive species shall be controlled so that they do not reach more than 10% aerial coverage for the 3-year monitoring period.

Schedule and Maintenance

Plantings shall be containerized plants or bare root. Watering of the installed plants may be required if drought conditions occur during the summer months. Invasive plants will be removed throughout the year as they occur.

Proposed Monitoring, Reporting and Contingency

To ensure that the performance standards are met, plantings will be counted in August or September for survival for the first year. The site will be monitored for three years from the time of completion of site construction by a qualified individual(s) who is experienced or trained in vegetation and monitoring techniques.

Valid monitoring data are critical to making meaningful management decisions that help the mitigation site meet its objectives. Monitoring plans are based on mitigation site conditions and plant community development. These factors together with the wetland mitigation objectives are to be incorporated into a site-specific monitoring plan that will be developed at the beginning of each monitoring season. The annual monitoring plan will use standard vegetation sampling methodology to measure site performance standards such as actual counts, line intercept methods or belt transect methods.

The monitoring team will be responsible for taking a representative sample of the site and determining an appropriate sample size.

Monitoring Reports

Monitoring reports will be completed and submitted to the City by December 31 for each of the monitoring years.

Contingency Actions

All dead plantings will be replaced so that 100% survival is reached for the first year. A sub-sample can be completed to assure that the 100% survival is reached. In years 2 and 3 all plantings will maintain an 80% survival rate for three years.

Himalayan blackberry, English ivy, and English holly will also be manually removed from the restoration area if they reach 10% or greater coverage during the three-year period.