



Work Plan Seedling Planting

Pacific International Terminals Property

Whatcom County, Washington

Prepared for:

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1.0 INTRODUCTION

Following a geotechnical investigation which inadvertently cleared upland and wetland forest vegetation, Washington Department of Natural Resources (WDNR) required that the area be restored through planting native commercial tree seedlings. This plan provides information on how tree planting activities will be accomplished on the Pacific International Terminals property in Whatcom County, Washington.

Cleared pathways were hydroseeded in 2011 with an erosion control seed mixture (Table 1). Since that time, no activities have occurred to disturb the vegetation or soil in the cleared areas, and as a result the previously cleared pathways are generally well-vegetated by grasses, young shrubs, and few tree seedlings. Natural recruitment has not provided the restocking density for commercial tree species requested by WDNR.

Table 1 Seed Mixture for Revegetation/erosion control used in 2011

| Common Plant | Scientific Name | Pure Seed (%) | Origin | Notes |
|----------------------------|-----------------------------|---------------|------------|--------------------------------------------------------------------------------------------------------|
| Sterile Wheatgrass | <i>Triticum X Agropyron</i> | 66 | Oregon | Fast sprouting, short-lived perennial that does not reproduce. Used as a nurse crop for other species. |
| Seaside Creeping Bentgrass | <i>Agrostis stolonifera</i> | 9.9 | Oregon | Mat forming perennial, tolerant of sea splash. Holds soil well. |
| Meadow Foxtail | <i>Alopecurus pratensis</i> | 9.4 | Washington | Early growing and blooming perennial, already common in the area. |
| Redtop Bentgrass | <i>Agrostis gigantea</i> | 6.9 | Oregon | Relatively quick germinating. Performs well on local soil types. Common in the vicinity. Mat forming. |
| Clover | <i>Trifolium hybridum</i> | 5.8 | Idaho | Perennial nitrogen-fixing species. Typical of clover already in the area. |

2.0 WORK PLAN

A total of 377,400 square feet (8.7 acres) has been identified for reforestation. Approximately 22,200 linear feet of cleared, 17-foot-wide access paths require planting.

According to WAC 222-34-010 reforestation measures, cleared areas that are reforested must contain an average of 190 seedlings per acre that have survived on site for at least one growing season. We have received a recommendation from DNR to plant seedlings 15 feet-on-center to reach this standard. Based on the proposed density, a total of approximately 1,680 trees will be planted across 8.7 acres, for an approximate stocking of 190 stems per acre.

Tree seedlings will be planted in both upland and wetland environments. Pacific International Terminals has installed survey flags indicating the boundary between forested upland and wetland zones.

2.1 Planting

Trees seedlings shall be manually planted following all best practices for tree health and survival. Planting practices to be implemented include:

- Maintain health of tree seedlings and especially avoiding desiccation and overheating during all stages of handling.
- Manually clear forest duff, grasses/forbs, and root mats from approximately 12-by-12 inch area of the immediate planting spot (spot clearing).
- Using a straight bladed planting tool (shovel or hoedad), open the soil to a depth of 1.5 times the seedling's root length.
- Using the planting blade, press open the soil wide enough to enable inserting the seedling's roots.
- Remove one seedling from planting bag and straighten roots, visually check that the seedling is healthy and that it has no stem or root damage. Ensure that roots are completely inserted into soil and also not twisted or tangled.
- Plant seedling so that it is at the correct depth following tamping of soil. Correct depth is roughly the same as in the nursery.
- Tamp the soil firmly around the seedling and ensure that the seedling is vertical. Do not leave air pockets around the roots.
- Visually inspect the planted seedling to confirm that the seedling is planted correctly before moving on to the next planting location.
- Place plant protection tube with stake over seedling and secure.

2.2 Plant Species and Materials

- 1) Seedlings are to be planted on 15 x 15 foot spacing.

- 2) The upland areas (265,200 square feet, or 6.1 acres) shall be planted with any combination of tree seedlings from Year 1 or Year 2 stock, including:
 - Big leaf maple (*Acer macrophyllum*)
 - Western red cedar (*Thuja plicata*)
 - Red alder (*Alnus rubra*)
- 3) Wetland areas (112,200 square feet, or 2.6 acres) shall be planted with any combination of tree seedlings from Year 1 or Year 2 stock, including:
 - Black cottonwood (*Populus balsamifera*)
 - Western red cedar (*Thuja plicata*)
 - Red alder (*Alnus rubra*)
- 4) Seedling protection tubes and stakes shall be required for all planted seedlings.

2.3 Access

No on-site activity by the contractor shall take place without the presence of an employee or representative of PI Terminals.

Under no circumstances will any vehicles leave paved surfaces on the property. There is no vehicle access off of paved surfaces on any portion of the site. Access to all areas to be planted is by foot.

There are multiple points located along Henry Road, Lonseth Road, Aldergrove Road, and Gulf Road that may be used to access to the planting area and will facilitate the movement of plants as necessary. The access pathways are mainly flat and currently vegetated with grasses and few young shrubs.

On-site security exists for all locations and coordination with on-site security will be necessary.

2.4 Other Work Details

Purchase and protection of seedling health during transport and prior to and during planting is the responsibility of the planting contractor. Actual planting palette to be determined by contractor based on availability from plant nurseries and shall be approved by the Pacific International Terminals'

project biologist. Purchased plant material will be subject to inspection by Pacific International Terminals biologist prior to planting.

The contractor is responsible for scheduling a pre-planting conference at the site. The conference must take place before site work begins.

An NPDES construction permit issued by Ecology is in place for the site and all requirements under that permit shall be adhered to. All existing Stormwater Best Management installations will be protected and not disturbed by the planting effort. The site's Stormwater Pollution Prevention Plan for the site is available for review.

No new additional soil erosion or sediment control measures are required with this planting effort. Previously, straw wattles and bales were installed at appropriate locations to reduce the risk of sediment entering roadside ditches and other water courses.

Litter of any type will not be generated by the contractor and staff. All garbage and project-related material will be carried offsite and disposed of properly and legally.

There no on-site water source available. If contractor determines watering is needed water must be delivered to the site.

Frequent site monitoring following planting and the annual report requirements will be completed by Pacific International Terminals.

This work requires permits and the Contractor will review a copy of the permits and keep a copy onsite at all times.

Pacific International Terminals ability to issue a notice to proceed is dependent on receipt of the permits.

3.0 SCHEDULE

Work is anticipated to proceed following receipt of all permits. Assuming permits are received in early 2014, planting will be completed no later than March 31, 2014. Should permits be delayed, planting will proceed during the next available planting season following receipt of all required permits.