GUIDANCE FOR DEVELOPMENT OF VEGETATION MITIGATION PLANS


Woods' rose / Rosa woodsii

SITE EVALUATION

It is important to perform a site evaluation. This evaluation process will generate site-specific information that will aid in the development of your planting plan. This worksheet is designed to record site information.

Project Contact:_____ Phone number:_____

Project Location:_____

Permit Number (if any):_____ Date:_____

Complete the table by checking the boxes that best describe the conditions on your site.

Table 1. Site assessment table

HYDROLOGY	Dry ☐	Moist ☐
LIGHT	Sun ☐	Shade ☐
TOPOGRAPHY	Flat ☐	Slope
ASPECT	South-facing ☐	North-facing
EXISTING VEGETATION	None (bare ground) ☐	Lawn ☐
	Invasive weeds ☐	Existing native plants ☐
	Ornamental/formal landscape ☐	


Oregon Grape / Mahonia aquifolium

PLANNING YOUR PROJECT

A site plan is an important planning tool for your vegetation project. It is the blueprint that maps out and documents the location and extent of all the permanent elements outside of your home. These include dimensions of your property, house, yard, lawn, planting beds, swimming pool, and all other hard surfaces such as patio, deck, rockery, retaining wall and driveway, and which direction is north. Once the site plan is completed, you can better analyze the existing opportunities and constraints on your site.

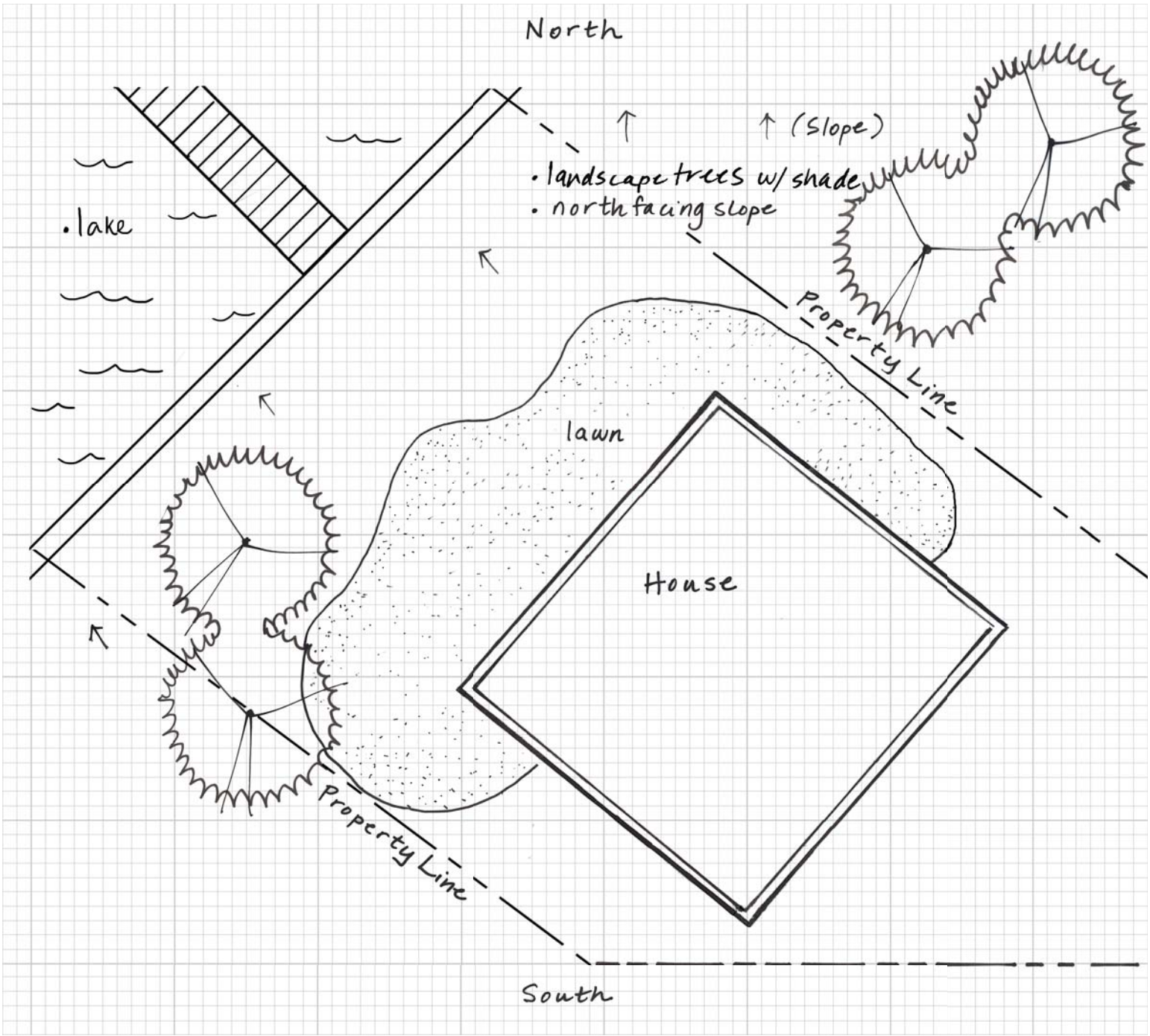
On the next page you will find an example; a blank Existing Site Plan Worksheet is located at the end of this Appendix.

Using Scale: Use the graph paper provided to produce one sketch of your property. The drawing **scale** should be somewhat precise as you will use it for reference later. For smaller **sites**, use one grid square per foot. For larger areas, use one grid square for 2 feet, 5 feet or 10 feet depending on the size of the site. Record the scale that you are using on the worksheet and provide at least one written dimension on the plan to verify the scale.

DRAW YOUR SITE PLAN

- Start by drawing permanent structures such as the house/building footprint, driveway, walkways, etc. As needed, measure these to the nearest foot and draw them on the worksheet.
- Add existing vegetation such as lawn areas, large trees, and shrubs that will remain on the site.

EXAMPLE OF EXISTING SITE PLAN



Scale: 1 grid (10 blocks) = 10 feet

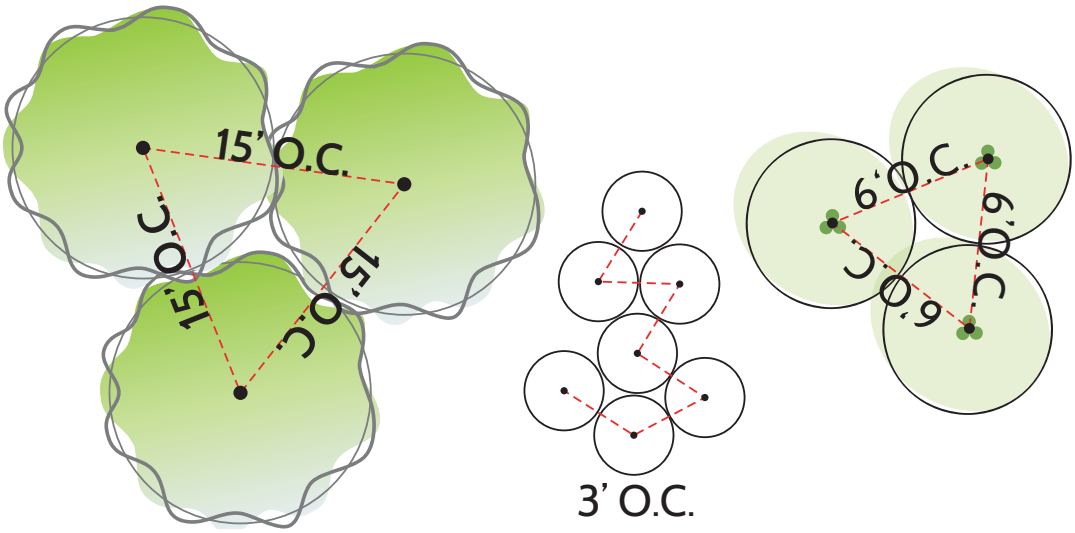
DRAWING THE PLANTING PLAN

The most critical features to consider in your plan are height, light needs and site placement. The Recommended Plant List on page 7 contains information about each plant's ecological specifics, as well as aesthetic and practical considerations.

Each plant will need enough space to grow without being crowded out by other plants. Although small when installed, plants will eventually compete with each other for light, water and nutrients. The project will be more successful if plants are spaced properly. Recommended plant spacing is shown in the table below:

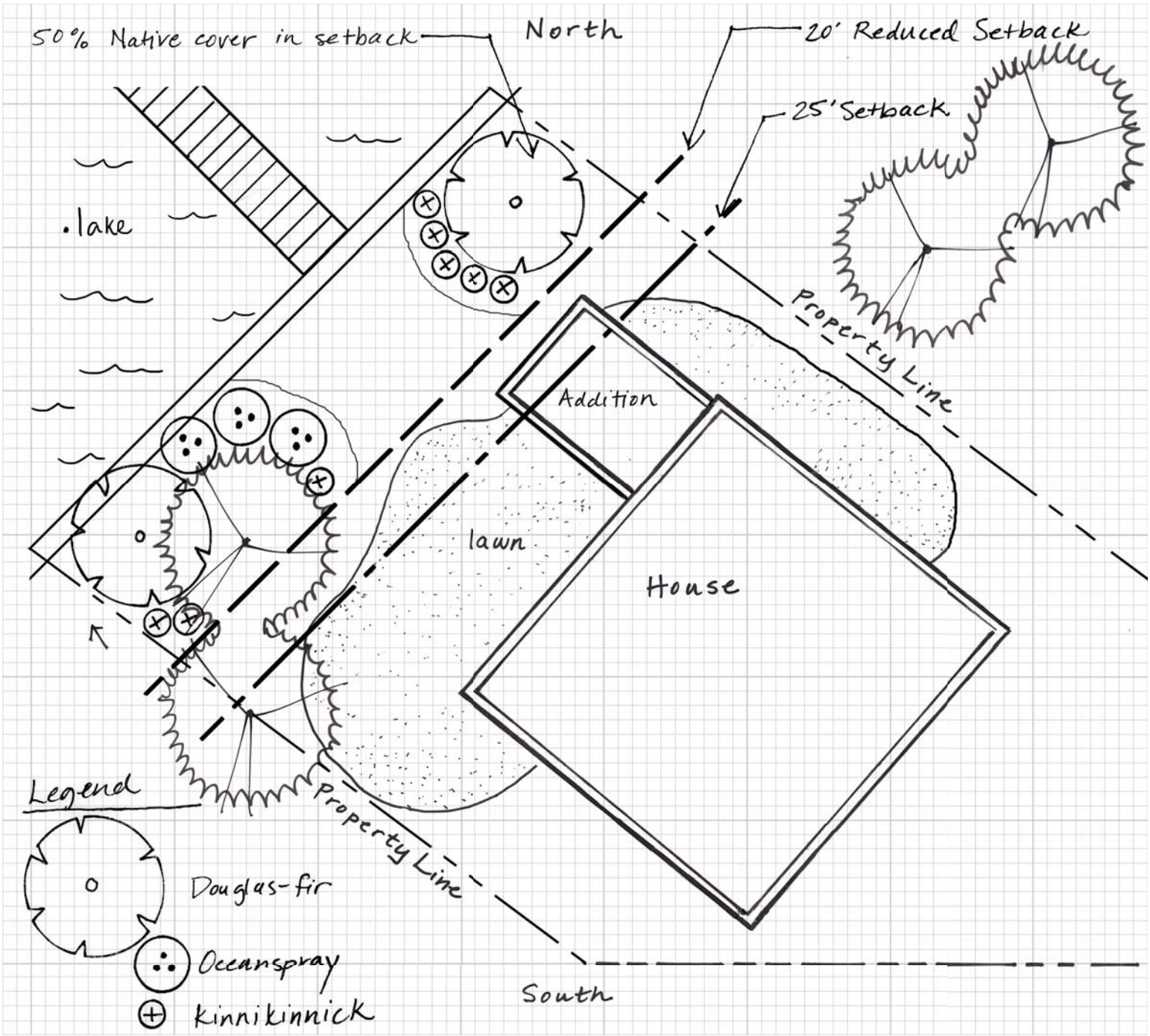
TYPE OF PLANT	AVERAGE SPACING
Trees	15' on-center
Shrubs	6' on-center
Groundcover/Perennials	3' on-center

STEPS TO DRAW YOUR PLAN



1. Copy your completed Existing Site Plan.
2. Determine which plants you are going to use. (See Recommended Plant List.)
3. Consult the Shoreline Master Program to identify specific requirements for species or type (tree, shrub, or groundcover), composition, and area of planting.
4. Draw a simple symbol for each plant. Put each symbol and the name of each plant in the legend. Symbol size should be scaled to on-center spacing (e.g. tree symbols should be 15' in diameter).
5. Lay out the trees first. Make sure to give them enough space. Then lay out the shrubs and groundcover.
6. Count up the number of plants by species and put a total in the legend.

EXAMPLE OF PLANTING PLAN



Scale: 1 grid (10 blocks) = 10 feet

CITY OF CHELAN **RECOMMENDED** SHORELINE NATIVE PLANT LIST

The following list of native plants are considered most suitable for revegetation plans on the shoreline of the City of Chelan; other native plants may be utilized provided the applicant provides documentation to the City verifying the species is native to the region. All of the below native trees, shrubs and groundcovers shall consist of large, commercially obtained nursery stock. They shall be planted and spaced a maximum of 15-foot centers for trees, 6-foot centers for shrubs, and 3-foot centers for groundcovers.

Plant Common Name (Scientific Name)	Plant Sizes (Height x Width)	Sun or Shade Exposure	Benefits - Humans, Wildlife, Environment
TREES			
Beaked Hazelnut (Corylus cornuta)	6-20 ft.	Sun to Part-Shade	▪ Food-mammals, birds ▪ Binds soil
Black Hawthorn, Douglas Hawthorn (Crataegus douglasii)	25 ft. x 15 ft.	Sun	▪ Food-wildlife, birds ▪ Cover-wildlife, birds ▪ Binds soil
Douglas-fir (Pseudotsuga menziesii)	100 ft. x 20 ft.	Sun to Part-Shade	▪ Food (seeds)-birds ▪ Fast growing ▪ Canopy for shade ▪ Evergreen
Douglas Maple, Rocky Mountain Maple (Acer glabrum var. douglasii)	20 ft. x 15 ft.	Adaptable, Part-Shade	▪ Food-birds ▪ Cover-wildlife ▪ Canopy for shade
Paper Birch (Betula papyrifera)	70+ ft.	Sun	▪ Food-wildlife, birds ▪ Cover-wildlife, birds ▪ Binds soil
Ponderosa Pine (Pinus ponderosa)	140 ft. x 40 ft.	Sun	▪ Food-birds ▪ Cover-wildlife ▪ Canopy for shade ▪ Evergreen
Rocky Mountain Juniper (Juniperus scopulorum)	15 ft. x 8 ft.	Sun	▪ Food-birds, wildlife ▪ Cover - wildlife ▪ Canopy for shade ▪ Evergreen
Western Hemlock (Tsuga heterophylla)	50 ft. x 35 ft.	Part-Shade	▪ Food (seeds)-birds ▪ Cover - wildlife ▪ Canopy for shade ▪ Evergreen
SHRUBS			
Blue Elderberry (Sambucus nigra ssp. cerulea)	10-12 ft.	Sun to Part-Shade	▪ Food-birds, wildlife ▪ Binds soil
Chokecherry (Prunus virginiana)	25 ft. x 25 ft.	Sun	▪ Food-birds ▪ Toxic to livestock ▪ Cover-wildlife
Mock Orange or Syringa (Philadelphus lewisii)	8 ft. x 6 ft.	Sun to Part-Shade	▪ Food-wildlife ▪ Flowering shrub ▪ Pleasant scent

Plant Common Name (Scientific Name)	Plant Sizes (Height x Width)	Sun or Shade Exposure	Benefits - Humans, Wildlife, Environment
Oakleaf Sumac (Rhus trilobata)	6 ft. x 6 ft.	Sun	▪ Bank stabilization ▪ Fire tolerant
Oceanspray (Holodiscus discolor)	8 ft. x 5 ft.	Part-Shade	▪ Food-wildlife ▪ Binds soil ▪ Flowering shrub
Oregon Grape (Mahonia aquifolium)	6 ft. x 6 ft.	Part-Shade to Shade	▪ Food-wildlife ▪ Cover-wildlife ▪ Edible berries ▪ Binds soil ▪ Evergreen
Redtwig Dogwood (Cornus sericea)	15 ft. x 15 ft.	Sun to Part-Shade	▪ Berries-wildlife ▪ Cover-wildlife ▪ Landscaping
Smooth Sumac (Rhus glabra)	15 ft. x 10 ft.	Sun	▪ Food-birds, wildlife ▪ Edible berries ▪ Binds soil
Snowberry (Symphoricarpos albus)	3 ft. x 3 ft.	Sun to Part-Shade	▪ Food-wildlife ▪ Binds soil
Thimbleberry (Rubus parviflorus)	4 ft. x 4 ft.	Part-Shade to Shade	▪ Food-birds, wildlife ▪ Cover-birds, wildlife ▪ Binds soil
Woods' Rose (Rosa woodsii)	6 ft. x 4 ft.	Sun to Part-Shade	▪ Cover-wildlife ▪ Flowering shrub ▪ Does well in disturbed areas
GROUNDCOVER			
Creeping Oregon Grape (Mahonia repens)	1 ft. x 3 ft.	Sun to Part-Shade	▪ Food-wildlife ▪ Edible berries ▪ Evergreen
Kinnikinnick (Arctostophylos uva ursi)	12 in.	Sun to Part-Shade	▪ Binds soil ▪ Evergreen
Western Sword Fern (Polystichum munitum)	3 ft.	Part-Shade to Shade	▪ Binds soil ▪ Bank stabilization ▪ Evergreen


Salal / Gaultheria shallon

INSTALLING YOUR PROJECT

TIMING

The best time to plant native plants is from October to March. It is also important to only install plants when temperatures are above freezing. The establishment period helps plant viability, especially in areas where irrigation or precipitation is infrequent or absent.

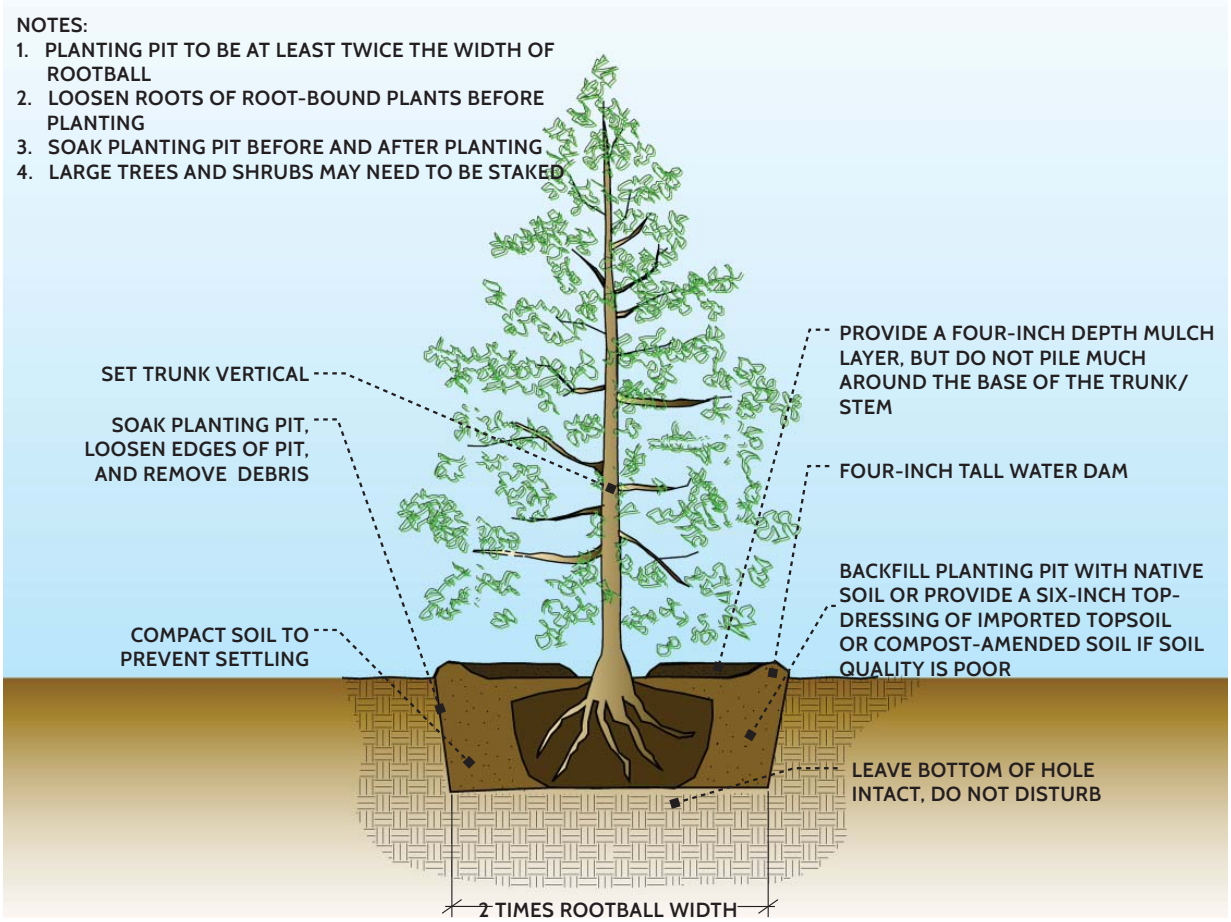
INVASIVE VEGETATION

Where encountered, invasive weeds should be removed manually without the use of herbicide, except in rare cases when applied by a State licensed pesticide applicator and approved by the City. Manual removal can be accomplished by grubbing out plants and roots entirely (including seed pods, fruits, and leaves). The ideal time for removal is prior to flowering in spring or summer. If removal is to occur after flowering, it is recommended that flowers be cut off and disposed of prior to grubbing. Grubbed out materials should be disposed of off-site immediately, since many of these species are still capable of propagating post-removal. Do not use weed materials for mulch and do not put into compost.

MULCHES

Mulches are materials that are placed on top of the soil surface. Mulch can improve soil nutrients and water-holding capacity. Depending on site conditions, planting in full sun may require more mulch to help retain soil moisture.

TREE AND SHRUB PLANTING DETAIL



TREE AND SHRUB PLANTING SEQUENCE

1. Dig a pit for each plant that is twice the size of the root ball or plant container.
2. Remove large rocks and other debris from the pit.
3. Soak the pit with water by filling it at least half-way. Allow the water to drain before installing plant. Note that some pits may not fill if the soil is very sandy.
4. "Rough up" the roots of the plants, pruning or straightening circling roots. Roots that circle the bottom and sides of the root ball can later girdle the tree as the trunk attempts to grow outward.
5. Install the plant in the pit, backfilling as necessary such that soil surface matches the surrounding ground level. Make sure stem of the plant is at the same ground level that it was in the nursery pot.
6. Mulch each plant with 4 inches of coarse wood chip mulch (preferred) or raked leaves. Keep mulch a few inches away from the stem.
7. Water the plant again.

Rose / Rosa spp.

MAINTENANCE & MONITORING

WATERING

Providing adequate water to newly installed plants as they establish their root systems is vital to their survival and should be provided on a temporary basis only until the plants become established, generally three to five years. Once established, properly selected native plants should not require a permanent irrigation system.

Temporary irrigation systems that save water include soaker hoses and drip irrigation. Correct water placement is important. Ensuring that water is reaching the roots and surrounding soil without running off is the key. Generally, 1-2 inches of water per week is recommended. Avoid watering during the hottest part of the day because you will lose water to evaporation.

FERTILIZER

Fertilizer should not be applied within the shoreline setback. Research has shown that newly installed plants have undeveloped root systems which will not use fertilizer. If fertilizer is used, it will benefit weeds instead of your new plants.

WEEDING

Each installed plant should be kept free of weeds and grasses in a 24-inch-diameter circle around the stem. Weeds should be pulled by hand. Weed wackers should not be used around young plants because they can easily damage or kill developing plants. Herbicides generally should not be used in shoreline setbacks.

MONITORING YOUR PROJECT

Planting projects should be monitored over a five-year period, unless specifically stated otherwise in the SMP or permit documents, to verify that installed plants survive and that the performance standards are achieved. Mitigation measures must continue to be maintained beyond the 5-year monitoring period over the life of the use.

Monitoring reports must be submitted to the City at the ends of years 1, 3, and 5. These reports must include the following:

- As-built plans that document where plants were installed and any changes that were made to the permitted plans.
- Comprehensive photo documentation of site conditions. Photos should be taken from the same general location every year to allow for a comparison of vegetation growth, cover, and survival between years.
- Documentation of plant survival and progress toward meeting performance standards, detailed below.
- Discussion of any maintenance needed or conducted to meet performance standards.

PERFORMANCE STANDARDS

The City of Chelan's SMP establishes a performance standard for survival of mitigation plantings.

A 100 percent survival standard applies to the first year post-installation. Typically, the plant supplier will warranty plants within the first year of growth. An 80 percent survival standard applies to years 3 and 5. Survival is calculated by counting each individual plant by species and comparing the results to the original planting plan. For example, if 8 snowberry plants were found alive and 10 were originally planted, the survival is 80 percent.

YOUR SITE & PLANTING PLAN

Notes:

Scale: