

TOWN OF NIAGARA-ON-THE-LAKE

PROCEDURE

PROCEDURE NO. **REC-PRK-003**

SUPERSEDES NO.

TITLE: *Tree Planting and Establishment on Public Properties*

EFFECTIVE DATE: **May 4, 2009**

PURPOSE:

To clearly establish the procedures for planting and the establishment of trees on public properties maintained by the Parks & Recreation Department.

PROCEDURE:

Selection:

When selecting plant material, plant quality is an important consideration. Only healthy plants that are characteristic of the species should be planted. All trees should have appropriate form, compactness, and symmetry. Trees should be free of any conditions that would prevent vigorous growth, and should have healthy, well developed root systems. Root ball sizes should be adequate to encompass enough of the root system as necessary for establishment.

Transporting:

Care must be taken when transporting and storing trees prior to planting. Lifting of trees should be by the root ball and not the stem. During transportation, soil balls should not be broken, and the trunk and branches may need to be padded and covered to prevent damage. Soil balls should remain adequately moist and cool both during shipping and any storage to prevent stress prior to planting.

Site Preparation:

Planting site preparation is a key component of the process. Site preparation should focus on providing the highest quality environment possible for root growth during the establishment period. The final depth of the planting hole should not exceed the depth of the root ball. As greater volumes of loose cultivated soil on the sides of a root ball provide for more rapid establishment, planting hole width should be a minimum of 1.5 times the diameter of the root ball. Sloped sides for the planting hole are preferred as they will allow roots to grow into better quality surface soils when planted in sites where soil is compacted. If drainage is a concern, the root ball may need to be planted slightly above grade, and the choice of species may need to be modified.

Planting:

When planting, timing is an important consideration. Planting time shall ideally minimize stress to the tree. Spring and fall are preferred planting times as air and soil temperatures are generally moderate and soil moisture is generally adequate; certain species, however, are best transplanted in spring. Tree trunks should not be used as levers when planting or positioning trees. Trees should not be planted too deeply; the bottom of the trunk flare should be at or above the finished grade. All plastic root ball wrappings and containers must be removed from the planting hole. Biodegradable burlap and twine from the top half of the root ball should be removed after the ball has been placed in the hole and has been stabilized by tamping soil firmly around the lower quarter of the root ball. In order to avoid root girdling, wire baskets should be cut off to at least 6 inches below the shoulder of the root ball before backfilling. Backfill soil should not be compacted to a density that inhibits root growth. Once planting and backfilling has taken place, water should be added to the root ball and backfill to bring the root ball to field capacity. Mulch should be applied to an initial settled depth of 5 to 10 cm.

Pruning:

If pruning has been performed correctly during production at the nursery, pruning at planting should be limited to the removal of broken twigs. Reduction pruning may be an effective method of addressing large branches and codominant stems. Over pruning is to be avoided, as it will reduce photosynthesis, may prolong the establishment period, and can destroy the tree's structure and introduce decay.

Staking:

Staking, guying, and bracing are methods for supporting the trunk of a planted tree to keep it in an upright position. If staking is necessary, two stakes with separate flexible ties or wire slipped through a piece of garden hose are typical methods. Staking systems should be observed and maintained as long as they are in place.

Guards:

Plastic guards may be installed as protection against damage from equipment and animals. Plastic guards can prevent small animals from feeding on bark at the tree base, girdling the stem, and can prevent mechanical injury from lawn mowers and line trimmers. When used, guards must be designed for trunk expansion or removed before they cause any constriction of tree trunks.

Establishment Period:

Proper care during the establishment period is very important for the survival and good health of the newly planted tree. During the establishment period, drought stress limits tree growth more than any other factor. All trees experience high levels of post planting stress from lack of water until their roots can grow into the surrounding soil and access moisture. Until roots have grown out of the root ball, moisture levels should be monitored and supplementary water provided as needed. Slow release watering bags may be employed to provide thorough and efficient watering.

Mulching:

Composted shredded bark mulch at a settled depth of 5cm to 10cm provides an effective means of controlling soil moisture. It also helps prevent mechanical damage, buffers extremes of soil temperature, controls weeds and other competing vegetation, replenishes organic matter, and may replenish soil nutrients. By creating a superior environment for root growth, mulching enables trees to grow more vigorously and therefore both reduces stress and decreases the establishment period. Mulch should therefore be installed immediately after planting whenever possible.