

## Chapter 5 – Nursery Operations



The Resource Management Division produces about 16,000 spring and 14,000 fall plants per year. The nursery provides a cost-effective way for the City to meet landscape plant replacement needs throughout its park system. Strict operational practices are followed to produce high quality and healthy plants in City of Bellevue nurseries. This section identifies and defines these best management practices for nursery operations.

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### 5.2 Definitions

**Clean Green** – Refers to various plant debris such as leaves, pruned limbs, etc. that has not been contaminated with garbage and is suitable for recycling and composting.

**Nursery** – A facility for the propagation and growing of plants for use on developed and undeveloped park property.

**Poly-house or Shade House** – Terms for greenhouse-type structure that provides a minimal level of cold weather or sun protection required by nursery crops.

**Senior Gardening Staff** – Resource management staff person responsible for managing the nursery. Senior gardeners are "journey-level" positions, possessing a broad range of horticultural knowledge and skills.

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### 5.3 Background

The City of Bellevue operates a 5 acre Nursery located at 15302 SE 16<sup>th</sup> Street. This facility holds ornamentals, groundcovers, vines, perennials, shrubs and trees. The plants are grown to support various needs throughout the park system from small in-house planting projects to large capital improvement projects.

An increasing number of these plants are Pacific Northwest native species that are grown for use in landscape restoration projects to ensure variety of plants needed in the sizes required. The City nursery also produces an increasing number of annuals for most of the City's planting beds and landscapes. The following are features of the City Nursery:

- Office and storage building
- Growing frames
- Holding and healing-in area
- Container yards
- Poly and shade houses
- Propagation areas: cold frames, seed beds, poly-house.

#### Basic Operating Plan

- Most of the nursery operation is containerized. Plants are grown in containers to various sizes for eventual planting in parks. A containerized operation is both cleaner and less labor intensive than field growing, particularly when moving plants out of the nursery.
- Plants are field grown to meet specific needs such as large specimen trees.

#### Plant Selection

- The City of Bellevue's nursery program is not designed to carry a large number of plants in its inventory. Surplus plants are not cost effective given the care required to maintain a large inventory.
- The types and quantities of plants selected for propagation are generally determined through requests from other City of Bellevue staff or to meet particular requirements of various capital projects.

- Both ornamental and native plants are grown in anticipation of annual needs based on history.
- Some plants are grown as test subjects for possible introduction into park landscapes.

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## 5.4 Best Management Practices

The following are standard practices for preparing and maintaining plants grown in City of Bellevue nursery operations.

### Site Preparation

- All plant growing areas shall have adequate drainage to ensure plants are not sitting in water or saturated soil. A slow release fertilizer is typically added to the soil prior to planting.
- Field growing soil and imported potting soil shall be tested as needed to determine the need for amendments/nutrients and for the presence of unwanted pathogens.
- The container soil mix shall be compost (20%), peat (15%), pumice (25%) and fine decomposed bark (40%) with 1 lb. calcium nitrate added per cubic yard.
- Soil for field growing shall be a sandy loam with not more than 30% organic material in the form of equal parts of compost and bark (Note: bark in this case is fir or hemlock free of wood waste products. Cedar bark or chipping debris shall not be used).

### Site Maintenance

- Noxious weeds shall be controlled or removed from the site during preparation.
- Roads and pathways shall be maintained on an annual basis to ensure accessibility.
- Any exposed soils or bark piles shall be covered with plastic.
- The general public shall not have access to the nursery grounds except and unless a pre-approved department staff person is also present.

### Cultural Care

The following are preventive maintenance techniques the City of Bellevue uses to ensure the quality of its nursery grown plants.

- All plants should be spaced to allow for optimal growth,

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- especially in field growing areas.
- Containerized plants shall be re-potted as needed to prevent encircling roots and to allow them to grow into their desired natural form without girdling.
- All plants shall be watered as needed. The primary method of irrigation is the existing overhead system. This system works well for field growing areas but is modified as needed for watering containerized plants.
- City water used for plant irrigation purposes shall be used efficiently:
  - Plants will be grouped by size and water needs.
  - Watering will be done on an as-needed basis.
  - The most efficient system for watering individual planted areas will be used.
  - Avoid watering nursery areas that are not currently holding plants.
- The nursery shall support recycling:
  - Clean compost will be used whenever possible.
  - Growing containers will be reused (following cleaning).
  - Plant debris will be sent to "clean-green."
  - Used soil from containers will be reused onsite whenever possible.
- Plants shall be fertilized as needed using slow-release types of fertilizers.
- Plant holding areas shall be used for plants that are in transition. While in holding, plants shall be mulched, staked as needed, watered and provided with shade protection if required.
- Winter protection shall be provided for plants as needed through the use of existing greenhouses or "frost blankets." Smaller, more tender plants shall have priority for winter protection.

### 5.5 Integrated Pest Management

Control of pests in the nursery environment is very important because many plants may be affected.

#### Pest Tolerance Thresholds

- Pests that threaten the health of the nursery crops will

not be tolerated and will be controlled.

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## Pest Management Strategies

### Surface and Groundwater Protection

- General site runoff is controlled through bio-filtration.
- Select the least toxic and most non-leaching chemical products only when necessary. Precisely follow all label instructions.

### Weed Control

- Most weed control at the nursery is accomplished through hand weeding, mulching and use of landscape fabrics.
- When other controls have failed, herbicide is used for spot control of weeds.

### Disease Control

- Select disease-resistant plant varieties and high quality disease free plant material.
- Monitor plant crops for disease outbreaks.
- Practice good cultural practices including watering, fertilizing, pruning and maintaining good air circulation.
- Reduce the potential for transfer of disease through good sanitation techniques. These practices include keeping growing areas, tools and containers clean and removing plant litter and debris in a timely manner.

### Insect Control

- Habitat for natural insect pest predators will be encouraged as an environmentally sound means to reduce populations of insect pests.

## 5.6 Training

The City of Bellevue will develop a basic training program for staff assigned to work in the nursery. This training will also be made available to other City of Bellevue staff to broaden their horticultural skill base.

