CRYSTAL SPRINGS
RHODODENDRON GARDEN

Master Plan

July 1992
ACKNOWLEDGEMENTS

Mayor J.E. "Bud" Clark
Commissioner Earl Blumenauer  Commissioner Dick Bogle
Commissioner Gretchen Kafoury  Commissioner Mike Lindberg

Charles Jordan, Director
Portland Parks Bureau

Preparation of the Master Plan for Crystal Springs Rhododendron Garden involved several people in the Portland Chapter—American Rhododendron Society, the Portland Parks Bureau, and OTAK, inc. Individuals who actively participated in the master plan are listed below.

Project Manager & Principal Author

David M. Yamashita, Planner
Portland Parks Bureau

OTAK, inc.

Linda Royer, Manager
Landscape Architecture
David Dyer, Landscape Architect

Portland Parks Bureau
City of Portland

Anne Kowalshek, Public Gardens Supervisor
Jim Sjulin, Natural Resources Supervisor

...and others who contributed their time and expertise to the master plan project. These include: Don Reed, Gardener; Steve Bricker, Park Foreman; and Michael Sewell, Planning Supervisor.
CRYSTAL SPRINGS
RHODODENDRON GARDEN

Master Plan

Prepared by:

Bureau of Parks & Recreation
Portland, Oregon

In Cooperation With:

Portland Chapter—American Rhododendron Society
OTAK, inc.

July 1992
# Table of Contents

1 - Introduction

1.1 Why the Master Plan Was Prepared .................................. 1  
1.2 Purpose of the Master Plan ............................................. 2  
1.3 Implementation of the Master Plan ................................... 2  
1.4 Planning Process ......................................................... 2  
1.5 Updating of the Master Plan ......................................... 3

2 - The Rhododendron Garden Today

2.1 Existing Conditions
   A. General Conditions .................................................. 4  
   B. Zoning and Land Use Regulations ............................... 6  
   C. Garden Layout ...................................................... 7  
   D. Facilities ............................................................ 8  
   E. Plant Collection ................................................... 10  
   F. Events and Activities ............................................. 10  
   G. Management and Operations Activities ....................... 12

2.2 Site Issues
   A. Adequacy of Land Area ............................................. 16  
   B. Trail System ......................................................... 16  
   C. Traffic and Parking ................................................. 20  
   D. Wildlife Management ............................................... 21  
   E. Facilities ............................................................ 22  
   F. Plant Collection ................................................... 22  
   G. Security and Vandalism ........................................... 23  
   H. Environmental Conditions ....................................... 23

3 - Master Plan Recommendations

3.1 Philosophy of the Master Plan ...................................... 26  
   A. Mission Statement ................................................. 28
Table of Contents

3.2 Garden Goals and Policies
   A. Plantings ........................................... 30
   B. Circulation and Parking ........................... 32
   C. Facilities .......................................... 35
   D. Programs, Activities, and Education .......... 36
   E. Wildlife Management and Environmental Management . 38
   F. Maintenance and Operations .................... 40

3.3 Development Plan
   A. Entry Area ......................................... 42
   B. Peninsula ........................................... 45
   C. Island .............................................. 47
   D. Exhibition Hall .................................... 50
   E. Crystal Springs Chapter House .................. 51
   F. Wildlife Habitat ................................... 52

4 - Funding
   4.1 Summary of Recommendations .................... 55
   4.2 Current and Projected Financial Situation .......... 56
      A. Expenses ........................................... 57
      B. Income ............................................ 66

Appendices
   A. Roles and Responsibilities
   B. History of the Garden
   C. Open Space Zone Regulations
   D. Environmental Zone Regulations
   E. Environmental Zone Application
Chapter 1
1 Introduction

Crystal Springs Rhododendron Garden is one of Portland's most popular and beautiful botanical Gardens. Started in 1950 as a test site, the Garden has grown into a horticultural and aesthetic treasure that attracts people from throughout the world.¹

People visit it for different reasons, and that may be the key to its popularity. As a botanical Garden, Crystal Springs offers an opportunity to observe and learn about hundreds of species and hybrid rhododendrons. To the general public, the Garden is a whirlwind of color in the spring and a refuge from the rigors of urban living. For wildlife, the Garden offers habitat, a home for their young, and a place to rest after the winter migration. For neighborhood residents, Crystal Springs is "their" Garden, a place to stroll, and a stopover on morning and evening walks.

That such a place should exist in the City is a blessing. But the future of Crystal Springs Rhododendron Garden cannot be left to chance—the Garden needs to be nurtured and cared for. The master plan describes how this should happen.

1.1 WHY THE MASTER PLAN WAS PREPARED

The need for a master plan for the Garden was recognized and proposed in 1987 by the Portland Chapter-American Rhododendron Society (PC-ARS). The project was initiated because the Garden had grown to a point where a plan was needed to guide future improvements. Some of the Garden's major facilities, such as the exhibition hall, require substantial renovation or replacement, something that will take years of planning and fundraising.

Actual preparation of the master plan document for Crystal Springs Rhododendron Garden was initiated by the City of Portland and PC-ARS in 1989. Several meetings and workshops were held to gather information, review alternatives, and to revise draft reports (See Section 1.4, Planning Process).

¹ A more detailed history is of the Garden is in Appendix B.
The plan is needed also because the 1995 National Convention for the American Rhododendron Society will be held in Portland. It was felt that Crystal Springs Rhododendron Garden will "showcase" the Portland Chapter's work and commitment to one of the country's finest rhododendron Gardens.

1.2 PURPOSE OF THE MASTER PLAN

The Master Plan is designed to serve as a blueprint and a working guide for the future development and improvement of the Rhododendron Garden. The plan establishes a direction for future development, outlines priorities, identifies potential new facilities, and outlines an implementation strategy.

The plan should be used as a guide when reviewing major projects as well as smaller projects, and is intended for use by both Parks Bureau staff and Rhododendron Garden volunteers. Although the focus of the plan is on physical improvements, these projects should help to establish a foundation on which other program opportunities can be realized.

1.3 IMPLEMENTATION OF THE MASTER PLAN

Implementation of the Master Plan should be carried out as a partnership between the Portland Chapter-American Rhododendron Society and the Portland Parks Bureau. PC-ARS is now extensively involved in the maintenance, improvements, and operation of the Garden and this participation will likely continue and increase.

As landowner, the Parks Bureau provides maintenance staff and funds a number of capital projects and repairs. Both groups have worked cooperatively and this partnership has been a key to the success of the Rhododendron Garden. A continuation of this relationship is proposed, with some modifications. The specific roles and responsibilities of the two groups are outlined in Appendix A.

1.4 PLANNING PROCESS

As mentioned previously, the need for a master plan process was recognized by the Rhododendron Garden’s Long-Range Planning Committee in 1987. Over the next two years, the Committee developed a mission statement and outlined some general ideas and concepts.
Work on the actual document began during the spring of 1989. Under the direction of the Parks Bureau, the committee had a series of three intensive workshops with Parks Bureau staff were held in the summer of 1990. Each workshop was four hours long and resulted in a basic concept and several major recommendations, that provided the foundation for the master plan.

Neighborhoods and other groups were an integral part of the process. The Eastmoreland Neighborhood Association and Sellwood-Moreland Improvement League (SMILE) were briefed on the plan at meetings in 1990 and 1991. Meetings also were held with representatives of the Audubon Society and the Eastmoreland Golf Course.

1.5 UPDATING OF THE MASTER PLAN

No master plan is ever "finished." It is, instead, always being implemented while new ideas are being considered and conditions change. As a result, the Rhododendron Garden's Master Plan should be updated when conditions change significantly and when other major issues need to be resolved.

The updating of the plan should occur in two ways.

(1) The project list should be revised annually. In the revision, completed projects can be dropped and new projects added. The relative priority of the list also should be reviewed annually to ensure that financial and staff resources will be directed toward the most important projects.

An evaluation of the plan's goals and objectives also should be carried out to ensure that new conditions and issues can be addressed.

(2) The entire plan should be revised every five years, depending on how much of the original plan has been realized. New goals and ideas should be integrated and the mission statement also should be reviewed to determine how applicable it is to current conditions.
Chapter 2
2 The Rhododendron Garden Today

The future of the Rhododendron Garden is tied closely to the site and its surroundings. Bordered on all sides by developed land, the garden is affected by current and proposed land uses of its neighbors. Expansion of the garden is possible but most of the garden will likely remain within its present borders. As a result, the garden will have to focus on making the best use of its current site and overcoming any site problems that now limit the garden's improvement.

The following chapter describes the Garden's existing conditions and identifies the most pressing issues that need to be addressed in the master plan.

2.1 EXISTING CONDITIONS

A. General Conditions

Crystal Springs Rhododendron Garden is owned by the City of Portland Parks Bureau and occupies about seven acres due east of the Eastmoreland Golf Course (also owned by the Parks Bureau) in southeast Portland. The garden is bordered on the east by SE 28th Avenue and Reed College, and by the Eastmoreland Golf Course on the other sides (see map on next page). Single-family homes in the Eastmoreland neighborhood also are a major adjacent land use.

The area around the garden will likely remain stable over the long-term because the surrounding land uses--residential, golf course, and a college--are relatively "built out". Of the three uses, Reed College is the only one with the potential for more construction and expansion, mainly in the area east of SE 28th and northeast of Eastmoreland Golf Course.
Location and Context Map

The garden is surrounded by residences and the Eastmoreland Golf Course. Reed College is to the northeast of the garden.
B. Zoning and Land Use Regulations

The Garden is zoned as Open Space (OS) with an "overlay" Environmental Conservation Zone, and an Environmental Protection Zone.

The Open Space Zone is intended to "preserve public and private open and natural areas identified in the Comprehensive Plan." Under the zone's regulations, some uses may require a conditional use review, such as "facilities that draw spectators to events in a park". Open Space regulations also define development standards for building setbacks, parking, street trees, and other related improvements.

The line between the EP Zone and EC Zone is defined in the Johnson Creek Basin Protection Plan as being the 100 year floodplain line of Crystal Springs Lake, elevation 63.375' uses, approximately 6" above the highest lake level as controlled by the dam creating Crystal Springs Lake.

The Environmental Protection Overlay (p) applies to all water bodies in the garden. The Environmental Conservation Overlay (c) is applied to the remaining upland areas of the garden.

Activities that are affected by the Environmental Overlays regulations include "changes to the land, including all fills and excavations, grading, and any modification of drainage patterns" and the "removal of trees and removal, cutting, or mowing of noncultivated vegetation, including herbicide application", and "resource enhancement activities."

Proposed activities in the Environmental Zones have to be approved through an environmental review process administered by the Portland Planning Bureau. All new projects not in the Master Plan approved by the Planning Bureau, must be reviewed through the E-Zone process, which may take as long as eight months. The Garden Committee must be aware of this delay whenever new projects are proposed.
C. Garden Layout

The Garden comprises five basic areas: (1) the entry area next to SE 28th Avenue, (2) the Jane Martin Garden, (3) the "peninsula", (4) the "island", and (5) the maintenance and storage area (see map below). With the exception of the parking lot and maintenance area, the Garden area is vegetated with a variety of plant materials. Built facilities are limited to a few buildings consisting of the exhibition hall, restroom, pumphouse, and maintenance building.

Much of the site is hilly, with flat areas confined to the parking area and the upper elevations of the peninsula and island. Elevations range from 60' at the lake to 90' above sea level, at the parking lot.

General areas in the Rhododendron Garden
D. Facilities

Two major structures are located in the garden—the exhibition hall and restroom/storage building. The exhibition hall (see photo below) was built as a facility for the display and growing of rhododendrons. It is now used for tool and equipment storage, and floral exhibits, usually during the Early Show in April and the Mother’s Day Show. The restroom and storage room is a small structure (see photo on next page) which includes two uses—restrooms and a storage room.

The maintenance area is a graveled space of about 4,500 sf in the southeast corner of the Gardens, abutting the golf course. The area is used to store materials and equipment used for Garden maintenance, parking of maintenance vehicles, and unloading of materials during special events. The pump house is on the east side of the area. The maintenance area is accessed by an existing gravel road across the golf course, this road is controlled by two locked gates opened only by Parks or garden personnel. The public does not have access to this area.

![The west side of the existing exhibition hall.](Image)
Restroom building. The storage room is on the left side of the building.

South half of the maintenance area, looking across to the golf course.
E. Plant Collection

The rhododendron collection at Crystal Springs Rhododendron Garden comprises about 3,000 plants, consisting of both hybrids and species rhododendrons. These plants have been acquired through individual donations, nurseries, organizations, and purchases. In addition, some were planted as seedlings or have been homegrown from the ARS seed exchanges.

The hybrids include many of the older varieties that are not now in the nursery trade, as well as new varieties. In general, species rhododendrons are located on the outer perimeter of the Garden and adjacent to the water and hybrids are planted in the inner beds where they can be viewed from the paths.

The Garden exhibits many representative species of the genus rhododendron. Many of these species originate in Asia, especially in the mountains of western China, Tibet, Nepal, and other areas subjected to mists and monsoon rains. Their habitat also extends across Europe into North America, the Arctic, Japan, and into the tropics of New Guinea. The only major group of rhododendrons not exhibited in the Garden is the tropical species (Vireyas), which require conditions that cannot currently be provided at the Garden.

Many deciduous azaleas are native to the east coast of North America. These are represented in the North American Species bed overlooking the lagoon. Three species of elepidote rhododendrons—one from the west coast and two from the east coast are in the same location.

The Rock Garden section of the Garden includes many of the smaller species and hybrids that require sun and good drainage. The Jane Martin Entrance Garden, in contrast, provides shade and protection for the large leaved species and hybrids.

F. Events and Activities

Although many activities are held throughout the year at Crystal Springs, the primary and most heavily used season is during April, May, and June, when the rhododendrons are blooming.

Three major organized events are held in the Garden.

- The Portland Chapter-American Rhododendron Society (PC-ARS) sponsors two flower shows. The "early show" features many of the early blooming species and hybrids, and also includes a plant sale.
The "Mother's Day Show" in May is PC-ARS's extravaganza of the year. Exhibitors present over 500 of their finest trusses to be judged and, like the early show, also features a plant and book sale. The Oregon State University Master Gardeners offer information about rhododendrons and PC-ARS presents "care and culture" clinics throughout the day. In recent years, food booths and music have been provided at the shows.

As the blooming season ends, ARS holds its annual Family Potluck and Dead-Heading party. Members and visitors all help in removing spent blossoms from the plants.

The other major events held at the Garden are the weddings that typically occur between May and September. In 1989, 22 weddings were held and in 1990, 13 weddings were held at the Garden (the lower number is due to a short "wedding season", caused by the Garden's closure during construction of the new high bridge).

*Exhibits in the Exhibition Hall at the Mother's Day Show.*
G. Management and Operation Activities

The Garden is currently operated by PC-ARS. The Rhododendron Garden's volunteer group meets weekly to undertake any needed improvements. This core group of volunteers has done much of the work over the last few years and have tackled such projects as building concrete retaining walls, inventorying the plant material, labelling shrub beds, and installing new plants. Other members also have contributed many hours of labor. From December 1988 to June 1990, for example, PC-ARS volunteered over 3,850 hours of work.

Maintenance of the grounds is the shared responsibility of the Parks Bureau and PC-ARS. Gardeners and operations staff from the Westmoreland Park District and the West Horticulture Unit perform duties such as litter pick-up, shrub bed maintenance, irrigation, and mowing. Alternative Service Crews (ACS) also have been used for labor-intensive work such as building trails and spreading gravel.

*Volunteers Bill Ferguson and Dean Prater spread barkdust in the Garden's planting beds.*
Because of the extensive plantings and Garden layout, maintenance of the Garden is expensive, both in labor and materials. Parks Bureau records for fiscal years 1988-90 indicate that the total cost of materials and services for maintenance of the Garden was over $136,000.

Most of the labor was used for care of shrub beds. Other labor-intensive tasks included other horticultural tasks, manual setting of irrigation heads, care of hard surfaces, and litter pick-up.
2.2    SITE ISSUES

Many of the recommendations of the master plan are based on the resolution of several critical site issues. The issues described below are those that are considered to be the most significant because they have a major impact on the current and future operation of the Garden.

A. Adequacy of Land Area

The Garden has a limited amount of usable land. Many of the issues listed in this section are based on the restricted amount of land. Almost all of the Rhododendron Garden is hilly, with an extreme shortage of "usable" land. As a result, existing facilities have been located wherever flat land was available. Expansion is now unlikely because the Garden is bordered by the pond, SE 28th, and the golf course--none of which provide any room for expansion in the immediate future.

B. Trail System

The current trail system appears to be confusing for some visitors. Trails are now about the same width throughout the Garden and lack any indication of hierarchy. Although not marked as such, the Garden does have trails that serve as major routes or loops. These are not differentiated from "secondary" trails that act as connections or auxiliary routes.

In addition, there appears to be proliferation of trails in some areas, notably on the peninsula and on the island. Some visitors become confused and disoriented in certain sections of the Garden. The problem is compounded by a lack of directional signage throughout the Garden. Some of the primary paths and many of the secondary paths do not meet accessibility standards.
Trails are not edged or defined in many areas. In many sections of the Garden, there is nothing to define where a trail ends and where the planting beds begin. The installation of edging would help to define the Garden’s paths and indicate whether a trail is a primary or secondary trail (see previous discussion). In addition, the use of path edging materials could also visually emphasize the need for visitors to remain on the designated paths.

The lack of a border or edging makes it difficult to define where trails end and where planting beds begin.
There is an over-supply of trails along the water. Views of the pond are a major attraction of the Garden and visitors are typically drawn to the water's edge, unless there are shrub plantings between the path and water. Although views from the shore can and should be accommodated, there now is an excessive amount of trails that border directly on the water. In some cases, these trails have had to be lines with rocks, which gives them a "hard" edge or appearance, especially when seen from other viewpoints in the Garden. Many areas between the trail and water which were once planked have been trampled bare by foot traffic of visitors wanting to get to the water's edge. The west side of the peninsula in particular has extensive slopes, bare of planting with heavily compacted soil.

To rectify this situation, some pond-side trails should be located away from the water to create a meandering rout that would be more interesting, while still providing views. Existing broad areas of gravel can be reduced with the addition of planting beds along the water's edge. The trails need to be reinforced with edging materials and limited obvious viewpoints created to permit access to the water's edge. Rock reinforcement along the water's edge has been successful in stabilizing the slopes against further erosion. This exists for over 50% of the water's edge and can be continued above the P Zone line.

A path along the water that should be "softened" with plantings along its edge to make it consistent with the natural and woodland character of the Garden.
The trail system is not currently designed to accommodate visitors in wheelchairs. The slope of many trails exceeds the standard of less than 8.33 percent or (one foot of rise for every 12 feet of run). In addition, many of the trails are surfaced with gravel, which makes them difficult for wheelchairs.

In implementing the revised trail system (see maps on pages 53-54), the grades, widths, and materials of the primary trails must conform to current standards for wheelchair users. Any reviews of trail development or renovation should also include people who are wheelchair users or have experience with physical disabilities.

A section of the Garden's main trail that is too steep for visitors in wheelchairs.
C. Traffic and Parking

Parking is inadequate for peak events. While the parking lot is now generally adequate for day to day use, the lot is insufficient during weekends when the Garden is at its peak bloom. Other events, such as Mother’s Day Show, also create considerably more traffic. During these events, the parking lot is full and cars line SE 28th, narrowing the travel lanes in both directions.

Although the Garden has in informal agreement with Reed College to share their parking lot, inadequate parking remains a problem. This is important because the lack of parking has discouraged some people from visiting the Garden. Potential solutions to the issue include the use of shuttles from other area parking lots, encouraging the use of bikes, busses, walking, the continued shared use of the Reed College parking facilities, and possible purchase of separate land for parking. A traffic study was conducted by Kittleson & Associates in July 1993. Their conclusions and recommendations are included in Appendix F.

Cars lining the west side of SE 28th Avenue during the Mother’s Day Show.
D. Wildlife Management

Overfeeding of the ducks by visitors is a widespread practice that is inappropriate. The overpopulation of ducks and other waterfowl is likely due to the extensive feeding from park visitors who take bread and other inappropriate food for the ducks. Because of the overfeeding, the Garden has an oversupply of domestic ducks and geese, which do not migrate but remain as a year-round population. In addition, the overfeeding also discourages wildlife from foraging naturally, as they would in the "wild."

The Garden suffers from an overpopulation of ducks. The ducks congregate in specific areas and contribute to erosion of the lake's banks. The problem is especially acute in the duck-feeding areas at the north end of the low bridge and along the east shore of the lagoon (see photo below).

The feeding of ducks is inappropriate because it contributes to an overpopulation of ducks, decreases their incentive to forage naturally, and lowers water quality.
E. Facilities

The exhibition hall suffers from a variety of problems ranging from poor appearance to a lack of flexibility for different uses. Future use of the exhibition hall is questionable, especially if the Garden needs to accommodate weddings and PC-ARS activities. The use of the exhibition hall for PC-ARS meetings is impractical because many people are reluctant to walk the distance between the parking lot and the hall during the evening.

In addition, the exhibition hall does not have a heating or cooling system. Consequently, the interior is frequently uncomfortably warm or cool for daytime use.

The restroom is in poor condition. Although functional, the restroom is unattractive inside and is difficult to maintain and keep clean. Moreover, the restrooms are hooked into a septic system, which can create offensive odors. The septic system also results in a wetter-than-normal lawn, requiring the use of hand mowers rather than more efficient equipment.

The current storage yard is inadequate for maintenance vehicles and volunteers. The area can now accommodate two or three trucks, a limitation that is exacerbated when materials are stored there and when wedding receptions and flower shows are held in the Garden.

F. Plant Collection

The Garden does not have a plant collection policy. As a result, there is no basis for deciding what plants are included and what plants are removed. Decisions on acquisitions are now handled on a case by case basis. Because of this omission, it is unclear how many of the collections are to be organized. In addition, some of the rhododendrons are unnamed and overgrown. In some cases, extensive remedial pruning may be needed to restore them to their original beauty.
G. Security and Vandalism

Vandalism is a common occurrence at the Rhododendron Garden. It typically results in damaged shrubs, broken equipment, and damaged furniture. In one instance, the donation box has been destroyed and the money stolen. Other problems have included having the fence cut, damage to the main gate, and vandalism of the restrooms and bridges.

According to Parks Bureau staff, vandalism sometimes worsens towards the end of the school year and tends to be alcohol-related. Car break-ins also are common, even during daylight.

H. Environmental Conditions

The uniqueness and beauty of Crystal Springs owes much to the presence of water. There are many areas of the Garden where springs emerge from the hillside. The waters edge is a unique zone. As part of the Master Plan, a wetlands determination and delineation was conducted by a wetlands biologist. This report is included in Appendix E. In summary, it cites a wetland fringe along the banks in most areas but not extending above the P Zone line surveyed and staked. There is no natural seasonal fluctuation to the lake level which would produce a broader wetland bank. The extent of the area regulated by the U.S. Fish and Wildlife National Wetland Inventory is confined to the edges of the stream emerging from the Jane Martin Garden, a narrow fringe along the spring at the east side of the peninsula where it has not been built up by a rock wall, the swale between the exhibition hall and maintenance area and an area on the southwest edge of the island where willows and water iris predominate.

The report examines in more detail the area between the Exhibition Hall and the maintenance area. This delineation is shown on the Master Plan as a wetland protection area and development plans for that area were modified to eliminate any impact in that area.
The steep banks along much of the waters edge create a rather abrupt transition zone between the open water wetland edge and upland forest community. The steep slopes of the east bank above the north lagoon have been terraced with rock walls to stabilize the slopes, control erosion and runoff, reduce foot traffic on the slopes, and to create planting areas. At some points the slopes becomes too steep to terrace, greater than a 1:1 slope. These slopes are very difficult to maintain in plantings and if left to erode may eventually undermine existing paths. The most severe area would be reinforced by stone boulders much like what was done in the creation of the Jane Martin Garden waterfall. The steep slopes of the Jane Martin Garden have been modified and stabilized with the addition of retaining walls, stone, and plantings.

The third area of existing steep slope is at the southwest end of the high bridge. This slope is somewhat reinforced by stone but will be rebuilt with the construction of the fern wall and the existing steep path replaced by a modified one. At the foot of the slope are springs which have created a soft muddy area frequently trampled by visitors leading to erosion and muddy water going in to the lagoon. An existing stone reinforcement has been eroded. Plans for improvements in this area call for a boardwalk to elevate foot traffic above the springs and soft soil.

Crystal Spring Lake is a man-made lake created by a dam located on the golf course to the west side of the lake. The water drops 4'-5' over the dam and becomes a tributary to Crystal Springs Creek and Johnson Creek. Crystal Springs Creek runs north of the garden through the golf course and does not flow through Crystal Springs Rhododendron Garden. The lake has a low bank on the golf course side and then the golf course land falls always to lower elevations to the west.

The lake level is occasionally lowered by the golf course to assist in drying out the land close to the lake. At times of low water flow in the summer, the shallow and stagnant areas of the lake develop significant aquatic plant growth and unpleasant odors from the stagnant water combined with the duck excrement. There are no migratory fish entering the lake due to the dam and the lake, springs and stream are not spawning grounds.
The native vegetation of the area is primarily Douglas fir, cedar, red alder, big leaf maple and Mazzard cherry. A part of the garden area bordering the golf course is undisturbed native vegetation. The understory of this area is heavily covered with blackberries. The developed garden areas are dominated by a tree canopy of Douglas fir, alder, and big leaf maple. The tree canopy was heavily damaged by the Columbus Day storm in 1962 when some trees were lost. Replanting was done with fast growing species to quickly replace the shade to the newly exposed rhododendrons. Many of these trees are now mature and providing too much shade and competition for the native trees and rhododendrons.

Some of these trees are being selectively removed. The existing tree canopy is maturing and as trees decline and become a hazard, they are removed by City of Portland crew. Replacement trees are sometimes planted in advance of removal. Ornamental cultivars have been planted in the Garden as companion plantings to the rhododendrons since the garden was first established. The Garden now has a collection of unique trees and shrubs which are not otherwise accessible in public gardens in Portland.
Chapter 3
## Master Plan Recommendations

The Master Plan for the Crystal Springs Rhododendron Garden consists of the three parts described below.

### 3.1 Philosophy of the Master Plan

The Philosophy of the Master Plan describes the basic tenets of the plan and represents a statement of values that should be considered as the plan is implemented. An important part of the Philosophy is the Mission Statement, which elaborates on the purposes of the Garden.

### 3.2 Goals and Policies

The Goals and Policies section identifies the plan’s basic goals and provides a foundation for specific projects and actions. These may be viewed as operating policies for the garden that should be consulted on any improvement project.

### 3.3 Development Plan

The Development Plan outlines recommendations for physical improvements and projects for specific areas of the garden, such as the entry zone, island, and peninsula. In addition, actions relating to the proposed headquarters and new Exhibit Hall are detailed.

### 3.1 Philosophy of the Master Plan

The Master Plan is based on three fundamental values about the Rhododendron Garden—what makes it special, its inherent character, and what features should always be preserved. These values were defined through several workshops with the garden’s Long-Range Planning Committee and Parks Bureau staff. These three basic beliefs are described below.

The most distinctive characteristics of the Garden are its beauty and tranquility. Whatever improvements and changes are made should be sensitive to maintaining these qualities, which represent a major reason that people visit the garden. The relationship between the garden and lake, and its "natural" appearance that recalls the native woodlands of the Pacific Northwest, are important characteristics to be preserved.
The garden also includes several landscape features that contribute greatly to its beauty and sense of tranquility. Because of their importance, these features should be part of any improvement plan. These features include:

- the informal planting beds and meandering paths;
- the variety of plant masses, both natural and cultivated;
- the large rhododendrons that reflect the garden’s history; and
- the open lawn areas that complement shrub plantings and provide spaces for relaxation.

_The Garden has the potential to become one of the country’s best and most beautiful rhododendron gardens._ Developing a first-class facility is an underlying theme of the master plan—a goal that will require a serious commitment of public and private resources.

_The Garden can serve as an educational resource as well a botanical garden that is appreciated mainly for its beauty._ Through carefully designed improvements, the garden can serve a variety of visitors, ranging from botanists to people out for an evening stroll.

_The relationship between the Garden and the lake is a feature that should be preserved into the future._
3.1.A MISSION STATEMENT

Crystal Springs Rhododendron Garden is intended to:

1. Present to the public a major display of significant rhododendrons, azaleas, and companion plantings.

2. Offer the tranquility of a peaceful refuge away from the hurried pace of urban living.

3. Demonstrate, through skillful use of companion plantings, how a major rhododendron garden may be beautiful and appealing to the public all year round.

4. Offer a natural setting for educational programs of interest to horticulturists, amateur gardeners, and local schools.

5. Provide an opportunity, through annual shows, for the public to see many rare and unusual rhododendrons and azaleas not normally seen in this area.

6. Provide the setting for facilities that will accommodate the functions of groups wishing to use the Garden for special occasions.

7. Provide the setting for physical facilities that will accommodate the meetings and other activities of the Portland Chapter of the American Rhododendron Society.
3.2 Garden Goals and Policies

The Goals and Policies Section serves as an "operating manual" for the garden. It outlines a series of goals and recommendations that should be consulted on proposed capital projects or policy decisions. The goals translate the plan's basic philosophy and mission statement into statements that describe how the garden is to be managed and developed.

The Garden Policies and Standards Section is divided into six groups:

3.2.A Plantings
3.2.B Circulation and Parking
3.2.C Facilities
3.2.D Programs and Activities
3.2.E Wildlife Management
3.2.F Maintenance & Operations
3.2.A  Plantings

**Goal:**  
*Design and maintain the plantings to display their inherent beauty, to provide an educational value, or to be consistent with an acknowledged landscape theme.*

This should be done by:

- Designing planting beds to: (a) provide information on rhododendrons and azaleas, or (b) follow a deliberate landscape design or theme.
- Developing planting beds to be linear in shape, to allow for the easier identification and photographing of plants from adjacent paths.
- Including historical and contemporary species and hybrids.
- Retaining the existing collection of Loderis.
- Incorporating native plantings into the garden design.

**Goal:**  
*Provide plantings that have year-round interest.*

This should be done by:

- Including companion plantings that complement rhododendrons and azaleas and have special appeal during summer, fall, and winter.
- Providing plant materials that have interesting bark color or texture, structure, colorful fruits and berries, fall or spring color, flowers, or other characteristics.

**Goal:**  
*Maintain an up-to-date inventory of plants in the garden.*

This should be done by:

- Developing and implementing a plant collection policy.
- Maintaining a map that shows the location of plants in the garden.
- Developing and maintaining a computer database of rhododendrons and their characteristics.
Plantings (Cont’d)

Goal:  Coordinate the garden’s plantings with those of the golf course and other adjacent areas as a way of unifying the visual appearance of both activities.

This should be done by:

- Working with the Eastmoreland Golf Course to coordinate and assist with plantings.
- Working with Reed College to coordinate the plantings on the east side of SE 28th Avenue.

Planting beds should be linear to allow for easier identification and photographing of plants from adjacent paths.
3.2.B Circulation and Parking

Goal: Provide a circulation system that directs visitors to Garden attractions, distributes large crowds, limits pedestrian circulation to designated paths, and accommodates daily use as well as occasional crowds.

This should be done by:

- Establishing and maintaining a hierarchy of trails throughout the garden that defines main routes and secondary paths and is effective in managing pedestrian circulation. See trail standards on next page.
  
  - Primary trails are designed to serve as the "circulation spine" and identify the most efficient route between major attractions. These trails should be paved and approximately 6' wide, and accessible to people with limited disabilities.
  
  - Secondary trails are designed to accommodate fewer visitors than primary trails and provide a more intimate quality. These trails may be either paved or unpaved and should be between 3'-4' in width.

- Defining paths clearly with natural or man-made edging. Edging materials and design should be consistent throughout the garden.

Goal: Ensure that the garden and its facilities are accessible to visitors in wheelchairs.

This should be done by:

- Maintaining primary paths, wherever possible, to have slopes less than 8.33% (one foot in twelve feet of run).

- Paving all primary paths.

- Reviewing circulation projects with the City’s Office of Human Resources to ensure that they meet current standards.

- Building an alternate entrance path from the main gate to the high bridge that conforms to current ADA standards.
Circulation and Parking (Cont’d)

*Goal:* Maintaining a circulation system that can accommodate special events without significantly affecting use of the garden for the public.

This should be done by:

- Providing a path system on the peninsula so a section can be closed without obstructing major circulation routes.
- Providing other small areas in the garden that can be closed for special events without affecting public circulation.

*Goal:* Design and locate trails and paths to preserve and enhance the garden’s beauty, natural topography, plantings, and views of the lake and adjacent golf course.

This should be done by:

- Minimizing the number and length of trails that directly abut the lake without buffer plantings to soften the edges.
- Emphasizing loop trails to return visitors to the main paths.
- Locating paths to create narrow planting beds that allow plants to be easily identified from both sides.
- Creating specific view points at the waters edge and limiting people to those points by strong trail reinforcement.

*Goal:* Control the impacts of parking, especially during events that attract large groups.

This should be done by:

- Maintaining the current parking lot capacity for daily use.
- Using methods such as shuttle busses, shared parking with Reed College, and promoting the use of busses and bicycles.
- Posting appropriate traffic signs along SE 28th Avenue during periods of heavy traffic.
- Hiring trained personnel to control and monitor traffic during major events.
- Acquiring additional land for overflow parking.
Trail Standards

Primary Trail-Typical Section

Secondary Trails-Typical Section
3.2.C FACILITIES

Goal: Provide facilities that are needed to accommodate visitors and proposed activities.

This should be done by:

0 Constructing a facility that can be used for flower shows, plant clinics, weddings, ceremonies, and other events (to replace the present Exhibition Hall).
0 Developing a Crystal Springs Chapter House that can be used as the focus for PC-ARS meetings, shows and other Garden activities.

Goal: Locate and design facilities that are architecturally compatible with the Garden’s woodland character and natural quality; with other structures; and with an acknowledged theme throughout the Garden.

This should be done by:

0 Reviewing the design of all proposed structures with the Garden’s Planning Committee, Parks Bureau staff, and other interested groups.
0 Using a consistent and appropriate palette of materials when adding new features or making and changes to the Garden.
3.2.D Programs, Activities, and Education

**Goal:** Develop the Garden as an educational resource for serious Gardeners and novices who are interested in rhododendrons and related species.

This should be done by:

- Sponsoring educational programs on rhododendron cultivation.
- Providing information kiosks and distributing information about the Garden, PC-ARS, the Friends group, and rhododendrons.
- Installing identification signs for all significant plants.

**Goal:** Sponsor appropriate events and activities to increase awareness of the Gardens, generate revenues, and expand the Garden’s constituency.

This should be done by:

- Developing a gatehouse and information kiosk that can be used to give or sell simple informational material and can be used to collect entry fees.
- Providing facilities that can be used for weddings, clinics, and other appropriate activities.
- Continuing to hold the Mother’s Day Show and other similar events.
- Provide multi-lingual signs and handouts to reach non-native English speaking visitors.

**Goal:** Operate a volunteer program that provides an adequate number of trained volunteers for maintenance and programs.

This should be done by:

- Continuing outreach efforts aimed at recruiting volunteers.
- Working with City to provide a full-time Gardener and other maintenance staff.
- Utilizing resources such as the Friends of Crystal Springs Rhododendron Garden, other rhododendron and botanical gardens, neighborhood organizations, and the Parks Bureau’s Volunteer Coordinator.
- Developing work plans and guidelines to be used by volunteers.
Programs, Activities, and Education (Cont’d)

**Goal:** Develop a complete informational and directional signage program.

This should be done by:

- Preparing a uniform graphics system for all signs and printed materials (such as brochures, plant lists, and tape tours).
- Providing interpretive signs to educate visitors on botanical and wildlife areas and attractions. (See Wildlife Management).
- Installing identification signs for all major trails, Garden areas, and rhododendrons and azaleas.
- Distribute multi-lingual informational brochures on the Garden to the city’s Visitor Information Center and other outlets.

**Goal:** Manage attendance levels to minimize damage to the Garden caused by overcrowding.

This should be done by:

- Designing paths to accommodate and direct pedestrian flows.
- Scheduling weddings during non-peak visitor hours.
- Providing separate entry and exit points.
- Requiring appointments for large groups.
- Locating popular attractions throughout the Garden.
- Defining paths with edging materials.

**Goal:** Strengthen and clarify the partnership between the Parks Bureau and the American Rhododendron Society in the operation of the Garden.

This should be done by:

- Maintaining a formal agreement that defines the relationship between the City of Portland and the Rhododendron Garden.
3.2.E Wildlife Management & Environmental Management

**Goal:**
*Manage the Garden to maintain a healthy and diverse population of wild waterfowl and other aquatic birds.*

This should be done by:

- Maintaining the highest possible water quality to encourage macro-invertebrate as waterfowl and aquatic bird food sources.
- Minimizing practices that negatively affect dissolved oxygen levels or add phosphorous, and chemical pollutants.

**Goal:**
*Encourage a diverse wild bird population by reducing feeding practices that favor domestic waterfowl.*

This should be done by:

- Reducing the overall amount of public feeding to encourage wild bird foraging and feeding behavior.
- Encouraging visitors to feed whole grain foods such as raw popcorn, field com, barley, rice, and wheat.
- Reducing scavenging opportunities that encourage animals such as gulls, crows, and rats by properly disposing of food scraps, practicing regular and thorough sanitation, and by using covered garbage cans.

**Goal:**
*Ensure that Garden improvements and maintenance practices comply with current City environmental regulations.*

This should be done by:

- Maintaining a current copy of Open Space Zone and Environmental Overlay regulations published by the Portland Planning Bureau;
- Consulting these regulations before initiating any projects within the affected areas.
Wildlife Management (Cont’d)

Goal: Wildlife and wildlife management shall be an integral part of the Garden’s plan.

This should be done by:

- Maintaining a diverse habitat in landscaped areas through the use of many and varied types of plants, and full landscape structure which includes overstory and understory trees, shrubs, and groundcovers.
- Removing plant species such as Himalayan blackberry in designated habitat areas.
- Providing information through an on-site interpretive display that requests public participation in wildlife management.
- Identifying other animals in the Garden (besides squirrels, rats, and mice) that were there historically and which might be reintroduced.

Natural areas such as this should be retained as wildlife habitat.
3.2.F Maintenance & Operations

**Goal:** Provide an adequate level of staff and equipment for the maintenance of planting areas and other facilities.

This should be done by:

- Utilizing a maintenance plan that defines priorities, maintenance responsibilities, schedules, and standard practices.
- Grouping plants with similar maintenance requirements when redesigning beds.
- Increasing the use of trained volunteers.
- Exploring the use of students from horticultural programs as interns.

**Goal:** Maintain an adequate "infrastructure" (irrigation, electricity, water, and other utilities) to all parts of the garden.

This should be done by:

- Automating the existing irrigation system.
- Applying for grants and identifying other funding sources to fund irrigation system improvements.

**Goal:** Protect the gardens from vandalism and other destructive actions.

This should be done by:

- Utilizing a range of preventive options such as high fences, gates, trained dogs, a live-in caretaker, security staff, security system, lighting, and retiming the irrigation system to operate at night.
- Repairing vandalism as soon as possible.
- Maintaining the fence around the garden as a first "line of defense".
- Encouraging greater use on a daily basis by the general public.
- Locking the parking lot gates at night.
- Working with Reed College to coordinate security programs and projects.
3.3 Development Plan

The Development Plan describes improvements to address specific areas or issues in the Garden. The recommendations are organized into six major zones, and are illustrated on two master plan maps on pages 44-45.

<table>
<thead>
<tr>
<th>3.3.A</th>
<th>Entry Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3.B</td>
<td>Peninsula</td>
</tr>
<tr>
<td>3.3.C</td>
<td>Island</td>
</tr>
<tr>
<td>3.3.D</td>
<td>Exhibition Hall</td>
</tr>
<tr>
<td>3.3.E</td>
<td>Headquarters</td>
</tr>
<tr>
<td>3.3.F</td>
<td>Wildlife Habitat</td>
</tr>
</tbody>
</table>

The Development Plan proposes a series of projects that are designed to carry out eight major priorities over the short term:

* Maintain the current character of the Garden, protect and enhance existing features of the Garden through projects such as water features, viewpoints, and additional companion plantings.

* Improve and enhance the collection of plants to maintain the Garden as a botanical resource.

* Improve the path system to provide a clearer hierarchy and to better direct and control pedestrian and vehicular movement.

* Renovate existing facilities and develop new facilities to realize the Garden's potential use for meetings, clinics, weddings, and other events.

* Redevelop the parking lot and surrounding area as a way of "extending the Garden" beyond its current borders.

* Expand the maintenance and storage area for maintenance functions and to accommodate service vehicles for weddings and other events.

* Managing wildlife, wildlife habitat, and riparian areas to make them integral parts of the Garden and to maintain a healthy and diverse waterfowl population.

* Improve the Garden's "infrastructure" by installing sewer lines and an automated irrigation system.
3.3.A ENTRY AREA

Major Development Concepts & Actions

Create a distinctive "signature entry" into the Garden.

This area should not be seen as just a parking area, but should instead, be developed to extend the Rhododendron Garden up to the street. This should be done by developing planting beds, installing rhododendrons and compatible similar plant materials, and using common materials for signs, paving, and other features.

1. Redevelop the parking lot and surrounding area into a "Gateway Garden" as shown on page 43.

2. Develop a gatehouse and entry structure at the Garden’s main entrance that can be used to collect fees and to provide informational brochures.

3. Post additional signs warning visitors not to leave valuables in their cars and to lock their doors.

4. Investigate the use of "greeters" to deter vandalism and improve security in the parking lot.

5. Provide for pedestrian safety in the parking area.

Renovate the areas surrounding the Garden with similar plantings.

The purpose of this effort is to provide a more consistent appearance along SE 28th Avenue. The east side of SE 28th and the areas north and south of the Garden should be re landscaped to provide a more consistent appearance.

In addition, the boundaries between the Garden and the golf course should be softened through the extension of Rhododendron Garden plantings. The result should be that the Garden "flow into" the golf course and vice versa.

1. Work with the Eastmoreland Golf Course staff to extend the Garden’s plant materials to the golf course.

2. Work with Reed College to coordinate plantings on the east side of SE 28th Avenue with the Rhododendron Garden.
Proposed Design
GATEWAY GARDEN

This plan illustrates how the parking lot would be redeveloped to extend the garden out to SE 28th Ave. A variety of other goals (see plan at left) would also be achieved by this project.

CRYSTAL SPRINGS RHODODENDRON GARDEN
Master Plan

Portland, Oregon
April 1992

Page 43
Entry Area (Cont’d)

 Renovate the area between the parking lot and the lagoon.

Several types of improvements are needed in this area. The sloped areas should be relandscape; hard edges along the lagoon should be “softened” with plantings; trail connections are needed; and a new duck feeding area should be developed.

1. Establish a duck feeding area to replace the current site. Provide seating around the terraces in the new area.

2. Stabilize slopes with terraced walls and planting beds.

3. Construct new waterfall in the steepest part of the hillside above springs. Stabilize slope with rock work and new plantings. Waterfall is to be recirculated through pumping from the lower pool much like what is done at the Jane Martin Waterfall.

4. Construct boardwalk above springs to connect lower trail to duck feeding area and to night exit trail.

5. Develop midlevel viewing platform to the side of the waterfall and stairs as necessary on sloped paths.
3.3.B PENINSULA

Major Development Concepts & Actions

Retain the existing character and features of the peninsula.

The woodland character of the peninsula—its natural quality and meandering path system—are key attractions and should be retained. Changes or additions to the Garden in this area should enhance or maintain this quality.

1. Provide riparian plantings along "hard" edges such as viewpoints or rock-lined walkways to soften their visual impact and to create a more natural appearance.

2. Plant bare areas of the peninsula to control erosion and discourage access. Reinforce slopes as necessary above "P" zone with stone walls to lessen slope.

3. Develop a fern wall at the south end of the lagoon. The wall will be created with natural boulders and interplanted with unusual and hardy exotic ferns. The wall will be kept moist with a special watering system.

4. Construct a boardwalk below the fern wall in damp areas of the trail to permit undisturbed seepage and pedestrian access without damage.

Develop new facilities that will improve the use of the peninsula for weddings.

This includes an attractive open-air structure with plantings that are appropriate for ceremonies. In addition, revisions to the path system will be needed to control access onto the peninsula during weddings.

1. Develop structures that can be used for wedding ceremonies at the north end of the peninsula.

2. Revise the path system to allow better control of visitor access during weddings.

Provide viewpoints for visitors to view the lake, adjacent golf course, and other parts of the Garden.

Several viewpoints are proposed to provide long vistas of the lake and scenic or "framed" views of the Garden.

1. Develop a major viewpoint at the extreme western tip of the peninsula.

2. Develop additional viewpoints along the western side of the peninsula.
Peninsula (Con’t)

3. Viewpoints are built up with a concrete or stone wall above the "P" zone line. Install benches and significant edges and plantings beyond to contain foot traffic to within the viewpoints.

4. Install a bridge across the spring on the east side of the lagoon and a stairway beyond the spring leading to the night exit trail.

5. Develop a viewing platform or gazebo between the stairway and the spring, about halfway up the bank, with access from the stairway.

Revise the path system to provide a clearer hierarchy and sense of direction.

A main loop is proposed along with the secondary paths that tie into the loop. The path layout is revised also to provide long and narrow planting beds for easier identification and photographing of plants.

1. Improve trails to create a main loop and system of secondary paths, as shown on page 53.

2. Redevelop trails to allow the peninsula, or portions of it, to be closed for weddings.

3. Install a boardwalk across the outlet of the spring at the south end of the lagoon below the new fern wall.

4. Install a boardwalk across the outlet of the large spring in the Jane Martin Garden.
3.3.C  ISLAND

**Major Development Concepts & Actions**

Maintain the essential "woodland" character of the island.

Like the peninsula, the Island's essential character is defined by the large rhododendrons, informal path layout, and "natural" appearance. These basic features should be retained and enhanced, even with the significant projects that are planned for this part of the Garden.

1. Provide riparian plantings along "hard" edges such as viewpoints or rock-lined walkways to soften their visual impact and to create a more natural appearance.

2. Develop either a small wetland habitat around the SE corner of the Rhododendron Garden Island (at the "dogleg" on the 13th fairway) to provide wetland mitigation and enhancement area.

   The present water level does not mimic natural seasonal fluctuations. This project would require a small water control structure and native vegetation plantings along both the Rhododendron Garden and the golf course sides of the wetland area.

3. Develop a small waterfall in the rock garden that is north of the proposed exhibition hall.

**Expand visitor facilities with a new Exhibit Hall and other minor structures.**

The exhibition hall is a high priority because it is needed to accommodate existing activities and events such as the Mother's Day Show, clinics, and frequent maintenance activities. A new Hall would also include facilities to handle small receptions and meetings, and rhododendron shows. A modest food-service operation by a contract caterer should be considered.

1. Rebuild the exhibition hall to provide space for Rhododendron Society events and activities, and other related programs.

2. Develop a small alcove area that can be used for wedding ceremonies and other events in the planting bed northwest of the proposed exhibition hall.
Island (Cont'd)

Provide viewpoints for visitors to view the lake, adjacent golf course, and other parts of the Garden.

Several viewpoints are proposed to provide long vistas of the lake and scenic or "framed" views of the Garden.

1. Develop a viewpoint at the south end of the island. Reinforce the pathway to raise it above the "P" level.

2. Construct a trellis-covered walkway to connect the main lawn to the major viewpoint at the south end of the island.

Revise the path system to provide a clearer hierarchy and sense of direction.

A main loop is proposed along with the secondary paths that tie into the loop. The path layout is revised also to provide long and narrow planting beds for easier identification and photographing of plants.

1. Improve trails to create a main loop and system of secondary paths, as shown on page 54.

2. Revise planting beds where needed to accommodate new or realigned trails.

3. Widen and pave main loop trail so that it meets accessibility standards and can accommodate construction vehicles to the south end of the low bridge.

Improve facilities needed for maintenance of the Garden. As noted in earlier section, maintenance of the Garden and its plants is difficult because it does not have an automatic irrigation system. In addition, maintenance staff require a larger storage and parking/loading area.

1. Renovate and expand the maintenance area. Much of the area is taken up by storage of materials used in the Garden. More area is needed for maintenance vehicles and construction staging area. Redevelop the maintenance area, as shown on page 54. This area will be expanded by filling existing depressions above the protected wetland area and outside of the "P" zone.

The storage and maintenance building may be expanded to accommodate maintenance equipment now kept in the Exhibition Hall. The maintenance/parking area will be used primarily for operations activities and special events such as weddings. It is not intended as
public parking. It is to be kept graveled rather than paved. New buffer and screening landscaping will be installed with the improvements.

2. Install an automatic irrigation system for the island.

3. When the restrooms are built in the new Exhibit Hall, the existing restroom building interior can be converted to maintenance use.
As noted in Chapter 3, the existing Exhibit Hall is in poor condition, does not meet projected needs, and should be replaced with a new structure. Because of its expected cost, it is considered to be a long-range project, with construction projected in five years. It is, however, considered to have a higher priority than the proposed Chapter House, described on next the page.

**Major Development Concepts & Actions**

Renovate the existing Exhibit Hall to accommodate a variety of activities.

The Exhibit Hall will serve two primary activities: (1) an exhibition hall for rhododendron exhibits and shows; and (2) a reception area for weddings and other special events. Additional space will be allocated to activities that supplement this use.

Supplementing facilities will include:

- restrooms accessible from both the inside and outside;
- veranda for outdoor activities and to provide views of the Garden; and to expand exhibit space;
- kitchen;
- meeting room;
- gift shop;
- propagation area; and
- an information center with interpretive information on rhododendrons and other plants, history, and other related topics.
- greenhouse section to display subtropical rhododendron species such as vireyas.
- loading area accessible from the maintenance area.

The Exhibit Hall should be designed to complement the Garden’s woodland character and natural qualities. In addition, the Exhibit Hall will be oriented to provide views of the Garden to the northwest and southwest.
3.3.E CRYSTAL SPRINGS CHAPTER HOUSE

Major Development Concepts & Actions

Develop a Crystal Springs Chapter House.

The Crystal Springs Chapter House could serve many functions that cannot be accommodated now at the Garden. The building could also serve as the focus for Garden activities that require extensive indoor space.

1. Conduct detailed building studies to refine space requirements, costs, and overall construction and site feasibility.

2. Assess potential to raise funds and discuss interim options, if it appears that funding could be difficult.
3.3.F WILDLIFE HABITAT

Major Development Concepts & Actions

Develop and improve habitat for desired species.

Recommended actions include:

1. Install Wood Duck boxes of a design to discourage starlings on larger overstory trees at locations near and facing open water areas.
   - Purple Martin houses could be considered.
   - Swallow houses could be added near water’s edge to attract Violet-Green and Tree Swallows. (Monitor to determine if House Sparrows take over; remove if sparrows are a problem.)
   - Overstory trees should be retained and maintain shrubby vegetation areas maintained in areas heavily used by the public to attract Greenbacked Heron.

2. Utilizing floating logs as roosting sites for wild aquatic birds. These should be located away from public areas to minimize the disturbance to wildlife.

3. Relocate domestic waterfowl through an “adopt-a-duck” program, or other techniques, to habitat areas well away from the Garden. (Domestic species include domestic mallards, domestic geese, Muscovys, and hybrids)

4. Reduce mallard nesting habitat if permanent mallard population remains too high after other strategies (feeding practices, relocation) are implemented.

5. Soften the edges along the Garden with native plantings that provide wildlife habitat and/or serve as a food source.
<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>PROJECT</th>
<th>COST</th>
<th>FUNDING SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Budget</td>
<td>Minor Grant</td>
</tr>
<tr>
<td>1991–92</td>
<td>Install automatic irrigation system throughout garden.</td>
<td>$50,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Redevelop asphalt paths &amp; edge paths on peninsula</td>
<td>27,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Build new maintenance bldg.</td>
<td>14,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop rock garden waterfall.</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Initiate minor improvements at the Exhibition Hall.</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Install new plantings in selected areas.</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop small wedding facility on peninsula.</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Build new bridge across lagoon stream.</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install irrigation at Overlook &amp; Jane Martin Garden.</td>
<td>7,000</td>
<td>7,000</td>
</tr>
<tr>
<td></td>
<td>Install signage at selected points.</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Develop stairs to night exit trail &amp; lagoon.</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asphalt Jane Martin path.</td>
<td>3,700</td>
<td>3,700</td>
</tr>
<tr>
<td></td>
<td>Conduct detailed studies for gatehouse.</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL FY 1991–92</strong></td>
<td>$138,700</td>
<td>$16,700</td>
</tr>
</tbody>
</table>

1992–93

| PROJECT                                                                 | COST  | FUNDING SOURCE |
|                                                                         |       |                |
| Asphalt & install edging along selected paths.                          | $20,000|               | 20,000       |
| Continue installation of new plantings.                                | 5,000 |               | 5,000        |
| Conduct detailed building studies of new exhibition hall.              | 5,000 |               | 5,000        |
| Install signs in selected areas.                                        | 5,000 | 5,000         |              |
| Develop rock viewpoints on Island.                                     | 3,000 | 3,000         |              |
| Assess options to acquire land for parking.                            | ---   |               |              |
| Assess fundraising options for new exhibition hall.                    | ---   |               |              |
| **TOTAL FY 1992–93**                                                   | $38,000| $8,000        | $10,000      | $20,000      |

1993–94

| PROJECT                                                                 | COST  | FUNDING SOURCE |
|                                                                         |       |                |
| Develop the Gateway Garden.                                            | $114,000|               | 114,000      |
| Develop a structure for wedding ceremonies on the north end of the peninsula. | 25,000|               | 25,000       |
| Redevelop & asphalt paths to create main loop on island.               | 15,000|               | 15,000       |
| Develop lagoon waterfall and bridge.                                   | 10,000|               | 10,000       |
| Establish new duck feeding area.                                       | 5,000 |               | 5,000        |
| Continue installation of new plantings.                                | 5,000 | 5,000         |              |
| Build permanent gatehouse.                                             | 15,000|               | 15,000       |
| Build fern wall.                                                       | 15,000| 7,000         | 15,000       |
| **TOTAL FY 1993–94**                                                   | $196,000| $10,000      | $17,000      | $169,000     |

1994–95

| PROJECT                                                                 | COST  | FUNDING SOURCE |
|                                                                         |       |                |
| Develop a new hall to replace existing exhibition hall.                | $500,000|               | 500,000      |
| Replace the low bridge with a new bridge.                              | ---   |               |              |
| Renovate and expand the maintenance area.                              | 50,000 |               | 50,000       |
| Continue installation of new plantings.                               | 5,000 |               | 5,000        |
| Continue installation of signs.                                        | 5,000 |               | 5,000        |
| Continue development of rock viewpoints.                               | 5,000 |               | 5,000        |
| **TOTAL FY 1993–94**                                                   | $565,000| $15,000      | $550,000     |
PROPOSED MASTER PLAN
PROJECTS

Turn page and open flap for fold-out of the Master Plan’s Projects.

CRYSTAL SPRINGS
RHODODENDRON GARDEN
Master Plan

Portland, Oregon April 1992
PROPOSED MASTER PLAN
PROJECTS

Projects shown on these maps are conceptual in nature and scale. As a result, the final design and specific location will be refined during the review and preparation of construction drawings.

CRYSTAL SPRINGS
RIODODENDRON GARDEN
Master Plan

Portland, Oregon
April 1992

Page 55
Chapter 4
4 Funding

The greatest challenge facing the Garden is to secure the funds required for maintaining and improving the Garden's facilities. The Master Plan proposes that this be a truly magnificent garden and a major tourist attraction for the City of Portland. To accomplish this will require considerable funding, both for annual expenses and for capital investments, as well as a deep commitment of energy and time by a large group of volunteers.

4.1. SUMMARY OF RECOMMENDATIONS

The Master Plan's recommendations can be carried out only with the infusion of much greater financial support than is now available or is likely to be available from present resources. Consequently, implementation of the Master Plan will require a refocusing on fundraising to move from dreams to reality.

To this end, the Funding plan includes several major recommendations. These are to:

* Develop a business plan to project expenditures and revenues.
* Increase the number of revenue-generating events for the garden.
* Develop a program to secure large financial contributions for the garden.
* Retain part-time professional fund-raising help.
* Initiate the use of admission fees.
* Transfer management and scheduling of weddings and other events from the Parks Bureau to PC-ARS, which would retain the net income for garden purposes.
* Hire a full-time gardener within a year.
* Establish an endowment fund for the garden.
4.2 CURRENT & PROJECTED FINANCIAL SITUATION

The financial situation facing the Rhododendron Garden is discussed in the following chapter and is grouped into two sections -- Income and Expenses. These two sections are further divided into the three categories noted below. The tables in this chapter also follow the same organization.

Program and Activities  This includes activities and events that result in net "profit" after covering the costs of the event, to help fund operation and maintenance expenses of the Garden.

Historically, the only event meeting this standard has been the Chapter's Mothers Day Show. Other events such as weddings, etc., have been managed by the Parks Bureau which has retained any funds received.

Operations and Maintenance expenses are those related to the day-to-day costs of Garden maintenance.

Capital Improvements are those items that are new to the Garden or are renovations of existing facilities where the expense is $2,000 or more.

Explanation of the Tables

Detailed tables are included to show the actual Garden expense and income for FY 1988-91, a 1992 budget, and budget/forecasts for 1993-95 based on certain assumptions, which are explained on the following pages.

All figures are for fiscal years (FY) ending June 30 and are increased 5% annually to allow for inflation unless noted otherwise. Generally, all projections are rounded to the nearest $25, $50, or $100, as appropriate.

The amount and value of the support that the Portland Parks Bureau provides is an important part of the Garden's support. As a result, Parks Bureau activities are shown as separate line items, regardless of whether it is in-kind or in cash. Figures prior to 1990 for maintenance are estimates, because records for individual Gardens were not previously kept (See Table 4 on page 65).

Equally important is the value of the hundreds of volunteer hours provided each year at the Garden. Historically, no clear record of volunteer time has been kept but actual recording of these hours began in the spring of 1991. This is important because the figures may be helpful in securing outside funding support.
A. Expenses

1. PROGRAM AND ACTIVITIES (See Table 1)

Expenses described in this section are based on an increase in the number and variety of events in the Garden. In addition, the cost of retaining part-time professional fund raising help (a Development Director) is shown in this group because there is no administration section.

(a) Mother's Day Show - Three major expense categories are noted and described below.

- Income from the plant sale should be increased from this event, but may require a slight increase in expenses, as well.
- Security expenses are now listed as an individual line item.
- Promotion and public awareness of the event are considered to be essential to the success of the Mother's Day Plant Sale.

(b) Paid Admissions - The Portland Chapter has, for a long time, wanted to explore the potential for generating revenues through an admission to the Garden. With the approval of the Chapter Board, some members of the Long-Range Planning Committee met with and discussed the idea with Parks Director Charles Jordan. The use of a fee on an experimental basis was approved, beginning in spring of 1991.

Starting the weekend after the annual Mother's Day Show, admission was charged on seven weekends, from 10:00 AM to 6:00 PM (the Garden was open from 6:00 AM to 10:00 PM). A $2 fee was charged for everyone, with the exception of children under 12, who were free. A total of $11,109 in fees was collected over these 15 days.

The admissions booth was staffed with three Chapter volunteers working two four-hour shifts each day. Two people acted as ticket sellers/takers and one volunteer served as a "greeter" at the gate. The greeter's job was to handle questions and complaints and, when someone would not or could not pay to enter, the greeter would provide a free ticket. Of the 7,183 tickets distributed, 1,633 (22 percent) were given away, compared to about 5,550 (78 percent) paid admissions.

The only challenge in collecting admissions was in recruiting the 12 volunteers needed for each weekend. Most of this was done by Long-Range Planning Committee members, who used the PC-ARS membership list as a volunteer base. Although the experiment was successful, the recruitment of volunteers was a continuing challenge.
Based on that experience, the Committee proposed to expand the admissions program in 1992 to run from March 1 through Labor Day. As before, the fee would be charged only on weekends and holidays, and only from 10:00 AM to 6:00 PM.

It also proposes to employ a supervisor to oversee hiring of the gatekeepers, training, records management, deposits, and other related duties. Ideally, the "Greeters" will be Chapter volunteers who can best represent the Garden to visitors. Ticket sellers and takers may also be volunteers although a small group of employees could be used.

The costs of a paid supervisor and half-volunteer and half-paid gatekeepers are described in the table below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mar-June</td>
<td>July-Sep '92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor*</td>
<td>$ 1,000</td>
<td>$ 1,450</td>
<td>$ 1,525</td>
<td>$ 1,600</td>
</tr>
<tr>
<td>Ticket sellers/</td>
<td>2,400</td>
<td>4,000</td>
<td>4,200</td>
<td>4,500</td>
</tr>
<tr>
<td>Greeter**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential</td>
<td>340</td>
<td>600</td>
<td>650</td>
<td>700</td>
</tr>
<tr>
<td>Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tickets (misc)</td>
<td>300</td>
<td>300</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADMISSION EXPENSES</td>
<td>$ 4,040</td>
<td>$ 6,350</td>
<td>$ 6,700</td>
<td>$ 7,000</td>
</tr>
</tbody>
</table>

Notes:  
* At $ 200/month starting in February  
** Three sellers/greeter at $ 6/hr. x 8 hrs = $ 144/day x 33 days, less half volunteers
(c) **Weddings and Other Events** - The Park Bureau now schedules all weddings in the Garden. The Bureau handles all details, charges a fee of $75, and keeps it for general Park Bureau purposes.

It is proposed that the ARS take over the management of weddings and other events and retain the net income for Garden purposes. Based on the Parks Bureau's experience, about 25 weddings are scheduled each year, evenly distributed before and after June 30 (the end of the fiscal year).

The Portland Chapter-ARS proposes to manage the weddings and other events by employing a manager who could work out of his or her home. The schedule would start in March, 1992 because that is when the reservation normally starts, and would continue through September. It is proposed also that the manager be hired by January 1 to provide enough time to plan and promote weddings in the Garden.

The proposed fee of $200 would allow someone to reserve a designated area of the Garden for a certain period. If and when the exhibition hall is improved and available, an additional fee would be charged for its use.

**Manager** - It is proposed that a manager be hired in 1992 for $300/month from January-April, and $400/month from May-September. The monthly salary assumes that an early start in 1992 will increase the number of weddings, which will require more time from the manager during the actual wedding season.

Assuming that the program proves successful, it is proposed that in 1993, the salary be as shown below. Approximately 15 percent would also have to budgeted for benefits, because it would be then be a year-round job.

- $300/month from January-April;
- $400/month from May-September; and
- $300/month from October-December.

**Phone** - The budget also includes a phone with answering service or machine at $50/month.

**Supplies and Postage** - Expenses have been allocated for similar amounts except that an extra $200 is allocated for 1992 for printed materials. Because of the June 30 fiscal year, all of the above costs must be distributed through two fiscal years. The table shows this distribution.
### Projected Budget

**Coordinator for Weddings & Special Events**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-April @ $ 300/mth</td>
<td>$1,200</td>
<td>$1,200</td>
<td>$1,200</td>
<td>Incr. 5%</td>
</tr>
<tr>
<td>May-June @ $ 400/mth</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>Incr. 5%</td>
</tr>
<tr>
<td>July-Sept @ $ 400/mth</td>
<td>(92) 1,200</td>
<td>(93) 1,200</td>
<td>(93) 1,200</td>
<td>Incr. 5%</td>
</tr>
<tr>
<td>Oct-Dec @ $ 300/mth</td>
<td>--</td>
<td>--</td>
<td>(93) 900</td>
<td>Incr. 5%</td>
</tr>
<tr>
<td></td>
<td>$2,000</td>
<td>$3,200</td>
<td>$4,100</td>
<td>$4,305</td>
</tr>
<tr>
<td>Phone @ $ 50/mth</td>
<td>300</td>
<td>600</td>
<td>630</td>
<td>660</td>
</tr>
<tr>
<td>Supplies &amp; Postage</td>
<td>300</td>
<td>600</td>
<td>630</td>
<td>660</td>
</tr>
<tr>
<td>Printing</td>
<td>200</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Manager’s Benefits</td>
<td>300</td>
<td>480</td>
<td>515</td>
<td>650</td>
</tr>
<tr>
<td></td>
<td>$1,100</td>
<td>$1,680</td>
<td>$1,775</td>
<td>$1,970</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$3,100</td>
<td>$4,880</td>
<td>$5,875</td>
<td>$6,275</td>
</tr>
</tbody>
</table>

**Office** - No provision has been made for an office for the weddings and events manager. It may be possible to accommodate this function out of the manager’s home. If not, other options should be explored, such as using a portion of the exhibition hall or some other office.

(d) **Development Director** - Fundraising goals will soon exceed what can be raised by a volunteer effort. As a result, an experienced fundraiser should be retained on a part-time or contracted basis.

This is especially critical if a new Gateway Garden and a new exhibition hall are to be built by 1995 (the year that the ARS national Annual Meeting will be held in Portland, celebrating the 50th Anniversary of the ARS).

Expenses for this position are projected to start in spring of 1992. The figures, which are shown in Table 1 on the next page, include salary, benefits, and other expenses, etc.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Show</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expenses</td>
<td>301</td>
<td>200</td>
<td>425</td>
<td>613</td>
<td>550</td>
<td>600</td>
<td>650</td>
<td>700</td>
</tr>
<tr>
<td>Mother's Day Show</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,200</td>
<td>4,400</td>
<td>4,800</td>
<td>5,000</td>
</tr>
<tr>
<td>Misc.</td>
<td>1,362</td>
<td>3,027</td>
<td>6,584</td>
<td>4,380</td>
<td>1,200</td>
<td>1,250</td>
<td>1,300</td>
<td>1,350</td>
</tr>
<tr>
<td>Trophies</td>
<td>1,228</td>
<td>1,495</td>
<td>1,099</td>
<td>980</td>
<td>4,000</td>
<td>5,000</td>
<td>6,000</td>
<td>7,000</td>
</tr>
<tr>
<td>Plant Sales</td>
<td>110</td>
<td></td>
<td></td>
<td>1,817</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td></td>
<td>1,753</td>
<td>515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,050</td>
<td>1,100</td>
<td>1,200</td>
<td>1,300</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>2,700</td>
<td>6,275</td>
<td>8,178</td>
<td>7,177</td>
<td>10,900</td>
<td>12,250</td>
<td>13,850</td>
<td>15,250</td>
</tr>
<tr>
<td>Admissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,000</td>
<td>1,450</td>
<td>1,525</td>
<td>1,600</td>
</tr>
<tr>
<td>Supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,400</td>
<td>4,000</td>
<td>4,200</td>
<td>4,500</td>
</tr>
<tr>
<td>Gatekeepers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td>300</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Tickets, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>340</td>
<td>600</td>
<td>650</td>
<td>700</td>
</tr>
<tr>
<td>Potential Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,040</td>
<td>6,350</td>
<td>6,725</td>
<td>7,150</td>
</tr>
<tr>
<td>Weddings &amp; Other Events</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000</td>
<td>3,200</td>
<td>4,100</td>
<td>4,305</td>
</tr>
<tr>
<td>Manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td>600</td>
<td>630</td>
<td>660</td>
</tr>
<tr>
<td>Phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td>600</td>
<td>630</td>
<td>660</td>
</tr>
<tr>
<td>Supplies and Postage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td>480</td>
<td>515</td>
<td>650</td>
</tr>
<tr>
<td>Managers' Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,100</td>
<td>4,880</td>
<td>5,975</td>
<td>6,275</td>
</tr>
<tr>
<td>Part-Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10,000</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Development Director</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROGRAM AND</td>
<td>3,001</td>
<td>6,475</td>
<td>8,603</td>
<td>7,790</td>
<td>28,590</td>
<td>39,080</td>
<td>42,100</td>
<td>44,375</td>
</tr>
<tr>
<td>ACTIVITIES EXPENSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PG-1.DMY
2. OPERATIONS AND MAINTENANCE (See Table 2)

Because the Parks Bureau has limited resources devoted to the Garden, operations and maintenance expenses borne by the Portland Chapter-American Rhododendron Society will increase. As one example, the cost for a full-time Gardener will have to be absorbed by the Society and should be a priority. A full-time Gardener should be employed by February 1, 1995.

Miscellaneous expenses will also increase. It is expected that the pace of improvements in the Garden will accelerate in 1992 to address many of its critical needs. Reflecting these projects, $2,000/year for expenses has been allocated in this category.

Finally, if more weddings are held in the Garden, improvements to the exhibition hall will be needed, and maintenance expenses will go up accordingly.

3. CAPITAL IMPROVEMENTS (See Tables 3 and 4)

These expenses will be determined by project costs and the scheduling of the improvements, listed on Pages 50 and 51. The tables on these pages indicate the "ideal" year in which each project should be done and the estimated costs. Any impact on the maintenance budget is shown in Table 2.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>ACTUAL</th>
<th>BUDGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair and Maintenance</td>
<td>360</td>
<td>1,688</td>
</tr>
<tr>
<td>General Garden</td>
<td>1,685</td>
<td>730</td>
</tr>
<tr>
<td>Insurance</td>
<td>733</td>
<td>1,098</td>
</tr>
<tr>
<td>PGE</td>
<td>152</td>
<td>164</td>
</tr>
<tr>
<td>Development</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>643</td>
<td>1,455</td>
</tr>
<tr>
<td>Gardener</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gardener Benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent Gatehouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Exhibition Hall</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL OPERATION AND MAINTENANCE EXPENSES</strong></td>
<td><strong>3,973</strong></td>
<td><strong>3,680</strong></td>
</tr>
<tr>
<td>ITEM</td>
<td>ACTUAL</td>
<td>BUDGET/FORECASTS</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>paddison fountain</td>
<td>2,403</td>
<td></td>
</tr>
<tr>
<td>irrigation system completion</td>
<td>233 4,127 2,506</td>
<td>50,000</td>
</tr>
<tr>
<td>exit gate</td>
<td>2,800 558</td>
<td></td>
</tr>
<tr>
<td>otak planning</td>
<td>7,616 2,383</td>
<td></td>
</tr>
<tr>
<td>martin garden</td>
<td>13,425 4,073 8,735</td>
<td></td>
</tr>
<tr>
<td>friends of crystal springs</td>
<td>766</td>
<td></td>
</tr>
<tr>
<td>alarm system (PGC)</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>overlook benches (PGC)</td>
<td>1,175</td>
<td></td>
</tr>
<tr>
<td>irrigation--jane martin &amp; overlook</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td>asphalt jane martin trail</td>
<td>3,700</td>
<td></td>
</tr>
<tr>
<td>major new plantings</td>
<td>5,000 5,000 5,000 5,000</td>
<td></td>
</tr>
<tr>
<td>gateway garden</td>
<td>114,000</td>
<td></td>
</tr>
<tr>
<td>coolhouse, minor imprvmts</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>small wedding fac. on island (alcove)</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>rock garden waterfall</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td>replacement low bridge</td>
<td></td>
<td>negotiated</td>
</tr>
<tr>
<td>asphalt all paths</td>
<td>27,000 20,000 15,000</td>
<td></td>
</tr>
<tr>
<td>new maintenance bldg.</td>
<td>14,000</td>
<td></td>
</tr>
<tr>
<td>permanent gatehouse</td>
<td>5,000 15,000</td>
<td></td>
</tr>
<tr>
<td>new exhibition hall</td>
<td>5,000 500,000</td>
<td></td>
</tr>
<tr>
<td>new bridge on lagoon stream</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>signage</td>
<td>1,750 1,000 5,000 5,000</td>
<td></td>
</tr>
<tr>
<td>stairs to night exit trail &amp; lagoon</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>rock viewpoints</td>
<td></td>
<td>3,000 5,000</td>
</tr>
<tr>
<td>major wedding facility on peninsula</td>
<td>25,000</td>
<td></td>
</tr>
<tr>
<td>establish new duck--feeding area</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>expand &amp; renovate maintenance area</td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td>develop lagoon waterfall &amp; bridge</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>fern wall</td>
<td></td>
<td>7,000</td>
</tr>
<tr>
<td><strong>total expenses</strong></td>
<td><strong>15,828 4,306 16,484 16,282</strong></td>
<td><strong>138,700 38,000 196,000 585,000</strong></td>
</tr>
<tr>
<td><strong>capital improvements &amp; major maintenance</strong></td>
<td><strong>TOTAL 937,700</strong></td>
<td></td>
</tr>
</tbody>
</table>

PG3-DMY
## TABLE 4: TOTAL ANNUAL EXPENSES (INCL. PARK BUREAU) - 1988-1995

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ACTUAL</th>
<th>BUDGET/FORECASTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NON-PARK BUREAU EXPENSES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programs &amp; Activities</td>
<td>3,001</td>
<td>6,475</td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td>3,973</td>
<td>3,680</td>
</tr>
<tr>
<td>Capital Improvements &amp; Major Maintenance</td>
<td>15,829</td>
<td>4,306</td>
</tr>
<tr>
<td><strong>TOTAL EXPENSES</strong></td>
<td>22,802</td>
<td>14,461</td>
</tr>
</tbody>
</table>

**TOTAL EXPENSES (EXCLUSIVE OF PARK BUREAU)**

<table>
<thead>
<tr>
<th>PARK BUREAU EXPENSES:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Program &amp; Activities</td>
<td></td>
<td></td>
<td>30,000</td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td>37,764</td>
<td>81,192</td>
<td>79,394</td>
</tr>
<tr>
<td>Capital Improvements &amp; Major Maintenance</td>
<td></td>
<td>70,000</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL PARK BUREAU EXPENSES</strong></td>
<td>37,764</td>
<td>81,192</td>
<td>109,394</td>
</tr>
</tbody>
</table>

**TOTAL GARDEN EXPENSES**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60,566</td>
<td>95,653</td>
<td>139,777</td>
<td>182,805</td>
<td>265,451</td>
<td>180,248</td>
<td>546,740</td>
<td>754,676</td>
</tr>
</tbody>
</table>
B. Income

The cost of providing on-going maintenance and funding improvement projects is a major expense to the Garden. Because continued financial support from the Parks Bureau is uncertain, the Garden Committee will have to assume more responsibility for funding, probably by using a variety of measures to generate income. Several techniques are described below.

1. PROGRAM AND ACTIVITIES (See Table 5)

    Mothers Day Show - A committee is now working on ways to increase income from the Mother's Day Show. Although attendance (and income) depends on the weather, it is believed that revenue from plant sales can generate more revenue.

    Paid Admissions - The use of an admission fee has been initiated on an experimental basis during the spring weekends (April, May, June). The success and feasibility of continuing this policy will be reviewed by the Garden Committee and Parks Bureau in late summer.

    Weddings and Other Events - These are another way to generate income for the Garden. The fee schedule for weddings and other events requires the approval of the Park Bureau. The fee would likely start at $200/ wedding, which is consistent with the fees charged by other organizations such as Leach Botanical Garden.

    The projections in Table 5 assume 25 weddings during calendar year 1992, from May to September. On a fiscal year basis, the number of weddings would be 15 in May and June, and 10 in July and August. The number of weddings could double in 1993.

    Gateway Souvenirs - This assumes that by 1992, souvenirs such as postcards, T-shirts, note cards, film, etc. will be available for sale at the gate. The figures shown in Table 5 are net income.
2. OPERATIONS AND MAINTENANCE (See Table 5)

**Donations** - Now done through the "tube" outside the coolhouse. By placing another tube near the entrance gate, this income could probably be doubled.

**Miscellaneous** - This income will likely not increase materially during the next few years because there is no way to activate it.

**Interest** - This represents the return on the investment of the endowment fund. Increasing the endowment fund is a long process. However, over the long term gifts and bequests to the fund can be significantly increased and an endowment program needs to be established.

3. CAPITAL IMPROVEMENTS AND MAJOR MAINTENANCE

A program to secure large financial contributions for the Garden is needed. Foundations, individuals, and selected corporations, can and will give major support if properly solicited. Because it is very difficult to do this with volunteers, the use of a professional fundraiser should be carefully considered. If approved, it is recommended that this begin on a part-time basis in FY 1992.

Smaller capital improvements might be funded by a surplus in Garden program and activities income. See pages 53-54 for description of potential funding sources for projects.

**Friends of Crystal Springs Rhododendron Garden** - A "Friends" group was formed during 1990 to seek more volunteers and to assist in fundraising. The membership fees generated from the Friends group will be dedicated to capital improvement projects in the Garden. (In the process of being organized, membership fees totaling $2,000 were received.) A portion of these fees will also be used for printed material and other organizational supplies.

It is expected that the Friends group will eventually establish its own fund-raising activities to supplement membership fees. However, approximately $4,500 in income received in 1990 and 1991 will be used to help fund new plantings at the Overlook Garden, the installation of new signs in the Garden, and asphalting of the Jane Martin Garden path.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>ACTUAL</th>
<th>BUDGET/FORECASTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROGRAMS &amp; ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers' Day Show:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admissions</td>
<td>4,840</td>
<td>6,953</td>
</tr>
<tr>
<td>Trophies</td>
<td>1,259</td>
<td>1,412</td>
</tr>
<tr>
<td>Plant Sales</td>
<td>2,412</td>
<td>2,597</td>
</tr>
<tr>
<td>Program Ads</td>
<td>710</td>
<td>1,065</td>
</tr>
<tr>
<td>Program Ads Receivable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-Shirts, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Income</td>
<td>8,511</td>
<td>11,672</td>
</tr>
<tr>
<td>Paid Admissions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weddings &amp; Other Events:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Souvenirs, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program &amp;</td>
<td>8,511</td>
<td>11,672</td>
</tr>
<tr>
<td>Activities Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OPERATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>932</td>
<td>787</td>
</tr>
<tr>
<td>Interest</td>
<td>3,192</td>
<td>3,899</td>
</tr>
<tr>
<td>Total Operations Income</td>
<td>4,124</td>
<td>4,686</td>
</tr>
<tr>
<td><strong>TOTAL INCOME</strong></td>
<td>12,635</td>
<td>16,358</td>
</tr>
<tr>
<td>(Prog./Activities &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PG-6.WKI

Crystal Springs Rhododendron Garden Master Plan - Chapter 4
CRYSTAL SPRING RHODODENDRON GARDEN

<table>
<thead>
<tr>
<th>CATEGORY:</th>
<th>BUDGET/FORECASTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXPENSE</strong></td>
<td></td>
</tr>
<tr>
<td>Program &amp; Activities</td>
<td>28,590</td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td>9,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37,590</td>
</tr>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
</tr>
<tr>
<td>Program &amp; Activities</td>
<td>45,200</td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td>7,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>52,700</td>
</tr>
<tr>
<td>NET SURPLUS (DEFICIT)</td>
<td>15,110</td>
</tr>
<tr>
<td>RUNNING SURPLUS (DEFICIT)</td>
<td>15,110</td>
</tr>
</tbody>
</table>

**CAPITAL IMPROVEMENTS & MAJOR MAINTENANCE**

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>138,700</td>
<td>138,700</td>
</tr>
<tr>
<td>38,000</td>
<td>38,000</td>
</tr>
<tr>
<td>196,000</td>
<td>196,000</td>
</tr>
<tr>
<td>565,000</td>
<td>565,000</td>
</tr>
</tbody>
</table>

PG-9.DMY

There is no surplus or deficit for Capital Improvements & Major Maintenance because no project can be undertaken until the funds are available for the project. The surplus for Program & Activities and Operations & Maintenance will be used for miscellaneous activities and to make up for deficits in funding major projects.
Appendices
Appendix A: Roles & Responsibilities
Appendix A:

ROLES AND RESPONSIBILITIES
MANAGEMENT OF CRYSTAL SPRINGS RHODODENDRON GARDEN

Revised August 1993

Purpose

The purpose of this agreement is to define and clarify the roles and responsibilities of the Portland Chapter--American Rhododendron Society and Portland Parks and Recreation in managing the Crystal Springs Rhododendron Gardens. Management of the Garden is now a partnership between the two groups, and it is anticipated that this relationship will continue into the future.

Terms of the Agreement

This Agreement will take effect on the day it is signed and will terminate five years from that date. At that time, the Agreement will be reviewed and revised if needed. The Agreement can be terminated at any time if both parties agree.

Crystal Springs Rhododendron Garden Master Plan

The Master Plan will be used as the principal guide by both groups in proposing and making any improvements to the Garden. Projects should conform to the goals and policies outlined in the plan. All improvement projects shall follow design standards or policies in the garden's master plan or those of Portland Parks and Recreation. Variations from these standards or policies shall be submitted to the Portland Parks and Recreation for their approval prior to the development of construction drawings.

To ensure that the garden maintains an accurate database of plants and facilities, all improvements, where appropriate, shall be recorded on the garden’s inventory drawings or other documents. The originals of these drawings and the inventory shall be kept by Portland Parks and Recreation.

General Funding Responsibilities

In general, Portland Parks and Recreation will assume primary responsibility for projects that replace existing facilities, address "basic" needs such as utilities, and which may be difficult to fund through grants or donations (such as the installation or renovation of sewer and electrical lines).

The Park Bureau also will be responsible for ensuring that improvements at the Garden adhere to all applicable planning and codes and environmental regulations. Planning and construction projects that require compliance with land use/environmental regulations or codes shall be submitted to the Portland Parks and Recreation for review. Specific responsibilities are detailed on the following pages.

The Portland Chapter-American Rhododendron Society will assume primary funding responsibility for projects that renovate and/or enhance the operation and use of existing facilities, and projects that result in the development of new facilities. PC-ARS shall submit projects that must conform to land use/environmental regulations or codes to Portland Parks and Recreation for its review.
Crystal Springs Rhododendron Garden
Roles and Responsibilities
Revised August 1993

To facilitate the division of maintenance and funding responsibilities, a current inventory of garden facilities, site amenities, and other improvements shall be maintained by Portland Parks and Recreation. This inventory shall include any information that is needed to carry out the agreement outlined on the following pages. To ensure its accuracy and to provide a common source of information, the inventory shall be updated and reviewed by both Portland Parks and Recreation and PC-ARS at a minimum of every 12 months.

Charles Jordan, Director
Portland Parks and Recreation

__________________________
Date

President
Portland Chapter - American Rhododendron Society
<table>
<thead>
<tr>
<th>RESPONSIBILITY</th>
<th>PORTLAND PARKS BUREAU</th>
<th>PORTLAND CHAPTER AMERICAN RHODODENDRON SOCIETY</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Materials &amp; Landscaping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daily Maintenance</strong></td>
<td>Pest management &amp; application of chemicals shall be done only by Parks personnel. Supply fertilizers, per request of the Garden Chairman. Care of large trees (over 6&quot; DBH)* Mow Leaf removal (not including rhododendrons) Leaf mulching to be joint effort with PC-ARS</td>
<td>Help identify pests, locations, plants where pest control is needed and assist with scheduling. Weeding, pruning, deadheading, planting, &amp; mulching of trees and shrubs. Fertilizing of plant materials. Care of herbaceous material. Care of small trees (less than 6&quot; DBH)* Leaf mulching to be joint effort with Park Bureau</td>
<td>*Specimen trees shall be cared for jointly by PC-ARS and the Portland Parks Bureau. PC-ARS will prepare a list of existing specimen trees and review for confirmation with PPB. This list shall be a part of the garden inventory. A &quot;specimen tree&quot; is a tree of particular interest to the PC-ARS, regardless of size.</td>
</tr>
<tr>
<td><strong>Replacement of Shrubs &amp; Trees</strong></td>
<td>Secondary responsibility Supply replacement shrubs, if available Tree removal (subject to approval by the City Forester)</td>
<td>Primary responsibility PC-ARS shall identify desired tree removals to improve the overhead canopy and/or to permit planting of more desirable trees.</td>
<td>Requires approval of Garden Committee Chair. Removal of trees requires review by Urban Forestry Commission prior to removal.</td>
</tr>
<tr>
<td><strong>Development &amp; Redevelopment of Planting Beds</strong></td>
<td>Secondary responsibility Assistance in implementation, subject to availability of staff &amp; materials</td>
<td>Primary responsibility Includes design &amp; construction</td>
<td>Requires review &amp; approval of Parks Bureau &amp; Garden Committee Chair. May require review and approval through the Environmental Zone process by the Planning Bureau.</td>
</tr>
<tr>
<td>Garden Furnishings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Walkway, signs, edging, benches, garbage, site furniture)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daily Maintenance</strong></td>
<td>Cleaning of buildings Litter pick-up Garbage disposal</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td><strong>Repairs</strong></td>
<td>Repair of facilities installed by Parks Bureau (repairing paths, wiring, and fences). Regraveling of paths</td>
<td>Repair facilities installed by ARS since June 1991. These activities do not significantly alter the appearance of the facility. Facility being repaired should have the same &quot;look and feel&quot; of its original design.</td>
<td></td>
</tr>
<tr>
<td><strong>Replacement &amp; Renovation</strong></td>
<td>Replacement of what is currently on site, subject to availability of funding.</td>
<td>Enhancement of existing facilities (Examples include redevelopment of the entry garden, renovation of the trail system, new paving, &amp; water features).</td>
<td>All projects shall be reviewed &amp; approved by the Parks Bureau. May require review and approval through the Environmental Zone process by the Planning Bureau.</td>
</tr>
</tbody>
</table>
### Utilities
*(Water, electricity, sewer, & telephone - does not include irrigation)*

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Portland Parks Bureau</th>
<th>Portland Chapter American Rhododendron Society</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily Maintenance</strong></td>
<td>Maintain and repair existing lines in good working order. <em>(e.g., winterizing pipes)</em></td>
<td>Maintain non-standard features (such as electrical pumps for ornamental features)</td>
<td>Requires an up-to-date inventory</td>
</tr>
<tr>
<td><strong>Repairs</strong></td>
<td>Repair existing lines for water, electricity, septic system, and drain lines</td>
<td>Repair utilities installed by PC-ARS.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>(Examples include repairing leaks in lines, septic fields, and drains)</em></td>
<td>Repair telephone lines and alarm systems.</td>
<td></td>
</tr>
<tr>
<td><strong>Replacement &amp; Renovation</strong></td>
<td>Replacement of existing lines with an identical or similar line. These improvements will address only code violations, dangerous conditions, other critical problems, or directives.</td>
<td>Replace all utility lines that upgrade them either in capacity or type of material</td>
<td></td>
</tr>
<tr>
<td><strong>Installation of Lines to New Structures</strong></td>
<td>None</td>
<td>Installation of utility lines to new buildings or other improvements, such as water features. Installation of utility lines that will increase the capacity of existing lines.</td>
<td></td>
</tr>
</tbody>
</table>

### Irrigation System

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily Maintenance &amp; Repairs</strong></td>
<td>Irrigate shrubs, lawns, and trees Repairs to existing lines <em>(manual and automatic)</em></td>
<td>Non-standard lines which shall be the responsibility of the ARS. Requires an up-to-date inventory.</td>
</tr>
<tr>
<td></td>
<td>Irrigate herbaceous plant material not covered by tree &amp; shrub irrigation. Repair non-standard park fixtures <em>(wooden risers and pumps)</em>.</td>
<td></td>
</tr>
<tr>
<td><strong>Replacement</strong></td>
<td>Replace main lines &amp; controllers <em>(needing repair)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace laterals</td>
<td></td>
</tr>
<tr>
<td><strong>Installation of New System</strong></td>
<td>Review design, provide specifications, assist with inspection.</td>
<td>Contracts for installation of new systems shall include all work, from ditch digging installation of controllers.</td>
</tr>
<tr>
<td>RESPONSIBILITY</td>
<td>PORTLAND PARKS BUREAU</td>
<td>PORTLAND CHAPTER AMERICAN RHODODENDRON SOCIETY</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------</td>
<td>-----------------------------------------------</td>
</tr>
</tbody>
</table>
| **Buildings & Major Structures**  
(Including bridges, gazebos, & gatehouse) | | | |
| **Daily Maintenance** | Limited to restroom building and restroom in proposed exhibition hall.  
Includes actions typically done on a daily basis, or frequently, such as cleaning restrooms and removing graffiti. | Cleaning and janitorial service with the exception of restrooms in proposed exhibition hall.  
Maintenance of exhibition hall. | Use of buildings for storage is subject to prior approval of the Garden Chair.  
It is expected that the restrooms in the proposed exhibition hall will replace the existing restrooms. The design for the new restrooms shall be reviewed and approved by Parks Bureau staff. Cleaning and janitorial responsibilities for the restroom will also be reviewed at that time. |
| **Repairs and painting** | Repairs to the exhibition hall, restrooms and bridges  
Painting of structures involving safety conditions (e.g., High Bridge)  
Specify type of paints or stains to be used. | Repairs to new facilities, gatehouse, and new maintenance building  
Painting of structures not involving safety factors (e.g., Exhibit Hall)  
Specify paint colors for buildings, bridges | |
| **New Development & Renovation of Buildings & Structures** | Limited to projects that address code violations, structural problems, or other safety-related issues.  
Projects that replace existing structures with similar facilities. | Improvements that enhance the use or appearance of existing buildings and the garden, such as renovation of the Exhibition Hall & gatehouse. | Planning and design of these improvements shall be done jointly or under the direction of the Parks Bureau. All projects shall be reviewed and approved by the Bureau. |
| **Other Activities** | | | |
| **Vandalism** | Repairing damage from vandalism to the garden and its facilities shall be a joint effort with PC-ARS. | Repairing damage from vandalism to the garden and its facilities shall be a joint effort with the Park Bureau. | |
| **Permits** | Assistance PC-ARS in obtaining permits | Includes the cost and primary responsibility to obtain permits for: (1) all activities initiated by PC-ARS and (2) activities listed as PC-ARS responsibility. | |
| **Equipment & Tools** | Provide hand tools & equipment needed for routine garden maintenance.  
Repair of Cushman and sharpening of saws and cutting tools | Identify tools with paint and keep tools on site. | List of tools and equipment needed shall be submitted to the Parks Bureau by the Garden Chair. |
<table>
<thead>
<tr>
<th>RESPONSIBILITY</th>
<th>PORTLAND PARKS BUREAU</th>
<th>PORTLAND CHAPTER AMERICAN RHODODENDRON SOCIETY</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Plan maintenance work every two months with the Garden Chair. Project management for projects where Parks Bureau has primary responsibility. Meet quarterly to review long-range plans &amp; projects</td>
<td>Plan maintenance work and upcoming projects with Park’s staff every two months. Project management for projects where PC-ARS has primary responsibility. Meet with Parks staff quarterly to review long range plans and projects.</td>
<td>Identifies needed resources ahead of time and enables the correct work to be done in a timely manner.</td>
</tr>
</tbody>
</table>
Appendix B: History of the Garden
Appendix B: History of Crystal Springs Rhododendron Garden

EARLY HISTORY

Visitors to the Crystal Springs Rhododendron Garden enjoying the beauty of the place might ponder how such a garden came to be. The answer is that many, many people by working together have accomplished much.

It started with the American Rhododendron Society, founded in Portland in 1945. Almost immediately the members began the search for a location for a display and test garden. Sam Jackson, owner of the Oregon Journal, gave the new organization 27 acres on Terwilliger Boulevard. Howard Slonecker led three years of effort to develop a garden and finally recommended the site be abandoned because of the unsuitable terrain and other difficulties. The late Claude I. Sersanos, one of the group assigned to select the new site, was the first to conceive the present location of the garden.

To the Reed College students this area had been known as Shakespeare Island. Mrs. Ruth Hansen recalls that on her original visit she found a few sad remains of a Shakespearean garden including large specimen plants of boxwood, some of which survive today. Although the entire area was overrun with blackberries and wild grasses, tall firs, and other native trees provided desirable shade.

C.P. Keyser, Superintendent of Parks at that time and responsible for the purchase and development of the entire East Moreland complex of parks, worked with Mr. Sersanos to negotiate with the City of Portland an agreement which defined the responsibilities of the Park Bureau and of the Society for developing and maintaining the Garden. Mr. Keyser and each succeeding Parks Superintendent have been helpful in responding to the needs of a developing garden.

The challenge which the early volunteers faced was tremendous. The dynamic Mr. Sersanos inspired others with his enthusiasm. He gave

---

1 The history of the garden was originally written by Robert L. Furniss in April, 1977, and updated by Betty Sheedy and Bruce Winston in 1990.
generously of his time and money, paying for the original chain link fence. He
donated many of the plants for the first planting in October, 1950.

John Bacher was the first garden chairman. He was assisted by Mr. and
Mrs. C.T. Hansen. They were to play a major role in the development of the
Garden. She was a landscape architect and made the original design for the
Island Garden.

The view from the high bridge revealed the desirability of an entrance
garden. Alfred S. Martin had been searching for a project within the Garden as
a memorial to his wife. He funded the entrance garden which is devoted to the
display of large-leaved rhododendrons.

Originally, the Garden was to be a "Test Garden" where new
rhododendrons could be evaluated for several years. This plan was abandoned
shortly after the Garden was completed because, without a resident curator,
hybridizers were reluctant to donate their plants. However, the name "Test
Garden" was used until 1964, when "Crystal Springs Rhododendron Garden"
became its official name.

THE ISLAND

Plantings and development were originally concentrated on what is
called "The Island," (although it had been connected with a fill to the
"mainland" east of it sometime before).

THE PENINSULA

Development of what we call "The Peninsula" started slowly. Originally
it was a convenient place for the "overflow" plants from the Island Garden. The
plants, interspersed with an informal network of paths, were allowed to grow
with a minimum of care. Few people saw them. The energy of the Chapter was
used in developing and caring for the plantings on the island.

Increasingly aware of the necessity of long-range planning for the
peninsula, the Portland Chapter called upon Wallace K. Huntington, landscape
architect. The resulting plan, adopted early in 1976 by the Chapter and the Park
Bureau, inspired action. Areas of lawn were planted. Some paths were
realigned, and new ones were laid out. New plantings were begun. The first
permanent benches were built and installed in vista areas by Julius Winters. On
April 30, 1977, the Peninsula Garden was officially dedicated.
FRIENDS OF CRYSTAL SPRINGS

In the fall of 1989, the groundwork for the creation of the Friends of Crystal Springs was laid. This new group has two primary goals: (1) to help secure more volunteer assistance, and (2) to help raise funds for specific projects of its choosing in the Garden.

PARK BUREAU SUPPORT

Since its inception, Portland City Commissioners in charge of the Park Bureau and each of the Park Bureau Superintendents have been continuously helpful in the growth and care of the Garden. Subject to the availability of funds, help has varied from persons assigned full time to crews that come by to do the routine care and give other help as they can. Outstanding among those fine people was John Lee who loved the Garden and gave service and help well beyond the requirements of his duties.

The Park Bureau has also provided major support for the large structural projects in the Garden. As an example, the "High Bridge" in the Jane Martin Entrance Garden was built by the City many years ago and now, after years of use, was replaced by a new bridge in 1991.

EARLY AND ANNUAL SHOWS

The Portland Chapter conducts two shows a year at the Garden. The Early Show is held on the first weekend in April and the Mother's Day Show is held on the second weekend of May. These shows serve to recognize growers of outstanding rhododendrons and also to give the public an opportunity to see the trusses on exhibit and to see the Garden in the midst of its spring beauty.

GARDEN FINANCING

Funds for care of the Garden not provided by Park staff have come from the profits of the Mothers' Day Show, described above, and from donations by members of the Chapter and other public spirited people.

Starting in 1990, additional support has come from the Friends of Crystal Springs mentioned earlier on this page.

The Garden has also received support from organizations and foundations. The Portland Garden Club has given continuing assistance, and more recently the Hardy Plant Society has helped. Our new watering system is being installed with help from the Meyer Memorial Trust for the materials.
Significant support has been given by Alfred S. Martin who funded the creation of the entry garden in memory of his first wife and in 1990 gave the beautiful new waterfall east of the high bridge.

A Rhododendron Garden Endowment Fund was established. It was made possible by combining substantial donations from C.E. Sersanos, Mrs. Carroll Higgins, the Robert Walker family, Mrs. J.B. Stokes, Siegfried Berthelsdorf, M.D. and Frank Mossman, M.D. This is a permanent capital fund administered by the officers and directors of the Chapter. Revenue is used for major developments and to meet special needs, such as repairing damage to facilities caused by storms.

Donations to the Rhododendron Garden Endowment Fund are tax deductible. Inquiries regarding this fund and contributions should be through the Portland Chapter, American Rhododendron Society.

EARLY PLANT CONTRIBUTORS

A large percentage of the rhododendrons in the Garden were donated. In recent years about fifty plants have been received annually. Some of the early contributors were: John Bacher, Mrs. A.C.U. Berry, Robert Bovee, P.H. Brydon, S.L. Bumaugh, James Caperci, Carlson Nursery, Mrs. Sophie Cason, George Clarke, Dr. J. Harold Clarke, Russ Conley, William Curtis, Mr. and Mrs. James Elliott, George Grace, Mr. and Mrs. L.C. Grothaus, Mr. and Mrs. C.T. Hansen, John Henny, Rudolph Henny, Del James, C.P. Keyser, Joe Klupenger, Mr. and Mrs. A.W. Kraxberger, Ben Lancaster, H.L. Larson, Irving Lincoln, Thomas McGuire.

Others: Frank Mossman, M.D., O.R. Neet, Endre Ostbo, Edwin Parker, Portland Park Bureau, Reddaway Gardens, Mr. and Mrs. George Sather, Mr. and Mrs. C.I. Sersanos, Howard Slonecker, Cecil Smith, Lucie Sorensen, Mrs. L.O. Stockdale, Dr. Robert Ticknor, University of Washington Arboretum, Van Veen Nursery, Robert Walker, J.B. Whalley, William Whitney, Wales Wood, and Art Wright.

WORK PARTIES AND VOLUNTEERS

Volunteers and Park Bureau staff members working in close cooperation, have developed at Crystal Springs what many people consider to be the city’s most enchanting park.

In early years, work parties under the leadership of John Bacher and Ted Hansen established the Garden, built the coolhouse, developed paths and
rockeries, installed fences, and laid the foundation for today's beauty spot. In 1961, Ruth Hansen wrote that 3,000 rhododendrons had been planted. In the following decade or so, work parties led by Louis Grothaus maintained and improved the Garden and added many special features, such as the numerous flowering cherry trees.

Each year Chapter members turn out one evening in June to "deadhead" rhododendrons and savor the enjoyment of working together in the Garden.

Volunteer work at the Garden has been organized over the years by some outstanding persons serving as Garden Chairpersons, starting at the original Terwilliger site. They include:

<table>
<thead>
<tr>
<th>Name</th>
<th>Years</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard Slonecker</td>
<td>1947-50</td>
<td>(at Terwilliger)</td>
</tr>
<tr>
<td>John Bacher</td>
<td>1950-58</td>
<td>(1st at Crystal Springs)</td>
</tr>
<tr>
<td>C.T. &quot;Ted&quot; Hansen</td>
<td>1958-68</td>
<td></td>
</tr>
<tr>
<td>Louis Grothaus</td>
<td>1968-75</td>
<td></td>
</tr>
<tr>
<td>Bob Furniss</td>
<td>1975-80</td>
<td></td>
</tr>
<tr>
<td>Edwin Dolan</td>
<td>1980-83</td>
<td></td>
</tr>
<tr>
<td>Dot Dunstan</td>
<td>1983-88</td>
<td></td>
</tr>
<tr>
<td>Ted Van Veen</td>
<td>1988-Present</td>
<td></td>
</tr>
</tbody>
</table>

Persons who worked with those Chairmen:

When one makes a list of names of people who made significant contributions of time and energy to a project, someone very important is always inadvertently omitted, as remembrances of the early days fade away. So, with apologies to many wonderful people whose names are missed, we say "thanks" to the following who worked so hard in the early days, and our thanks extends also to those not included:

<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julius Winters</td>
<td>Carroll Higgins</td>
<td>Ron Burnett</td>
</tr>
<tr>
<td>A.W. Kraxberger</td>
<td>Meldon Kraxberger</td>
<td>Karl Bock</td>
</tr>
<tr>
<td>Eunice Burnett</td>
<td>Hance Haney</td>
<td>Joy Heaney</td>
</tr>
<tr>
<td>Stan Jewett</td>
<td>Doris Jewett</td>
<td>Roger Stewart</td>
</tr>
<tr>
<td>Margaret Stewart</td>
<td>Janet Binford</td>
<td>William Curtis</td>
</tr>
<tr>
<td>Molly Grothaus</td>
<td>Ed Benedict</td>
<td>Bill Robinson</td>
</tr>
<tr>
<td>Ruth Hansen</td>
<td>Marjorie Black</td>
<td>Scout Troops 3, 7, 84</td>
</tr>
</tbody>
</table>

Crystal Springs Rhododendron Garden Master Plan-Appendix B  Page 5
Even more difficult is to make a list of persons who are recent or current workers in the Garden because there are so many, but we give special thanks to the following:

<table>
<thead>
<tr>
<th>Betty Sheedy</th>
<th>Ernie Metcalfe</th>
<th>Bill Ferguson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doris Torset</td>
<td>Fred Paddison</td>
<td>Dave Goheen</td>
</tr>
<tr>
<td>Harvey Welch</td>
<td>Mary Telford</td>
<td>Cleo Paddison</td>
</tr>
<tr>
<td>Francis Newton</td>
<td>George (Monty) Montgomery</td>
<td></td>
</tr>
<tr>
<td>Howard Calver</td>
<td>Frank Mossman</td>
<td>Luurt Nieuwenhuis</td>
</tr>
<tr>
<td>Elsie Dorfman-Skinner</td>
<td>Dean Prater</td>
<td>LaVeta Prater</td>
</tr>
<tr>
<td>Peter Kendall</td>
<td>Jim Skinner</td>
<td>Jeanette Nieuwenhuis</td>
</tr>
<tr>
<td>Jim Whitcomb</td>
<td>Paula Cash</td>
<td>Louise Renner</td>
</tr>
</tbody>
</table>

*Cristal Springs Rhododendron Garden Master Plan-Appendix B  Page 6*
CHAPTER 33.100
OPEN SPACE ZONE

Sections:
General
33.100.010 Purpose
33.100.020 Short Name
33.100.030 Where the Zone Is Applied
33.100.040 Other Zoning Regulations
Use Regulations
33.100.100 Primary Uses
33.100.110 Accessory Uses
33.100.120 Nuisance-Related Impacts
Development Standards
33.100.200 Development Standards
33.100.205 Excavations and Fills
33.100.210 Nonconforming Development
33.100.215 Signs
33.100.220 Street Trees

General

33.100.010 Purpose
The Open Space zone is intended to preserve public and private open and natural areas identified in the Comprehensive Plan. These areas serve many functions including:
- Providing opportunities for outdoor recreation;
- Providing contrasts to the built environment;
- Preserving scenic qualities;
- Protecting sensitive or fragile environmental areas; and
- Preserving the capacity and water quality of the stormwater drainage system.

33.100.020 Short Name
The short name and map symbol of the Open Space zone is OS.

33.100.030 Where the Zone Is Applied
The Open Space zone is applied to all land designated as "Open Space" on the Comprehensive Plan map. In addition, property owners may request an open space designation for open or natural areas that meet the purpose of the zone, and for view, conservation, or similar easements that can be shown as open space. See Chapter 33.810, Comprehensive Plan Amendments.
Chapter 33.100
Open Space Zone

Title 33, Planning and Zoning

33.100.040 Other Zoning Regulations

The regulations in this chapter state the allowed uses and the development standards for the base zone. Sites with overlay zones, plan districts, or designated historical landmarks are subject to additional regulations. The Official Zoning Maps indicate which sites are subject to the additional regulations. Specific uses or development types may also be subject to regulations in the 200s series of chapters.

Use Regulations

33.100.100 Primary Uses

A. Allowed uses. Uses allowed in the open space zone are listed in Table 100-1 with a "Y". These uses are allowed if they comply with the development standards and other regulations of this Title. Being listed as an allowed use does not mean that a proposed development will be granted an adjustment or other exception to the regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters.

B. Limited uses. Uses allowed that are subject to limitations are listed in Table 100-1 with an "L". These uses are allowed if they comply with the limitations listed below and the development standards and other regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The paragraphs listed below contain the limitations and correspond with the footnote numbers from Table 100-1.

1. Retail Sales And Service. This regulation applies to all parts of Table 100-1 that have note [1]. Retail Sales And Services uses are conditional uses only when they are associated with a Park And Open Areas use. In other situations they are prohibited.

2. Parks And Open Areas. This regulation applies to all parts of Table 100-1 that have note [2]. Uses in the Park And Open Areas category are allowed by right. However, certain facilities which are part of a Park And Open Areas use require a conditional use review. These facilities are listed below.

   a. Parks. Swimming pools; concession areas; parking areas; baseball, football, soccer, and other fields used for organized sports; and other facilities that draw spectators to events in a park, are conditional uses within a park use.

   b. Cemeteries. Mausoleums, chapels, and similar accessory structures associated with funerals or burial, and parking areas are conditional uses within a cemetery use.

   c. Golf courses. Club houses, restaurants, driving ranges, and parking areas are conditional uses within a golf course use.

   d. Boat ramps. All boat ramps and associated parking areas are conditional uses.

100-2
<table>
<thead>
<tr>
<th>Use Categories</th>
<th>OS Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Categories</strong></td>
<td></td>
</tr>
<tr>
<td>Household Living</td>
<td>N</td>
</tr>
<tr>
<td>Group Living</td>
<td>N</td>
</tr>
<tr>
<td><strong>Commercial Categories</strong></td>
<td></td>
</tr>
<tr>
<td>Retail Sales And Service</td>
<td>CU [1]</td>
</tr>
<tr>
<td>Office</td>
<td>N</td>
</tr>
<tr>
<td>Quick Vehicle Servicing</td>
<td>N</td>
</tr>
<tr>
<td>Vehicle Repair</td>
<td>N</td>
</tr>
<tr>
<td>Commercial Parking</td>
<td>N</td>
</tr>
<tr>
<td>Self-Service Storage</td>
<td>N</td>
</tr>
<tr>
<td>Commercial Outdoor Recreation</td>
<td>CU</td>
</tr>
<tr>
<td>Major Event Entertainment</td>
<td>N</td>
</tr>
<tr>
<td><strong>Industrial Categories</strong></td>
<td></td>
</tr>
<tr>
<td>Manufacturing And Production</td>
<td>N</td>
</tr>
<tr>
<td>Warehouse And Freight Movement</td>
<td>N</td>
</tr>
<tr>
<td>Wholesale Sales</td>
<td>N</td>
</tr>
<tr>
<td>Industrial Service</td>
<td>N</td>
</tr>
<tr>
<td>Railroad Yards</td>
<td>N</td>
</tr>
<tr>
<td>Waste-Related</td>
<td>N</td>
</tr>
<tr>
<td><strong>Institutional Categories</strong></td>
<td></td>
</tr>
<tr>
<td>Basic Utilities</td>
<td>CU</td>
</tr>
<tr>
<td>Community Service</td>
<td>CU</td>
</tr>
<tr>
<td>Essential Service Providers</td>
<td>N</td>
</tr>
<tr>
<td>Parks And Open Areas</td>
<td>L/CU [2]</td>
</tr>
<tr>
<td>Schools</td>
<td>CU [3]</td>
</tr>
<tr>
<td>Colleges</td>
<td>N</td>
</tr>
<tr>
<td>Medical Centers</td>
<td>N</td>
</tr>
<tr>
<td>Religious Institutions</td>
<td>N</td>
</tr>
<tr>
<td>Daycare</td>
<td>CU</td>
</tr>
<tr>
<td><strong>Other Categories</strong></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>Y</td>
</tr>
<tr>
<td>Aviation And Surface Passenger Terminals</td>
<td>N</td>
</tr>
<tr>
<td>Detention Facilities</td>
<td>N</td>
</tr>
<tr>
<td>Mining</td>
<td>CU</td>
</tr>
<tr>
<td>Radio and TV Broadcast Facilities</td>
<td>L/CU [4]</td>
</tr>
<tr>
<td>Rail Lines And Utility Corridors</td>
<td>CU</td>
</tr>
</tbody>
</table>

**Notes:**
- The use categories are described in Chapter 33.920.
- Regulations that correspond to the bracketed numbers [ ] are stated in 33.100.100.B.
- Specific uses and developments may also be subject to regulations in the 200s series of chapters.
3. Schools. This regulation applies to all parts of Table 100-1 that have note [3]. School uses are subject to the regulations for schools in the R5 zone as well as Chapter 33.281, Schools and School Sites.

4. Radio And Television Broadcast Facilities. This regulation applies to all parts of Table 100-1 that have note [4]. Radio And Television Broadcast Facilities which are exempt from the regulations of Chapter 33.274, Radio and Television Broadcast facilities are allowed by right. See Chapter 33.274.

C. Conditional uses. Uses which are allowed if approved through the conditional use review process are listed in Table 100-1 with a "CU". These uses are allowed provided they comply with the conditional use approval criteria for that use, the development standards, and other regulations of this Title. Uses listed with a "CU" that also have a footnote number in the table are subject to the regulations cited in the footnote. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The conditional use review process and approval criteria are stated in Chapter 33.815, Conditional Uses.

D. Prohibited uses. Uses listed in Table 100-1 with an "N" are prohibited. Existing uses in categories listed as prohibited may be subject to the regulations of Chapter 33.258, Nonconforming Uses and Development.

33.100.110 Accessory uses
Uses that are accessory to a primary use are allowed if they comply with specific regulations for the accessory uses and all applicable development standards.

33.100.120 Nuisance-Related Impacts

A. Off-site impacts. All nonresidential primary and accessory uses must comply with the standards of Chapter 33.262, Off-Site Impacts.

B. Other nuisances. Other nuisances are regulated by Title 18, Nuisance Abatement and Noise Control.

Development Standards

33.100.200 Development Standards

A. Allowed or limited uses. Allowed or limited uses are subject to the development standards stated below.

1. Building setbacks. Buildings must be set back from all property lines 1 foot for each foot of building height.

2. Outdoor activity facility setbacks. Outdoor activity facilities, such as swimming pools, basketball courts, tennis courts, or baseball diamonds must be set back 50 feet from abutting R-zoned properties. Playground facilities must be set back 25 feet from abutting R-zoned properties if not illuminated, and 50 feet if illuminated.
B. Conditional uses. Conditional uses are subject to the development standards stated below.

1. Building setbacks. Buildings must be set back from all the property lines 1 foot for each foot of building height, with a minimum setback of 20 feet.

2. Parking. Conditional uses must meet the parking standards for that use in the CG zone, as stated in Chapter 33.266, Parking and Loading.

3. Other standards. Conditional uses are also subject to the other development standards stated in Table 110-5 in Chapter 33.110, Single-Dwelling Zones.

33.100.205 Excavations and Fills
Excavations and fills may require a review. See Chapter 33.830, Excavations And Fills.

33.100.210 Nonconforming Development
Existing developments that do not conform to the development standards of this chapter may be subject to the regulations of Chapter 33.258, Nonconforming Uses and Development.

33.100.215 Signs
The sign regulations are stated in Chapter 33.286, Signs.

33.100.220 Street Trees
Street trees are required for all developments by the City Forester. See Chapter 20.40, Street Trees and Other Public Tree Regulations.
Appendix D: Environmental Zone Regulations
CHAPTER 33.430
ENVIRONMENTAL ZONES

Sections:

General
33.430.010 Purpose
33.430.020 Overlay Zones
33.430.030 Short Names and Map Symbols
33.430.040 Natural Resources and Functional Values
33.430.050 Items Subject to These Regulations
33.430.060 Items Exempt From These Regulations
33.430.070 Applicable Development Standards and Approval Criteria
33.430.080 Other Regulatory Agencies

Use Regulations
33.430.100 Uses Allowed

Development Standards
33.430.200 Development Standards

Environmental Review
33.430.300 Purpose of the Review
33.430.310 Modifying Environmental Zone Boundaries
33.430.320 Procedures
33.430.330 Supplemental Application Requirements
33.430.340 Approval Criteria
33.430.350 Impact Evaluation
33.430.360 Mitigation Plans
33.430.370 Natural Resource Management Plans

General

33.430.010 Purpose
The purpose of the Environmental zones is to:
• Protect the City’s inventoried significant natural resources and their functional values, as identified in the Comprehensive Plan;
• Implement the Comprehensive Plan environmental policies and objectives; and
• Encourage coordination between City, county, regional, state, and federal agencies concerned with natural resources.

33.430.020 Overlay Zones

A. General. The City has identified and inventoried natural resources and their public value. Some natural resource areas have been determined by the City to have greater public benefits than others. There are two overlay zones with different emphases to reflect two levels of natural resource areas.

1. The Environmental Protection overlay zone is applied to areas with the highest functional values and where the City has determined the natural resource to be of such significant value that almost all development would have a detrimental
impact. The regulations of the Environmental Protection zone are intended to be very stringent and are designed to preserve the resource and its values.

2. The Environmental Conservation overlay zone is applied to areas with high functional values where the City has determined that development may be allowed if adverse impacts are mitigated. The regulations of the Environmental Conservation zone are intended to conserve the resource and its values.

B. Subareas of the environmental zones. Each Environmental zone consists of the natural resource area and a transition area surrounding the natural resource area. The purpose of the transition area is to protect the adjacent natural resource. The transition area provides a buffer between the natural resource area and impacts of adjacent development.

1. Natural resource area. This is the land containing the natural resource to be protected and the lands surrounding it where development and activities would degrade the resource.

2. Transition area. This is the land around the edges of the natural resource area that constitutes a transition area for the natural resource area. The first 25 feet of the Environmental zone, measured inward from the zone boundary, is the transition area. See Figure 430-1.

![Figure 430-1](Image)

Environmental Zone Subareas

33.430.030 Short Names and Map Symbols

The Environmental zones are also referred to in this Title by the short names listed below and are shown on the Official Zoning Maps with the symbols listed below. Collectively, the zones are called the Environmental zones.

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Short Name</th>
<th>Map Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Conservation</td>
<td>EC</td>
<td>c</td>
</tr>
<tr>
<td>Environmental Protection</td>
<td>EP</td>
<td>p</td>
</tr>
</tbody>
</table>
33.430.040 Natural Resources and Functional Values

A. Natural resources. A natural resource is the physical resource itself. An Environmental zone may be placed on a site when one or more of the natural resources listed below have been identified as significant;

1. Wetlands;
2. Water bodies and riparian areas;
3. Fish and wildlife habitat areas; or
4. Ecologically and scientifically significant natural areas.

B. Functional values. Significant natural resources are important because of their functional values. The functional value may be physical, aesthetic, scenic, educational, or some other nonphysical function, or a combination of these. For example, two values of a wetland could be its ability to provide stormwater detention for x units of water draining y acres, and its ability to provide food and shelter for z varieties of migrating waterfowl. As another example, an unusual native species of plant in a natural resource area would be of educational, heritage, and scientific value. Most natural resources will have many functional values. Some general categories of functional values are:

- Groundwater recharge and discharge;
- Flood storage and desynchronization;
- Domestic water supplies;
- Shoreline anchoring and dissipation of erosive forces;
- Sediment trapping;
- Nutrient retention and removal;
- Pollution control (to maintain water quality);
- Habitat for fish and wildlife;
- Recreational opportunities;
- Visual and scenic amenities and character; and
- Heritage value.

C. Additional site information. The City's adopted Goal 5 inventories and related economic, social, environmental, and energy (ESEE) analyses contain additional information about the natural resources and their values at individual sites.

33.430.050 Items Subject to These Regulations
Unless exempted in 33.430.060 below, the following are subject to the development standards and required reviews of this chapter, as specified in Section 33.430.070:

A. Change of use where there are concurrent exterior alterations to buildings or the site;

C. New development;

D. Exterior alteration of any building and any site expansions or modifications, including increased cultivated area, grazing area, or other agricultural activities;
E. Changes to the land, including all fills and excavations, grading, and any modification of drainage patterns;

F. New above or below ground utilities that are not in public rights-of-way;

G. The dedication or extension of public and rail rights-of-way;

H. Removal of trees and removal, cutting, or mowing of noncultivated vegetation including herbicide application. Removal of vegetation identified as nuisance plants on the Portland Plant List is not subject to this provision. The Portland Plant List is available at the Permit Center; and

I. Resource enhancement activities.

33.430.060 Items Exempt From These Regulations
The following items are exempt from the development standards and required reviews stated in this chapter:

A. Sale of property or change of ownership of a business;

B. Changes to the interior of a building;

C. Normal repair and maintenance of structures and development, including landscaping (only when replacing with in-kind materials), flood control, and irrigation;

D. Customary dredging and channel maintenance of existing drainage facilities. This includes vegetative maintenance for access and stormwater/flood control purposes within and adjacent to drainageways, but not the placement of fill or dredge spoils except for temporary storage outside a wetland or water body;

E. Temporary emergency procedures necessary for the safety or protection of property;

F. Single utility poles required to provide service to the local area;

G. Public right-of-way dedication and improvement projects that are subject to the National Environmental Policy Act (NEPA) of 1969 and that the City finds, through the NEPA and Oregon Action Plan process, that the project complies with the Comprehensive Plan;

H. Groundwater monitoring wells when constructed to standards approved by the City.

I. Right-of-way dedications for widening existing rights-of-way, when additional right-of-way is needed to ensure a contiguous width.

33.430.070 Applicable Development Standards and Approval Criteria

A. Recreational trails. Required recreational trails are subject to the development standards of Chapter 33.272, Public Recreational Trails, and the approval criterion of 33.430.340.A. In addition, they must be constructed to City standards. Other trails, rest points, view points, and facilities for the enjoyment of the natural resource are also subject to the approval criterion of 33.430.340.A.
B. Resource enhancement projects. Resource enhancement projects, including approved mitigation plans, are reviewed against the approval criteria of 33.430.340.B. They are not subject to the development standards of 33.430.200.

C. All other development. All other development is subject to the development standards of 33.430.200 and the environmental review approval criteria of 33.430.340. The applicable environmental review approval criteria will depend on whether the proposal is in a transition area, an EC natural resource area, or an EP natural resource area. In addition, development in a natural resource area must include an impact evaluation and may require a mitigation plan, as stated in 33.430.350 and 33.430.360.

D. Natural resource management plans. Development in areas subject to a natural resource management plan must conform to the requirements of the plan. See 33.430.370. The development standards of the plan may be more liberal or more stringent than the environmental zone standards. The requirements for review, the procedure, or the approval criteria may also be superceded by the requirements of the management plan. The environmental zone development standards apply unless the management plan states otherwise.

33.430.080 Other Regulatory Agencies
This chapter contains the City’s regulations for areas within the environmental zones. The regulations of other agencies may also apply to individual sites and they may be more restrictive than the City’s regulations. Possible affected agencies include: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, Oregon Division of State Lands, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, and local drainage districts. City approval does not imply approval by other agencies. Applicants are encouraged to contact all appropriate regulatory agencies for information and advice before their development plans are completed.

Use Regulations

33.430.100 Uses Allowed

A. Review required. Uses and development allowed by the base zone, overlay zone, and plan district regulations are allowed in the environmental zones if they comply with the development standards and are approved through an environmental review. The amount and placement of development may be restricted to ensure conformance with the regulations of this chapter.

B. Hazardous substances. Hazardous substances greater than the consumer commodity quantity are prohibited in the environmental zones. See 33.140.120 for descriptions of hazardous material quantities.
33.430.200 Development Standards
The development standards of this section apply to all transition and natural resource areas.

A. Building placement. This standard is intended to protect adjacent natural resource areas by allowing for solar access and controlling the scale and bulk of buildings near natural resources. A building or structure up to 25 feet in height may be placed up to the boundary of the natural resource area. A setback from the natural resource area boundary of at least 1 foot for every 1 foot in height over 25 feet is required. See Figure 430-2.

B. Parking and truck areas. These regulations are intended to provide a transition between the natural resource area and development, to assist in controlling runoff, and to protect the visual amenity values of the natural resource.

1. Auto and light truck areas. Parking areas for autos and light trucks must be set back at least 10 feet from natural resource area boundaries. The setback must be landscaped to at least the L2 standard, as stated in Chapter 33.248, Landscaping and Screening.

2. Medium and heavy truck areas. Parking, loading, and maneuvering areas for medium and heavy trucks must be set back at least 10 feet from natural resource area boundaries. The setback must be landscaped to at least the L3 standard.

C. Exterior work activities. Exterior work activities are prohibited unless in conjunction with a river-related or river-dependent use.

D. Exterior storage and display. Exterior storage and display areas must be set back at least 10 feet from resource area boundaries. The setback must be landscaped to at least the L3 standard.

430-6
E. Drainage and topography.

1. The site must be contoured, planted, or developed to prevent erosion, pollution, and sedimentation into the adjacent natural resource area.

2. The Bureau of Environmental Services may require water pollution mitigation measures as a condition of approving the discharge of runoff into a natural resource or into a stormwater drainage facility which discharges into a natural resource. Preferred treatment is with natural pollution control systems compatible in character with the natural resource. The type of mitigation measure or facility, will be determined by the Bureau of Environmental Services.

F. Landscape materials.

1. The first 10 feet of landscaping, measured from the natural resource boundary line, must be planted with plant species native to the Willamette Valley or to the Pacific Northwest. Allowable plant species are described in Section IV.C, Landscaping, of the Willamette Greenway Plan. This requirement applies to all landscaping whether required or optional.

2. The standard in Paragraph 1. above does not apply where the identified natural resource does not include native plant species as a characteristic or value. In these cases, landscaping may be similar in type and character to that in the natural resource area.

G. Lighting. Exterior and interior lights must be placed so that they do not shine directly into natural resource areas.

H. Trash collection areas. Outdoor trash collection areas are prohibited.

I. Noise. Buildings must be placed and constructed to meet the noise standards for nonresidential development adjacent to residential zones. See Title 18, Nuisance Abatement and Noise Control.

J. Construction management. Construction must be done in a manner which will ensure that the remainder of the site with Environmental zoning will not be adversely impacted.

Environmental Review

33.430.300 Purpose of the Review
Environmental review of uses and development in the Environmental zones is intended to provide adequate protection for the identified natural resources. The review provides for flexibility and reasonable development opportunities when development is sensitive to the special environmental concerns of the site.

33.430.310 Modifying Environmental Zone Boundaries
Environmental zone boundaries may be modified by the City as the result of and concurrent with approving development in a natural resource area. The boundaries may be modified for either of the two situations stated below. All other requests for boundary changes are
processed as a change of an overlay zone, as stated in Chapter 33.855, Zoning Map Amendments.

A. Creation of new resource areas. The Environmental zone boundary may be expanded as part of the environmental review to include areas identified for enhancement in a mitigation plan.

B. Loss of existing resource areas. The Environmental zone boundary may be removed from a portion of an existing natural resource area where approved development will eliminate natural resource. The boundary will not be removed until after all required mitigation measures have been completed.

33.430.320 Procedures

A. Transition areas. Environmental review in a transition area is processed through a Type II procedure in both the EC and EP zones.

B. Natural resource areas. Environmental review in a natural resource area is processed through a Type II procedure in the EC zone and a Type III procedure in the EP zone. An exception to this in the EP zone is a review of a recreational trail located in a natural resource area but not in the natural resource itself. When locating outside the natural resource, recreational trails are processed through a Type II procedure. A pre-application conference is required for all Type II and III procedures in both zones.

C. Special evaluation by a trained professional. The Planning Director may hire a professional to evaluate proposals and make recommendations upon finding that additional expertise is warranted due to exceptional circumstances. The professional may have expertise in the applicable natural resource or expertise in the potential adverse impacts on the natural resource. This provision may be applied only to proposals to develop in the natural resource area. A fee for these services will be charged to the applicant in addition to the application fee.

33.430.330 Supplemental Application Requirements
All of the information listed below must be included with an environmental review application, in addition to the standard application requirements of 33.730.060.

A. Special site plan requirements.

1. The site plan must clearly show the boundaries of the natural resource area and the transition area at a scale of at least 1 inch for every 100 feet. Location of the environmental zone is based upon the maps adopted with the ESEE analysis for the area.

2. Additional site plan requirements. In addition, the site plan must show:
   - Proposed site contouring;
   - Proposed stormwater management and disposal;
   - Existing or proposed, above or below ground utilities;
   - Proposed right-of-way dedication;
   - All trees greater than six inches in diameter measured at five feet above the ground. As an option to showing all trees greater than 6 inches in wooded areas not being disturbed, the crown cover outline can be shown;
Other vegetation cover types, general distribution, and identification of vegetation affected by the proposed project;
Existing floodplains and elevations;
Proposed sanitary waste disposal systems; and
Proposed recreational trails, viewpoints, and outdoor recreational spaces.

B. Additional plans and analyses. The following information is required in either a site plan or narrative form, or in a combination of the two:

1. A construction management plan showing enough detail to fully address the concerns described in 33.430.210.1. above. The plan should address the handling of construction equipment, construction materials, excess fill, runoff, erosion, how trees and vegetation will be protected, and similar items;

2. If the development is proposed for a transition area, a detailed description of any proposed on-site or off-site mitigation measures;

3. An impact evaluation if the development is proposed for a natural resource area, See 33.430.350. If the impact evaluation shows that there will be a degradation or loss of functional values, a mitigation plan will also be required. See 33.430.360.

33.430.340 Approval Criteria
An environmental review application will be approved if the review body finds that the applicant has shown that all of the applicable approval criteria stated below are met.

A. Recreational trails.

1. Which approval criteria apply. Recreational trails to be located outside of a natural resource area are subject to the approval criteria stated in Paragraph 2. below. Recreational trails to be located in a natural resource area in the EP and EC zones are subject to the approval criteria stated in Subsection E. below.

2. Approval criterion. Trails, rest points, view points, and other facilities constructed for the enjoyment of the natural resource limit and balance significant detrimental environmental impacts with the potential for enjoyment of the natural resource.

B. Resource enhancement projects. Resource enhancement projects must have adequate mitigation measures to ensure that there will be no net loss of natural resources and functional values and that the objectives of the enhancement project will be achieved.

C. Excavations and fills. Excavations and fills are subject to the approval criteria of Subsections D, E, or F below and the approval criteria for excavations and fills stated in Chapter 33.830, Excavations and Fills.

D. Development in transition areas.

1. Development within the the transition area will have no significant detrimental environmental impacts on adjacent natural resource areas due to any change of drainage patterns, erosion, sedimentation, hazardous material spills, litter, or exterior lighting.
2. Existing trees and other vegetation are retained to the greatest extent possible.

3. The proposed construction management plan is adequate to protect the adjacent natural resource area.

E. Development in natural resource areas in the EC zone.

1. The proposal has as few significant detrimental environmental impacts on functional values as is practical.

2. All identified significant detrimental environmental impacts on the functional values will be compensated for through a mitigation plan.

3. Proposed construction management measures are adequate to protect remaining natural resource areas during the construction period.

F. Development in natural resource areas in the EP zone.

1. There are no alternative sites available within the City that are suitably zoned to allow the proposal and that would have less impact on natural resources.

2. The applicant's analysis of the economic, social, environmental, and energy consequences (ESEE) of the proposal is able to show that the City's prior ESEE analysis for the site is no longer valid due to a change in the factors considered. The applicant's ESEE analysis also clearly demonstrates that there is a public need for the proposal in the natural resource, and that the public benefit resulting from the proposal outweighs the significant detrimental environmental impacts on the natural resource.

3. All significant detrimental environmental impacts on the functional values will be compensated for through a mitigation plan.

4. Proposed construction management measures are adequate to protect remaining natural resource areas during the construction period.

33.430.350 Impact Evaluation
An impact evaluation is required for all proposals in a natural resource area. The following steps describe the process for evaluating the impacts of a proposal.

A. The natural resources are identified.

B. The functional values of the identified natural resources are defined by characteristics and quantity.

C. Alternative locations, design modifications, or alternative methods of development on the subject property which would reduce the impacts on natural resources are identified and evaluated.

D. The impacts of the proposal on the natural resources and functional values are determined, including an economic, social, environmental, and energy (ESEE) analysis for proposals in the EP zone.
E. If there is any resulting degradation or loss of functional values from the proposal, a mitigation plan is required which will compensate for the degradation or loss. See 33.430.360 below.

33.430.360 Mitigation Plans

A. Description. A mitigation plan is a plan to compensate for the degradation or loss of a site’s functional values identified in the impact evaluation process. It may also be a plan to improve a natural resource area through the enhancement of functional values. It is a comprehensive and long range plan.

B. Purpose. Mitigation plans are intended to preserve functional values while providing some flexibility for development within a natural resource area. Development within a natural resource area has the potential of degrading or destroying the natural resource and its functional values. If development outside of the natural resource area is not practical, the negative impacts must be eliminated or compensated for through mitigation. In evaluating proposals for mitigation, the following order of locational and resource preference applies:

1. On the resource site, with the same kind of resource;
2. Off-site, with the same kind of resource;
3. On-site, with a different kind of resource; and
4. Off-site, with a different kind of resource.

C. Location of mitigation measures. Mitigation must be done within the City limits and preferably in the same local watershed.

D. Preparation and implementation. It is recommended that, based upon the functional values to be mitigated and the complexity of the project, the mitigation plan be prepared and implemented with the guidance of professionals with experience and credentials in the applicable natural resource areas and values. These professionals may include wildlife biologists, ecologists, hydrologists, foresters, and wetland scientists. The property owner of the affected site is responsible for the design and/or implementation of each element of the plan.

E. Elements of a mitigation plan. A mitigation plan must contain at least the following elements:

1. Documentation in written and mapped form of the existing natural resource and functional values on both the site to be impacted and the mitigation site;
2. The objectives of the mitigation plan, including functional values that are being conserved;
3. Information showing how the mitigation measures will ensure that there is no net loss of the functional values;
4. Information describing the coordination efforts with, and requirements of any other local, State, and Federal regulatory agencies;
5. A site plan which includes at least the following items:
   a. Applicable elements required by the environmental review application;
   b. The species, size, and spacing of any vegetation;
   c. Any water bodies, including depths;
   d. Any water sources, including volumes; and
   e. Any dams, weirs, or other structures relating to mitigation;

6. A construction plan for the mitigation measures, including timetables and assurances for performance;

7. A management plan for ongoing maintenance, including assurances for performance.

8. A monitoring plan for during and after implementation.

9. Assurances to rectify any mitigation actions which are not successful. This may include bonding or other surety.

33.430.370 Natural Resource Management Plans

A. Purpose. Natural resource management plans provide an alternative approach to individual environmental reviews. The plan may be either comprehensive in its treatment of natural resources within the management plan area, or it may be a functional plan which addresses a single or limited range of natural resources and functional values. Examples of a functional plan might be a 40-Mile Loop implementation plan or a drainageway development plan. Plans should cover large natural resources, such as a creek or slough, which may pass through many ownerships, or large areas which may have many protected natural resources and many ownerships. The plan provides a means for a single environmental evaluation and review of a large ecosystem. This process is not intended for small parcels. The process allows for coordination with other local, state, and federal agencies to provide consistency in implementation of environmental regulations. A natural resource management plan will also result in more certainty for land owners and in more rapid processing of development requests.

B. What is covered in a plan.

1. A natural resource management plan must cover all significant natural resources protected by the environmental zone(s) within the plan boundaries which are relevant to the scope of the plan. The plan must address all of the identified functional values of the natural resource areas which are significantly affected by actions or developments addressed in the plan.

2. The plan may also address concerns of other governmental agencies if the plan is being developed to be used concurrently by other agencies.

3. Management objectives which maintain or enhance identified functional values should be included.
C. Details and content of the plan.

1. The plan must be of adequate detail, description and mapping to provide site specific certainty to property owners and to allow City staff to review all development proposals for compliance with the plan.

2. The plan may include additional development standards or exemptions from the development standards of this chapter.

3. The plan must also identify:
   a. Where development is and is not allowed and the types of development allowed;
   b. The location and type of any mitigation measures;
   c. The timing of development, mitigation measures, and other improvements;
   d. The procedure for City review of allowed development; and
   e. The manner in which all requests for adjustments or amendments to an approved plan will be processed.

D. Adoption procedure for a plan. Adoption of a natural resource management plan is processed through a legislative procedure. A natural resource management plan may be implemented in several ways including but not limited to a plan district, urban renewal district, or master plan. Formulation of the plan may be done by the City, another government agency, or affected property owners.

E. Approval criteria for adoption of a plan. A natural resource management plan will be adopted if it is found that:

1. The plan is consistent with the purpose of the environmental zones;

2. The plan complies with the requirements for natural resource management plans stated in this section; and

3. The plan meets the relevant environmental review approval criteria stated in 33.430.340.A through F.
SITE: 2
UNIT: Crystal Springs
Maps: 3632; 3633; 3732; 3733; 3832; 3833

SITE SIZE: 101 acres
LOCATION: SE Ellis (N); SE Nehalem and Tacoma (S); SE McLoughlin and SE 22nd Ave. (W); and SE 28th Ave. (E).
NEIGHBORHOOD: Eastmoreland and Sellwood-Moreland
DATE OF INVENTORY: February 1987, June and August 1990

HABITAT CLASSIFICATION
- Riverine, Lower Perennial, Unconsolidated Bottom
- Riverine, Lower Perennial Artificial, Rocky Shore
- Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Seasonally Flooded
- Palustrine, Emergent Persistent, Seasonally Flooded (Crystal Springs)

GENERAL DESCRIPTION
This highly modified site is a flat, historic floodplain is now primarily a landscaped City park (Westmoreland Park), a municipal garden (Rhododendron Gardens), and a golf course (Eastmoreland). Crystal Springs and the Rhododendron Gardens provide scenic values and the later, also provides educational value. Golf course and park activities take advantage of the creeks, riparian areas, and wetlands primarily from an aesthetic standpoint. Single and multi-family residential development is also within small portions at the northwest, southwest, and southeast corners, and a single commercial lot on the corner of SE McLoughlin Boulevard and SE Tacoma is also included. Both Crystal Springs and Johnson Creek are located within this site. The area includes water bodies, two creek channels, fisheries, and extensive permeable surfaces (open grass) that provides rain infiltration and limited habitat.

SIGNIFICANT RESOURCE VALUES
Water, storm drainage, scenic, fish and wildlife habitat, aesthetics, heritage, flood storage, recreation, and education

QUANTITY OF RESOURCES:
The overall wildlife habitat quality of this site is limited due to the extensive lawn cover. Ninety percent of this, 101-acre site area has permeable surfaces which contribute to groundwater recharge and reduction in peak flooding. About 25 acres of the site are water bodies, with most of the remainder in highly modified open space.

QUALITY OF RESOURCES:
The water quality of Crystal Springs has been studied by the USGS in 1989 and 1990. The creek is known to support coho, steelhead, cutthroat trout, and some migrating fall chinook. Crystal Springs is primarily spring fed, has a year-round flow, and receives little surface runoff.

Native vegetation is limited, with more than 90% of the site being landscape lawn. However, the golf course’s cultivated grass provides food for resident and wintering waterfowl. In 1986, higher concentrations of both American and European widgeons were observed at Eastmoreland than anywhere else in Portland. This combination of grassland and adjacent water bodies provides important wintering habitat for waterfowl within the urban environment.
Rhododendron gardens consisting of azaleas, rhododendron, and other flowering shrubs provide food and nesting for hummingbirds and warblers in the spring and early summer. Golf course ponds and Crystal Springs Lake provide food and cover for wintering waterfowl. Mallards, wigeons, mergansers, shovelers wood ducks, and coot can commonly be observed. The Rhododendron gardens receive regular human use on a year-round basis, with higher numbers of visitors in spring and summer. The adjacent Eastmoreland Golf Course is used daily.

The creek channels provide aquatic habitat for steelhead, trout, and coho salmon. Crystal Springs, which flows into Johnson Creek just south of this site, is one of the few creeks within the Portland Metro area that still supports a population of native cutthroat trout and steelhead. These fish spawn and migrate up Johnson Creek no farther than the Tideman-Johnson Park area.¹ A fish hatchery is located along Cystral Springs within this site. It is operated by a private volunteer and sponsored by the Oregon Department of Fish and Wildlife and stocked with Cutthroat Trout and Coho Salmon fry.

The relatively large amount of permeable surfaces on this site help maintain the infiltration capacity of the ground and ground recharge.

The Site 2 portion of Johnson Creek flows through the Eastmoreland Golf Course and Johnson Creek Park. The channel is mostly riprapped. Blackberry and willow grow in a narrow strip along the bank adjacent to the golf course green. Vegetation overhangs the creek, providing some local temperature regulation of the stream for fish and limited habitat for passerine species and small mammals. The riparian fringe functions as a corridor for some wildlife in a densely urbanized area that lacks the necessary natural vegetation and water required to attract wildlife.

Fences along the creek separating properties may inhibit travel by some mammal and herptile species throughout the length of the site. Bird species using Reed Lake probably travel regularly between the two sites.

<table>
<thead>
<tr>
<th>Score for Wildlife Habitat Value: 39</th>
<th>Range for All Sites = 18 to 83</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation</td>
<td></td>
</tr>
<tr>
<td>Food (variety)</td>
<td>medium</td>
</tr>
<tr>
<td>Cover (structural diversity)</td>
<td>low</td>
</tr>
<tr>
<td>Human Disturbance</td>
<td>high</td>
</tr>
<tr>
<td>Interspersion</td>
<td>low</td>
</tr>
</tbody>
</table>

**MANAGEMENT RECOMMENDATIONS:** Increase native plant materials throughout site. Incorporate a wildlife habitat management program into groundskeeping practices for these three public facilities; Rhododendron Garden, Cystral Springs (West Moreland Park); and Eastmoreland Golf Course.

**LAND AREA AFFECTED BY ENVIRONMENTAL OVERLAY ZONES:**

<table>
<thead>
<tr>
<th>Zones</th>
<th>Area Affected by EC Zone</th>
<th>Area Affected by EP Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>IG1</td>
<td>&lt;1 acres</td>
<td>&lt;1 acres</td>
</tr>
<tr>
<td>OS</td>
<td>39</td>
<td>25</td>
</tr>
<tr>
<td>R1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>R2</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>R5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CG</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

67
Appendix E: Environmental Zone Application
Environmental Review Application
CRYSTAL SPRINGS RHODODENDRON GARDEN
MASTER PLAN

Portland Parks & Recreation/Planning Section
City of Portland
April 1994

Description of Proposal
A master plan for Crystal Springs Rhododendron Garden has been prepared and proposes several projects that vary in scale and scope. These projects will be phased as funding allows over a period of up to six years.

Approval Criteria
This project is being submitted for review as a Resource Enhancement project, subject to the regulations under 33.430.340.B of Title 33 – Planning and Zoning.

This application has been prepared to meet the following approval criterion:

Resource enhancement projects must have adequate mitigation measures to ensure that there will be no net loss of natural resources and functional values and that the objectives of the enhancement project will be achieved.

Approach to Meeting Approval Criteria
The application demonstrates that the Master Plan meets the intent and approval criteria by the following:

- All of the projects are designed to enhance the Garden’s resource and functional values.

- A Construction Management Plan is part of the application and will be followed for all construction projects in the Garden.

- Mitigation measures have been developed, which include the creation or enhancement of wetland or habitat areas.

- A wildlife enhancement program has been prepared and will be an integral part of the Master Plan.

- Larger projects that have not been designed, such as the Garden Hall1 will be submitted for approval separately and when fully designed.

---

1 The Garden Hall is a redevelopment of an existing facility. Because of the scale of this project, this will be submitted as a separate application for review when the Garden Hall is designed. The Hall has been used for servicing special events such as weddings, plant clinics, and rhododendron shows.
The Site's Resource Values

The Johnson Creek Basin Protection Plan includes Crystal Springs Rhododendron Garden within its jurisdiction and describes it as part of Site No. 2.

The plan identifies the site's resource values as water, storm drainage, scenic, fish and wildlife habitat, aesthetics, heritage, flood storage, recreation, and education. Of these values, four are considered to be relevant for this application -- water, wildlife habitat, aesthetics, recreation, and education.

Ec & Ep Zone Boundaries

Environmental zone boundaries for the Ep and Ec zones in the Garden are shown on page 5. The Environmental Zones on this map (as shown on quarter-section maps in the City's Permit Center) are incorrect because the map's boundaries do not correspond to ground conditions.

According to Duncan Brown, planner with the Planning Bureau, the Ep boundaries should conform to the 100 year floodplain elevation of 62.0'. The Ec zone consists of everything above that elevation to the middle of the SE 28th St.

For this application, it was assumed that the Ep zone would comprise an area that includes the water and the area between the shoreline and the outer edge of the closest man-made feature, such as a trail or bridge. Conversely, the Ec zone would comprise the area that remains, consisting mainly of upland conditions.

Compliance with Approval Criteria

Projects in the Master Plan which are covered by E-zone regulations are described below. Projects are divided into those along the water and those in the upland areas.

None of the projects described on the following pages will displace existing riparian plants. The existing conditions are bare eroded compacted slopes or stone reinforced edges. The construction of these projects will direct visitors onto developed paths, minimizing foot traffic along water edges and permitting riparian edges to be replanted.

A. Projects Along the Water

Projects in this category are located either at the water's edge or immediately adjacent to it. All of the projects described on the following pages enhance the resource value of the Garden.
The waterfalls are designed to protect slopes that are too steep to support plantings and cannot be terraced with rock walls. Two waterfalls are proposed and are described below.

- The north lagoon waterfall is in an area that consists of bare, steep, eroding slopes that seep water along the spring aquifer. The waterfall will include a group of rocks that will help to stabilize the slope, cover the soil, create planting pockets, and add water movement for the enjoyment of birds and people. The waterfall will be constructed on upland slopes. The base pool can be constructed above the 62' floodplain elevation. Riparian plants will be planted along the water's edge.

- The proposed waterfall in the rock garden on the island is located among an exposed basalt outcrop where it is difficult to grow plants. The waterfall will be small in scale and can be designed with a recirculating pool (above the Ep zone) which will not be connected to the lake.

The low bridge will be replaced because it has deteriorated from wood rot and is not adequate for current needs. The bridge is regularly used by Cushman maintenance vehicles which cannot pass pedestrians on the bridge. Also, the bridge is not wide enough for two wheelchairs to pass.

The turnouts in the center of the proposed bridge will permit pedestrians to step out of the way of vehicles or other pedestrians as they linger to enjoy the view. The structural supports for the bridge are now in the lake bed and will be for the new bridge.

The north lagoon boardwalk will connect an existing walk with a proposed wildlife viewing area and the night exit gate. The wildlife viewing area is being relocated from the center of the garden where the ground has become worn and compacted, to the north lagoon which is close to native undisturbed vegetation for wildlife cover. The riparian bank under the boardwalk will not be disturbed.

The boardwalk will be 6' wide. It will include 2 or 3 concrete support posts in the water, well under the 50 cy. maximum fill permitted under a Corp of Engineers 404 permit.

The third boardwalk spans the creek and adjacent wet areas downstream from the high bridge. The boardwalk will connect two paths at the lower level. The water is very shallow at this point (2"-3") and visitors frequently walk across the creek.
The ground in this area has been worn bare by foot traffic and is an area of soft soil that could create silting into the lagoon. The boardwalk would permit the clear flow of any drainage from upper slopes and elevate foot traffic above the soft soil.

☐ Several viewpoints also are planned to address erosion problems and to provide viewing opportunities of the garden and adjacent areas. Erosion is a common problem in many areas and is the result of visitors walking to the water’s edge over large areas of compacted soil, most of which has little or no vegetation.

The viewpoints will provide access to the water’s edge in a limited number of areas. They will be defined by rock walls that extend above the water. The “floor elevation” of the viewpoints will be about 1’-2’ above the 100 year floodplain as a way of reducing the slope along the bank. By directing visitors to designated viewpoints, surrounding slopes can be re-vegetated with native plantings. Without vegetation the slopes are eroding and silting into the lake.

☐ The wildlife viewing area is also an area with significant educational value and is an integral part of the wildlife management plan. The viewing area replaces the existing “feeding zone”, located at the north end of the low bridge on the peninsula. The proposed viewing area will include interpretive signs for waterfowl identification as well as information on appropriate feeding practices.

☐ The wetland area would create and enhance a wetland habitat in the cove at the southeast corner of the island. The area now has some native plants but can be enhanced to provide better wildlife habitat. The project would improve water quality, improve fish and wildlife habitat, and enhance the Garden’s educational value.

Mitigation and Environmental Management

Some of these projects will result in the loss of existing or potential habitat areas next to the water. Several mitigation measures are proposed to address this issue.

- Riparian plantings will be installed for a minimum of three feet around all viewpoints.

- In planting areas directly adjacent to these projects, plants with either habitat value or native plants will be used.

- A water garden or wetland habitat area will be created in the southeast corner of the island (see description on previous page)
In addition, to the mitigation measures, construction of these projects will adhere to the guidelines described in the Construction Management Plan.

B. **Upland Projects**

A majority of the projects in the Master Plan are located in the upland areas of the Garden. Projects are generally organized into four types -- trail improvements, structures, the service area, and the Gateway Garden.

*Trail improvements* focus on clarifying and improving access within the Garden. As noted in the Master Plan, many of the trails are confusing to visitors or do not manage public access well. By relocating or formalizing access, some of the trail projects should result in less soil erosion in high-traffic areas. These projects will improve the overall recreational value of the Garden and make the major areas of the garden accessible.

*Structures* are proposed in several areas of the Garden, though they are concentrated on the peninsula. The structures are "garden structures", which will be designed to accommodate educational and recreational activities. These structures will be designed to fit into the woodland character of the Garden and will be unobtrusive in scale and appearance. The major structures are located in the central parts of the garden away from water edges.

The *Gateway Garden* consists of a project to renovate the appearance of the parking lot and integrate it visually with the rest of the Rhododendron Garden. The parking lot now consists mainly of asphalt and concrete. The improvement project will remove areas of pavement and create planting beds in which a variety of rhododendrons, azaleas, trees, and companion plants will be installed.

The *service and maintenance area* is a controlled-access area that is controlled by a locked gate and is not open to the public. It is used for storage of garden materials being used in the garden (stone, compost, etc., and materials being taken out of the garden-leaves, brush, etc.). The area will be used: (a) to store materials for construction projects, (b) for Portland Parks' trucks, and equipment and emergency equipment, and (c) for parking for service vehicles during special events.

**Mitigation and Environmental Management**

Some of these projects noted above may result in the loss of
existing or potential habitat areas next to the water. Several mitigation measures are proposed to address this issue.

- Appropriate plantings (rhododendrons, azaleas, or native plant materials) will be installed wherever new planting beds are created. As noted in the Johnson Creek Basin Protection Plan (page 67), rhododendrons and azaleas, and other flowering shrubs “provide food and nesting for hummingbirds and warblers in the spring and early summer.”

- Wetland native plantings would be planted along the bare slopes on the west side of the island and peninsula below the 100-year floodplain. Wetland native plantings would be planted in beds along the waters edge in areas that are now wide graveled pathways above reinforced rock edges. When the wildlife viewing area is moved, a large area of bare ground close to the waters edge can be planted. The potential square footage of native wetland planting area available is more than ten times the area which could potentially be impacted by the construction of the bridges and waterfall.

- Wildlife enhancement projects throughout the garden will be initiated (described on next page).

In addition, to the mitigation measures, construction of these projects will adhere to the guidelines described in the Construction Management Plan.
An integral part of the Garden and its Master Plan is the preservation and enhancement of its habitat value. The Master Plan includes several actions to implement this goal. These actions also serve as part of the Garden’s effort to mitigate against loss or alteration of habitat created by projects.

The actions in the Wildlife Enhancement Program are described below.

1. Install wood duck boxes of a design to discourage starlings. These would be added on large overstory trees at locations near and facing open water areas.

2. Utilize floating logs as roosting sites for wild aquatic birds. These should be located away from public areas to minimize the disturbance to wildlife.

3. Relocate domestic waterfowl through an “adopt a duck” program or other techniques, to habitat areas well away from the garden.

4. Reduce mallard nesting habitat if permanent mallard populations remain too high after other strategies.

5. Soften the edges along the garden with native plantings that provide wildlife habitat and/or serve as a food source.
To protect the Garden and its resources against environmental degradation during construction, a set of policies have been prepared. These policies will be followed for all construction projects.

**Construction**

1. Construction materials will be stockpiled in the area of the main parking lot and will not be allowed within the EP zone. The City will inform contractors of this requirement and will be stated in the project’s construction specifications.

2. The City will provide appropriate enclosures or deposit boxes for construction wastes. In addition, the City will ensure that construction waste will not blow, disintegrate, block the infiltration of rain water, prevent the growth of plants, attract or injure wildlife, or otherwise interfere with the natural functions of the site.

3. The Contractor will agree not to leave excess concrete on the site or dispose of water on site, which had been used to rinse concrete mixing, pouring, or spreading equipment.

**Management of Earth Stockpiles**

1. The City will make every effort to avoid stockpiling excavation spoils on site by removing all excavated material to designated areas on the site. If there is a need to store excavated soil overnight, sediment control systems will be used to minimize runoff into the lagoon.

   Earth stockpiles greater than six feet will not be permitted.

**Sediment Barriers**

1. Biofilter Bags or comparable seed-free sediment control material will be installed around any soil stockpiles left overnight.

2. Biofilter Bags will be installed at the toe of all slopes.

3. A sediment fence will be installed at the toe of the lowest slope next to the creek.

**Maintenance**

1. All ESC systems will be inspected daily for damage and will be repaired with materials stored on site.

2. All ESC systems will be inspected after each rainfall to remove any accumulated sediments or repair damaged materials.
3. All ESC systems will remain in place and will continue to be monitored until the banks have been stabilized and shrubs are established.

1. Disturbed slopes shall be revegetated as soon as possible.

2. Approximately 3" of mulch will be applied immediately after final grading.
The Master Plan includes goals and policies that govern various aspects in managing the Garden. Rather than develop an additional set of policies for this application, appropriate policies and sections from the Master Plan were culled and are described on the following pages.

The Garden’s Master Plan includes several policies that establish the overall objective to protect and enhance the Garden’s resources and function values. The relevant policies are quoted below from the plan.

Philosophy of Master Plan

The basic elements and overall direction of the plan and the Garden are defined in this section. As noted below, the "philosophy of the master plan" emphasizes the preservation and enhancement of several of the Garden's functional values -- aesthetics, recreation, and education.

The most distinctive characteristics of the Garden are its beauty and tranquility. Whatever improvements and changes are made should be sensitive to maintaining these qualities, which represent a major reason that people visit the garden. The relationship between the garden and lake, and its "natural" appearance that recalls the native woodlands of the Pacific Northwest, are important characteristics to be preserved.

The Garden can serve as an educational resource as well a botanical garden that is appreciated mainly for its beauty. Through carefully designed improvements, the garden can serve a variety of visitors, ranging from botanists to people out for an evening stroll.

Mission Statement

The Garden’s Mission Statement clarifies and elaborates on the fundamental purpose of the Rhododendron Garden. Among the pertinent statements that demonstrate how the Master Plan will address the Garden’s functional values for aesthetics, recreation, and education are the following:

Crystal Springs Rhododendron Garden is intended to:

1. Present to the public a major display of significant rhododendrons, azaleas, and companion plantings.
2. Offer a natural setting for educational programs of interest to horticulturists, amateur gardeners, and local schools.
3. Provide an opportunity, through annual shows, for the public to see many rare and unusual rhododendrons and azaleas not normally seen in this area.
Garden Goals & Policies

The Master Plan also includes specific objectives that define operating policies for different aspects of the Garden. These policies also address the functional values that are part of the approval criteria for this application.

The section below includes policies from the Garden's Master Plan, grouped by the respective resource value.

Aesthetics or Education

3.2.A Plantings

Design and maintain the plantings to display their inherent beauty, to provide an educational value, or to be consistent with an acknowledged landscape theme.

Design and locate trails and paths to preserve and enhance the garden's beauty, natural topography, plantings, and views of the lake and adjacent golf course.

3.2.C Facilities

Locate and design facilities that are architecturally compatible with the Garden's woodland character and natural quality; with other structures; and with an acknowledged theme throughout the Garden.

3.2.D Programs, Activities, and Education

Manage attendance levels to minimize damage to the Garden caused by overcrowding.

Water, Fish & Wildlife Habitat

3.2. Wildlife Management & Environmental Management

Manage the garden to maintain a healthy and diverse population of wild waterfowl and other aquatic birds.

This should be done by:

- Maintaining the highest possible water quality to encourage macroinvertebrate as waterfowl and aquatic bird food sources.
- Minimizing practices that negatively affect dissolved oxygen levels or add phosphorus, and chemical pollutants.

Encourage a diverse wild bird population by reducing feeding practices that favor domestic waterfowl.
This should be done by:

- Reducing the overall amount of public feeding to encourage wild bird foraging and feeding behavior.
- Encouraging visitors to feed whole grain foods such as raw popcorn, field corn, barley, rice, and wheat.
- Reducing scavenging opportunities that encourage animals such as gulls, crows, and rats by properly disposing of food scraps, practicing regular and thorough sanitation, and by using covered garbage cans.

*Wildlife and wildlife management shall be an integral part of the garden's plan.*

This should be done by:

- Maintaining a diverse habitat in landscaped areas through the use of many and varied types of plants, and full landscape structure which includes overstory and understory trees, shrubs, and groundcovers.
- Replacing exotic species in designated habitat areas with native species.
- Providing information through an on-site interpretive display that requests public participation in wildlife management.
- Identifying other animals in the garden (besides squirrels, rats, and mice) that were there historically and which might be reintroduced.

---

**Recreation and Education**

3.2.D Programs, Activities, and Education

*Develop the Garden as an educational resource for serious gardeners and novices who are interested in rhododendrons and related species.*

This should be done by:

- Sponsoring educational programs on rhododendron cultivation.
- Providing information kiosks and distributing information about the Garden, PC-ARS, the Friends group, and rhododendrons.
- Installing identification signs for all significant plants.

*Develop a complete informational and directional signage program.*

This should be done by:

- Providing interpretive signs to educate visitors on botanical and wildlife areas and attractions.
- Installing identification signs for all major trails, Garden areas, and rhododendrons and azaleas.
- Providing informational handouts in languages other than English, primarily Japanese and Spanish.
POSSIBLE IMPACT AREAS

POTENTIAL MITIGATION AREAS
new plantings

CONSTRUCTION STAGING AREA

EROSION CONTROL BARRIERS
during construction

CRYSTAL SPRINGS
RHODODENDRON GARDEN
Master Plan

Portland, Oregon
April 1992
POSSIBLE IMPACT AREAS

POTENTIAL MITIGATION AREAS
new plantings

CONSTRUCTION STAGING AREA

EROSION CONTROL BARRIERS
during construction

CRYSTAL SPRINGS
RHODODENDRON GARDEN
Master Plan

Portland, Oregon
April 1992