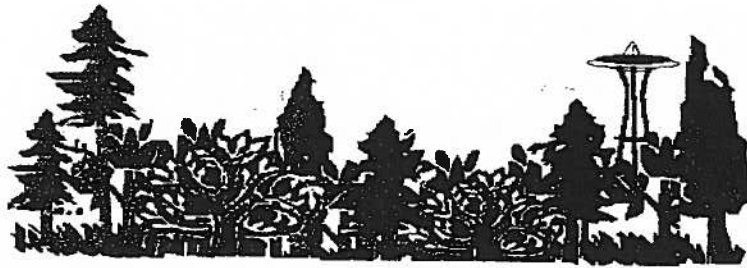


# **Renewing the Washington Park Arboretum**



## **MASTER PLAN**

**Adopted by Seattle City Council Resolution 30317**

**May 7, 2001**

**Adopted by the University of Washington Board of Regents**

**May 18, 2001**



## RESOLUTION 30317

A RESOLUTION adopting a master plan for the Washington Park Arboretum:

WHEREAS, there is a need to reach a consensus on a renewed vision for the future of the Washington Park Arboretum and to establish a framework according to which that vision may be realized; and recognizing "...the principle that public parks are a public trust, to be maintained for present and future generations...fully accessible to all citizens of Seattle..." (Ordinance #103667); and

WHEREAS, in Ordinance 11714 the City Council in 1994 authorized the Superintendent of Parks and Recreation to proceed with a community assessment and scoping phase for an Arboretum master plan and authorized acceptance of a Sixty Thousand Dollar (\$60,000) donation from the Arboretum Foundation for such purposes; and

WHEREAS, in Resolution 29152 the City Council in 1995 approved the Scoping Document for a new master plan for the Washington Park Arboretum based on that community assessment and scoping phase which consisted of the formation of a Citizens Oversight Committee, the distribution of over 9,000 surveys to members of the community and Arboretum support groups, conducting six (6) public meetings to gather information on issues, concerns and ideas, regarding what should be included in the scope of a new master plan; and

WHEREAS, in Ordinance 117892 the City Council in 1995 authorized the Superintendent of Parks and Recreation to proceed with the development of a new master plan for the Washington Park Arboretum and authorized the acceptance of Four Hundred Thousand Dollars (\$400,000) from the Arboretum Foundation for the master planning process; and

WHEREAS, the Arboretum and Botanical Committee conducted a series of public meetings and workshops as a part of the master plan development process and released a master plan entitled "Greenprint for the Future"; and

WHEREAS, significant public concern ensued and, with the goal of developing alternatives and options that would generate increased community support, the Board of Park Commissioners conducted an additional public process, including a public meeting and three community workshops in the fall of 1998; and



1  
2 WHEREAS, the Arboretum and Botanical Garden Committee used the results of  
3 that process to develop a revised plan "Renewing the Washington Park  
4 Arboretum"; and  
5

6 WHEREAS, the Department of Parks and Recreation as lead agency released a  
7 Determination of Significance (DS) (March 11, 1999) indicating that the  
8 master plan proposal required an EIS; and  
9

10 WHEREAS, public and agency comments were invited on the EIS scope, both in  
11 writing and at a public meeting; and  
12

13 WHEREAS, the scope was modified to reflect those comments and submitted to  
14 the City Council; and  
15

16 WHEREAS, Resolution 29978 approved the Environmental Scoping Information  
17 Report for a new master plan for the Washington Park Arboretum and  
18 authorized the Superintendent of the Department of Parks and Recreation  
19 to prepare an Environmental Impact Statement and to present  
20 recommendations to the Mayor and City Council for adoption of a new  
21 master plan for the Washington Park Arboretum; and  
22

23 WHEREAS, a Draft Environmental Impact Statement and a report entitled  
24 "Financial Aspects of the Proposed Arboretum Master Plan" were issued  
25 in May, 2000; and  
26

27 WHEREAS, THE Department of Parks and Recreation conducted a public  
28 hearing on June 15, 2000, to receive verbal and written comments on the  
29 Draft Environmental Statement; and  
30

31 WHEREAS, a Final Environmental Impact Statement was issued and was not  
32 appealed; and  
33

34 WHEREAS, after careful review of public comments received throughout the EIS  
35 process the Arboretum and Botanical Garden Committee made significant  
36 modifications to the master plan and voted unanimously on January 3,  
37 2001 to approve and recommend the proposed master plan "Renewing the  
38 Washington Park Arboretum."  
39

40 NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE  
41 CITY OF SEATTLE, THE MAYOR CONCURRING, THAT:  
42

43 The Master Plan for the Washington Park Arboretum  
44

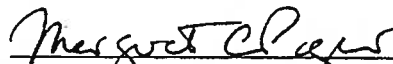


The master plan for the Washington Park Arboretum that includes programmatic as well as physical changes to the Arboretum, which plan consists of the narrative entitled "Renewing the Washington Park Arboretum," including two Attachments (Exhibit "A" attached to this resolution), drawings entitled "Master Plan Illustrative Plan" (Exhibit "B") and the "Master Plan Circulation and Facilities Plan" (Exhibit "C") with marginal notes describing key physical features and themes outlined in the master plan narrative, is adopted. The drawings, Exhibits B and C, show the general conceptual locations of these features and may be adjusted in the design phase of implementation.

BE IT FURTHER RESOLVED BY THE CITY COUNCIL OF THE CITY OF SEATTLE, THE MAYOR CONCURRING, THAT:

The Department of Parks and Recreation shall develop options and evaluate the pros and cons of adding more community representation to the existing Arboretum and Botanical Garden Committee (ABGC). The Board of Park Commissioners is requested to review the Department's analysis, and to make a recommendation to the City Council concerning ABGC membership.

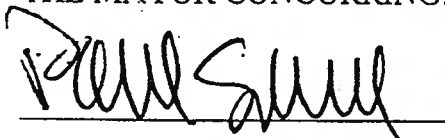
Adopted by the City Council the 7<sup>th</sup> day of May, and  
signed by me in open session in authentication of its adoption this 7<sup>th</sup> day of  
May.

  
\_\_\_\_\_  
President of the City Council

Filed by me this 15<sup>th</sup> day of May.

  
\_\_\_\_\_  
City Clerk

THE MAYOR CONCURRING:

  
\_\_\_\_\_



*Exhibit A*  
*of Resolution 30317*  
*The Washington Park Arboretum Master Plan*

*Renewing the Washington Park Arboretum*

May 2001

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<b>Exhibit B</b>	<b>Master Plan Illustrative Plan</b>
<b>Exhibit C</b>	<b>Master Plan Circulation and Facilities Plan</b>
<b>Attachment 1</b>	<b>Implementation Guidelines for the Washington Park Arboretum Master Plan</b>
<b>Attachment 2</b>	<b>Mitigation Measures Contained in the Final Environmental Impact Statement for the Washington Park Arboretum Master Plan, January 2001</b>

## 1. Purpose and Need

*The Washington Park Arboretum is a living plant museum emphasizing trees and shrubs hardy in the maritime Pacific Northwest. Plant collections are selected and arranged to display beauty and function in urban landscapes, to demonstrate their natural ecology and diversity, and to conserve important species and cultivated varieties for the future. The Arboretum serves the public, students at all levels, naturalists, gardeners, and nursery and landscape professionals with its collections, educational programs, interpretation, and recreational opportunities.*

Mission Statement, 1996

The Washington Park Arboretum has had a glorious sixty-year history as one of the most loved educational and cultural resources in the Pacific Northwest. The Arboretum, then known as the University of Washington Arboretum, began officially in 1934 when an agreement was signed by the University of Washington and the City of Seattle, allowing the University to develop and manage an arboretum and botanical garden in Washington Park. This agreement continues to serve the park's and arboretum's mission of service to the people of the Northwest, through education, conservation, and recreation.

The Washington Park Arboretum is managed cooperatively by the Seattle Department of Parks and Recreation and the University of Washington. The Arboretum Foundation is its major support organization. The City of Seattle owns the Arboretum's land and buildings, Seattle Parks and Recreation maintains the park functions and the University of Washington maintains and manages the plant collections. Development of the Arboretum Master Plan will not alter this relationship.

The Washington Park Arboretum is at once a collection of woody plants of international significance and a public park, treasured by residents of Seattle and the surrounding area. The brilliance of the Washington Park Arboretum lies in the rare blending of these two qualities. It is the overriding and explicit intent of this master plan to preserve and foster both of these qualities into the future. This master plan seeks to improve the care, expand the content and increase the accessibility of the collection, while at the same time maintaining undiminished, the natural, informal ambience of the park. To the extent that the plan is successful a visitor so inclined will be able to gain information more easily than has been possible heretofore, while other visitors will be able to relax, stroll, and play. Toward this end, there shall be no permanent perimeter fencing or admission fees charged to restrict or impair public access to Washington Park.

The purpose of the proposed plan for the renewal of the Washington Park Arboretum is to reach consensus on a vision for the future of the Arboretum and to establish a framework according to which that vision may be realized. The Arboretum must maximize its value to the communities of western Washington as a place of

- education, both formal and informal, concerning the natural history and landscape value of woody plants;
- conservation of plant species, and of their genetic diversity, that are threatened with extinction worldwide; and
- recreation and tranquil experience for all visitors to Washington Park.

The University, the Arboretum Foundation and the City have not yet committed to financing specific elements of the plan. Commitments will require further deliberations with their governing bodies. The City's approval of the capital and operating costs of the plan are subject to the City's budget process.

This document first establishes, in Chapter One, the need for a comprehensive plan to renew the Arboretum and a set of goals for its future. These needs and goals are the foundation for the plan's objectives and the proposed plan itself, which are presented in Chapter Two.

With over 4,400 species and cultivated varieties on its grounds, the 230-acre Washington Park Arboretum contains one of the three most diverse collections of woody plants in the United States. As such, Washington Park *is unique* among Seattle's many urban green spaces: it embodies the ecological values of any well-forested urban park -- such as absorption of pollutants, moderation of urban heat island effects, and habitat for wildlife -while most effectively displaying the beauty, diversity, and landscape utility of the world's temperate flora.

Our cool maritime Pacific Northwest climate allows us to grow a wider variety of plants than almost anywhere in temperate North America. As human pressures affect the ecological health of the Earth, living museums such as the Arboretum have a duty to educate people about the values of plants, of their natural environments, and of their importance in urban landscapes.

As a park, the Washington Park Arboretum welcomes visitors from throughout the region to walk, bicycle, picnic, take photographs, observe wildlife, and enjoy its quiet, naturalistic, Olmstedian ambience.

## 1.1 Project proponent

The proposed plan for the Washington Park Arboretum is the result of cooperative effort by the City of Seattle, the University of Washington, and The Arboretum Foundation, working together on the Arboretum and Botanical Garden Committee (ABGC). The ABGC is the legally mandated advisory committee to the University and the City established by the Arboretum's enabling ordinance in 1934. The ABGC comprises nine members appointed by the University, City, Governor, and the Arboretum Foundation. The Department of Parks and Recreation has management responsibility for the Arboretum on behalf of the City of Seattle, and the Center for Urban Horticulture in the College of Forest Resources has management responsibility on behalf of the University. The Arboretum and Botanical



Garden Committee believes that it is in the best interest of the Arboretum and its constituents to address these issues in a comprehensive planning process, rather than piecemeal.

## **1.2 Need for a Plan for the Washington Park Arboretum**

The plan by which the Arboretum now operates, the *Master Plan Update for the University of Washington Arboretum in Seattle's Washington Park* (Jones and Jones, 1978), addressed issues principally of facilities, traffic, and pedestrian circulation. If the Arboretum is to successfully fulfill its mission in the next several decades, however, it must have a clear vision driven by its responsibilities and goals in education, conservation, and recreation. Therefore this new master plan presents a complete set of goals, objectives, and programmatic recommendations to guide the Arboretum's immediate and long-range future in a way that is inspiring and sustainable.

The following sections review the issues that comprise the most compelling justification for a new plan for the Washington Park Arboretum.

### **1.2.1 Education**

#### *Formal educational programs*

The Washington Park Arboretum offers educational programs of outstanding quality, yet they serve far fewer people than should the most significant public garden in Seattle's major, growing metropolitan area. Traditionally, public garden education has been oriented almost solely to sophisticated plant enthusiasts, the academic elite, and the affluent. Major metropolitan public gardens now are successfully reaching much wider audiences, suggesting the Arboretum's greater potential for educational service to the community.

School administrators and teachers are increasingly aware that when students participate in field trip experiences related to classroom study, they better absorb and retain their classroom lessons. When they visit the Arboretum, children easily learn how important plants and parks are to our own health and urban environment, and in turn how important it is to care for parks and plants. A visit to the Arboretum can stimulate a child's lifetime enjoyment of gardening and nature. A child's lessons in geography come to life in the presence of trees and forests from all over the world.

K-12 school programs served approximately 2,640 students in 1999-2000. The demand and potential are much greater, however. Approximately 60% of current participants are school children who reside in the Seattle City limits. The Arboretum is one of two parks in which the 3<sup>rd</sup> grade Plant Growth and Development curriculum is taught. With continued assistance from community partners such as Alliance for Education, the Arboretum is able to offer many children their first-ever field trip experience. Arboretum staff expects increases from Seattle schools as well as eight other school districts through the Saplings programs. The 2006 goal is to host 6,000 students in the Saplings program. Given the uniqueness of the Arboretum as an educational resource in western

Washington, and the performance of similar public gardens in other major metropolitan areas, when the Arboretum reaches its potential it should serve at least 20,000 K-12 students and youth each year from throughout the Puget Sound region.

Other audiences for formal educational programs presently are even less well served by the Arboretum. These include families, educators, landscape professionals, natural history/ecology enthusiasts, gardeners, special-needs populations, and adults in general. It is estimated that 4-5,000 additional people could benefit from formal Arboretum programs.

#### *Educational value to the community at large*

The Washington Park Arboretum can and should better serve the community at large, whose interest in natural history, gardening, and open space recreation is unsurpassed anywhere in the United States. Hundreds of thousands of visitors each year attest to the Arboretum's value to the community. One reflection of this value is the membership in The Arboretum Foundation, the nonprofit organization that promotes education, volunteerism, and financial support for the Arboretum. The Foundation today boasts a membership of about 3,200 from throughout the Puget Sound region and beyond. Membership, volunteerism, and financial support will increase substantially when the community is inspired by a plan to make the Arboretum's bounty of plant life, beauty, and educational benefit more interesting and accessible to our diverse population.

The Arboretum, like any living museum, fulfills much of its educational mission by informal means, by having plant exhibits whose messages are clear, absorbing, and well interpreted through signage, docents, and written materials. Visitors seeking recreation and emotional renewal from their time in the Arboretum should leave the park having learned something, however implicitly "by osmosis," about the natural world as well. The current organization and interpretation of plant collections, however, do not promote such informal education.

#### *Educational relevance of plant displays.*

Many of the Arboretum's plant collections and displays are incomprehensible to all but a few botanically sophisticated visitors. Most current displays are organized around taxonomic themes, according to plants' evolutionary relationships: legumes are grown, together, as are viburnums, cherries, spruces, mountain-ashes, crabapples, hollies, maples, and magnolias. Some of the Arboretum's taxonomic displays are well appreciated, but most are not even recognizable to the untrained visitor. Over the past half-century, living museums like the Arboretum have found that students and audiences learn best from, and enjoy, displays that are organized ecologically, according to plants' natural communities, or *horticulturally*, according to plants' uses in urban garden landscapes. Much of the recent popularity of Seattle's Woodland Park Zoo, for example, can be traced to its change from taxonomic (the Primate House) to ecological (African Savanna) display themes.

### 1.2.2. Conservation

#### *Conservation of threatened species and genetic diversity*

The world's biological diversity today is increasingly at risk of extinction and loss of self-sustainability. Currently the Washington Park Arboretum grows specimens of at least 117 species of trees and shrubs that are considered endangered or threatened with extinction somewhere in the world according to the CITES list. However, most of the Arboretum's conservation species are represented by just one or two individual specimens. As one of the major public gardens in the United States, the 230-acre Arboretum should play a much larger role in the *ex situ* ("off site") conservation of endangered species. In addition, the genetic diversity of many cultivated species is in decline as old cultivated varieties are abandoned for new. Public gardens such as the Arboretum can preserve this diversity by growing individuals of varieties that are not currently in fashion but that may provide material for hybridization in the future. The goal of the Arboretum can be achieved by cultivating numerous individuals in order to preserve possible samples of the species genetic variability.

#### *Conservation education*

Most urban dwellers have little direct notion of the fragility of our natural heritage. One of the best ways to communicate that message is through plant displays that represent natural plant communities of the world, including our own native forests, and that demonstrate the inter-relatedness of those communities and their intrinsic value. Naturalistic, ecological displays can emphasize those plants that are in danger of extinction within their natural habitats. No current display at the Arboretum effectively communicates such a message. The natural marshy shoreline, wetlands, and uplands could demonstrate how ecosystems may vary in their vegetation and wildlife. For example, a renovated riparian area around Arboretum Creek even may attract salmon, to the ecological benefit of Union Bay and the educational benefit of visitors.

#### *Location of plant collections*

The relationship between the location of plant collections and the site conditions in which they can thrive is often poor in the present Arboretum. The original James Dawson (Olmsted Brothers) plan for the Arboretum imposed a sequence of plant displays on Washington Park with insufficient concern for environmental conditions most conducive to the health of the plants. Siting plants in the correct environment is the first step to showing their beauty and significance while decreasing the intensity of maintenance they require.

#### *Horticultural maintenance*

Many of the Arboretum's finest trees and shrubs are dying from old age, storm damage, disease, inadequate pruning and other care, overcrowding, shading out by fast growing self-sown native trees, and being overcome by invasive species such as English ivy and Himalayan blackberry. Invaders not only are affecting the health of exotic collection plants, but also

are interfering with the natural regeneration of the Arboretum's habitat matrix of native trees and shrubs. A well-managed Arboretum can be a model for other Puget Sound urban green spaces.

The Arboretum's horticultural crew, with only one staff member for every twelve acres, ranks well below other comparable public gardens such as Strybing Arboretum in San Francisco, which has one horticultural staff for every five acres. As a result, many specimens and displays have declined for many years, so that some are dead, some are unrecognizable, and others, such as the viburnums, are vestiges of dying, misshapen specimens.

#### *Plant security*

Increasingly, the Arboretum's plant collections are victims of theft and vandalism, such as recent severe damage and losses to the crabapples, conifers, birches, and valuable Japanese maples.

#### *Wildlife*

The Arboretum is currently a haven for many species of birds, insects, and other wildlife that utilize both the diverse native forest habitats and the botanically rich collections of exotic trees and shrubs. In the past, curation and management of the plant collections have not sought to maximize wildlife health and diversity, but such concerns must be addressed in the future if the Arboretum is to fulfill its role as an urban wildlife sanctuary.

### **1.2.3. Recreation and Visitor Services**

#### *Balancing recreational use and plant/environment health*

The Washington Park Arboretum is a unique urban resource that must balance its roles as a park and as a resource for education, conservation, and display. Bicycling, jogging, dog walking, and other recreational activities often damage plants and their environments either directly or indirectly, e.g. by compacting soil over root systems. For instance, canoe and kayak launching, waterfowl feeding, wave action, runoff, and compaction by pedestrians, contribute to degradation of the Duck Bay shoreline, which in one place has receded by more than fifteen feet in recent years. Both "arboretum" and "park" uses can be better supported through improved planning and infrastructure.

#### *Bicycle use of Washington Park*

Presently the bicycle linkage between E. Madison Street and the north end of Washington Park is difficult and dangerous. Recreational bicycle use of Washington Park is not well provided for, resulting in inappropriate bicycling on pathways, which interferes with the health and appreciation of the Arboretum plant collections, and visitor safety.

### *Visitor safety and security*

During the scoping phase of the current planning process (see section 2.2 below), personal safety was the concern expressed most frequently by the public. Crime statistics are typical for those in a Seattle park, which deters some constituents - particularly families with small children and elderly plant devotees - from exploring the entire Arboretum. Also, inappropriate bus and truck traffic on Arboretum Drive puts pedestrians at risk. Parked automobiles are frequently broken into, especially in the small, isolated parking lots throughout the Arboretum. The Seattle Police Department's "Crime Prevention Through Environmental Design" team has recognized the Arboretum's significant safety problems and has suggested numerous creative solutions.

### *Automobile traffic*

Lake Washington Boulevard accommodates about 18,000 cars on a typical weekday, four times as many as was intended in the original plan for the boulevard. This traffic restricts easy pedestrian access across Lake Washington Boulevard, which is spanned only by the Wilcox Footbridge near the north end of the park. The western portion of the Arboretum is therefore effectively inaccessible to most visitors, and many Montlake residents living west of Washington Park cannot easily access the eastern core of the Arboretum on foot. Traffic issues are especially acute during rush hours, when many drivers make U-turns at the north entrance of the Arboretum in order to enter eastbound Route 520.

### *Pedestrian circulation*

Pedestrian passage across Lake Washington Boulevard is particularly problematic near the south end of Washington Park, hindering access between the Japanese Garden and the rest of the Arboretum. The majority of trails in the Arboretum are not surfaced or graded to permit reasonable access by disabled or elderly visitors. Pedestrian entrance into, and orientation within, the Arboretum are often confusing and difficult, especially for visitors who are not yet intimately familiar with the park. Pedestrian access from local bus-stops should be improved so that more people will visit the Arboretum without their automobiles.

### *Japanese Garden experience*

One of the most outstanding features of the Washington Park Arboretum is the Japanese Garden. However, the full Japanese Garden ambience and experience have not been achieved for several reasons: Facilities envisioned in the 1959 plan for the Garden, such as a pavilion and expanded north entry, have not yet been implemented. Landscaping outside the fence, intended to contribute appropriate Asian forest "borrowed scenery" to the Garden's context, has not yet been provided. In addition, high traffic volumes on Lake Washington Boulevard impact the tranquility desired in the garden.

### *Visitor amenities*

The Arboretum portion of Washington Park has only one set of restrooms, at the Graham Visitors Center in the north end, for its entire area. (Restrooms at the south end ballfields are relatively inaccessible from the Arboretum due to heavy Boulevard traffic.) Water fountains are similarly sparse, and even basic food service is lacking. Other than the Visitors Center, only the Lookout in the south end offers visitors any shelter from the often unpredictable weather.

### *Naturalistic experience*

Since its inception, the Washington Park Arboretum has adhered to the Olmstedian ideal of plants displayed in a naturalistic manner, accessible to people for education and for esthetic respite from urban stresses. The Arboretum should continue to embrace that ideal in the future.

## **1.2.4 General Issues**

### *Arboretum Foundation activity and membership*

As noted above, The Arboretum Foundation is an outstanding nonprofit organization that supports the Washington Park Arboretum through volunteerism and fundraising, and its membership level should be expected to grow, commensurate with the most significant public garden in the Pacific Northwest.

### *Fiscal sustainability*

The Washington Park Arboretum's fiscal health has been inadequate from its very inception, as evidenced by 50-years'-worth of deferred maintenance on the grounds, relatively few people served by its educational programs, and the waning relevance of many of the plant exhibits.

## **1.3 GOALS FOR THE FUTURE OF THE WASHINGTON PARK ARBORETUM**

The goals for the future of the Washington Park Arboretum directly address the needs and issues raised in the previous section. The focus of improvements to the Arboretum will remain on Curation, Education, and Visitor Services. Goals are numbered for ease of later reference, not to suggest any priority order, and are summarized as follows:

### **1.3.1 Education**

1. An educational program fulfilling the Washington Park Arboretum's potential to serve K-12 students, higher education, families, landscape professionals, natural history/ecology enthusiasts, gardeners, special needs populations, and general visitors (consistent with Washington Park's recreational mission)

2. Plant exhibits organized, designed, and interpreted to be as interesting and self-explanatory as possible to the Arboretum's diverse audiences

### **1.3.2 Conservation**

3. Plant exhibits that demonstrate to all visitors the ecological attributes and values of natural plant communities throughout the temperate world, emphasizing forests of the Pacific Northwest, of regions with similar cool winter-rain climates, and of selected Pacific Rim regions
4. Active conservation of species of trees and shrubs, and of their genetic diversity, that are threatened with extinction in temperate regions of the world
5. Healthy, thriving plant collections and exhibits throughout the Washington Park Arboretum
6. The Arboretum as a sanctuary for diverse urban wildlife
7. Rehabilitation of historic planting sites, physical amenities, and Olmstedian influences.

### **1.3.3 Recreation and Visitor Services**

8. Non-structured recreational use of Washington Park consistent with the Arboretum's mission of education, display, and conservation, as further defined below.
9. Improved safety of all visitors to Washington Park, including vulnerable populations, and security for their belongings
10. Decreased disruption of park and arboretum use by arterial traffic on Lake Washington Boulevard and entering/exiting State Route 520
11. Improved pedestrian and bicycle access to Washington Park
12. Enhancement of the ambience and visitor experience at the Japanese Garden
13. Educational, conservation, and visitor facilities consistent with growing recreational enjoyment of Washington Park Arboretum by citizens of the city, region, and beyond
- 14.. Provision for the visitor amenities expected of a 230-acre public garden and recreational park
15. Continuation of the naturalistic influence upon which the Arboretum was founded.

#### 1.3.4 General Goals

16. Efficient and effective administration that excels at fundraising, resource allocation, advocacy, and personnel management
17. A thriving Arboretum Foundation, with membership, active volunteerism, and fiscal support at levels appropriate for the flagship public garden in the Pacific Northwest
18. Long-term fiscal sustainability for ongoing operations and capital improvement
19. Rehabilitation in accordance with appropriate historic preservation goals



## **2. A Proposal by the Arboretum and Botanical Garden Committee**

### **2.1 OBJECTIVES FOR THE PLAN**

The proponents intend through a new master plan to address those issues and challenges that confront the present and future of the Washington Park Arboretum. At the end of each listed objective, there is in parentheses reference back to the particular goals, and their category (Education, Conservation, Recreation/Visitor Services, General), that are listed in Chapter One. The objectives are numbered below for ease of reference, and do not suggest any priority order.

#### **2.1.1 Education, Volunteerism, and Community Outreach**

1. Implement classes, tours, self-guided learning opportunities, and other means to educate Arboretum visitors on the natural history, conservation, and landscape value of the world's woody plants. Those audiences should include at least 20,000 K-12 students each year plus substantial numbers of higher-education students, families, landscape professionals, natural history/ecology enthusiasts, gardeners, special needs populations, and general visitors (See Appendix D of the final EIS for details.)
2. Build on the Arboretum Foundation's successful volunteer program, with ever more Foundation members contributing their efforts and resources in all program areas.
3. Achieve a level of staff, volunteers, and facilities that will allow implementation of all desired educational programs in a fiscally sustainable manner.

#### **2.1.2 Collections and Exhibits**

4. Improve existing educationally valuable plant exhibits by redesign, plant replacement, provision of appropriate, unobtrusive interpretive signage, and informative written and electronic publications.
5. Create new plant exhibits that address the full range of the Arboretum's educational mission -natural history, environmental studies, and conservation as well as landscape horticulture - and interpret them appropriately.
6. Create plant exhibits that truly simulate forest communities of the Pacific Northwest, other cool winter-rain regions of the world, and selected Pacific Rim regions.
7. Implement conservation programs for selected temperate zone woody species threatened with extinction, in collaboration with other gardens, government agencies, and non-governmental organizations.

8. Grow and maintain plants representing the full genetic diversity of Pacific Northwest native trees and shrubs, in cooperation with conservation agencies and non-governmental organizations.
9. Maintain unusual old cultivars of selected landscape plants in danger of disappearing, so they are available in the future for landscape use and hybridization, in cooperation with regional centers of germplasm conservation.
10. Improve the Japanese Garden's facilities and the plantings outside its boundaries to enhance the Japanese Garden visitor experience.
11. Improve the ecological health and natural regeneration of the Arboretum's areas of native habitat, both wetland and upland, for their intrinsic value and consistent with relevant environmental regulations.
12. Enhance wildlife diversity through the design, implementation, and phasing of plant collection exhibits and native forest habitats.
13. Achieve a level of staff, volunteers, and facilities adequate for outstanding curation and record-keeping of the plant collections.

#### **2.1.3 Horticultural Maintenance**

14. Situate present and future plant displays in areas of the Washington Park Arboretum most appropriate for their health with the least maintenance and use of resources and chemicals.
15. Care for each plant so that it effectively demonstrates its ecological attributes and/or urban landscape uses.
16. Aggressively control invasive plants and weeds in the Arboretum, and actively discourage the introduction and use of presently or potentially invasive landscape plants.
17. Maintain a healthy, matrix of native forest habitat for its wooded ambience and wildlife value.
18. Control self-sown native vegetation that has been allowed over the years to kill and weaken many of the Arboretum's plant exhibits.
19. Improve the security of plant collections against theft and vandalism.
20. Achieve a level of staff, volunteers, and facilities adequate for the sustainable first class maintenance of the Arboretum's plant collections.

#### **2.1.4 General Services and Administration**

21. Achieve a level of staff, volunteers, and facilities adequate for effective general services, administration, fundraising, and advocacy for the Arboretum's mission.
22. Achieve predictable, long-term fiscal sustainability for the Washington Park Arboretum.
23. Attract new funding by effectively promoting an inspiring vision for the future of the Arboretum.

#### **2.1.5 Visitor Experience and Built Facilities**

24. Configure and juxtapose plant displays, native forest habitats, pathways, buildings, parking, and outdoor education shelters so as to retain the naturalistic environment that visitors now enjoy.
25. Phase the implementation of planned alterations of hardscape and plant displays over many years so that disruption of the Arboretum's naturalistic ambience is minimized at any given time.
26. Work with appropriate agencies to reorient arterial traffic conduits at the north end of the Washington Park Arboretum and reduce speed of traffic on Lake Washington Boulevard so traffic moves logically between Lake Washington Boulevard and SR-520, with minimum disruption to the Arboretum.
27. Maintain appropriate traffic on Arboretum Drive in order to improve its safety as a pedestrian route and use it for tours, bicycles, and other special access.
28. Improve surfacing and grading of selected trails throughout Washington Park to permit better barrier-free access for all park visitors
29. Improve appropriate recreational bicycle access through Washington Park, as well as linkage between E. Madison Street and the north end of Washington Park.
30. Improve pedestrian entrances and trail orientation to promote effective self-guided use of the Arboretum.
31. Improve linkage between parts of Washington Park west and east of Lake Washington Boulevard, especially in the region of the Japanese Garden.
32. Reconfigure parking lots to promote safety of visitors, security for their personal belongings, and maximum parking capacity per lot area.
33. Plan and implement on-site built facilities for appropriate programs in broad-based public education, collections curation, horticultural maintenance, visitor service, and associated administration, while maintaining the Arboretum's naturalistic ambience.

34. Increase numbers of strategically placed visitor services, such as restrooms, water fountains, outdoor open shelters, and modest food service.
35. Increase the habitat diversity in Washington Park by restoring the natural function of Arboretum Creek and the northern shoreline, and utilize for urban environmental education.
36. Promote an increase in unstructured recreational opportunities in a manner consistent with the Arboretum's mission of education, display, and conservation.
37. Reduce actual crime in Washington Park and the magnitude of potentially unsafe localities.

## **2.2 PLANNING FOR THE WASHINGTON PARK ARBORETUM**

The following plan for the future of the Washington Park Arboretum is the culmination of a process that began in July 1994 when a formal scoping study to identify critical issues regarding the Arboretum was begun under the aegis of the Arboretum and Botanical Garden Committee. This scoping study, conducted by Carol Hudson and Mark Hinshaw, utilized written questionnaires, visitor surveys, traffic surveys, and meetings with constituent groups and the neighboring communities to gather information. In 1995 Hudson and Hinshaw published their report, *The Scoping Document for a New Master Plan for the Washington Park Arboretum*.

The issues identified in their report were used in a formal review by the City of Seattle Department of Parks and Recreation to select a firm that would conduct a planning process and devise a new master plan. A committee composed of representatives from the City of Seattle, University of Washington, The Arboretum Foundation, and Seattle Design Commission evaluated written submissions from various firms that responded to a public call, for qualifications. Interviews then were conducted with four finalists. The committee recommended in late 1996, with the concurrence of the Arboretum and Botanical Garden Committee, that The Portico Group, a Seattle-based landscape architecture, architecture, and planning firm with considerable experience and reputation for design and planning of living museums, be hired to conduct the Master Plan process. The planning process was conducted under the supervision of the Department of Parks and Recreation, with the Arboretum and Botanical Garden Committee as the primary advisee.

During much of 1997, The Portico Group, along with its sub-consultants, conducted a series of community meetings, surveys, and 17 public interest panels in order to gather additional relevant information about the conditions of the Arboretum and the visions for the future held by its varied constituents. Formal planning sessions concerning specific topics were conducted with directors and leaders of other public gardens, and with other interested parties, throughout the planning process. Several public open houses also were held to gather comments from neighbors, friends, and park/arboretum users.

The Portico Group issued three primary reports in late 1997: 1) The Programming, Existing Conditions Assessment, and Conceptual Plan; 2) The Executive Summary; and 3) The Arboretum Plan: A Greenprint for the Future. Subsequently, throughout 1998-99 hundreds of discussions have been held about the Arboretum Plan in order to gauge reaction to the proposed draft plan and to elicit creative input in the interest of further improvement to the plan.

During 1998-99, over a hundred community presentations about the plan were made to horticultural organizations, community clubs and councils, and public service clubs from Portland, Oregon, through Vancouver, British Columbia, with special emphasis on Seattle and its surrounding communities. At 47 of these meetings, 597 participants completed written surveys about the draft master plan, rating each of the 23 major elements of the plan as "great idea", "good idea", "neutral", or "bad idea." The 23 elements received "great" plus "good" ratings ranging from 68% to 97% of the respondents. Conversely, several local community organizations passed resolutions expressing strong reservations about certain aspects of the draft plan, particularly those involving hardscape (e.g., buildings and parking). The Plan was available and continues to be on the internet for study and comment.

During the fall of 1998, the Seattle Board of Parks Commissioners sponsored one public meeting and three public workshops, at which further citizen input was solicited. The results were synthesized by the Parks Board, and given to the Arboretum and Botanical Garden Committee to provide guidance for their revision of the draft plan. Workshops also were held with the leadership of the Arboretum staff from both the University and City, and with the Arboretum Foundation board of directors, to further inform the plan's revision.

Between mid-1998 and early 1999, the ABGC assembled and analyzed all of the information received from multiple sources in order to prepare a revised alternative plan. This revised plan was then presented as the preferred plan for the Draft EIS. Testimony and public hearings were conducted, and this information was used by the ABGC to formulate the current and again revised plan. The ABGC continued to consider and plan details as the EIS was being written. The plan has been modified in response to all of the comments, public hearings, and workshops that have occurred during the last 6 years. The proposal described here is a product of more than a year of work on the EIS and is the master plan that the ABGC expects to propose to the Seattle City Council and UW Board of Regents. Readers who have followed the planning process over the years will note significant differences between the current proposal and the 1997 *Greenprint* draft plan, especially in the areas of Visitor Experience and Built Facilities; those differences are summarized in Attachment A.

The ABGC greatly appreciates the efforts and creative thinking by thousands of persons since discussions began in 1994, and believes the result to be an inspiring plan that reflects diverse, positive visions for the future of the Washington Park Arboretum.

## 2.3 THE PROPOSAL: RENEWING THE WASHINGTON PARK ARBORETUM

The proposed master plan includes programmatic as well as physical changes to the Arboretum. The map entitled Proposed Master Plan illustrates many features of the physical plan and, with its marginal notes, relates them to the themes elucidated above. This plan shows the general, conceptual location of these features, and may be adjusted in the design phase of implementation. The proposed master plan includes new trails and exhibits, revised roadways and parking, new and replacement buildings, and expanded maintenance and education programs. New exhibits include Taxonomic, Horticultural, Eco-Geographic and Native Forest Exhibits, stream and marshland restoration and rehabilitation, and a new southern terminus for Azalea Way. New structures include a south gateway education and visitor center, education and curation buildings near the Graham Visitors Center, a pavilion and an entry building for the Japanese garden, expanded maintenance facilities, greenhouse and lathhouse replacement, and utilization of part of the present Museum of History and Industry (MOHAI). The following sections of this document, organized according to the same scheme as the outline of the plan's objectives, describe both the physical and programmatic plan in further detail.

### 2.3.1 Education, Volunteerism, and Community Outreach

The Washington Park Arboretum proposes to improve current programs in education, volunteerism, and community outreach, and to develop and offer additional programs that meet the Arboretum's mission of helping educate Seattle's urban populations about our responsibility to care for the living natural world that surrounds us. This would be accomplished by expanding onsite education opportunities while also carrying the Arboretum's message, resources, and lessons afield through community outreach and enhanced options for volunteerism.

Existing programs at the Washington Park Arboretum would continue to evolve to complement those at related institutions and facilities, such as the U.W. Center for Urban Horticulture and the City of Seattle's Discovery and Carkeek Parks. Educational and outreach programs would be developed to best take advantage of the Arboretum's unique niche as the flagship public garden in western Washington and the most diverse collection of woody plants west of the Mississippi River. In addition, the physical site of Washington Park affords unique opportunity to teach about landforms, habitat diversity, plant ecology, wildlife, conservation, and the entire recent geological history of Puget Sound country, all within easy reach of urban students and audiences. In fact, the Arboretum offers a rare opportunity to teach geologic history, evolution of plant and animal history, and human intervention history.

1. Education for pre-kindergarten through high school students, developed in cooperation with teachers and curriculum advisors, for example: expand the "Saplings" programs for K-6<sup>th</sup> graders to reach all students in selected grades of major school systems (e.g. all of Seattle Public Schools' approximately 4,500 3rd graders), guided tours, self-guided tours, and Explorer Packs; offer new programs for pre-kindergarten and kindergarten students (including day schools and home school programs), traveling presentations for classes

that cannot visit the Arboretum, horticultural career training for 7th-12th graders, new teaching materials for classroom use, community service learning opportunities, and indoor educational exhibits created by local classes for display both on- and offsite

2. Youth education programs that are outside of formal school contexts, for example: increase Arboretum Adventures and Branching Out after-school programs in association with community centers; implement new Arboretum badges for Scouts and Campfire youth, Junior Guides, job apprenticeship programs, summer camps with conservation-education organizations such as Seattle Audubon and Science Adventures, collaboration with Youth Tree Corps and TREEmendous Seattle for urban forest youth volunteerism
3. Family programs, for example: increase Family Festivals (fun and learning in the Arboretum) and family-oriented Explorer Packs for all ages; offer new weekend programs of hiking and classes, Storytelling Sundays, festivals of various themes relevant to the Arboretum (e.g. Forests and Cultures of the World), Greenhouse Discovery Days, and cooperative family programs with other organizations such as the Woodland Park Zoo, the Museum of History and Industry, the U.W. Burke Museum, the Pacific Science Center, the Seattle Art Museum, and the Museum Educators of Puget Sound
4. Higher education of students at the University of Washington, regional community and technical colleges, and other state institutions of higher education, for example: improve service to students and classes in horticultural fields, and attract new classes and students in natural history, ecology, wildlife, and biogeography; facilitate class visits and independent student research projects on garden curation, education, and horticultural maintenance
5. Adult education, for adults interested in gardening and natural history, for example: increase guided tours, focus walks, outreach courses, lectures, seminars, offsite garden tours, workshops on propagation and plant care, plant study programs, design studios, and symposia; implement new onsite and traveling exhibit displays, and participation in horticultural shows and expositions throughout the community
6. Professional education, in collaboration with professional organizations and relevant government agencies, for example: increase seminars and field courses in landscaping, arboriculture, plant care, and plant identification; produce new publications and interpretive material for professional education and certificate programs; expand professional themes to include wildlife management, conservation, and parks care
7. Volunteerism and educator training, so that volunteers and educators can participate in all Arboretum programs from curation to education to horticultural maintenance, for example: increase volunteer recruitment, training, and enrichment programs; institute appropriate workshops for educators and volunteer programs, such as Washington State University/County Master Gardeners.

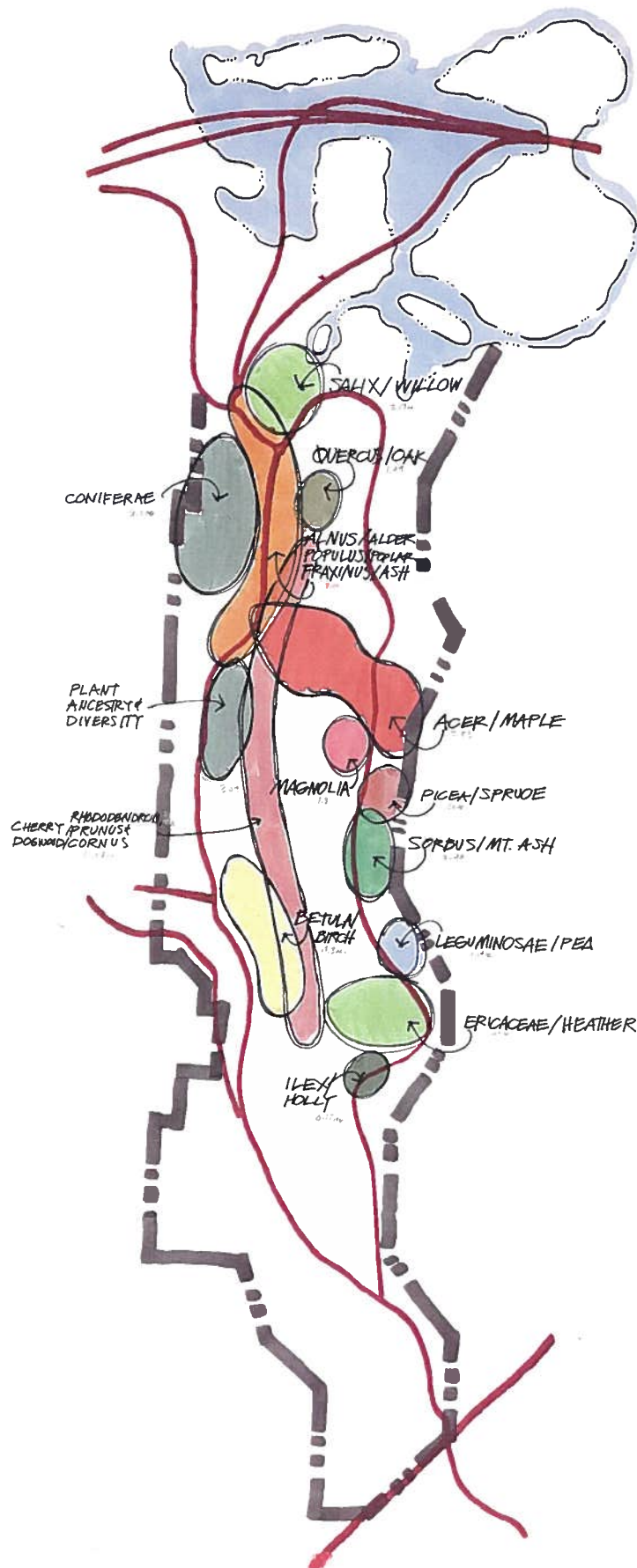
8. General visitor education, so that all visitors to Washington Park have ready opportunities to learn from the displays, staff, and volunteers, for example: increase onsite weekend tours and appropriate interpretive materials (signs, brochures, maps); implement new "Discovery Stations" near the GVC and the outdoor education shelters, self-guided tours, weekend rangers/guides, and computerized learning stations
9. Education for special populations: offer new programs such as work training in landscape horticulture, specialized tours and interpretive materials (e.g. Braille, multi-language), improved Americans for Disabilities Act-mandated accessibility of collections and displays
10. Improved community outreach, for example cultural and arts programs appropriate for Arboretum gardens and facilities affiliated with the Japanese Garden, or the Chilean and New Zealand exhibits. This would include interpretive materials, accessibility for all visitors, or other Arboretum-related activities
11. Staffing and facilities for educational programs and appropriate space for volunteers who assist in these activities: approximately 9 FTE education staff, utilizing new indoor facilities of approximately 3,000 square feet footprint near the GVC, approx. 2,000 sq. ft. of the South Entry education/visitor services facility, and meeting rooms in all buildings; square footage includes offices, classrooms, and storage space; five outdoor education shelters (four new, one existing), totaling approximately 1,500 square feet, also would be used; indoor classroom space is proposed for activities that complement the major educational focus, namely the "outdoor classroom" that is the Arboretum

### 2.3.2 Collections and Exhibits

Plant collections and exhibits are presented according to their type, as defined in Chapter One: taxonomic, horticultural, and ecogeographic. In addition, special attention is paid to the Arboretum's forest vegetation that is native to Puget Sound country, which serves in some cases as an interpreted display of a native forest community and in all cases to benefit wildlife, the ecological function of Washington Park, and its naturalistic environment. Over the following decades, additional exhibit ideas will occur to Arboretum staff and constituents, but the exhibit themes listed below will provide the Arboretum's physical and conceptual framework.

- 1 Taxonomic exhibits, displaying the diversity of species and cultivars within particular groups of related plants
  - 1.1 Major taxonomic exhibits; see map entitled Collections Plan: Taxonomic Exhibits
    - *Salix* (willows), along the shoreline and wetland areas
    - *Alnus* (alders), *Populus* (poplars), and *Fraxinus* (ashes), in the northern riparian zone





Washington Park Arboretum

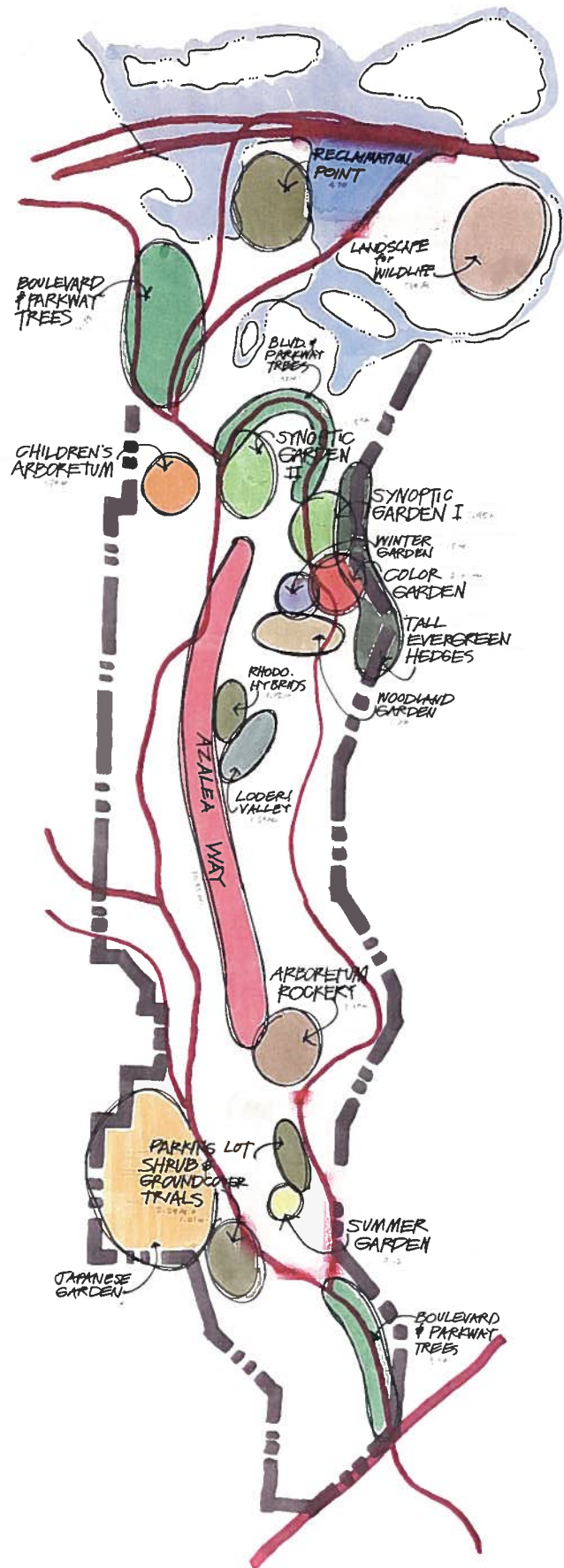
Collections Plan  
Taxonomic Exhibits

- *Coniferae* (conifers), showing the diversity of pines, cypresses, sequoias, yews, and their relatives, in the Pinetum west of the Wilcox Bridge
- *Quercus* (oaks), as an *allee* north of the trail hub at the site of the present oak display
- *Acer* (maples), maintaining a current taxonomic strength *Acer palmatum* (Japanese maples), cultivar collection in the Woodland Garden
- Plant Ancestry and Diversity, at Yew and Honeysuckle Hills, reflecting the original Dawson plan by which primitive and advanced plants were displayed to demonstrate major aspects of the course of flowering plant evolution
- *Magnolia*, improving an already outstanding exhibit
- *Rhododendron*, *Prunus* (cherries), and *Cornus* (dogwoods), maintaining the current taxonomic emphasis of Azalea Way
- *Prunus* (Japanese flowering cherries), cultivar exhibit near Azalea Way
- *Picea* (spruces), continuing to emphasize outstanding species for landscape use
- *Sorbus* (mountain-ashes), the Brian O. Mulligan *Sorbus* Collection, with drainage to be improved further
- *Betula* (birches), continued to be sited appropriately in a wet area west of Azalea Way
- *Leguminosae* (pea family), with improved plant selection to show the vast diversity of the family, from *Albizia* to brooms to locusts to Redbuds
- *Ericaceae* (heather family), on the hillside above the south large pond, showing the diversity of one of the most important families of landscape plants
- *Ilex* (hollies), improved as a national "plant consortium" collection.

#### 1.2 Minor taxonomic exhibits, smaller and not illustrated on the map

- *Berberis/Mahonia* (barberries, Oregon grape, and relatives)
- *Camellia* and *Stewartia*, smaller exhibit than at present but still displaying diverse species and cultivars for landscape use
- *Caprifoliaceae* (honeysuckle family, including *Viburnum*), illustrating the family's diversity and landscape use
- *Hamamelidaceae* (witch-hazel family), supplementing the many species displayed in the Winter Garden

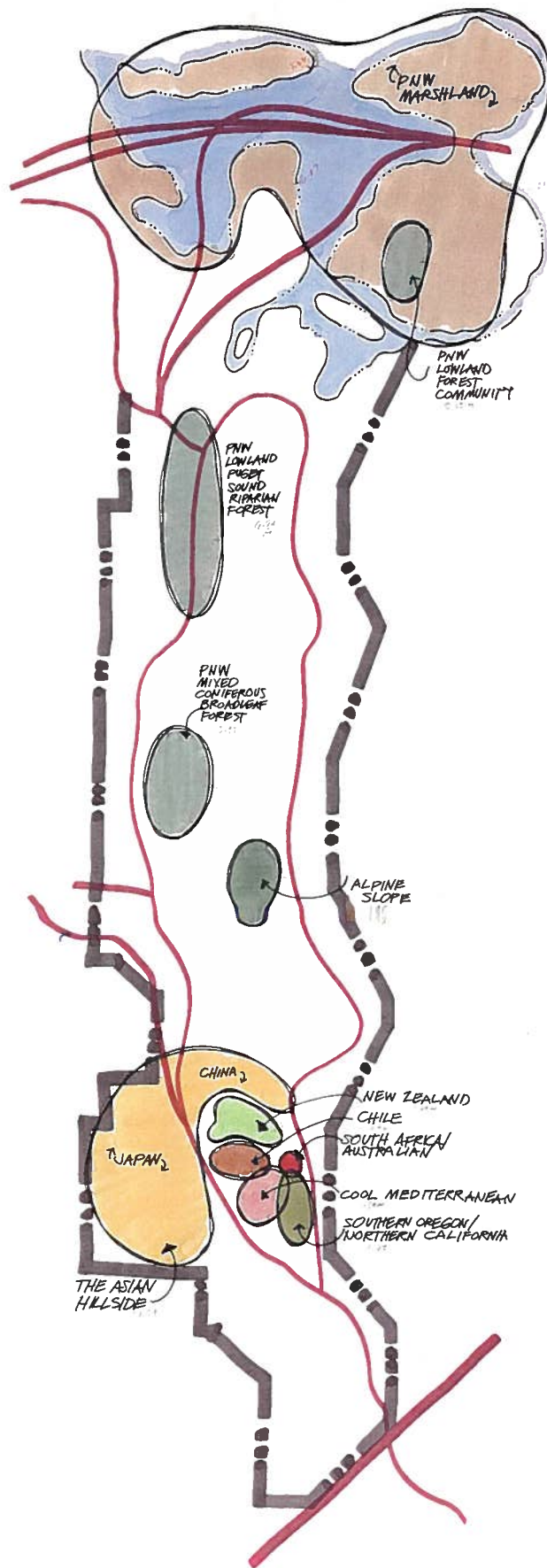
- *Wisteria*, as at present in the trellises around the Graham Visitors Center
- 2 Horticultural exhibits, displaying plants according to themes relevant to the practice of urban landscape horticulture; see map entitled Collections Plan: Horticultural Exhibits
- A horticultural/ecological exhibit of trees, shrubs, and wildflowers restoring the ecological and wildlife function of a former garbage dump in the area surrounding the SR Route 520 ramps, consistent with environmental regulations
  - New boulevard trees at the north entrance to the park; retention and maintenance of existing ones at the south end
  - Landscaping for Wildlife, displaying plants and landscape design techniques to encourage native wildlife, in a naturalistic setting especially in the north end
  - Children's Arboretum, with scale and themes appropriate for learning by children, near the children's play area
  - Synoptic Garden I, a year-'round display near the GVC illustrating the Arboretum's various horticultural exhibit themes
  - Synoptic Garden II, presenting an overview of the Arboretum's landforms and plant communities, as well as ethnobotanical significance of native woody species
  - Color Garden, woody plants colorful throughout the year, for residential landscaping
  - Screening Hedges, along the fence line bordering Broadmoor Country Club
  - Winter Garden, maintaining the currently successful exhibit
  - Woodland Garden, a current exhibit demonstrating trees and shrubs such as Japanese maples in a shaded woodland landscape setting
  - Azalea Way, renovated promenade with improved, disease-resistant plant selections according to historic Azalea Way themes of cherries, rhododendrons, and dogwoods
  - Pacific Northwest Rhododendron Hybrids exhibit that displays those cultivars that have emerged over many years from the efforts of this region's hybridizers
  - Loderi Valley, the present naturalistic exhibit of *Rhododendron* Loderi hybrids
  - Arboretum Rockery, renovating the rockery downhill from the Lookout shelter to create a large-scale rock garden of woody-plants



# Washington Park Arboretum

Collections Plan  
Horticultural Exhibits

- Japanese Garden, maintaining the current successful exhibit and improved by additional facilities and complementary landscaping outside the Garden's boundaries (see elsewhere in the plan;
  - Parking Lot Shrub and Groundcover Trials, displayed at the appropriate parking lots such as the South Entry and Japanese Garden parking lot.
  - Summer Garden, surrounding the Madrona shelter and utilizing species that also are displayed naturalistically in the nearby ecogeographic exhibits.
3. Ecogeographic exhibits, for visitors and students to immerse themselves in accurate, naturalistic recreations of forest communities of the world, for the active conservation of endangered species from those selected forest communities, and for wildlife value;
- 3.1 Pacific Northwest native plant communities
- Pacific Northwest Marshland along the shoreline of Union Bay
  - Pacific Northwest Lowland Forest Community, as befits existing conditions and vegetation
  - Lowland Puget Sound Riparian Forest, along a stretch of Arboretum Creek
  - Pacific Northwest Mixed Coniferous Broadleaf Forest
- 3.2 Plant communities of cool winter-rain region of the world, with climates similar to the Pacific Northwest west of the Cascades, installed on the hillsides around the new Madrona Terrace interpretive shelter to simulate natural elevational gradients
- Chile, emphasizing the forests of the Lakes District in south central Chile
  - Cool Mediterranean, forest of a winter-rain region inland from the coast of the Mediterranean Sea
  - Southern Oregon/Northern California, forests related to our PNW community but with additional trees and shrubs that are northern elements of Californian flora, incorporating existing Madrone and other trees
  - South Africa, Australia, and Tasmania, a small exhibit of plants from regions that are typically considerably warmer than Puget Sound country
- 3.3 Plant communities of other Pacific Rim regions, also installed on hillsides to simulate natural elevational gradients
- New Zealand, representing a high altitude forest community with winter-cold temperatures similar to the Seattle region



Washington Park Arboretum

Collections Plan  
Eco-Geographic Exhibits

- Japan, on the slopes above the Japanese Garden to simulate Japanese forest and to serve the Garden as genuine borrowed scenery
  - China, across Lake Washington Boulevard northeast of the Japanese Garden, representing the forests of Mount Omei
- 3.4 Other regions
- Alpine Slopes of the World, among the switchbacks of the A.D.A.-accessible trail, displaying recreations of selected alpine plant communities of the world
- 4 Native forest habitats and exhibits; see map entitled Collections Plan: Native Forest Habitats and Exhibits
- 4.1 Native forest habitats, serving as a) the forest matrix among which exhibits are placed, b) wildlife habitat, and c) a place for conserving the genetic diversity of Pacific Northwest native tree and shrub species; these native plant assemblages will be those best suited to the environmental conditions of particular Arboretum sites
- Dry Forest Plant Associations, in areas of superior soil drainage
  - Intermediate Forest Plant Associations, in areas of somewhat slower drainage
  - Mesic Forest Plant Associations, in wetter soils
  - Wet Forest Plant Associations, in the wettest, most poorly drained areas
- 4.2 Native forest exhibits, interpreted displays of particular plant communities or landscape uses of native plants, shown as hatched areas on the map
- The area around the SR 520 ramps (see above under part 2, this section)
  - Landscaping for Wildlife (see part 2)
  - Synoptic Garden II (see part 2)
  - Pacific Northwest Marshland (see part 3.1)
  - Pacific Northwest Lowland Forest Community (see part 3.1)
  - Lowland Puget Sound Riparian Forest (see part 3.1)
  - Pacific Northwest Mixed Coniferous Broadleaf Forest (see part 3.1)
  - Southern Oregon/Northern California (see part 3.2)



- 5      Staffing and facilities for curation and collections management: approximately 7 FTE specialists in the areas of curation, collections management (record-keeping, mapping, and labeling), and interpretation, housed in facilities at the north end near the Graham Visitors Center

### 2.3.3 Horticultural Maintenance

- 1      Maintenance of plants and exhibits: care for each plant, exhibit, and native habitat area so that each is healthy and serves its programmatic goals of education, conservation, and display
- 2      Control of invasive plants, so that the health of desirable plants is not adversely affected, so that native habitat areas can regenerate themselves naturally, and to reduce the Arboretum's role as a source of invasive plants for surrounding natural and naturalistic areas
- 3      Staffing for horticultural maintenance

3.1    Five levels of maintenance, assigned to different areas of the Arboretum to guide the development of staffing and resources, ranked from high to low intensity of maintenance. Acreage is estimated out of approx. 230 total acres of Washington Park Arboretum.

- intensively managed and groomed collections, e.g. the Japanese Garden, requiring approx. 1.50 FTE per acre to keep exhibits painstakingly maintained throughout the year, including preventive maintenance: approx. 8 acres
- ✓ • special collections, e.g. Azalea Way and other highly landscaped horticulture: exhibits, requiring approx. 0.40 FTE per acre for plant care and weed/invasive control; approx. 28 acres
- core collections, e.g. the ecogeographic exhibits and others in woodland settings or open turf areas, requiring approx. 0.20 FTE per acre for plant care and weed/invasive control; approx. 64 acres
- open space, e.g. wet naturalized areas, requiring approx. 0.05 FTE per acre to mow during dry season and to control weeds/invasives; approx. 40 acres
- low maintenance collections, e.g. -native habitats, requiring approx. 0.05 FTE per acre to maintain habitat quality and to control weeds/invasives; approx. 80 acres

3.2    Staffing to reach eventual desired level of maintenance: approximately 42.0 FTE, as calculated from above. Arboretum administration and staff will need to develop more refined staffing plans and budget projections as implementation of particular



exhibits occurs, not the general estimate presented above suffices for planning of facilities and assessment of the fiscal aspects of the Arboretum's future.

- 4 Facilities for horticultural maintenance and operations: buildings and open structures expanded from present 4,700 square foot to approximately 10,000 sq. ft., contained within the current Maintenance Yard area northeast of the Graham Visitors Center

#### 2.3.4 General Services and Administration

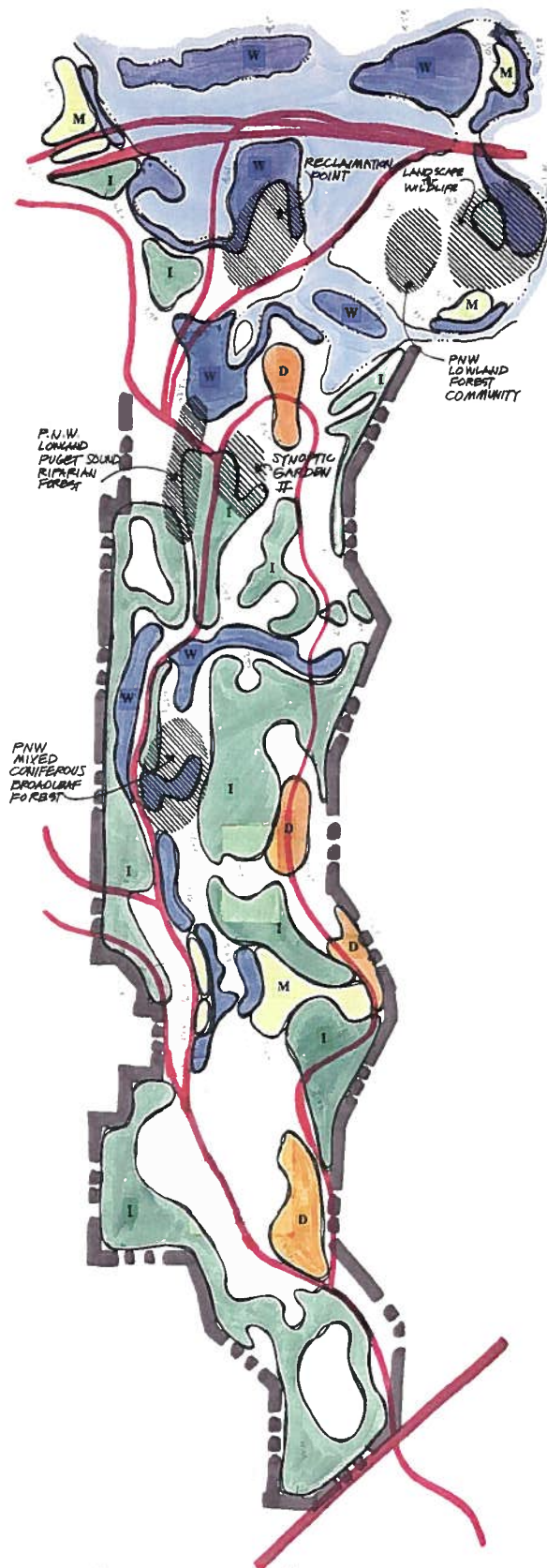
A well-run public garden has active programs in membership, fundraising, marketing, public information, retail services, volunteerism, public events, and security. It is estimated that when the Washington Park Arboretum achieves the full scope of programmatic activity presented in this plan it will require a staff of approximately 22 FTE in the areas above, including general administration, fiscal services, facilities management, and clerical support. Staffing levels are proposed to increase very gradually to these levels over the succeeding decades. Facilities for these staff will amount to approximately 4,000 square feet of floor area and would be accommodated in the MOHAI building once the Museum moves to its new location. If MOHAI is not available when needed for Arboretum use, the equivalent suitable space will need to be found.

#### 2.3.5 Visitor Experience and Built Facilities

All square footages for buildings represent approximate footprints that are provided for general consideration. For those buildings where there would be a small second story (such as the Graham Visitors Center), a total "floor area" square footage is included after the footprint figure. Basements, if any, would lack direct access to the outside and would be for storage, not programmatic space (again, comparable to the Graham Visitors Center). Actual architectural forms will be designed to meet programmatic needs and to minimize visual and ecological impact to the site. In developing structures, agencies will strive to limit the extent of buildings at the Graham Visitor Center to the western edge of the current pavement of Arboretum Drive. See Attachment A for a comparison of the current plan, the plan proposed in 1999, the 1997 *Greenprint Plan*, and the *Olmsted Bothers 1936 plan*.

##### 1. Roadways

- 1.1 Modify the intersection of Lake Washington Boulevard (LWB) and the on-off ramps of SR-520 to create a more graceful entry to the Arboretum; maintain existing stop signs and turn restrictions at this intersection and at Lake Washington Boulevard and Foster Island Road; and modify the unused freeway ramp at the north end to make a multiuse (including bicycles and service vehicles) link to the Museum of History and Industry
- 1.2 Relocate the northern third of Arboretum Drive eastward, from the Graham Visitor Center (GVC) to just north of the Picea (Spruce) display



Washington Park Arboretum

Collections Plan  
Native Forest Habitats  
& Exhibits

- D Dry Forest Plant Associations
- I Intermediate Forest Plant Associations
- M Mesic Forest Plant Associations
- W Wet Forest Plant Associations
- Native Eco-Geographic Exhibits

- 1.3 Leave Arboretum Drive open to through traffic; add measures to eliminate trucks and other inappropriate vehicles; utilize Drive for tram tours and other special-purpose access
- 1.4 Install a pedestrian-activated signal at the Lake Washington Boulevard East and East Boyer Street intersection
- 1.5 Improve the intersection of LWB, Arboretum Drive, and Japanese Garden/playfield parking access including a pedestrian-activated signal.

## 2 Other Pathways, Non-automobile Transportation

- 2.1 Reorient pedestrian trails for improved viewing of displays, public access (including more Americans with Disabilities Act grading and surfacing), and three major loop trails, including a ramped switchback trail at The Rise, approximately midway along the north-south axis of the Arboretum; retain many informal trails
- 2.2 Install a multiuse trail (including bicycles) running lengthwise, along the east side of LWB with two branches near the south end: one crossing Arboretum Drive and passing north of the Stone Cottage to E. Madison St, and the other crossing to the west side of LWB and passing under E. Madison St. to the Harrison Valley. In addition, provide the following:
  - Bicycle safe storm drains.
  - Paving in spot locations to improve bicycle safety.
  - Improved bicycle safety signage along Lake Washington Boulevard. Request that SeaTran, and the Bicycle Advisory recommend a signage plan for the bicycle route to improve bicycle safety. The signage plan should include considering increase signage directing riders to alternate routes.
  - Traffic calming measures along Lake Washington Boulevard. (SeaTran shall make recommendations concerning measures such as speed bumps, additional speed limit signs, a slower speed limit, pedestrian activated crosswalks, or additional crosswalks).
- 2.3 A wheelchair-accessible overpass over Foster Island Drive, including adding earthen fill on the north side to provide a ramping path down to existing grade will be further studied before seeking funding for construction of this element. Less expensive and near-term alternatives for safe at-grade pedestrian crossings will also be explored.
- 2.4 Make an open-space trail hub west of GVC, without interfering with significant existing vegetation, including Azalea Way
- 2.5 Extend and improve the pedestrian trail running the length of the Arboretum west of LWB, with 8 pedestrian links to the adjoining neighborhood

- 2.6 Install an elevated "canopy walk" between the summits of Yew and Honeysuckle Hills for access to tree tops
- 2.7 Add an overpass over LWB near the Japanese Garden (JG), south of the JG and north of the Washington Park playfield, including bicycle accommodation
- 2.8 Install sidewalks along LWB from E. Madison St. to Arboretum Drive

### 3 Parking

- 3.1 Retain the "Department of Transportation" lot, with 25-car capacity, off Lake Washington Boulevard just west of the SR-520 ramps
- 3.2 Remove most of the small parking lots at the north end of the park (6 lots, 108 cars) and expand the present GVC lot southward from present 49 cars to 109 cars and 4 buses. Approximately ten parking spaces would be retained on Foster Island Road and would include some spaces dedicated for barrier-free parking.
- 3.3 The master plan reduces the amount of parking along Foster Island Drive, from approximately 50 to approximately 10 spaces, on the side downslope from the Arboretum maintenance yard. The proposed Arboretum Shoreline and Trail Improvements Plan completed in July, 2000 recommended 4 additional stalls (2 of them ADA) near the trailhead at the northern end of Foster Island Drive.

The Washington Park Arboretum Master Plan discourages development of any other additional parking along Foster Island Drive, for aesthetic reasons and because parking is not a desirable use in a sensitive shoreline area, especially when other alternatives exist. Instead, the master plan advocates expanding the existing lot near the Graham Visitor Center from 49 to 109 stalls. This lot is close enough to Duck Bay and the Foster Island trailhead for most park visitors. Pedestrian connections between the expanded parking lot and the improved shoreline trail will also be made accessible and convenient for most users.

- 3.4 Add an 18-car parking lot just northeast of the Woodland Meadow
- 3.5 Reduce the Arboretum Drive parking lots, presently 10 lots for 102 cars, to 3 lots for 30 cars

Three of the existing small lots along Arboretum Drive will be retained for public use. The remaining ones will be removed and their sites restored to collections or open space. The specific three small lots to be retained may be further considered, but some logical choices could be Lot 8 at the summit of the Drive, and lots 4 and 5 at Woodland Glen, providing access to new trailheads. Two lots at the far north (lots 10 and 11) would be replaced by an 18-car lot adjacent to the Woodland Meadow. Two lots at the south end (lots 2 and 3) would be replaced by a 30-car lot serving the eco-geographic collections in that vicinity. Combined with the 109-space lot at the Graham Visitor Center, this would provide 6 lots evenly distributed along the Drive.

- 3.6 Add a 30-car parking lot in the Madrona Terrace near the south end of Arboretum Drive, to support the new outdoor education shelter at that location
  - 3.7 Reconfigure the LWB/Interlaken parking lot for better landscaping and efficiency, increasing capacity from 26 to 28 cars
  - 3.8 Improve the parking lot between the Japanese garden and playfield to accommodate more cars (present 84 increased to 128) and 4 buses and to improve landscaping
- 4 Buildings and Open Structures
- 4.1 Expand the Maintenance and Operations headquarters and maintenance buildings, from approximately 4,675 sq. ft. floor area, to approximately 10,000 sq. ft. floor area; including expanding open structures for equipment storage from current approximately 1,725 sq. ft. to approximately 2,575 sq. ft.; all would be contained in the Maintenance Yard, at the present location
  - 4.2 Renovate the Graham Visitors Center (GVC), keeping its current size (5,690 sq. ft. footprint, 6,700 sq. ft. floor area), for visitor services
  - 4.3 Construct new facility south of the GVC to support curation (approximately 3,000 sq. ft. floor area)
  - 4.4 Construct new facilities northwest of the GVC to support education (approximately 3,000 sq. ft. floor area)
  - 4.5 Replace the greenhouses, lath houses and storage south of the GVC
  - 4.6 Increase the number of "outdoor education shelters" from one to five: retain the 600 sq. ft. shelter at the Overlook, and construct new 300 sq. ft. shelters at Foster Island, at the Yew Hill canopy walk; at the alpine plant display; and at Madrona Terrace
  - 4.7 Retain the three open structures in the Japanese Garden
  - 4.8 Construct an education and visitor services building near the south parking lot and the Japanese Garden (approximately 2,500 sq. ft. floor area) for education and visitor services, including class/meeting room and rest rooms.
  - 4.9 Retain the Stone Cottage
  - 4.10 Add a Japanese Garden pavilion, approximately 1,000 sq. ft., with a small enclosed space and a veranda, against the hillside north of the pond

- 4.11 Expand the Japanese Garden entrance facility to approximately 1,700 sq. ft. to include a ticket window, gift shop, rest rooms, and small reading room
- 5 Landscape Features
  - 5.1 Plant boulevard trees along the north end of LWB and Foster Island Drive, similar to the south entrance of Washington Park on LWB
  - 5.2 Construct one viewing platform on the south shore of the baylet south of Marsh Island
  - 5.3 Restore and stabilize the Duck Bay shoreline
  - 5.4 Install new display and demonstration gardens south of GVC complex, with small arbors, terraces, and water features
  - 5.5 Designate Woodland Meadow for special events and community celebrations, maintaining its current ambience
  - 5.6 Retain compost area at its current size, perhaps relocated among the maintenance buildings or displays at the north end
  - 5.7 Increase water flow at the source of Arboretum Creek, by allowing more water into the channel but keeping it in underground culverts via the playfield, emerging aboveground east of LWB near the Interlaken intersection; and enhance the creek bed's natural appearance and ecological function including a possible salmon run
  - 5.8 Expand the pond near Rhododendron Glen to create a visual terminus for the south end of Azalea Way
  - 5.9 Maintain the boulevard trees along Lake Washington Boulevard from E. Madison St. to Arboretum Drive
- 6 Safety
  - 6.1 Improve lighting at entrances, parking areas, and other strategic locations
  - 6.2 Install emergency telephones and first aid call boxes at strategic locations
  - 6.3 Spread programmatic activities and facilities more evenly throughout the Park to increase "safety in numbers"
  - 6.4 Reduce or eliminate parking in isolated areas
  - 6.5 Clearly mark trail routes and locations on signage

## 2.4 IMPLEMENTATION AND PHASING OF ARBORETUM IMPROVEMENT

All agencies with authority to review projects implementing this Master Plan shall use the Implementation Guidelines contained in Attachment 1 to this plan, and consider the mitigation measures contained in Attachment 2 to this plan.

A number of variables will affect the phasing and sequencing of capital improvement projects embodied in the plan. Actual development sequence will relate to current programmatic priority, availability of funding for a given capital project, and availability of ongoing funding to sustain new exhibits or capital developments. Many elements of the proposed plan for the Washington Park Arboretum are independent of one another in terms of the possible sequencing of their implementation.

There are some developments that must be implemented in a particular sequence, and they are self-evident, such as the following three examples. When a display is moved, e.g. the renovated *Euonymus* and *Buxus* display should be installed at the new site and given time to begin to mature before the display at the former site is removed, so there is no time that a valuable display is missing or ineffective. Utility provisions should be installed before new buildings are constructed. Consolidated parking at the Graham Visitors Center, and Madrona Terrace should be constructed before the small lots they are replacing are removed, so there is no time in which the parking availability is unreasonably reduced. Parking at the South Entry (between the Japanese Garden and Washington Park Playfield) will not be expanded, unless expansion is strictly necessary for implementation of other parts of the plan. Timing of any necessary expansion will be responsive to the demand created by development and renovation of collections, interpretive trails and trailheads, and construction of new facilities in that vicinity. Further, require retention of the sequoia trees by the parking lot.

It should be noted, as it was previously, that the plan will be implemented over many years, on the order of two to three decades at least, in order to minimize the short-term disruption to the Arboretum's ambience at any given time. Furthermore, it is recommended that Arboretum managers, staff, and constituents review the plan periodically to ensure that the Arboretum remains current in its service to the community.

In summary, the general priorities for arboretum improvements would be, in descending order:

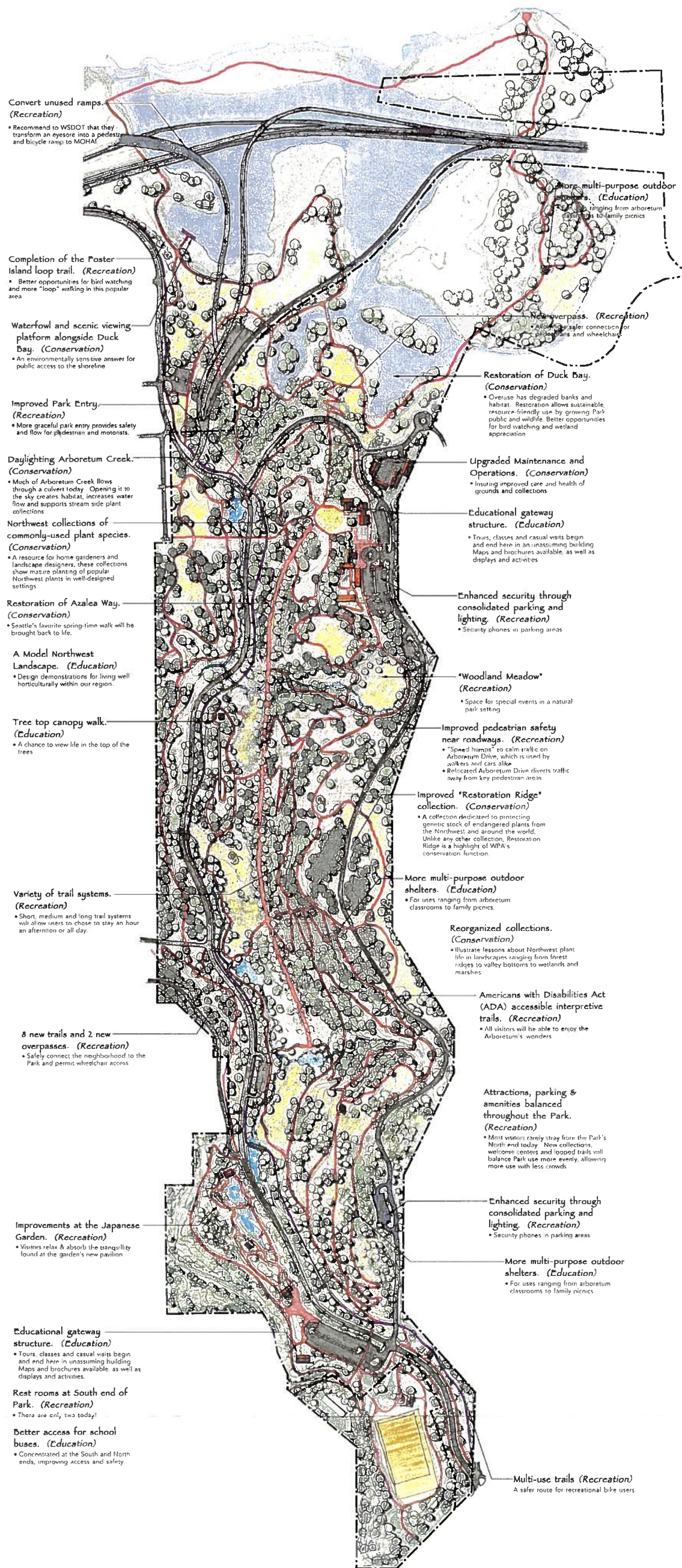
- 1) plant collection maintenance and renovation;
- 2) infrastructure repair and improvement for the maintenance of the collection;
- 3) improved visitor amenities including parking, structures, and educational programs

Structures for increased staff and equipment for expanded programs will be phased in over time.

The Department of Parks and Recreation shall report to the City Council, annually on the following:

- i. The status of overall plan financing and implementation;
- ii. The status of public outreach in implementing the plan;
- iii. The status of implementation of the elements of the Master Plan.
- iv. Include estimates of annual City departmental capital and M&O costs as they become known.





# Washington Park Arboretum

## Master Plan

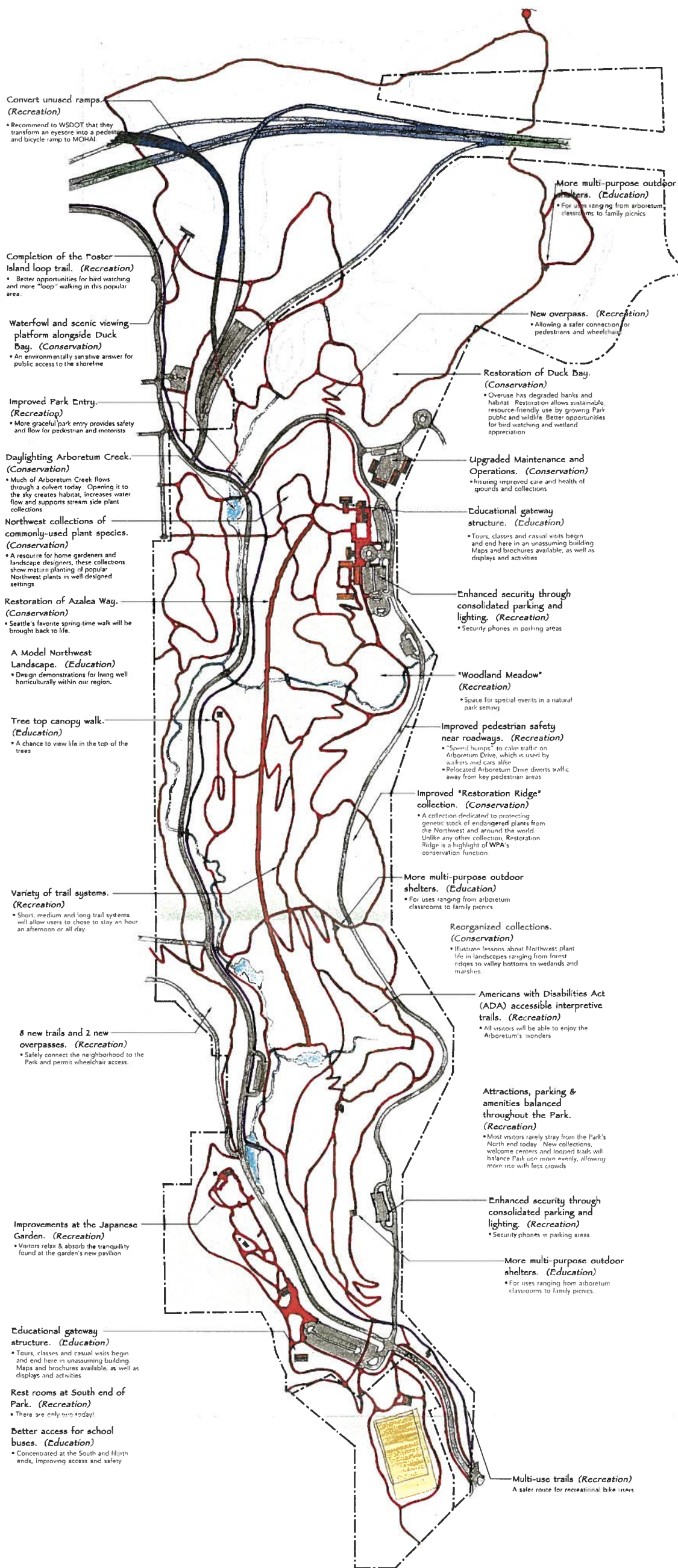
Illustrative Plan  
January 2001



Seattle Department of Parks and Recreation  
The Arboretum Foundation  
The University of Washington







# Washington Park Arboretum

Circulation & Facilities Plan

## Proposed Master Plan

A Proposal by the  
Arboretum and Botanical  
Garden Committee

December 2000



Seattle Department of Parks and Recreation  
The Arboretum Foundation  
The University of Washington



# **Attachment 1**

To the Washington Park Arboretum Master Plan

## **IMPLEMENTATION GUIDELINES**

for the

### **Washington Park Arboretum Master Plan**

#### **Purpose**

The Master Plan for the Washington Park Arboretum is a conceptual document intended to guide future improvements in the park. It sets forth a philosophical basis for those improvements in terms of goals, objectives and a number of specific project elements such as horticultural exhibits, pathways, roadways, facilities and buildings. Although the participants in preparing and reviewing this plan have a common context for interpreting the master plan, there is no certainty that future Arboretum directors, Parks and Recreation Department (DPR) personnel and members of the Arboretum and Botanical Garden Committee (ABGC) will interpret its concepts in the same way. For this reason the following guidelines have been compiled to reduce the ambiguity that might arise in future implementation of the master plan.

#### **Context**

The Arboretum is an integral part of Seattle's entire park system. It is a defining feature of Washington Park and, as such, serves as an important link in Seattle's historic Olmsted park and boulevard system. Lake Washington Boulevard, as part of the 20-mile boulevard system, and Arboretum Drive are critical to both the experience of the Arboretum and its linkage with the rest of the park system. The Arboretum by its location within Washington Park serves two functions: one as an arboretum and the other as a general recreational landscape for unstructured enjoyment. The balance of these two functions will be a guiding principle when undertaking the implementation of the Washington Park Arboretum Master Plan.

The Master Plan will be implemented in the context of a stewardship philosophy expressed in the Park Management and Environmental Education sections of the Seattle Parks and Recreation Department's Plan 2000. The Plan 2000 presents, among other things, the department's environmental and recreational intentions. As a functional plan adopted by the City Council (June 19, 2000), it is a part of Seattle's overall Comprehensive Plan. Unless modified through a public process and future City Council action, both the Comprehensive Plan and the Plan 2000 documents provide the foundation for interpreting concepts in master plans for specific sites including the Washington Park Arboretum.

## **Relationship to the Arboretum Master Plan Environmental Impact Statement**

The environmental review process identified a number of specific mitigating measures to ensure that the master plan could be implemented while maintaining the high quality environment that characterizes the Washington Park Arboretum today. In fact, implementing the plan will actually enhance the park's environment and recreational enjoyment in a number of ways:

- improving the maintenance of plant collections
- daylighting parts of Arboretum Creek that presently flow unseen in a pipe through the park
- stabilizing and naturalizing the eroding shoreline
- providing pedestrian access opportunities
- developing new eco-geographic exhibits along Arboretum Creek and the Union Bay shoreline, highlighting Pacific Northwest habitats.

Beyond these kinds of positive results, the Environmental Impact Statement (EIS) identified mitigating measures that will prevent or minimize adverse impacts of specific proposed actions. Mitigating measures considered particularly important to future understanding of the master plan's intent are incorporated below in the implementation guidelines.

Some of the mitigating measures are required by law and follow common sense. Some, however, bear special emphasis because they are not necessarily required by law or by current standard operating procedures, or they deal with unique qualities of the Washington Park Arboretum. Even so, the success of the Master Plan may depend on their consistent application over an extended period of time, 20 years or perhaps even longer.

These implementation guidelines will be employed as individual projects are undertaken in the Arboretum. In some cases, the guidelines simply specify additional more detailed environmental information that should be collected before a project is designed, to be used in guiding final siting, schematic design and design development phases. Others identify a range of considerations for siting, design, construction and operation of these projects. In some cases, the additional environmental or siting/design information will be incorporated into formal environmental review documents required by law and current practice.

**Siting and Design Development Guidelines:** As the Master Plan is implemented, further site specific analysis will be undertaken as part of the siting, schematic and design development phases of project elements, with the goal to minimize any adverse impacts on the landscape, historic and aesthetic resources of the site.

**Historic and Cultural Resource Guidelines:** Implementation of the Master Plan will adhere to the Seattle Parks and Recreation Plan 2000 policies for preserving historic and cultural resources. Within the Washington Park Arboretum, the following guidelines will apply:

- Conduct additional assessment of the history of affected areas in the early stage of schematic design, and consider retention or rehabilitation of elements of historic significance (this could include adjustments to plan elements such as road and parking layout, and siting of buildings and new exhibits).
- Document locations of particular kinds of cultivated plants to be moved or removed, according to current Arboretum policy and with particular attention to the historic taxonomic organization of the Arboretum.
- Conduct additional assessment of the design intent for the sequence of spaces and views along Lake Washington Boulevard and other portions of the park, and retain or restore that intent where feasible.
- Employ methods recommended by the Secretary of the Interior's *Guidelines for the Treatment of Cultural Landscapes (1996)*.
- Collect information on archaeological resources consistent with the Seattle Department of Design, Construction, and Land Use Director's Rule 2-98.
- Cease construction activities immediately and contact the State Historic Preservation Officer (SHPO) if archaeological artifacts are uncovered during construction or demolition activities.
- Follow the consultation requirements set forth in section 106 of the National Historic Preservation Act in cases where properties that are listed on or eligible for the National Register of Historic Places could be affected by proposed development or rehabilitation projects, or if any archeological artifacts are uncovered during construction or demolition activities.
- Pursue and/or support Landmark status for the Park or some of its features, as appropriate, when the historic documentation has been sufficiently developed.

If the Park or some of its features are nominated for city landmark status, the Landmarks Preservation Board would make a determination. If designated a landmark, the City

Council would adopt specific measures for compliance in a Controls and Incentives agreement.

**Aesthetic Guidelines:** Because of the high-quality naturalistic setting of the Washington Park Arboretum, mitigation for aesthetic impacts can be accomplished by minimizing visual change in such ways as:

- faithfully restoring disturbed landscapes,
- retaining mature planting and the context of interspersed native growth wherever feasible,
- siting structures where they would be least intrusive,
- respecting and considering the use of “borrowed scenery” especially in areas visible from the Japanese Garden, and
- using unified architectural and signage treatments.

The architectural design of new buildings at the Arboretum should balance the desire to maintain and enhance the landscape setting while allowing the creation of beautiful buildings. New buildings and structures should complement the existing GVC, Japanese Garden, the Stone Cottage and Wilcox Footbridge. Their scale and materials should be modest and park-like. The arrangement of buildings should create a campus-like character, siting the buildings in relationship to each other to create exterior spaces for public gatherings, while not detracting from the primary importance and character of the landscape experience.

Roadways should respond to local topography and plantings, be scaled to surroundings, and limit overhead traffic control and lighting structures to remain as unobtrusive as possible

Planning for removal of unwanted canopy trees will take into consideration the possibility of inadvertently opening undesirable views. Tree removal will be phased to avoid such impacts where feasible.

Because the Master Plan will be implemented over two to three decades, aesthetic impacts of maintenance, construction or planting activities will be minimized. In addition, proposed work will be limited to discrete parts of the park at any one time, so that visitors may avoid areas of active construction while still finding undisturbed parts of the park to enjoy.

**Noise Management Guidelines:** The ABGC and the DPR will endeavor to maintain the Washington Park Arboretum’s respite from urban-related noise. Construction projects will be managed with this goal in mind. Educational programs will be scheduled and conducted to minimize noise from such activities. Staff will discretely remind visitors that the park is intended to be a place of relative quiet. Occasional events, either outdoors.

or indoors, will be selected and managed to minimize the escape of noise that could bother other visitors.

**Roadway Development Guidelines:** Lake Washington Boulevard is a Park-owned historic park boulevard. Because the R.H. Thompson Expressway was not built and the temporary freeway ramps connect to Lake Washington Boulevard, the resulting auto traffic volume, congestion, noise and air pollution are detrimental to the Arboretum plant collection and the park experience. However, because of the role Lake Washington Boulevard currently plays in the City's arterial street network, the Master Plan does not propose major changes to the existing arterial and freeway ramp designation until SR 520 can be upgraded to allow this. The Washington State Department of Transportation's Trans-Lake Washington Study is currently evaluating alternative futures for SR 520, including:

- provision for high capacity transit,
- partial lidding of the freeway,
- different locations of the intersections allowing access to and from the freeway.

The DPR and ABGC are participating in that study as occasional reviewers of alternatives. They have and will continue to advocate a reduction of adverse impacts of arterial and freeway traffic on the Arboretum, chiefly through decisions on the role of Lake Washington Boulevard and the location of future 520 ramps. The DPR and ABGC support and encourage concepts that would significantly reduce traffic, noise and other impacts of freeway related traffic on the boulevard, and upon the north end of the park including Foster Island. Since the decisions and schedule for the reconstruction of SR 520 are unknown at this time, opportunities for interim improvements to reduce the impacts of the access ramps to Lake Washington Boulevard, such as time of day and use, may be explored.

Roadway realignments proposed in the Master Plan, including the northern portion of Arboretum Drive and the north entry along Lake Washington Boulevard, will follow a public process of design programming and study of alternatives. These alternatives will seek to fulfill the spirit of the Olmsted Plan for the two roadways. More specifically:

#### Arboretum Drive

- Along the existing Arboretum Drive, existing significant trees will be retained where feasible and consideration will be given to retaining the experience of the historic roadway by providing a pedestrian pathway on the historic road alignment. The pleasure drive characteristics of Arboretum Drive will be respected and incorporated in the process of revising its northernmost alignment around the expanded visitor and education facilities there.
- The extent of road relocation for Arboretum Drive will also be guided by the following goals:



- to allow pedestrians to walk directly from the buildings and parking areas into the main grounds without having to cross vehicular traffic; to provide for a safe connection for pedestrians from the Woodland Meadow to the main collection.
- The northern part of Arboretum Drive when realigned eastward of the expanded parking area will have at least 10 foot planted areas on both sides to screen the parking area on one side and the Broadmoor Golf Course maintenance facilities on the other.

#### Lake Washington Boulevard

- The north entrance to the Arboretum will be clearly announced through the relocation of Lake Washington Boulevard and re-establishment of the park boulevard character that was obliterated by construction of SR 520 in the 1960's and the aborted construction of R.H. Thompson Expressway in the 1970's. The boulevard would swing southward then eastward, separating itself from nearby residences.
- Large trees and grading will create an entry similar to the south entrance near East Madison St.
- The boulevard realignment will take advantage of any new opportunities for reducing traffic that may result from the Department of Transportation's redesign of SR 520 and its interchanges. For the health of the Arboretum and the reclamation of Lake Washington Boulevard as a park boulevard, it is a goal to have the 520 ramps and their entrances relocated entirely out of the Arboretum and ideally not connected to Lake Washington Boulevard.
- Impacts to Montlake area homes located west of the park will be minimized by selecting a boulevard alignment that does not unnecessarily diminish the separation they now enjoy from traffic on the boulevard, and provision of generous landscaping as part of the overall north entry improvement.
- In addition to improved boulevard appearance and function, the redesigned north entry along Lake Washington Boulevard will enhance bicycle and pedestrian movements to the north end of the park, and allow a more beautiful and useful public park space in the area presently dominated by the SR 520 ramps.

The Master Plan also calls for the Seattle Transportation Department (SEATLAN) to explore and implement other smaller-scale improvements to reduce impacts of arterial traffic within the Arboretum. These could include traffic calming devices such as speed humps, mid-block pedestrian crossings with median refuge islands (in place of crossings at intersections), and other changes to Lake Washington Boulevard within the park. The design of speed humps and other traffic calming devices must safely accommodate bicycle traffic and must respect the historic and aesthetic character of the boulevard.



**Arboretum (North End) Restoration Guidelines:** In the vicinity of Duck Bay and the MOHAI building on the north, the plan shows:

- a trail connection north to south across the alignment of the freeway ramps,
- use of the unused freeway ramp as a route to get pedestrians, bicycles and possibly small service vehicles across SR 520 to the MOHAI building vicinity and Foster Island Trail connections there.

Beyond these general concepts and features, implementation guidelines for this area of the park include the following:

- The DPR and the University will continue to improve and maintain the area under and near the existing SR 520 ramps as a passive green public space and Arboretum collections. Its potential is currently underutilized, even though the DPR's maintenance of this state-owned property has improved it greatly over the past decade.
- The north-south trail and vehicular crossing of the SR 520 right-of-way is a concept. The Trans-Lake Washington study of SR 520 may identify alternatives to accomplish the freeway crossing now shown on the plan.
- If the Trans-Lake Washington Study results in either relocating the freeway ramps entirely out of the Arboretum, or redesigning them near their present location, the DPR and the University will endeavor to make the existing public space more visually connected to the Washington Park Arboretum further south. This means more stately trees along the boulevard, trail improvements, and planting that includes both areas of native vegetation and exhibits with interpretive opportunities. WSDOT's existing 25-space parking lot on the west side of the ramps, if retained in the SR 520 redesign, would be planted to help that area blend into the Arboretum surroundings.

**Recreation Guidelines:** Recreational activities such as walking, jogging, bicycling, bird watching, boating, informal play and picnicking are popular in the park. The Master Plan anticipates continuing these uses while at the same time protecting the arboretum's collection. The Plan does not propose any new restrictions on recreational activities. In some cases it proposes improving facilities to accommodate them, e.g. the new multipurpose pedestrian/recreational bicycle path running the full length of the Arboretum, removing barriers to people's use of some trails, and potentially providing designated places for launching and retrieving small cartop boats. If any limitations or changes of recreational activities become advisable in the future, they would be implemented only after appropriate public discourse on the advantages and disadvantages, and the extent of change needed and within the context of a balanced-use facility.

Some restrictions on use of the Arboretum will be necessary only during construction of specific projects. Construction activities will be managed by Arboretum and Parks and

Recreation Department staff. They will be accountable for ensuring that construction is phased so that only limited areas of the park are disturbed at any one time for construction or renovation. They will be especially attuned to the need to maintain public access to and within the park for traditional and customary recreation use, including quiet, contemplative activities.

**Pathway Guidelines:** New pathways illustrated in Figure 3 of the Final EIS indicate barrier-free ADA routes for wheelchairs and people with mobility limitations. This does not mean they will eventually all be paved. Aside from the proposed paved multipurpose pedestrian/recreational bicycle path that is shown east of Lake Washington Boulevard, other paths to be improved will be surfaced with a crushed rock material that can support wheelchairs. Other existing trails to be retained will continue to be soft-surfaced.

The multipurpose pedestrian/recreational bike path is shown as the only new asphalt paved path proposed in the master plan. While graphic illustrations of the master plan show an alignment that intends to be respectful of topographical constraints, views and significant trees, actual design of this path will document these features in more detail and propose solutions that reduce impacts. Where necessary or desirable, the trail may deviate from its location adjacent to Lake Washington Boulevard to an alignment that will minimize grading and tree cutting and preserve the landscape character of the boulevard. Being a recreational rather than commuter bike path, it is not intended to be as wide as the Burke-Gilman trail. If necessary, bicycle speed limits may be imposed for safety reasons, particularly in areas where the path is narrow.

**Parking Guidelines:** The Master Plan's general concept is to concentrate most parking at the north and south ends of the park where the most intensive uses are, with smaller concentrations near the SR 520 ramps, Interlaken Drive, and Madrona Terrace. It also retains 3 of the existing small lots along Arboretum Drive, for approximately 30 cars that can drive closer to specific exhibits and trails along the drive. DPR and the ABGC will select these 3 locations after further consultation with Arboretum users. The Master Plan also reduces the amount of parking along Foster Island Drive, from approximately 50 to approximately 10 spaces, on the south side downslope from the DPR maintenance yard. The proposed Arboretum Shoreline and Trail Improvements Plan completed in July, 2000 recommended 4 additional stalls (2 of them ADA) near the trailhead at the northern end of Foster Island Drive.

The Washington Park Arboretum Master Plan will discourage development of additional parking along the drive, for aesthetic reasons and because parking is not a desirable use in a sensitive shoreline area, especially when other alternatives exist. The master plan advocates expanding the existing lot near the Graham Visitor Center from 49 to 109 stalls, and this lot is close enough to Duck Bay and the Foster Island trailhead for most park visitors. The pedestrian connections between the expanded parking lot and the improved shoreline trail will be made accessible and convenient for most users.

**Signage Guidelines:** Before any new signage is installed in existing or proposed exhibit areas, the City and the University of Washington will develop an interpretive signage plan, with an appropriate public review process. The plan is expected to have several different categories of signs or graphics for conveying information in varying situations. The plan will take advantage of contemporary technology for museum displays, including electronic devices as well as brochures for self-guided tours, to minimize the need for large fixed display materials and visual clutter in the park.

**Japanese Garden Guidelines:** The master plan's proposal of a new south end educational/visitor center will require careful coordination of design with a proposed new Japanese Garden entrance facility, to assure harmony of their appearances. Likewise, the proposed pedestrian crossing structure over Lake Washington Boulevard south of the garden must be visually compatible with the Garden. If a new pedestrian trail link is added west (uphill) from the Japanese Garden, as shown on the Proposed Master Plan illustration, it must be carefully designed to prevent intrusion into the Garden's special environment. People moving along the trail should not distract from the Garden's "borrowed scenery". Any new horticultural exhibits in the south end of the park will also be designed and located with this "borrowed scenery" principle in view.

**Implementation Funding Guidelines:** The Department funding of elements of the Master Plan will be based on the general priorities listed on pages 30-31. Projects identified for capital improvement funding by the Department will be undertaken in an order based on their consistency with these priorities, with improvements related to support of the plant collections being identified first and others being phased in over time.

## **Attachment 2**

### **To the Washington Park Arboretum Master Plan**

## **Mitigation Measures Contained in the FEIS for the Washington Park Arboretum Master Plan, January 2001.**

### **Geology and Soils**

All excavation and grading for roadways, trails, building foundations, and slope stabilization should be designed and executed in accordance with recommendations of a geotechnical engineer based on site-specific exploration of soil and ground water conditions.

Standard erosion control measures should be implemented during the earthwork portions of the project. These measures involve the use of water trucks to reduce dust, as well as the use of vegetative cover, temporary plastic sheeting, silt fences, siltation ponds, and other best management practices (BMPs) to temporarily control surface water drainage and reduce erosion of exposed soils.

Abandoned landfills are considered environmentally critical areas, and although it is unlikely that methane gas is produced by the abandoned landfill located at the south end of the park, development standards of the Seattle Municipal Code (chapter 25.09) must be followed during construction in this area. If contaminated soil is encountered during construction, proper handling and disposal of the contaminated materials are required in accordance with the Model Toxics Control Act cleanup regulation (Washington Administrative code [WAC] 173-340).

During the proposed construction and renovation of buildings, roadway improvements, and trail modifications, no further mitigation measures would be required beyond compliance with Seattle Municipal Code chapter 25.09, regulations for environmentally critical areas, and seismic zone 3 design specifications. Site-specific engineering and geotechnical studies would be required to ensure the adequacy and stability of the local soils, particularly in liquefaction-prone areas.

### **Air Quality**

Emissions from construction equipment and trucks can be reduced by using relatively new, well-maintained equipment. Avoiding prolonged periods of vehicle idling also would reduce emissions.

Construction contractors must comply with Puget Sound clean Air Agency Regulation I, sections 9.11 and 9.15 requiring reasonable precautions to minimize odor and dust impacts. Dust produced by construction activities could be reduced in several ways. Areas of exposed soils could be sprayed with water or other dust suppressants. Soil

tracked out of the construction area by trucks could be reduced by washing off deposits of mud, dirt, and other debris from vehicle bodies, fenders, frames, undercarriages, and wheels. Covering dusty truckloads and providing adequate freeboard to prevent spillage can also minimize dispersal of fugitive dust from construction trucks. Finally, soil that does escape the construction area on exiting vehicles could be reduced with an effective street-cleaning effort.

Trucking of materials to and from the project site could be scheduled to minimize congestion by avoiding peak-hour travel times. This measure in turn would minimize secondary air quality impacts caused by traffic traveling at reduced speeds.

No operational mitigation measures would be required. Project-generated carbon monoxide concentrations near the areas with the highest potential for air quality problems would comply with establish standards. Mitigation measures related to roadway modifications along Lake Washington Boulevard East, described in the transportation section (of the FEIS) would also mitigate potential air quality impacts associated with increased traffic congestion.

## **Water Resources**

Overall, the proposed additions and modifications of vehicular and pedestrian roadways, building, shelters, and parking areas would each result in an increase of greater than 9,000 square feet of developed area. Therefore, these portions of the proposed development would be subject to the appropriate water quantity and quality controls as outlined in Seattle ordinance 117789. Specific treatment and detention requirements would depend on final development plans, but might include the following:

- Peak flow control for runoff from the new impervious surface area, and possibly for some existing impervious surfaces nearby.
- Best management practices (BMPs) to limit erosion and sediment transport during construction (e.g., limiting the extent of site disturbance at any point in time; providing mulch cover on disturbed surfaces; and using sediment basins, silt fences, and check dams to reduce flow velocities and trap sediments onsite).
- Permit BMPs to provide water quality treatment for roadway and parking lot runoff (e.g., wet ponds, bioswales, filtration systems, and wet vaults).
- Permanent BMPs to prevent stream bank erosion and scouring at stormwater outfalls (e.g., riprap energy dissipaters).

Given that the proposed improvements are localized and scattered over a large area, water quality treatment facilities may have to be designed to treat existing roadways and parking areas to account for any areas of new roadways and parking that cannot feasibly receive water quality treatment. Final stormwater management requirements would depend on the design details of the proposed development and would require extensive consultation with city engineers. Likewise, the net impacts of the total increase in impervious areas may have to be considered when determining the detention requirements for the proposed plan. If direct discharges to Lake Washington via Arboretum creek are not permitted by the city, detention facilities would be required to

prevent any impacts associated with increased flows. These facilities might have to be designed to manage flow from some of the larger existing impervious surfaces (roads, parking lots, and rooftops) to account for many small increases in impervious areas (smaller buildings, trails, and shelters).

In addition, the net impact of the increase in impervious surfaces on the Washington Park Arboretum overall should be considered when determining detention requirements.

Although no significant impacts are expected for water resources (i.e., Lake Washington and Arboretum Creek), the increase in surface runoff may affect smaller drainage systems on the site. The impacts associated with the proposed development are not expected to be significant, but they would contribute to the cumulative surface runoff rates that result in small-scale flooding and soil saturation onsite. Reuse of stormwater runoff for irrigation could be considered as part of the final design of new and expanded buildings.

Finally, even though the amount of construction at any one time would be limited because of the long period of master plan implementation, the proposed design and maintenance of temporary erosion and sediment control facilities are crucial to the prevention of water quality problems. A diligent erosion control and water quality monitoring plan should be implemented as soon as construction work begins to ensure that water quality impacts are avoided. Specifically, extra attention should be given to keeping soil disturbance, clearing, and grading of the site to a minimum, thereby limiting the erosion and transport of sediment during construction. If possible, construction activities should be scheduled for the dry season. Implementation of effective erosion and sedimentation control measures can significantly reduce the potential for this type of contaminant transport.

### **Plants and Animals**

Some of the elements of the proposed master plan would be beneficial to plants and animals within the Washington Park Arboretum, such as restoring the creek to a surface channel, revegetating shorelines and wetland buffers, and creating new wetland areas and ponds.

For adverse impacts on plants and animals, mitigation involves a hierarchy of avoidance, minimization and compensation for these impacts. Efforts to avoid and minimize adverse impacts have been incorporated into the proposed master plan. Compliance with regulations for wetlands for fish and wildlife habitat, such as maintaining and restoring buffers, and timing construction to avoid disruption of breeding or migration, would ensure that implementation of most projects under the plan would adequately protect wildlife. Because of the master plan's extended period of implementation, impacts occurring at any one time would be limited, with changes occurring at a gradual pace, allowing animals greater opportunity to adapt.

Relocating the northern one-third of Arboretum Drive East from the park interior to the outer edge of the park could give wildlife a greater areas of connectivity, depending on the design and use of the areas where the road would be removed. Removal of the

abandoned Arboretum Drive pavement and revegetation of this swath could provide a long-term benefit to wildlife. Beneficial impacts on wildlife would also result from reducing traffic use on Arboretum Drive. Eliminating trucks and other inappropriate vehicles would reduce the amount of noise that may disturb wildlife, and use of low-speed electric or pedal-powered tour vehicles would even further reduce the amount of noise.

Beneficial impacts could occur where parking lots are removed and additional vegetation is planted, thus creating new wildlife habitat.

Improvements to wildlife habitat may result from removing invasive species along the Duck Bay shoreline, planting trees along Lake Washington Boulevard East and Foster Island Drive East, expanding the rhododendron pool, and enhancing Arboretum Creek. The value of the wildlife habitat provided by the native forest could be improved by installing bird and bat boxes, and restricting human activity in certain areas where wildlife species are more sensitive to disturbance.

The impacts of increased human activity could also be mitigated by educational and interpretive materials that inform users about the habitat for wildlife.

## **Energy and Natural Resources**

Construction activities would comply with the City of Seattle's energy and water conservation policy. During construction, energy could be conserved by recycling and reuse of materials, by reduction of demand through greater efficiency of operations, and by direct conservation through elimination waste and reduction in activities that require energy. During building renovation, reusable materials such as fixtures, windows, wood, and masonry should be salvaged. Recyclable materials also should be sorted and recycled.

Energy impacts resulting from operation could be minimized through design and operational considerations. Building renovation and new construction would be designed to comply with the Seattle Energy Code (section 22.700 of the Seattle Municipal Code), which includes provisions to reduce overall energy consumption.

## **Noise**

Although it is exempt from regulatory noise limits, construction noise can adversely affect people living nearby. The following measures would be used where feasible to minimize construction noise impacts:

- Use properly sized and maintained mufflers, engine intake silencers, and engine enclosures, turn off idle equipment, and confine activities to daytime hours. These measures could be specified in construction contracts as appropriate.
- Place stationary equipment as far from sensitive locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers providing 10-dBA reduction in equivalent sound levels could be placed around the equipment, with the opening directed away from the sensitive receiving property.

- Substitute hydraulic or electric models for impact tools such as jackhammers, rock drills, and pavement breakers to reduce construction and demolition noise.
- Require equipment operators to drive forward rather than backward, when feasible, to minimize the noise from reverse-gear alarms. Although reverse-gear alarms are exempt from most noise ordinances, noises from such devices can be among the most annoying sounds from a construction site.
- Require operators to lift rather than drag materials, when feasible, to minimize noise from material handling.

The proponent and the Department of Parks and Recreation would work with neighborhood groups or other concerned parties as necessary during design, construction, and operation to ensure that potential noise impacts on local sensitive receptors are prevented or reduced to acceptable levels. In addition, the following measure may be considered to minimize potential noise impacts during operation:

- Remind visitors (particularly groups of children visiting the Washington Park Arboretum for educational purposes) that the arboretum is intended to be a place of relative quiet, and that noise should be kept to a minimum.

### **Land and Shoreline Use**

With the required shoreline substantial development permits and any conditions attached to them, no significant land or shoreline use impacts would be expected to result from any of the alternatives. To minimize potential adverse impacts, the following measures are recommended:

- Work with the City of Seattle and appropriate resource agencies to develop appropriate mitigation measures for project elements located within environmentally sensitive areas (see proposed mitigation in geology and soils section and plants and animals section).
- Limit the proposed Foster island shelter to 15 feet in height to comply with shoreline development standards. If approved after further study and if possible, limit the proposed Foster Island Road east overpass to 15 feet in height; otherwise seek ways to relocate this overpass so that it falls outside the shoreline environment.
- Contractors should implement best management practices during construction activities on Foster marsh islands and along Duck Bay shoreline areas, as well as during demolition of the unused SR 520 freeway ramp, to minimize potential impacts on the sensitive shoreline environment. Similarly, arboretum staff should emphasize to visitors that the conservancy-preservation area is a sensitive and protected area, and that intensive activities around this shoreline are prohibited.

### **Recreation**

Implementation of the proposed plan or alternatives over several decades would minimize construction-related impacts at any one time. Construction activities should be coordinated by arboretum and Parks and Recreation department staff with Seattle Transportation and other city departments, to include plans for site access and staging areas. Mitigation measures related to traffic congestion are identified in the



transportation section of this EIS. Trail modifications and new construction areas should be clearly marked to ensure the safety of the general public.

Building renovation activities and construction schedules should be coordinated by arboretum staff and the contractors to avoid interruption of educational and recreational activities. Classroom activities may be temporarily relocated at the Center for Urban Horticulture.

## **Historic and Cultural Resources**

Conformance with the policies in *Seattle's Parks & Recreation Plan 2000* would help to avoid or mitigate adverse impacts on historic and cultural resources in the Washington Park Arboretum. Pertinent policies set forth in that plan are summarized below:

- For park amenities and signage, strive for consistency throughout the system as a means both of establishing identity and of reducing maintenance costs, while recognizing special needs associated with future designation of historic and natural resource areas. (Development #13)
- Coordinate planning for boulevards and trails with planning for natural historic resources. (Management and Maintenance #14)
- Park natural resource areas and park historic resource areas will be designated and managed with use limited as necessary to conserve natural and historic resources within parks, including the conservation and enhancement of wildlife habitat. (Stewardship, Primary, #7)
- The Olmsted Brothers system and individual boulevards and parks comprising the system will be designated as park historic resource areas to be treated as a living legacy. Park features developed through the Works Progress Administration will be given similar treatment. Procedures for adequately considering historic planning and design intent in current management practices will be part of the planning for future restoration and improvements. (Stewardship, Primary, #8)
- A conservation and historic preservation ethic will be incorporated into staff training and procedures. (Stewardship, Primary, #9)
- Tree management and maintenance will include consideration of tree health, long-term reforestation needs, historical context, and tree impacts such as public safety, views, aesthetics, street or sidewalk damage, and maintenance requirements. (Stewardship, Primary, #14)
- Park boulevards and trails will be managed and maintained in accordance with boulevard and trail agreements with Seattle Transportation. (Stewardship, Primary, #15)
- Increased emphasis will be placed on maintenance of design intent, access and continuity, and visual character of the boulevards. (Stewardship, Primary, #16)
- Park maintenance will be based upon available funding and measurable maintenance objectives established for park categories as supplemented by special procedures for park natural and historic resource areas. (Stewardship, Secondary, #12)
- Provide for restoration of ornamental landscapes throughout the Seattle park system. Provide particular attention to historic landscapes of the Olmsted Brothers tradition. (Landscaping, L1)

- Designate park historic areas within appropriate parks, including consideration of 1930s Works Progress Administration-era landmark improvements as well as Olmsted Brothers planned and/or designed parks. Establish development and maintenance guidelines for such areas. Consider establishment of a Department conservator position to maintain historical information, records, and documents as well as coordinate review of major maintenance and development proposals (Olmsted Brothers Parks, Works Progress Administration Improvements, etc). (Historic, PH-1)
- Designate and protect natural and historic resources (including wildlife habitat) within parks, focusing on sensitive resource management, public information, staff training, and maintenance procedures. (Environmental Protection, EP2)
- Expand and incorporate historical programming and interpretation into environmental education efforts. (Environmental education Programs, EEP-4)

The following mitigation measures would be implemented during future projects within the Washington Park Arboretum to minimize impacts on historic and cultural resources. These measures apply to all alternatives.

- Employ methods recommended by the U.S. Department of the Interior in *Guidelines for the Treatment of Cultural Landscapes* (1996).
- Conduct additional assessment of the history of affected areas in the early stage of design development, and consider retention or renovation of elements of historic significance (this could include substantial adjustments to plan elements such as road and parking layout and siting of buildings and new exhibits.)
- Document locations of cultivated plants to be moved or removed prior to removal.
- Conduct additional assessment of the design intent for the sequence of spaces and views along Lake Washington Boulevard and other portions of the park, and retain or restore that intent where feasible.
- Comply with the Seattle Department of Design, Construction, and Land Use director's Rule 2-98 where required.
- Cease construction activities immediately and contact the state historic preservation officer if archaeological artifacts are uncovered during construction or demolition activities.
- Follow the consultation requirements set forth in section 106 of the national Historic Preservation Act in cases where properties that are listed on or eligible for the National Register of Historic Places could be affected by proposed development or renovation projects, or if any archeological artifacts are uncovered during construction or demolition activities.

In addition, the Department of Park and recreation is currently studying the possibility of city landmark nominations for numerous parkas and boulevards throughout Seattle, including Washington Park Arboretum and Lake Washington Boulevard. If features within the park are nominated for city landmark status, a determination would be made by the Landmarks Preservation Board and the city council. For newly designated landmarks, specific measures for compliance (known as a controls and incentives agreement) would be determined by the city council.

## **Aesthetics**

Because of the high-quality naturalistic setting in the Washington Park Arboretum, mitigation for aesthetic impacts can be accomplished by minimizing visual change in such ways as faithfully restoring disturbed landscapes, retaining of mature landscaping wherever feasible, siting structures where they would be least intrusive, and using unified architectural and signage treatments. Planning for removal of unwanted canopy trees could take into consideration the possibility of inadvertently opening undesirable views, and steps such as phased removal could be employed to avoid such impacts.

Because of the Master Plan's extended period of implementation over two to three decades, aesthetic impacts of maintenance, construction, or planting activity occurring at any one time would be limited, with changes occurring at a gradual pace. In addition, proposed work would be limited to discrete portions of the park at any given time, so that visitors may avoid areas of active construction while still finding undisturbed areas of the park to enjoy.

## **Transportation**

### **Lake Washington Boulevard Traffic Speeds**

Potential mitigation measure: Install speed humps, speed lumps or traffic-calming circles on Lake Washington Boulevard East within the park. (Speed lumps are speed humps that do not extend all the way across a lane. Wide-wheelbase trucks and buses can straddle the lump, while at least one wheel of an automobile must roll over it.) The design of speed humps and other traffic calming devices must safely accommodate bicycle traffic.

Lake Washington Boulevard traffic speeds greatly exceed the 25-mph speed limit, despite roadway characteristics (narrow width and curving alignment) that tend to reduce speeds. Although the installation of stop signs at Lake Washington Boulevard intersections (Arboretum Drive, Interlaken Boulevard, and Boyer Avenue) may reduce speeds in the immediate vicinity of the stop signs, it would have little or no effect on speeds between the stop-controlled intersections, and the congestion created by the stop signs can create air quality and noise problems. Furthermore, the improved access to Lake Washington Boulevard from the side streets at all-way stops can encourage and hence increase neighborhood infiltration by through traffic.

### **Lake Washington Boulevard Pedestrian Crossings**

Potential mitigation measure: Install mid-block crossings with median refuge islands (raised, with flashing inset lights, or with pedestrian signals if appropriate) in place of crossings at intersections.

Improved pedestrian crossings are needed on Lake Washington Boulevard to enable safe and convenient pedestrian access and circulation in the park. However, placing such crossings at intersections exposes pedestrians to conflicts with turning traffic and

motorists whose attention is focused on other vehicles and their maneuvers. Placing crossings away from intersections eliminates these conflicts, and the refuge islands allow pedestrians to cross one lane or one direction of traffic at a time. Realigning the Lake Washington Boulevard travel lanes around a refuge island also can help reduce traffic speeds.

#### Lake Washington Boulevard Commuter Bicycle Lane

Potential mitigation measure: Widen Lake Washington Boulevard to provide a striped bicycle lane on both sides of the road.

Such a class II bicycle lane would allow commuter bicycle traffic to continue to use Lake Washington Boulevard while reducing conflict between bicyclists and vehicular traffic and avoiding the creation of new pedestrian/bicycle conflicts. This could have impacts on the historic character of the boulevard, however.

#### Lake Washington Boulevard/Madison Street Intersection

Potential mitigation measure: Lengthen the southbound Lake Washington Boulevard left turn lane at Madison Street.

Provision of adequate left turn queue storage on southbound Lake Washington Boulevard at Madison Street would allow the intersection to operate at LOS C and eliminate the southbound peak period queues that can strangle access to and from the Japanese garden/Washington Park playfield parking lot and Arboretum Drive. This could require removal of trees and could affect the historic character of the boulevard.

#### Public Services and Utilities

Law enforcement, firefighting and emergency medical services could be given advance notice of construction activities to minimize potential impacts on service or response time. Emergency management plans for both the police and fire departments should be coordinated with the Parks Department and the University of Washington for reliable emergency access.

The principles of crime prevention through environmental design can be incorporated into the design of new and renovated facilities to improve safety and security within the park. These principles are based on natural surveillance, maximization of visibility, natural access control, and defensible space, and measures employed would have to be evaluated against other purposes of the Washington Park Arboretum.

Utility relocation agreements can be established with the involved agencies to specify procedures to be followed during construction within the park. These agreements would coordinate utility relocation, replacement, temporary connections, protection, and monitoring plans during final design development and construction. All utility locations

would be checked with existing utility plans and also field-verified before construction to minimize any impacts on existing utilities.

To minimize the potential for damage to exposed utilities during construction, provisions should be included in the construction plans to use engineering controls such as shoring and conduit support systems. During construction, construction debris and waste materials can be recycled to the extent possible to reduce environmental impacts. A construction-phase drainage plan and a temporary parking plan may help to reduce impacts on adjacent neighborhoods during construction.

May 7, 2001

# A Comparison of the Proposed Master Plan with Previous Plans and Existing Development

Plan elements	1936 Olmsted General Plan <sup>1</sup>	Existing	1997 proposed Greenprint plan		1999 Alternative Plan (in DEIS)		Current Proposed Master Plan	
			Existing retained	New construction	Existing retained	New construction	Existing retained	New construction
<b>Structures (Square feet floor area)</b>								
S. Entrance Lodge (Stone Cottage) <sup>2</sup>	640	750	750	-	750	-	750	-
S. Comfort Station	1,800	2,000	2,000	-	2,000	-	2,000	-
N. Entrance Lodge	1,400	-	-	-	-	-	-	-
Administration/Curation	8,800	-	-	5,600	-	5,600	-	3,000
Storage and Service	8,200	4,675	-	11,200	2,800	7,200	2,800	7,200
Shelters, kiosks, and open pavilions	2,281	600	600	8,100	600	1,200	600	1,200
Greenhouses	12,000	5,175	-	4,500	-	2,700	-	5,400
Lath Houses	-	9,150	-	4,000	-	2,700	-	2,700
Frames	4,200	-	-	-	-	-	-	-
Greenhouse storage	-	-	-	1,200	-	-	-	-
Graham Visitors Center	-	5,690	5,690	-	5,690	-	5,690	-
Japanese Garden tea room	-	450	450	-	450	-	450	-
Japanese Garden Entrance building	64	-	-	625	-	1,700	-	1,700
Japanese Garden Pavilion	-	-	-	2,000	-	1,000	-	1,000
Education - North @ GVC	-	-	-	3,050	-	3,000	-	3,000
South education & visitor services center	-	-	-	6,700	-	5,000	-	2,500
Meeting room at North end	-	-	-	1,500	-	1,500	-	-
Administrative offices at MOHAI <sup>3</sup>	-	-	-	-	-	-	-	4,000
<b>Subtotals</b>			<b>9,490</b>	<b>48,475</b>	<b>12,290</b>	<b>31,600</b>	<b>12,290</b>	<b>31,700</b>
<b>TOTAL STRUCTURES (SQ. FT.)</b>	<b>39,385</b>	<b>28,490</b>	<b>57,965</b>	<b>43,890</b>				
<b>Parking (No. of spaces)</b>								
Automobile	216	377	155	405	188	210	198	180
Bus	-	-	-	12	-	8	-	8
<b>TOTAL PARKING SPACES</b>	<b>216</b>	<b>377</b>	<b>572</b>	<b>406</b>				
<b>Paths (Lineal Miles)</b>								
	<b>18.6</b>	<b>8.2</b>	<b>4.4</b>	<b>8.0</b>	<b>4.4</b>	<b>8.0</b>	<b>4.4</b>	<b>8.0</b>
<b>TOTAL PATHS (L.M.)</b>	<b>18.6</b>	<b>8.2</b>	<b>12.4</b>	<b>12.4</b>				

<sup>1</sup> Floor areas for buildings in 1936 Olmsted Plan were derived from area-takeoffs from the Hoggson rendering.

<sup>2</sup> The Stone Cottage was shown in slightly different location on the Olmsted Plan but was similar in size and function to the Stone Cottage

<sup>3</sup> Exact floor area that will be available at MOHAI has not been determined. If sufficient area is not available at MOHAI, additional off-site office space will be needed to accommodate staffing proposed under the plan.