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CITY AND COUNTY OF HONOLULU

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RECEIVED TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

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OFFICE OF ENVIRONMENTAL
QUALITY CONTROL
November 19, 2003

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State Office Tower
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact (FONSI) for
Wahiawa Botanical Garden Master Plan Update; Wahiawa, Oahu, Hawaii

The Department of Design and Construction has reviewed the comments received during the 30-day public comment period that began on August 23, 2003. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next edition of the Environmental Notice.

A completed OEQC Publication Form and four copies of the final environmental assessment are enclosed. Please call Mr. Harold Mau of my staff at 527-6330 if there are any questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "T. Steinberger".

TIMOTHY E. STEINBERGER, P.E.
Director

TES:gt

Attachments

2003-12-08-0A-PEA

DEC 8 2003

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FINAL ENVIRONMENTAL ASSESSMENT

WAHIAWĀ BOTANICAL GARDEN

MASTER PLAN UPDATE



Prepared For

DEPARTMENT OF DESIGN AND CONSTRUCTION
City and County of Honolulu

October 2003

FINAL ENVIRONMENTAL ASSESSMENT

WAHIAWĀ BOTANICAL GARDEN
MASTER PLAN UPDATE

Prepared in Partial Fulfillment of the Requirements of
Chapter 343, Hawaii Revised Statutes and
Chapter 200, Title 11, Hawaii Administrative Rules

Prepared For:

DEPARTMENT OF DESIGN AND CONSTRUCTION
City and County of Honolulu
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Honolulu, Hawaii 96813

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October 2003

PREFACE

The Wahiawa Botanical Garden Master Plan, prepared by Lester H. Inouye & Associates (1991) for the Honolulu Botanical Gardens, was adopted by the Department of Parks and Recreation, City and County of Honolulu as the long-range strategy for the development of the Wahiawā Botanical Garden. In September 1996, an Environmental Assessment was prepared to evaluate potential environmental impacts that might result from implementing the Master Plan. The Department of Parks and Recreation issued a Finding of No Significant Impact ("FONSI") for the Final Environmental Assessment Wahiawa Botanical Garden Master Plan in January 1997. The FONSI was published in the Office of Environmental Quality Control Environmental Notice of January 23, 1997 and February 8, 1997.

Since 1997, there have been no significant improvements to the Garden. In 1999, the Wahiawā Vision2000 Team decided to spend its share of public funds to implement improvements recommended in the Wahiawā Botanical Garden Master Plan. The improvements include improving existing trails and adding new trails, adding signage and lighting, and renovating the existing visitor information booth. While many of the improvements proposed by the Wahiawa Vision2000 Team were recommended in the Wahiawā Botanical Garden Master Plan, the renovation of the visitor information booth was not. The Wahiawā Vision2000 Team, however, has expressed the need to provide improved space at the existing visitor center to accommodate small-scale public gatherings and activities within the Garden.

As a result, the Department of Design and Construction, City and County of Honolulu, has apprised the Wahiawā Vision2000 Team that the proposed improvement would require updating the master plan and preparing a new environmental assessment. The 1991 Wahiawā Botanical Garden Master Plan has been updated by PBR Hawaii, consultants to the Wahiawa Vision2000 Team. The consultant team has integrated current planning, community visioning, and Honolulu Botanical Garden staff recommendations with many of the concepts and recommendations of the 1991 Master Plan. This environmental assessment evaluates the environmental impacts resulting from implementation of the updated master plan.

PROJECT PROFILE

Proposed Action: Wahiawā Botanical Garden Master Plan Update

Location: Wahiawā, District of Wahiawā, Oahu

Proposing Agency: Department of Design and Construction
City and County of Honolulu

Determining Agency: Department of Design and Construction

Tax Map Key: 7-4-17: 01
Land Area: 26.9177 acres
Approximate Area of Project: 22 acres
Land Owner: City and County of Honolulu

State Land Use District: Urban
General Plan: Urban Fringe
Sustainable Community Plan Area: Central Oahu
Land Use Map: Park
Zoning: P-2 General Preservation
Special Management Area: Outside SMA

Existing Use: Botanical Garden, Drainage

Anticipated Determination: Finding of No Significant Impact

Contact: Harold Mau, Project Coordinator
Facilities Design and Engineering Division
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Telephone: 527-6330
Facsimile: 523-4767

Note: Substantive revisions to the text of the Draft Environmental Assessment are shown in *bold italic* type. Deleted text is enclosed by [brackets].

TABLE OF CONTENTS

	Page
PROJECT PROFILE	i
SECTION 1 DESCRIPTION OF THE PROPOSED ACTION	1
A. Purpose and Need for the Master Plan	1
B. Master Plan Concepts	2
1. Facilities	2
2. Theme Garden Development	3
3. Safety and Access Improvements	4
4. Circulation	4
5. Parking and Street Access	4
6. Utility Systems	5
7. Signs and Graphics	5
8. Lighting and Security	5
9. Accessibility	5
C. Plan Implementation	6
1. Phasing	6
2. Operations and Maintenance	7
3. Annual Operating Costs	6
SECTION 2 DESCRIPTION OF THE AFFECTED ENVIRONMENT	10
A. Existing Collection and Facilities	10
B. Environmental Conditions	11
C. Public Facilities	14
D. Public Services	15
SECTION 3 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS	16
A. Assessment Process	16
B. Short-term Impacts	16
C. Long-term Impacts	18
SECTION 4 ALTERNATIVES TO THE PROPOSED ACTION	23
SECTION 5 AGENCIES AND ORGANIZATIONS CONSULTED IN THE ASSESSMENT PROCESS	24
SECTION 6 LIST OF PERMITS AND APPROVALS	25
SECTION 7 DETERMINATION OF SIGNIFICANCE	26

TABLE OF CONTENTS

REFERENCES

28

APPENDIX A SUMMARY OF PLANT INVENTORY:
GULCH, WAHIAWĀ BOTANICAL GARDEN

APPENDIX B COMMENT LETTERS AND RESPONSES

The Department of Design and Construction, City and County of Honolulu, proposes to implement the improvements recommended in the Wahiawā Botanical Garden Master Plan ("1991 Master Plan") and the Wahiawā Botanical Garden Master Plan Update ("Master Plan Update"). The 1991 Master Plan was adopted by the Department of Parks and Recreation as the long-range strategy for the development of the Wahiawā Botanical Garden located at Wahiawā, Oahu, Hawaii.

The Wahiawā Botanical Garden is situated in a narrow, steep, and densely vegetated gulch in the central area of Wahiawā Town. The garden is bordered by Glen Avenue to the north, California Avenue to the south, Wahiawā Recreation Center to the west, and residential developments along Uuku Street to the east. The nearly one mile long, V-shaped gulch is an unnamed branch of the south fork of Kaukonahua Stream which flows into Lake Wilson. Areas surrounding the garden can be described as suburban residential characterized by single-family residences, schools, playgrounds, and streets. A Location Map is shown in Figure 1.

A. Purpose and Need for the Master Plan

The 1991 Wahiawa Botanical Garden Master Plan and this Master Plan Update seek to protect and preserve the garden's natural and cultural resources and to expand the educational, interpretive, and recreational opportunities for the general public. Improvements to and management of the resources at Wahiawā Botanical Garden are guided by the management goals of the Honolulu Botanical Garden ("HBG"). These goals are supported by objectives in the functional areas of science, horticulture, education, and recreation. The goals and objectives of the HBG are:

Science: Implement formal collections management polices and practices.

- Ensure proper management of an orderly and carefully conceived plant collections policy and accessions system and provide for necessary scientific documentation of botanical garden resources.

Horticulture: Implement formal cultivation management standards and practices.

- Ensure proper management of an exceptionally significant tropical plant collection and provide for optimum horticultural care of botanical garden resources.
- Implement horticulturally correct, labor saving techniques within the botanical garden.
- Improve botanical garden entrance areas and overall aesthetic imagery.

Education: Develop quality interpretive programs and services.

- Ensure public awareness of global resource management and conservation issues and provide for creative learning opportunities to enhance understanding of the significance and value of botanical garden resources.

Recreation: Develop relevant botanical garden recreational programs and services.

- Ensure responsiveness in meeting community needs and provide for effectiveness and efficiency in the management of botanical garden program operations.

As the long-range document to guide development and in the context of the goals and objectives of the Honolulu Botanical Gardens, the purposes of the Wahiawā Botanical Garden Master Plan are to:

- protect, maintain, and properly manage all resources in the garden;
- provide botanical resources for scientific research;
- provide adequate facilities and staffing to properly manage, meet horticultural requirements, and increase public awareness of resource management and conservation;
- upgrade the environmental quality of the garden; and
- provide facilities to serve the recreational and cultural needs of the community.

The Master Plan Update includes the additional objectives:

- improve safety and access throughout the garden;
- provide access for maintenance vehicles where possible; and
- maximize accessibility and participation for those of all physical abilities.

B. Master Plan Concepts

The 1991 Master Plan recommended several significant changes to the existing garden to achieve its objectives. The Plan recommended the construction of a Visitor Education Center building on a sloping section of the gulch, the development of an "activity core" at the base of the Visitor Education Center, and drainage improvements along the bottom of the gulch. Some of these recommendations form the foundation of the Master Plan Update that includes community visioning, HBG staff recommendations, and maintenance and liability issues. Improvements proposed in the 1991 Master Plan and the Master Plan Update are discussed below. The proposed new Master Plan for the Wahiawā Botanical Garden is shown in Figure 2.

1. Facilities

The 1991 Master Plan recommended constructing a 4,700-square foot multi-level, multi-use Visitor Center/Education/Administration Building that would house visitor services, administration offices, classrooms, a gift shop, a reference library, multi-purpose room, a kitchen and restroom facilities all under one roof. It located the facility at the proposed new main entry on Glen Avenue. This location was chosen since at that time it would not infringe upon developed garden areas, there was adequate space on the Glen Avenue side of the Garden for its development, and the parking lot on Glen Avenue was much larger than that on California Avenue.

Now, however, the Hawaiian Garden has been developed in this area of the gulch floor and the location is no longer ideal. Several rare native Hawaiian species including six *Pritchardia munroii* would be endangered by the proposed structure. In addition, the Wahiawā Botanical Garden Vision Committee felt that the main entrance should remain on California Avenue since historically the public's familiarity with the Garden is tied to its main entrance on California Avenue. As a result, the Education/Administration Building on Glen Avenue is no longer included in the master plan and in its place a smaller Entry Pavilion on California Avenue will be constructed.

The existing Visitor Center will be retained for special events and/or adjunct uses for the Entry Pavilion. Also, minor renovations to the existing maintenance facilities are proposed.

a. Entry Pavilion

The existing Visitor Center located on the California Avenue side of the Garden is a small, single-story structure with an information desk, office space, and restrooms. It is a rustic building constructed of grouted lava rock and wood and fronts a large open lanai with a spectacular view of the Garden. The pavilion is not visible from the parking lot off California Avenue or the street and is often plagued by vandalism and theft.

Since the Visitor Center cannot be readily seen, visitors are often confused as to which way to enter the Garden from the California Avenue parking lot. Some visitors have been known to cross the pedestrian bridge only to find they must retrace their steps and enter through the relatively unmarked gate to the east. Furthermore, there is little information to direct or assist visitors if there are no volunteers manning the pavilion.

During early vision committee discussions, renovation of the existing Visitor Center was investigated only to find out the cost of renovation would be just as expensive as constructing a new building. To create a more obvious entrance and to help reduce the problems of theft and vandalism at both the visitor facilities and the parking lot through increased surveillance, a new building will be constructed closer to California Avenue in direct line of sight from both the parking lot and the main entrance.

A single-level Entry Pavilion of approximately 1,200 square feet is proposed. The architectural program for the Entry Pavilion consists of a reception area, larger office space for staff and volunteers with computer desks, adjoining and expandable multipurpose rooms, a covered lanai for various community uses such as meetings and classes, demonstration kitchen, and ADA accessible restrooms. Information boards and garden maps will be posted outside the facility so that they will be available to visitors even when the facility is unmanned and locked. A video viewing area inside the Pavilion will provide videos of inaccessible areas of the gulch for those unable to hike down the steep slopes.

The existing Visitor Center structure will be retained and reused as a multi-function facility to be used as needed by staff, volunteers, and visitors. The entry between the parking lot and Entry Pavilion will be enhanced with signage and landscaping.

b. Maintenance Buildings

Minor renovations are needed to improve the existing maintenance buildings located at the eastern end of the Garden. The propagation facilities will be upgraded primarily in the potting shed areas and improvements will be implemented to make the buildings ADA accessible.

2. Theme Garden Development

Existing plant collections will be expanded and new plant collections introduced to create theme gardens. While unique individual specimens will be displayed, future gardens will be developed in terms of forests and groves representing geographical environments. The theme gardens will be organized along the length of the gulch.

The beginnings of four theme gardens already exist in the gulch but substantial landscape improvements and plant materials are needed to create the desired theme garden environments. The five gardens are the Hawaiian Garden, Heliconia and Palm Garden, Okinawan Garden and Flowering Insular Flora, Melanesian Palms, and Bamboo Forest.

In addition to the theme gardens, there are several flat areas above the steep slopes that have been designated as specialty gardens. These specialty gardens play unique roles within the larger landscape of the botanical garden. Some are dedicated to individuals who have contributed to the development of the garden. Others provide educational, botanical, recreational, and beautification opportunities. The special gardens include the Upper Terrace, Kuraoka Terrace, Mary Jane Lee Garden, Tropical Conifers, and Australian Forest.

3. Safety and Access Improvements

Wahiawā Gulch serves as a drainage channel for the surrounding streets and residential areas of upper Wahiawā Town. Storm water runoff is discharged into the gulch from several drain outlets, culverts, and swales and makes its way to the southern end where it eventually discharges into Lake Wilson.

The 1991 Master Plan recommended drainage improvements along the bottom of the gulch to increase its carrying capacity through the garden. Ponds would be developed not only as aesthetic features for various theme areas of the garden but they to also serve as stormwater detention basins. The ponds would be of sufficient depth to hold a limited volume of stormwater runoff. In addition, the ponds would reduce the amount of sediment and debris that currently flow through the gardens during heavy rainstorms.

The Master Plan Update calls for the clearing of the debris that has collected on the gulch bottom and to provide a more stable and safe surface upon which visitors and maintenance vehicles can travel. In addition, certain areas of the gulch have historically experienced severe erosion and ponding from runoff waters. These areas will need protection and reinforcement. A few of the drain outlets that empty into the gulch are in disrepair and require immediate attention to prevent damage to the surrounding garden areas. Energy dissipaters should be placed at key locations throughout the garden to help slow runoff velocity.

4. Circulation

The existing pedestrian system of walks and trails will be expanded and improved. A cleared and stabilized main trail linking all points of the garden will be provided along the bottom of the gulch. Secondary trails will branch from the main trail into the theme and special garden areas. The Master Plan Update recommends that an internal walkway/jog path that follows along the Garden's perimeter be considered. It would allow those of all abilities a view into the Garden and add a recreational amenity to the Wahiawā community. The Master Plan Update also recommends constructing trails that would connect the western end of the botanical garden with neighboring public facilities such as the Wahiawā Recreation Center, Lake Wilson, and Wahiawā Freshwater Park.

5. Parking and Street Access

The existing parking area on Glen Avenue will be expanded, repaved to comply with ADA requirements, and landscaped.

The existing parking area on California Avenue will be repaved and striped to provide handicap parking stalls and ramps. A significant change to the number of existing stalls is not anticipated.

6. Utility Systems

Existing utility service to the garden including water, sewer, and electrical power is adequate. Some improvements, however, are needed to support and connect new utilities to the existing systems.

Existing water and sewer systems provide adequate service. Electrical service may have to be upgraded from the existing single-phase service to 3-phase service. Telecommunication capabilities also should be upgraded to include additional phone service and connection to the Internet. The respective authority will confirm the availability and adequacy of the respective utility systems during the design stage or at the time of building permit application.

7. Signs and Graphics

In addition to labeling plants, signage will be used for orientation, identification, interpretation, and to reinforce the garden's character. Color coded maps will designate different parts of the garden with markers also bearing the same color codes. Graphic symbols will be used to identify the theme gardens, accessible and scenic trails, and facilities throughout the garden.

Entry features such as gateways, landscaping, and signage at the two parking lots will identify the botanical garden and direct visitors towards the main entry.

8. Lighting and Security

Wahiawā Botanical Garden has a history of theft and security problems. The existing Visitor Center and donation box have been vandalized many times and cars parked in the parking lot on California Avenue have been burglarized. Currently security guards are not posted onsite.

Lighting the parking lots and areas around the two entrances and the Entry Pavilion and Visitor Center can improve visibility for surveillance by neighbors and police patrols. Lighting will also allow night time events to be held at the garden thus encouraging the community to maximize the use of the grounds and buildings.

Activity lighting should provide sufficient illumination to enable visitors to safely negotiate garden paths and highlight activity nodes. Security lighting, especially those in the parking lot, should not cause harsh glare upon neighboring properties and residences.

In addition to security lighting, a small security staff should be retained to provide additional safety and protective services. *The City will also construct a fence and gate for parking lot security on California Avenue (Department of Parks and Recreation Comment).*

9. Accessibility

A ranking system of trails is proposed to inform visitors of the level of skill and potential hazards that may be encountered. Garden furniture and ancillary facilities will be accessible per outdoor accessibility guidelines. Many areas of the gulch may not be accessible without jeopardizing visitor safety, the plant collections, and garden aesthetics. To provide for those who are not able to access those areas, staff is also considering providing rides down to the gulch bottom by special appointment via maintenance roads. Other provisions include educational and visual displays such as information boards with photographs, and running videos of garden walkthroughs to be shown at the Education Pavilion/Visitor Center.

Garden trails will be designed to comply with proposed ADA guidelines for Outdoor Developed Areas given the steep terrain and sensitive flora. Accessibility will be maximized in flatter areas of the garden such as the Upper Terrace. Since there are no adopted federal or state guidelines for outdoor developed areas, the proposed guidelines as presented by the Outdoor Developed Areas Regulatory

Negotiation Committee in their September 15, 1999 report will be followed to the extent possible given steep terrain and sensitive flora at Wahiawā Botanical Garden. In reviewing the Master Plan Update, the Disability and Communications Access Board asked that the following informational statement be included in the Master Plan and the Environmental Assessment.

"All buildings, facilities, and sites shall be designed to meet the Americans with Disabilities Act Accessibility Guidelines and the requirements of §103-50 Hawaii Revised Statutes (HRS). Buildings, facilities, and sites shall incorporate the best design practices noted in the recommendations from the U.S. Architectural and Transportation Barriers Compliance Board's Regulatory Negotiation Committee Final Report, "Accessibility Guidelines for Outdoor Developed Areas" published in September 1999, or when applicable, other more current documents providing guidelines for outdoor recreational areas."

C. Plan Implementation

1. Phasing

Project priorities listed below are based on input from the Wahiawā Community Vision Team and the City and County of Honolulu Department of Parks and Recreation. The first two sets of priorities include projects requiring immediate attention such as safety repairs or projects favored by the Vision Team. These projects will be funded by the City's Vision monies and therefore include projects that enhance visitorship to the Garden. Priority III improvements include additional projects that either support higher priority projects or those that may be funded with the HBG's annual budget. Estimated construction costs are presented where known.

Priority I Estimated Total Construction Cost: \$1.03 million

- Maintenance access and safety improvements
- Trail Improvements

Priority II Estimated Total Construction Cost: \$3.69 million

- New Education Pavilion/Visitor Center and California Avenue Parking Lot Improvements (\$2.8 million)
- ADA and garden improvements to Upper Terrace (\$892,000)

Priority III

- California Avenue entry features, fencing, signage, landscaping, bus stop (\$105,000)
- Glen Avenue parking lot improvements (\$143,000)
- Glen Avenue entry features, fencing, signage (\$86,000)
- ADA accessible observation decks (\$15-25,000)
- ADA accessible transport vehicle/van (Varies)
- Renovation of existing Visitor Center structure (Dependent on design)
- Drainage improvements (dependent on scope and design)
- Develop theme gardens, special garden areas, and picnic areas (Varies)
- Additional observation decks, shelters, trails, benches, and other garden amenities (Varies)
- Signage and lighting around Visitor Center/Upper Terrace (\$90,000)
- Develop areas west of the existing pedestrian bridge (Varies)

2. Operations and Maintenance

The Master Plan Update seeks to develop the Garden with theme gardens, special garden areas, additional trails, visitor facilities, and other improvements that eventually will encompass the entire 27 acres. Currently, the Garden is understaffed and has the following annual operating budget:

Staffing	\$198,000
Supplies/Utilities	\$ 55,000
Equipment	<u>\$ 10,000</u>
TOTAL	\$263,000

As the master plan reaches full build-out, additional operational staff will be needed to manage and maintain the Garden and planned activities. Additional staffing needs and cost estimates are as follows:

Program Operations

Education Specialist II
Education Specialist I

Horticultural Operations

3 Gardeners
Arborist
Nursery Worker I
Aroid Horticultural Specialist

Contracted Services

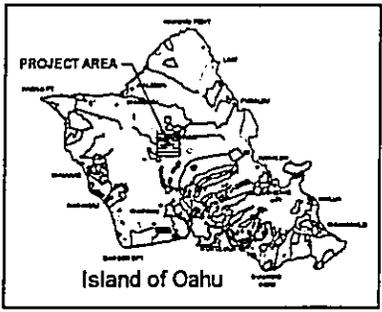
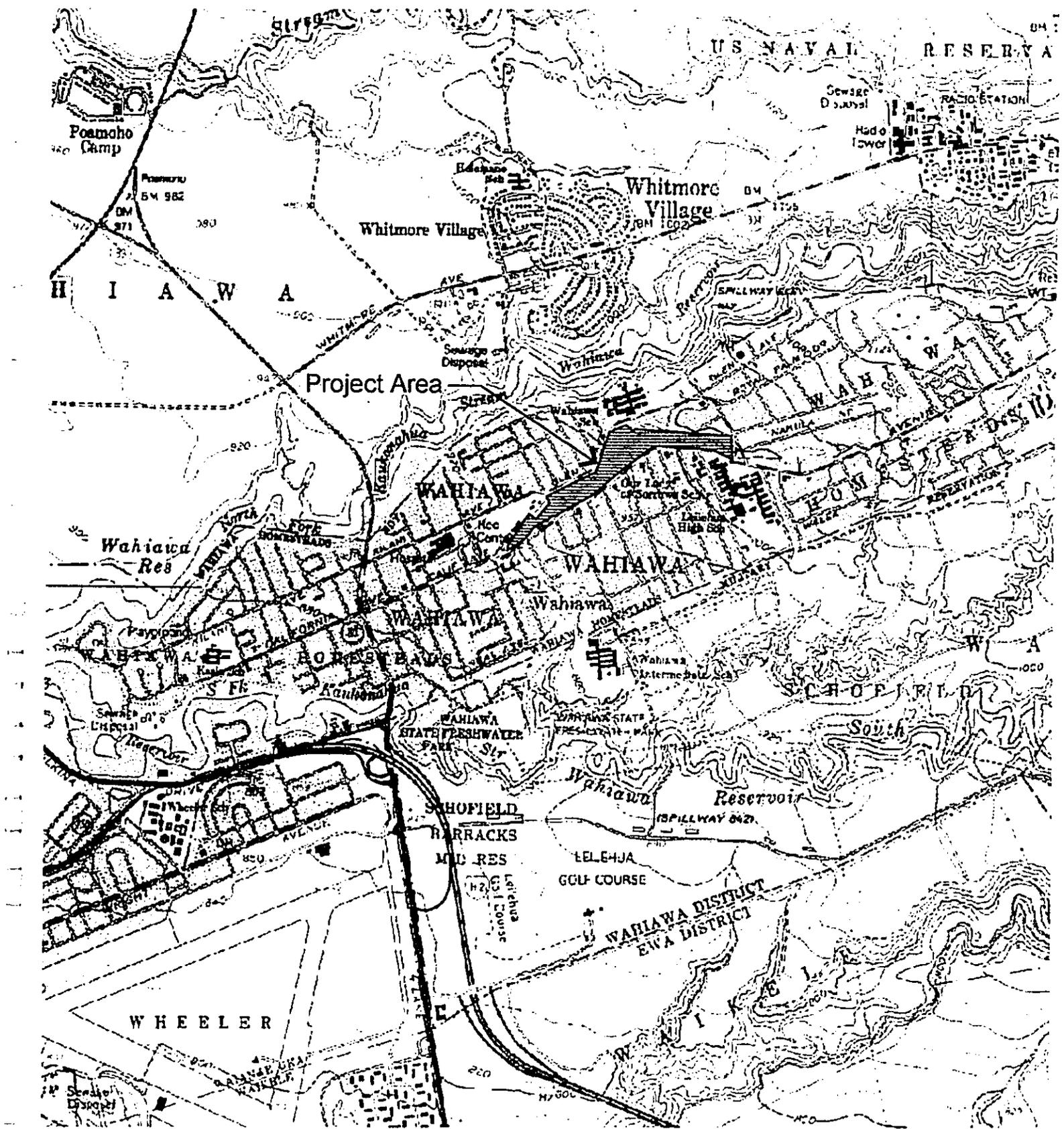
3 Security Staff

3. Annual Operation and Maintenance Cost Estimate

The additional annual operation and maintenance cost estimate includes the salary and wage costs of the projected staffing and additional personnel costs for part-time and temporary help needed for educational interpretative programs at the Garden. In addition, there will also be costs associated with security services that will be contracted. Annual operating costs are estimated as follows:

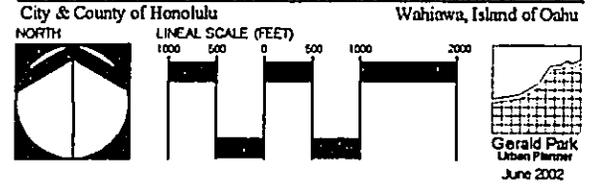
Program Operations Staff	\$ 90,000
Horticultural Operations Staff	305,500
Contractual Services (security)	<u>60,000</u>
TOTAL	\$ 455,500

DOCUMENT CAPTURED AS RECEIVED



Source: USGS, Haleiwa, Hauula, Schofield Barracks & Waipahu Quadrangles

Figure 1
Location Map
Wahiawa Botanical Garden



MAP/DRAWING#

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The town of Wahiawā is situated on the flat central plain of Oahu (the Schofield Plateau) between the Waianae and Koolau Mountains about 24 miles northwest of downtown Honolulu. Encircled by the North and South Forks of Kaukonahua Stream and pineapple fields, Wahiawā was once touted as "The Pineapple Capital of the World". Wahiawā and the neighboring villages of Kunia, Whitmore, Poamoho, and Helemano were built and their populations grew in support of the pineapple industry.

Wahiawā Botanical Garden is one of five botanical gardens comprising the Honolulu Botanical Gardens. The other gardens are Foster, Lili'uokalani, Koko Crater, and Ho'omaluhia. The living collection of the five gardens is being developed into one of the nation's most unique public garden complexes. Collectively, they offer a climatically diverse garden system not found in other botanical gardens in the world.

Wahiawā Botanical Garden dates back to the 1930's when it was one of the Hawaii Sugar Planters Association experimental arboreta. Its location at about the 1,000 foot elevation provides the conditions needed by plants from the cool, humid tropics. Foster Botanical Garden, the oldest of the gardens, has the most historic and mature collection. All of its fourteen acres are planted with introduced vegetation and the site is optimum for the growth of plants requiring a sub-tropical climate. Lili'uokalani Botanical Garden, located mauka of Foster Garden (across the H- I Interstate Freeway), is planned as a native Hawaiian garden. Koko Crater Botanical Garden, located on Oahu's south shore is being developed with dryland plants or those suitable for arid climates. Planting began in this 200 acre garden in 1957-58. It is still being developed. Ho'omaluhia Botanical Garden at the foot of the Koolau Mountain Range in Windward Oahu is a 400-acre high rainfall site. The garden was created as part of a federal flood control project.

A consultant's study concluded, "that the Honolulu Botanical Gardens could become one of the world's leading botanic garden complexes in terms of site diversity, educational potential, training potential, and conservation potential. The City and County of Honolulu is to be complimented for having encouraged the development of these remarkable facilities" (Institute of Museum Services, 1990).

A. Existing Collection and Facilities

Wahiawā Botanical Garden is the second oldest of the five gardens comprising the Honolulu Botanical Gardens. The plant material in the garden includes a large collection of native palms and flowering plants and exotic species introduced to Hawaii. The plant materials range throughout the gulch but can be grouped generally into the theme areas described in the Master Plan.

The total land area of the gulch and garden is 27 acres of which about nine acres have been improved. The garden as it is evolved in the middle section of the gulch principally on its bottom and steep sloping sides. Several, small, flat terraces line the gulch along its sides. Visitors enter the garden from a single entry/exit adjacent to an off-street parking lot along California Avenue. A wide concrete walk leads to a one-story wood structure housing an information booth and restrooms for men and women ("Visitor Center"). The Visitor Center is staffed daily by volunteers who answer questions about the garden, offer docent tours, and distribute pamphlets for self-guided tours. There is no gift shop or food concession on the premises.

From the Visitor Center, pathways lead visitors through plant displays along the terrace garden or down a meandering walk to the gulch floor. The Upper Terrace is planted primarily with trees and

ferns and is well maintained. The Upper Terrace is the most developed and most visited section of the garden.

Several footpaths descend to the gulch floor from the Upper Terrace but these are too steep for the handicapped. Although rugged and unpaved, the floor can be traversed on foot. Flood water flowing through the garden have up-lifted concrete slabs once laid on the gulch floor to stabilize it. As a result, certain areas of the garden are inaccessible by maintenance vehicles and treacherous for foot travel.

The garden is open daily from 9:00 am to 4:00 pm and there is no admission fee. Self-guided tours are the principal means of viewing the garden but groups can request for tours conducted by volunteer docents.

Attendance records (Data Book, 1994) show an increase in visitors from 19,238 in 1990 to a projected 30,000 in 1993. There are no records but it is presumed that most visitors arrive by car, small tour buses or vans, or TheBus.

Back of house activities are confined to a service area built on a flat terrace near the upper part of the gulch fronting California Avenue. *Staff offices and a maintenance building are housed in two detached structures.* The buildings are of recent construction and appear to be in good condition. Off-street parking is provided for ten vehicles. Potted seedlings are propagated on makeshift racks in a corner of the maintenance area. Five full-time employees comprise the garden staff. *A private security guard is on duty during daylight hours.*

The garden is almost entirely enclosed by a 6-foot high chain link fence. Maintenance vehicles access the garden (and the gulch floor) from two locations. These entries are gated and secured at all times. Within areas actively developed as gardens or in the process of being developed, the gulch floor is used as a transportation corridor. In many places the soil has been amended with concrete rubble or crushed blue rock to facilitate vehicle movement during wet periods. This "road" serves as the only access to the two drainage outlets feeding into the head of the gulch off Uuku Street.

Other than the botanical garden and its support facilities, there have been almost no major structural improvements within the gulch. No roads cross the gulch but a steel/concrete pedestrian bridge was put in place in the late 1950s. One end of the bridge is located adjacent to the parking lot on California Avenue. A wooden pedestrian bridge once crossed the bottom of the gulch in the vicinity of the Hawaiian Garden. The bridge has since been removed.

The oldest plantings in the garden date back to the 1930s when the Garden was one of the Hawaii Sugar Planters Association (HSPA) experimental tree arboreta. Many of the larger trees on the site today date from that decade and were planted under the direction of Dr. Harold Lyon. The property was transferred to the City and County of Honolulu in 1950 and opened to the public as a park in 1957.

B. Environmental Conditions

For descriptive purposes, Wahiawā Botanical Garden can be separated into improved and unimproved sections with the pedestrian bridge over the gulch representing the dividing line between sections. The bottom, sides, and flat areas mauka of the bridge have been and continue to be cleared, landscaped, and maintained by staff as the Wahiawā Botanical Garden.

Mosquitoes abound. Large, well-established trees stand on both sides of the gulch with broad intermixing canopies overhead. There is no access "road" for vehicles or marked footpaths and passage is difficult in some areas. Aside from chain link fencing around the perimeter and drainage outlets and culverts, this stretch of the gulch is generally unimproved.

Topography

Ground elevation in the vicinity of the gulch rises from approximately 920 feet msl at Wahiawā Recreation Center to 1000 feet msl at the eastern most end of the gulch. According to engineering surveys, the gulch is over 50 feet deep at its deepest point.

Soils

Soil survey maps (Soil Conservation Service, 1972) record two soil types comprising the project area: Helemano silty clay (HLMG) and Leilehua silty clay (LeB). The entire ravine is mapped as Helemano clay which makes up about 85% of the soil. The remaining 15% is Leilehua clay which is found primarily on the flat lands bordering California Avenue.

Leilehua clay is characterized as moderate to rapidly permeable, of slight erosion hazard, and generally suitable for foundations for low buildings. Helemano clay is also moderate to rapidly permeable but the erosion hazard is severe to very severe and susceptible to sliding.

Drainage

"Aerial photo contour maps indicate that the general drainage pattern is in the southwesterly direction. The Garden drains an interior section of Wahiawā from the District Park site to the Dole Street area (Park Engineering, 1995)". Several existing drainage systems consisting of catch basins, drain intakes, drain manholes, pipe culverts, and roadside swales collect and convey stormwater runoff.

Existing 54-inch and 84-inch pipe culverts are the largest contributors of concentrated flows discharged into the Garden. The outlets of these drain pipes are located at the extreme northeast boundary of the Garden and discharge runoff collected from the California Avenue and Nakula Street area. The tributary drainage area for these culverts is estimated to be approximately 116 acres. Smaller drain outlets and roadside swales along California and Glen Avenues also discharge storm water and overland flow into the Garden. A 7' X 7' box culvert located at the downstream or western end of the gulch conveys stormwater under California Avenue towards Wahiawā Reservoir. The drainage tributary area to this box culvert is estimated to be approximately 306 acres (Park Engineering, 1995). Peak discharge through this culvert is calculated at 1,276 cfs for the 100 year storm (Ibid).

Flood Hazards

The Flood Insurance Rate Map for this section of Oahu places all Wahiawā in Zone D which is defined as "areas in which flood hazards are undetermined" (Federal Emergency Management Agency, 1990).

Archaeology

Archaeological site maps and files at the Historic Sites Division, Department of Land and Natural Resources, depict no recorded archaeological features on the premises. In its review of the Environmental Assessment prepared in 1996, the State Historic Preservation Division commented: "The Master Plan indicates that areas where ground disturbance will be most pronounced are along

undeveloped sections of the garden along the gulch bottom. Areas will be cleared, the bottom widened and modified to accommodate waterways, walkways, ponds, utilities, and exhibit areas. Because it is unlikely that historic sites would be found along the steep slopes and gulch bottoms in this area, we believe that this project will have "no effect" on historic sites (SHPD, 1996)."

The Master Plan Update does not propose the construction of waterways and ponds along the gulch bottom; however, it is believed that the SHPD statement of "no effect" is still in effect for those improvements proposed in the Master Plan Update.

Cultural Resources

Given a history of urban activities on the site and in the immediate area, it is unlikely that cultural practices occurred on the property in the recent past and no on-going cultural activities are likely. This contention is supported by the absence of documented known or recorded surface archaeological features, sacred sites, burials, hunting and gathering resources, and historic trails within Wahiawā Gulch.

Flora and Fauna

Staff botanists of the Honolulu Botanical Gardens conducted a botanical survey on March 7, 1996 of the Garden from the pedestrian bridge to Fred Wright Park. The survey references certain elements of the 1991 Master Plan such as the Visitor Center, which may not be constructed with the Updated Master Plan (2002). Areas mauka of the pedestrian bridge were not surveyed since this area is gradually being cleared and planted. Staff is in the process of accessioning new and existing plantings. The plant checklist of the area surveyed in 1996 is found in Appendix A. Article 13, Revised Ordinances of Honolulu "Protective Regulations for Exceptional Trees" identifies a Mindanao Gum (*Eucalyptus deglupta*) located on the Upper Terrace as an exceptional tree.

Several rare native Hawaiian hibiscus species are represented in the Garden. Staff botanists also indicated that the Hawaiian Garden is planted with mostly native Hawaiian plants, many of which are relatively rare but not listed on the endangered species list. *The species that are listed on the Federal endangered species list include Gardenia brighami, Munroidendron racemosum, Pritchardia munroi, and P. remota*

A survey of fauna has not been completed because there does not appear to be habitats that are considered significant and/or compatible for endangered or threatened species of animals. The Garden is located in an urban area which suggests that development has limited the value of wildlife use of the area.

Land Use Controls

The 27 acre parcel is designated Urban on land use district boundary maps prepared by the State Land Use Commission.

The Oahu General Plan identifies central Oahu (including Wahiawā) as part of the "urban fringe" for the island of Oahu. "The relevant general plan policy is to manage physical growth and development in the urban fringe areas so that: 1) an undesirable spreading of development is prevented; and 2) their proportion of the island-wide resident population remains unchanged. The general plan population distribution guidelines for central Oahu provide for a population range of 12.8 to 14.2 percent of the island-wide total."

The Central Oahu *Sustainable* Communities Plan ("COSCP") Land Use Map designates the site for the Park use and it is zoned P-2 General Preservation on the zoning map for Wahiawā. In the context of general land use policies for parks and open space corridors, the COSCP proposes that the Botanical Garden a) should be retained primarily as a gulch in its natural state and b) it should be linked to Wahiawa Freshwater Park on Lake Wilson by a trail through the gulch which connects the two facilities. With respect to the improvements within the Garden, the COSCP acknowledges that a new master plan has been developed for the garden. General policies for improving the garden should focus on the promotion of eco-tourism, environmental education, and conservation of tropical plants, and include the development of a visitor center, a second parking area, an activity core as the garden center, a new system of walking paths.

The property is neither located in a Special District nor has such a designation been approved for any part of Wahiawā.

C. Public Facilities

Circulation

California Avenue is the only thoroughfare connecting lower and upper (Wahiawā Heights) Wahiawā. The two-lane, two-way road features a variable pavement width (between 35-45 feet) within a 50 foot right-of-way where it passes the Garden. The right-of-way is programmed for widening to 64 feet. Seven feet of Garden property between Circle Drive and Uuku Street is needed for the widening.

Glen Avenue also carries mauka-makai traffic between Eames Street (about 0.5 miles above the Garden) and lower Wahiawā. The two-lane, two-way road has a variable pavement width (average of 40 feet) within a 50 foot right-of-way. The right-of-way is programmed for widening to 56 feet between Valley Avenue and Koa Street. Three feet of Garden property between Kellogg Street and Valley Avenue is needed to accommodate the widening.

The Garden has two parking areas: the main visitor lot on California Avenue and a secondary parking lot on Glen Avenue. The main lot on California Avenue with 26 stalls is able to accommodate daily weekday visitors. The parking lot on Glen Avenue provides additional stalls for visitors. During weekdays, staff from Wahiawā Elementary School across the street informally uses the parking lot.

A city bus stop adjoins the parking lot on California Avenue. Another bus stop is located on California Avenue opposite Iliwai Drive but is quite distant from the entrance to the Garden.

Wastewater

Wastewater is discharged into an 8-inch line in California Avenue and conveyed to the Wahiawā Wastewater Treatment Plant at the lower end of California Avenue. Secondary treated effluent is discharged into Lake Wilson.

Water

A 10-inch water main is located under California Avenue and 8-inch and 16-inch mains are located under Glen Avenue. Water for the Garden is drawn through a 3-inch meter; the maintenance facility [and caretaker cottage] is fed by a 1-1/2 inch meter. Both are serviced from the California Avenue main.

Schools

Schools bordering the Garden include Wahiawā Elementary School (K-6) on Glen Avenue and Leilehua High School (9-12) and Our Lady of Sorrows School, a parochial school, on California Avenue.

Power and Communication

Power and communication services are available on overhead lines from either California or Glen Avenues.

Parks and Recreation

Wahiawā Recreation Center, a City and County of Honolulu facility, is the major community recreation facility in Wahiawā. Located at the western end of the gulch, its facilities include a 25-meter swimming pool, gymnasium, multi-purpose building, lighted tennis courts, outdoor basketball courts, playground equipment, lighted regulation softball and baseball fields, and off-street parking.

D. Public Services

Protective Services

The Wahiawā Police Station is located on North Cane Street about three blocks south of the Wahiawā Recreation Center. Police officers regularly patrol Wahiawā town.

Fire protection originates from the Wahiawā Fire Station located on California Avenue about 1 mile south of the Garden. Response time is estimated at less than two minutes.

Refuse

Municipal collection crews collect solid waste twice weekly. Green waste is collected by garden staff and used for mulch.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS

A. Assessment Process

The scope of the project was discussed with staff of the Department of Design and Construction, Department of Parks and Recreation, Wahiawa Vision2000 Team, staff of the Honolulu Botanical Gardens, and the consultant team. State and County agencies were contacted for information relative to their areas of expertise. Time was spent in the field noting site conditions and conditions in the vicinity of the botanical garden. The sum total of consultations and field investigations helped to identify existing conditions and features that could affect or be affected by the project. These conditions are:

- No rare, threatened, or endangered flora or fauna were observed growing in the wild; however, rare native Hawaiian hibiscus are found on the Upper Terrace and rare Hawaiian plants and palms grow in the Hawaiian Garden;
- There are no known archaeological or cultural resources on the premises;
- The existing plant collection comprises the principal resource of the area;
- The environment has been altered by man beginning with an experimental arboreta in the 1930s, a park in the 1950s, and a botanical garden in the 1960s; and
- The gulch functions as a drainageway for surrounding residential areas and streets, however, it is not a designated flood hazard zone.

B. Short-term Impacts

Sitework will probably be the most disruptive construction activity on the environment. This first activity entails grubbing and clearing, grading to include cut and fill, excavation, backfilling, installing infrastructure, stockpiling, and hauling. All are prerequisites for building the temporary and permanent improvements to follow.

Sitework is a persistent source of fugitive dust. Site contractors are aware that dust is a nuisance to both workers and people living near work sites and it is imperative to maintain stringent dust controls. Dust control measures to be employed by the Contractor may include frequent water sprinkling of the work area, limiting the amount of ground area that is exposed at any given time, erecting dust screens, and immediately landscaping or mulching exposed cuts and fills. Most construction will be confined to within the gulch where the soils are relatively moist and this should aid in controlling dust.

The Contractor will be responsible for general housekeeping of the project area and for keeping adjacent streets and properties free of mud, sediment, and construction litter and debris.

Construction noise, like fugitive dust, cannot be avoided. The total time that construction noise will be generated at a given location and the total time noise sensitive properties would be exposed to noise is not known. Noise sensitive properties are identified as residential uses directly adjoining the Garden along upper Glen Avenue, Clark Place, and several dead end streets. Residential uses along lower Glen and California Avenues and nearby schools for our purposes are considered "less" sensitive to noise because they already are exposed to sounds of passing traffic. Although construction noise probably will be audible in all areas, exposure to noise and the duration of exposure is expected to be minimal. Most construction (except for the Entry Pavilion and parking lot

improvements) will be done within the gulch below street level. The distance between noise sensitive properties and the job site, type and duration of construction activity, existing vegetation, and background noise (primarily traffic noise) will help to attenuate construction noise.

The allowable noise level for the preservation zoning district is 55 dBL between the hours of 7:00 am and 10:00 pm. Construction activities will produce noise in excess of the allowable daytime noise level and a noise permit will be needed. The Contractor will be responsible for obtaining the permit and complying with conditions attached to the permit. Work will be scheduled for normal working hours (7:00 am to 3:30 pm) Mondays through Fridays thus limiting noise producing activities to certain periods of the day.

Sitework will expose soil thus increasing the opportunities for runoff and erosion particularly on the gulch slopes. Construction of the Entry Pavilion will minimally alter the land at the building site. The quantity of material to be excavated is not known at this time. The erosion hazard of Helemano soils is severe and a soils study will be prepared to address considerations of soil suitability prior to construction. It is anticipated that potential soil hazards can be mitigated to an acceptable level. Grading will be done in accordance with erosion control ordinances of the City and County of Honolulu and approved grading plans. Best Management Practices (BMPS) for erosion and drainage control during construction will be prepared for approval by the Department of Planning and Permitting.

For the most part, construction work is not a new activity within the developed portion of the Garden. Slopes, the gulch bottom, and exhibit areas continue to be improved with small equipment and labor intensive efforts. Physical changes will be most pronounced along the bottom of the undeveloped section that has not been improved at all. This area will be cleared of unwanted vegetation, plant debris, and litter to make way for the proposed improvements. Construction activity along the bottom should not be visible to the public from street level and vegetation along the slopes will probably be cleared by hand thus minimizing opportunities for erosion.

Should subsurface archaeological or cultural features or burials be unearthed, work in the immediate area shall cease and historic authorities notified immediately for proper disposition of the finds. The Historic Sites Division, DLNR commented, "because it is unlikely that historic sites would be found along the steep slopes and gulch bottoms in this area, we believe this project will have no effect on historic sites".

Adverse effects on flora are not anticipated. Unwanted plant stock to include trees, shrubs, invasive grasses, and weeds will be removed. Trees to be protected and preserved will be tagged by garden staff. Hardy plant stock may be used in landscaping other city projects. Flora growing adjacent to the existing Visitor Information booth will be relocated to other parts of the Garden prior to construction and select, new plantings will be used to complement the design, scale, and form of the completed Entry Pavilion.

Utility lines or improvements passing through exhibit areas will be routed as much as possible to avoid damaging plants on display. Affected plants will be tagged for identification and protection during construction. If utility lines or improvements cannot be routed without affecting plants, the plants will be relocated elsewhere on-site.

The City and County of Honolulu Department of Parks and Recreation and Honolulu Botanical Garden staff, including arborists, horticulturists, and other botanical experts, will be involved in the design development process and provide advice to ensure significant trees are preserved, protected, or relocated as appropriate. The Department of Parks and Recreation staff, specifically the

Honolulu Botanical Garden staff and the Arborist Advisory Committee, as well as botanical experts such as certified arborists shall be consulted to ensure that existing trees and their roots are protected whenever possible (The Outdoor Circle Comment).

No improvements are proposed near the exceptional Eucalyptus. The tree has been identified on the Wahiawā Botanical Garden Master Plan (Department of Planning and Permitting and The Outdoor Circle Comments).

Construction notices will be posted to warn visitors of construction activities. In some instances, the Garden may be closed altogether to ensure the safety of the public. If the Garden remains open during construction, visitor attendance is expected to decline. Visitors would be exposed to noise and dust, the movement of construction personnel and vehicles, and construction activities in general. The net impact is that one's visit and experience may not be as pleasant and enjoyable as anticipated.

Construction vehicles hauling men and material will contribute to traffic on adjoining streets. Material deliveries will be scheduled for non-peak traffic hours and before or after schools are dismissed to minimize impacts on after school traffic.

C. Long-term Impacts

As the most sizable addition to Wahiawā Botanical Garden, the Entry Pavilion will alter existing views of and into the Garden from California Avenue. Some of the trees at this location will be removed and replaced by the single-level structure. The building will be visible from California Avenue and from adjoining locations within the Garden, the pedestrian footbridge over the gulch, and the parking lot on California Avenue. Existing trees and tropical foliage combined with supplemental landscaping will help to enhance the public view.

With the exception of the Entry Pavilion, most of the planned improvements may not be visible from areas adjoining the Garden. The theme gardens are all located at the bottom of the gulch about 50 feet below street grade. Minimal changes in the density of trees on the slopes and flat lands are expected thus views into the gulch should remain generally unchanged from present conditions. However, selective pruning of trees and shrubs should be encouraged so that the community can enjoy views into the Garden.

The Entry Pavilion will provide office space for garden staff and volunteers and an exhibit area for educational purposes. Small group activities such as social, educational, business, and community meetings also can be accommodated on the premises. Except for the Wahiawā Recreation Center, there are not many municipal meeting facilities in Wahiawā. The Garden itself can be used for group picnics or recreational outings.

It is anticipated that the sum total of improvements will contribute to public knowledge about the scientific, botanical, and historical aspects of the collection and the Garden as a whole. The theme gardens, informational displays, lectures, and functional classes can be used to promote awareness of plant conservation, protection of local endangered flora, or any number of programs that foster a greater understanding of plants and the environment in general and the tropical rainforest in particular.

The proposed improvements such as new building structures and the expanded Glen Avenue parking lot will marginally increase storm runoff by creating a net increase in impermeable surfaces. Whether generated by garden facilities or from adjoining areas, storm runoff will continue to be discharged into Wahiawā Gulch. The drainage improvements recommended in the 1991 Master Plan cannot prevent flooding but attempts to control runoff by confining it to a man-made waterway coursing through the

gulch. This is an acceptable level of mitigation considering the existing drainage pattern where there is no runoff control. The addition of energy dissipaters at strategic locations will aid in slowing runoff velocity.

It was desirable to obtain baseline data about runoff water quality. However, during the time the EA was being prepared there were no significant rainfall events. When it did rain, water from several drain outlets had ceased to flow by the time a crew reached the field to collect water samples. What follows then is a generalized prediction of water quality characteristics in the runoff water based on studies of urban storm water quality at various urban locations on Oahu. The locations, parameters, and values are shown in Table 1.

Total solids, pH, conductance, chloride and at least some trace metals are not potential problem contaminants, being present in runoff in concentrations not much different from stream water. Total suspended solids (TSS) can be high in any runoff where the watershed is undergoing disturbance (grading and grubbing for example). High values will essentially contribute sediment to the Garden.

The established neighborhoods in this Wahiawā watershed would not contribute large amounts of suspended material during most storm events. Local runoff will also contribute suspended material if areas of bare soil are not mulched or covered by ground covering vegetation.

Trace metal concentrations in urban runoff are somewhat difficult to predict yet could have adverse impacts on aquatic biota in the proposed ponds. Only lead and mercury were assessed by Yamane and Lum and small amounts of both were found in their study of runoff from Mililani. Different metals, particularly copper, nickel, and zinc were found in the other storm drain studies (Table 1).

No sources of concern for trace metals are associated with the watershed in this part of Wahiawā, although lead from automobiles and paints frequently does show up in streams draining watersheds dominated by residential use. Zinc from automobile tires and arsenic from certain herbicides are other domestic sources encountered in runoff.

The subject of toxic organic substances in runoff is extremely complex and not easily generalized because of the wide range of substances potentially involved. Pesticides used in the neighborhood, particularly tennicides applied to soils, and toxic components of automobile fuels (mostly polynuclear aromatics) are chemical substances of greatest concern. These substances tend to bind to small particles in runoff and can be deposited along the bottom of the gulch as sediment.

The Office of Environmental Quality Control posed a comment concerning mosquito control given public health concerns over dengue fever and West Nile virus. All the areas of Wahiawa Botanical Garden are checked for standing water on a monthly basis. If only a small amount of standing water is found, it is either removed through use of a blower (to spread the water in a thin film that evaporates easily) or by digging a trench to drain it. If there is a large amount of water that cannot be removed, Bacillus thuringensis "dunks", charcoal-like briquettes containing bacteria that destroys mosquito larvae, are placed in the water. The "dunks" are not hazardous to plant life and humans.

During the rainy season, and during periods of high alert to mosquito borne disease such as dengue and West Nile virus, checks for standing water are done on a weekly basis.

The 1991 Master Plan estimated that Wahiawā Botanical Garden could attract upwards of 60,000 visitors annually which averages to 155-170 persons per day (60,000/363 open days) in the long-term. This is about a threefold increase over recent counts between 1991 and 1993 when the number of

Table 1. A summary of water quality characteristics from storm drain studies on O'ahu.

	Iwilei†	Manoa‡			Mililani*	
		A	B	C	A	B
Discharge (ft ³ /sec)					30	12
pH	6.5 - 6.7				7.2	7.0
Total solids (mg/l)	220 - 263				251	96
TSS (mg/l)	6 - 16	110	452	168	204	96
Turbidity (ntu)					35	20
DO (mg/l)	5.7 - 7.6				79	52
Conductance (µmhos/cm)						
Chloride (mg/l)	23 - 35					
Total hardness (mg/l CaCO ₃)	64 - 73					
COD (mg/l)	16.5 - 82.4	120	84	43	60	34
BOD (mg/l)	3.6 - 14.1	> 16	> 16	6.4		
Grease (mg/l)	0.3 - 2.1					
NUTRIENTS: (mg/l)						
ammonia		0.20	0.18	0.16		
NO ₃ + NO ₂	1.00 - 1.31	2.71	2.14	0.03	0.21	0.10
TKN	0.08 - 6.97	4.01	3.28	1.92	1.2	1.4
Total N		6.72	5.42	1.95		
orthophosphate	0.50 - 1.88					
Total P	1.56 - 2.76	0.12	0.12	0.16	0.34	0.17
METALS: (µg/l)						
arsenic		ND	ND	ND		
cadmium		ND	ND	ND		
chromium	8 - 17	ND	ND	ND		
copper	12 - 28	74	15	40		
iron	26 - 88					
lead	129 - 4560	110	ND	630	20	10
mercury		3	ND	2	0.2	0.1
nickel		79	51	68		
zinc	315 - 1070	371	20	203		
BACTERIA (mpn)						
Total coliform	9700 - 14800					
Fecal coliform	287 - 835				26000	26000
Enterococcus	5100 - 1800					

† Fujiwara (1973). Range of flow weighted averages or flow proportioned composite values from three separate storm samplings in Iwilei District of Honolulu (industrial).

‡ DOH (1980). results of single samples representing runoff from A = HI-freeway, B = University commercial area, and C = Manoa mixed residential/commercial area.

* Yamane & Lum (1985). Median values from two watersheds (A & B) in Mililani Town over four year period. Number of samples varied from 9 to 208.

visitors was estimated at 21,600 annually or between 58-64 people per day (21,600/363 open days). Daily counts fluctuate and there may be more or less people visiting the Garden than the average on any given day (or for special events). Volunteers at the Garden informed us that the current number of visitor's cars varies daily but averages about 25-40 cars per weekday. All park in the California Avenue parking lot.

At this time, there are no plans to allow tour operators to schedule the Garden as a commercial tour stop. There are no provisions for bus or commercial vehicle parking.

If projected visitor expectations are achieved, surrounding businesses in Wahiawā may benefit economically. The addition of up to 40,000 visitors annually --- visitors who probably would not visit the town if not for the botanical garden --- could contribute to the community's economy. This is not to suggest that Wahiawā would evolve into a tourist community. Rather, it suggests that the Garden may be the stimulus for bringing people to Wahiawā and it is up to the local businesses to realize the opportunities this presents.

The anticipated increase in the number of visitors will increase vehicle traffic to/from the Garden. The array of proposed activities to include office use, reference center, meeting facility, gift shop, and the botanical garden are all traffic generators. A review of trip rates for the various uses suggests a common rate or range of rates is difficult to determine either because there are no rates for the activity or the use on which a rate is based may not apply to what is being proposed except in general terms. For example, there is no trip rate for a botanical garden and the rate for a government office in a suburban location is about 81 trips per day per thousand square feet of office area. In lieu of welldefined trip generation rates, trip rates to and from the Garden were estimated as follows:

Activity	Vehicle Trips Per Day	Estimated
Government Office	81/000 sf/gfa	60 trips per day (75%)
Botanical Garden	Surrogate	140-175 trips per day
Meeting Facility	No Rate	0
Classrooms	No Rate	0
Reference Room	No Rate	0

A surrogate estimate for the botanical garden was calculated using a turnover rate of 2.0 to 2.5 times per day for a parking space during visiting hours (9:00 am to 4:00 pm). This suggests that visitors would spend about two hours touring the Garden. Multiplying this rate by the planned 70 parking stalls (76 less 6 stalls for staff parking) yielded an estimate of between 140-175 vehicles per day. About half these vehicles would be on-site during the late morning to early afternoon, the peak visiting time.

The botanical garden office is assumed to be about 1,200 square feet and would generate traffic on the order of 75% of the rate for a thousand square feet of office space. Trip rates for the meeting facility, classrooms, and reference room are undetermined. It is presumed these facilities would not be in use everyday and arrangements can be made to minimize traffic conflicts during large events.

In total, an estimated 200 to 235 vehicle trips per day can be expected when the improvements are completed. Because this figure applies to vehicle trips to/from the Garden, the actual number of vehicles is half or between 100 to 120 vehicles per day. This is an estimated net increase of between 75-80 vehicles per day over current conditions (25 to 40 vehicles per weekday). This increase is expected to take place during non-peak traffic hours.

Having two parking lots is expected to disperse traffic onto the two major roads adjoining the Garden thus lessening its impact on the neighboring residential areas. Roadway and sight distance conditions at the California Avenue parking lot are considered acceptable and no significant design changes appear to be required. The Glen Avenue parking lot will be redesigned and expanded. The location of driveways should consider sight distance in both directions with concern for a curve in the road from the direction of Wahiaiwā Elementary School. For safety purposes, some kind of traffic control measures should be exercised at the driveways after school is dismissed to minimize traffic hazards for school age children.

On occasions when the parking lots are at capacity, on-street parking is available on both sides of Glen Avenue fronting Wahiaiwā Elementary School. Alternatively arrangements could be made to use the school parking lot for overflow parking during non-school hours.

The level of development and projected increase in the number of visitors will increase the demand for water, wastewater, power, and other utility services. Estimates of average daily consumption have not been calculated but the existing systems generally are adequate to accommodate daily demand. System upgrades can be anticipated and should be budgeted for in the future as the respective utility systems are aged and sections may be in need of replacement. Replacement can be performed either as stand alone capital improvement projects or coordinated with improvements planned for the garden.

Noise is not expected to have significant environmental consequences in the long-term. For the most part, botanical gardens are quiet places to be enjoyed at a leisurely pace. Noise from maintenance equipment, vehicle traffic, and occasional evening functions can be expected.

The Master Plan is consistent with and supportive of land use policies articulated for parks and open space in the Central Oahu *Sustainable* Communities Plan. The sum total of the Master Plan Update improvements is consistent with City goals to focus on eco-tourism, environmental education, and conservation of tropical plants and on-going efforts at the Garden to achieve these goals.

The intent of the 1991 Master Plan and Master Plan Update is to improve environmental quality and enhance the scientific, educational, and recreational value of the flora. Some species may be moved to other locations within the Garden to conform to Garden objectives and growing conditions and new species planted to bolster available stock for the theme gardens. It is assumed that Honolulu Botanical Garden staff botanists (and others) will select exotic plant materials that can be grown, maintained, and controlled by garden staff and will not adversely affect Hawaiian flora.

Light and glare from light fixtures in the parking lots along California and Glen Avenues and the Entry Pavilion can be expected. Lighting is needed for security reasons and shielding and directing light away from adjacent streets and residences can help to minimize glare.

A chain link fence surrounds the Garden. As its collection of rare plants grow in numbers, it may be necessary to implement security measures to guard against theft and vandalism. Lighting will help but consideration should also be given to having the Honolulu Police Department increase routine patrolling of the area or hiring a security firm during night time hours.

A. No Action

A no action alternative would maintain the status quo of the Wahiawā Botanical Garden and preclude the occurrence of all impacts, short and long-term, beneficial and adverse described in this document.

B. Alternative Design

The Departments of Design and Construction and Parks and Recreation and the Wahiawā Vision2000 Team reviewed several master plan concepts. The Master Plan Update Plan is the preferred alternative for the long-range development of the Garden to achieve the scientific, horticultural, educational, and recreational objectives of the Honolulu Botanical Gardens in general and the Wahiawā Botanical Garden in particular.

Some of the improvements described in the Master Plan Update have been or are in the process of being designed (the Entry Pavilion for example). It is anticipated that the design of these facilities (to be done by others) will capture the spirit and underlying planning concepts articulated in the 1991 Master Plan and Master Plan Update.

C. Alternate Uses

Alternate uses for Wahiawā Gulch were not investigated in the 1991 Master Plan and the Master Plan Update. Development of the gulch as a botanical garden represents the best use of the property at this time.

AGENCIES AND ORGANIZATIONS CONSULTED IN THE ASSESSMENT PROCESS

*The Draft Environmental Assessment for the Wahiawa Botanical Garden Master Plan Update was published in the Office of Environmental Quality Control Environmental Notice of August 23, 2003 and September 8, 2003. Publication initiated a 30-day public review period ending on September 22, 2003. Copies of the Draft Environmental Assessment were mailed to the agencies and organizations identified below. An asterisk * identifies agencies and organizations that submitted letters or written comments during the review period. All comment letters and responses are found in Appendix B.*

Federal

- *U.S. Corps of Engineers
- * U.S. Fish and Wildlife Service
Pacific Ecoregion

State

- Department of Education
- Department of Health
- Department of Land and Natural Resources
 - *Historic Sites Division
 - *Disability and Communications Access Board
 - *Office of Environmental Quality Control
 - *Office of Hawaiian Affairs

County

- *Board of Water Supply
- *Department of Facility Maintenance
- *Department of Parks and Recreation
Honolulu Botanical Gardens
- *Department of Planning and Permitting
- *Department of Transportation Services
- *Police Department
- *Fire Department

Others

- *Hawaiian Electric Company
- *Verizon Hawaii
- Wahiawā Community & Business Association, Inc.
- Wahiawā Neighborhood Board No. 26
- Wahiawā Vision2000 Team
- Friends of Honolulu Botanical Gardens
- The Honorable Donovan Dela Cruz, Honolulu City Council
- Wahiawā Library (Placement)

The List of Permits and Approvals is suggestive rather than comprehensive. Design plans for the various Garden improvements have not been prepared and implementation of the plans may require construction permits other than those listed below.

<u>Permit/Approval</u>	<u>Approving Authority</u>
<u>City and County of Honolulu</u>	
Grubbing, Grading, and Stockpiling Permit	Department of Planning and Permitting
Building Permit for Building, Electrical, Plumbing Sidewalk/Driveway and Demolition Work	Department of Planning and Permitting
Connection to Storm Sewer	Department of Planning and Permitting
Street Usage Permit	Department of Planning and Permitting
Sewer Connection Permit	Department of Planning and Permitting
<u>State of Hawaii</u>	
Variance from Pollution Controls	Department of Health
Accessibility [Approval] <i>Review</i>	Disability and Communication Access Board

Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment (§11-200-12). The relationship of the master plan to these criteria is discussed below.

- 1) **Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;**

There are no cultural resources on the premises to be lost as a result of this project. The State Historic Preservation Division commented in 1996 that "[B]ecause it is unlikely that historic sites would be found along the steep slopes and gulch bottoms in this area, we believe that this project will have "no effect" on historic sites." Should subsurface archaeological or cultural deposits be unearthed during construction, work in the immediate shall cease and historic preservation authorities notified for proper disposition of the finds.

The plant collection is considered a natural resource although most of the species have been introduced since the 1950s.

- 2) **Curtails the range of beneficial uses of the environment;**

Wahiawā Gulch has been designated a botanical garden since the 1950s and implementation of the Master Plan Update will guide government and community actions to achieve this intended use.

- 3) **Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;**

The master plan does not conflict with long-term environmental policies, goals, and guidelines of the State of Hawaii.

- 4) **Substantially affects the economic or social welfare of the community or State;**

The master plan will not adversely affect the economic or social welfare of the community or State. In the long-term, it is believed that the anticipated increase in visitors to the Garden could benefit merchants in Wahiawā.

- 5) **Substantially affects public health;**

Public health will not be adversely affected.

- 6) **Involves substantial secondary impacts, such as population changes or effects on public facilities,**

Substantial secondary impacts are not anticipated. Public facilities are adequate to serve the proposed improvements. The availability of sewer capacity at the Wahiawā Wastewater Treatment Plant will need to be confirmed and sewer connection permits applied for.

7) Involves a substantial degradation of environmental quality;

The proposed improvements are expected to improve environmental quality. The planting of trees and the flow of runoff have altered the environment of the gulch and the botanical garden. Improvements will alter the unruly appearance of the undeveloped section of the gulch that already has been degraded by wanton dumping of litter, accretion of natural debris, and unwanted vegetation.

8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The Master Plan Update will guide the timing of improvements to the Garden into the near future. It is, however, part of an on-going vision team program and capital improvement program to upgrade, expand, repair, renovate, or replace facilities owned by the City and County of Honolulu for the benefit of its residents and visitors.

9) Substantially affects a rare, threatened or endangered species, or its habitat;

Rare, threatened or endangered flora or fauna will not be affected by the proposed improvements.

10) Detrimentially affects air or water quality or ambient noise levels; or

Ambient air quality will be affected by fugitive dust and combustion emissions but can be controlled by measures stipulated in this Assessment. Construction noise will be pronounced during site preparation work but should diminish once the building is erected. All construction activities will comply with air quality and noise pollution regulations of the State Department of Health. Best Management Plans will be prepared to minimize soil loss and construction runoff.

11) Affects an environmentally sensitive area such as a flood plain, tsunami zone, erosion prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

Improvements to Wahiawā Botanical Garden are not proposed in identified flood hazard or erosion prone areas. There are no streams, estuaries, or lakes within the confines of the gulch. Kaukonahua Stream and Lake Wilson surround Wahiawā and Wahiawā Gulch discharges runoff into Lake Wilson.

12) Substantially affects scenic vistas and viewplanes identified in county or state plans or studies; or,

Implementation of the Master Plan Update will create additional scenic vistas and viewplanes of and into the Garden and expand viewing opportunities.

13) Requires substantial energy consumption.

Energy requirements will be determined during the design phase of individual projects. In the long-run, construction of the Entry Pavilion and security lighting will cumulatively require a commitment of electrical power greater than that currently used.

REFERENCES

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SUMMARY OF PLANT INVENTORY: GULCH, WAHIAWA BOTANICAL GARDEN

7 March 1996 - J. Sand & W. Singeo

GULCH: PEDESTRIAN BRIDGE - FRED WRIGHT PARK

The area covered in this botanical survey included the V-shaped gulch area from the new pedestrian bridge to Fred Wright Park. Elevation ranges from approximately 920 ft. at the bottom of the gulch to about 960 - 980 ft. at street level.

The general list of plants observed within the area surveyed is attached.

The bottom of the gulch is strewn with a sometimes thick layer of debris. Interspersed are small plants and seedlings which have been carried downstream during heavy rains and have taken hold at the gulch bottom (Ficus, Casuarina, Chrysophyllum, Cinnamomum, Coffea seedlings, small palms, weedy species such as Ruellia and Justicia, etc.)

Along both sides of the gulch are primarily the larger, well established trees. Predominant trees are: Eucalyptus sp. (20+ individuals); Albizia sp. (17+ ind.); Ficus benghalensis (15+ ind.); F. sp. (15+ ind.); Pittosporum pentandrum (12+ ind.); Eucalyptus robusta (10+ ind.); Melaleuca quinquenervia (10+ ind.); Grevillea robusta (9+ ind.); Ravenala madagascariensis (9+ ind.); F. microphylla (8+ ind.). The other species listed are present in smaller numbers.

Vines of Monstera, Pothos and Operculina climbing over the large trees are ubiquitous.

As seen from the plant list, there are no native Hawaiian plant species, and no endangered plant species growing in the area surveyed.

SLOPE: AREA BORDERING KILANI ST., BETWEEN THE OLD PEDESTRIAN BRIDGE AND THE AROID AREA

The area proposed as the site of the visitor center appears to be somewhere between the old, wooden pedestrian bridge, (now unsafe to use and cordoned off), and the aroid area.

This area is a part of what is called the "Hawaiian Garden" at Wahiawa Botanical Garden (WBG). The area is approximately represented in the Wahiawa Garden/Hawaiian Garden map, grids I-1,2,3 to L-1,2,3).

A list of plants in the Hawaiian Garden is attached. It should be noted that not all of them are growing within the grid areas mentioned above.

To summarize, the proposed construction site of the visitor center will be in an area planted with a few relatively common non-native plants (i.e., Cedrela odorata, Eucalyptus sp., Ficus sp., etc.).

However, the site is planted mostly with native Hawaiian plants. Many of the Hawaiian species are relatively rare, though not on the endangered species list. Of greatest concern is the direct impact on those endangered species growing within the grid site: Gardenia brighamii, Munroidendron racemosum, Pritchardia munroi and P. remota.

There are also numerous plants growing in the area which are identified only to the genus level; i.e., Pritchardia sp. Identification to the species level, which requires special sampling techniques and examination by plant specialists outside of Hawaii, could result in the determination of additional plants which are on the endangered species list.

PLANT INVENTORY: GULGH, WAHIAWA BOTANICAL GARDEN

(Area below new pedestrian bridge to Fred Wright Park)

7 March 1996 -- J. Sand & W. Singeo

1	<i>Acacia sp.</i>	(possibly Formosan Koa, <i>A. confusa</i>)
2	<i>Agathis sp.</i>	
3	<i>Albizia sp.</i>	
4	<i>Aleurites moluccana</i>	Kukui Nut
5	<i>Amaryllis sp.</i>	Day Lily
6	<i>Caryota sp.</i>	Fishtail Palm
7	<i>Casuarina equisetifolia</i>	Ironwood
8	<i>Cecropia sp.</i>	
9	<i>Chrysophyllum oliviforme</i>	Satin Leaf
10	<i>Cinnamomum sp.</i>	(possibly Chinese Cinnamon, <i>C. aromaticum</i>)
11	<i>Clusia rosea</i>	Autograph Tree
12	<i>Coffea arabica</i>	Coffee
13	<i>Cordyline fruticosa</i>	Ti
14	<i>Dieffenbachia sp.</i>	Dumb Cane
15	<i>Dracaena sp.</i>	
16	<i>Erythrina sp.</i>	Coral Tree
17	<i>Eucalyptus robusta</i>	Swamp Mahogany
18	<i>Eucalyptus spp.</i>	
19	<i>Ficus benghalensis</i>	Indian Banyan
20	<i>Ficus microcarpa</i>	Chinese Banyan
21	<i>Ficus spp.</i>	Banyan Trees
22	<i>Grevillea robusta</i>	Silky Oak
23	<i>Heliconia sp.</i>	
24	Indet weeds	(1 vine; 1 herbaceous weed, probably Euphorbe)
25	Indet. Araceae	(probably <i>Alocasia sp.</i>)
26	Indet. Legume	
27	Indet. Palms	(probably <i>Areca sp.</i> & <i>Chamaedorea sp.</i>)
28	<i>Justicia betonica</i>	White Shrimp plant
29	<i>Melaleuca quinquenervia</i>	Paperbark
30	<i>Monstera deliciosa</i>	Monstera
31	<i>Musa sp.</i>	Banana
32	<i>Operculina turpethum</i>	Wood Rose
33	<i>Philodendron undulatum</i>	Philodendron
34	<i>Pittosporum pentandrum</i>	
35	<i>Pothos sp.</i>	Pothos
36	<i>Ravenala madagascariensis</i>	Traveller's Tree
37	<i>Ruellia graecizans</i>	
38	<i>Schirius terebinthifolius</i>	Christmas Berry
39	<i>Spathodea campanulata</i>	African Tulip
40	<i>Syzygium sp.</i>	
41	<i>Trema orientalis</i>	

A. LETTERS FOR WHICH A RESPONSE IS NOT REQUIRED

Verizon Hawaii, Inc.
State Historic Preservation Division
Department of the Army, Corps of Engineers
Board of Water Supply
Department of Facility Maintenance
Honolulu Police Department
Hawaiian Electric Co. Ltd.
Michael Molina, US Fish and Wildlife Service (Via E-mail)

B. LETTERS REQUIRING A RESPONSE

Office of Hawaiian Affairs
Honolulu Fire Department
Department of Parks and Recreation
Department of Planning and Permitting
Department of Transportation Services
Office of Environmental Quality Control
The Outdoor Circle
Disability and Communication Access Board



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96855-5440

REPLY TO
ATTENTION OF:

September 5, 2003

Civil Works Technical Branch

Mr. Gerald Park
Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Wahiawa Botanical Garden Project, Oahu (TMK 7-4-17: 1). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

- a. Based on the information provided, a DA permit is not required for the project.
- b. The flood hazard information provided on page 12 of the DEA is correct.

For further information, please contact Ms. Jessie Dobinckich of my staff at (808) 438-8876 and refer to file number 200300266.

Sincerely,

James Pennaz
James Pennaz, P.E.
Chief, Civil Works
Technical Branch

received
7-6-03

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



September 4, 2003

Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Your Letter of August 14, 2003 on the Environmental Assessment for the Wahiawa Botanical Garden Master Plan Update. TMK: 7-4-17: 1

Thank you for the opportunity to comment on the subject document.

The existing water system is presently adequate to accommodate the proposed improvements.

The availability of water will be confirmed when the building permit is approved. When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The proposed project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit.

If you have any questions, please contact Joseph Kaakua at 748-5440.

Very truly yours,

K. Suida
for CLIFFORD S. JAMILE
Manager and Chief Engineer

JEREMY HARRIS, Mayor
EDDIE FLORES, JR., Chairman
CHARLES A. STEWART, Vice-Chairman
JAN MULLY, ABE
HERBERT B.K. KAPUALA, SR.
DAROLYN H. LENOVO

RODNEY K. HARRADA, E-ORCA
LARRY J. LEOPARD, E-ORCA

CLIFFORD S. JAMILE
Manager and Chief Engineer

DOHWAY K. KOTOSAKI
Deputy Manager and Chief Engineer

received
7-7-03

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 ULUOHA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 493-5054 FAX: (808) 493-5057



JEREMY HARRIS
MAYOR

LARRY J. LEOPARDI, P.E.
DIRECTOR AND CHIEF ENGINEER
ALVIN AU
DEPUTY DIRECTOR
HONOLULU REFER TO:
004-03-704

September 12, 2003

received
7-12-03

Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Wahiawa Botanical Garden Master Plan Update
TMK: 7-4-17-01, Wahiawa

The Department of Facility Maintenance has reviewed the subject report and does not have comments to offer at this time. We understand that the Department of Parks and Recreation will be primarily responsible for the maintenance of the proposed park facility.

Should you have any questions, please call Tyler Sugihara, Assistant Chief of our Division of Road Maintenance, at 523-4472.

Very truly yours,

Larry J. Leopardi
LARRY J. LEOPARDI, P. E.
Director and Chief Engineer

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 826-3111
http://www.honolulu.gov
www.cc.honolulu.hi.us



JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF
GLENN B. KAJIYAMA
PAUL D. PUTZLU
DEPUTY CHIEFS

September 10, 2003

OUR REFERENCE CS-KP

received
7-10-03

Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

We have reviewed the Draft Environmental Assessment for the Wahiawa Botanical Garden Master Plan Update and have no comment to offer at this time.

If there are any questions, please call Lieutenant Brian Chang of District 2 at 621-8442 or Ms. Carol Sodelani of the Support Services Bureau at 529-3658.

Sincerely,

LEE D. DONOHUE
Chief of Police

By *Karl Godsey*
KARL GODSEY
Assistant Chief of Police
Support Services Bureau



September 11, 2003



Mr. Gerald Park
Gerald Park, Urban Planner
1221 Kapiolani Boulevard - Suite 211
Honolulu, HI 96814

Dear Mr. Park:

Re: Wahiawā Botanical Garden
Master Plan Update
Wahiawā, Oahu (TMK: 7-4-17:01)

Thank you for the opportunity to comment on the July 2003 draft EA of the Wahiawā Botanical Garden Master Plan Update as proposed by the Department of Design and Construction, City & County of Honolulu. We have reviewed the subject document and have the following comments:

- (1) When fence improvements are being made along California and Glen Avenues, the contractor must comply with OSHA regulations by maintaining adequate clearance between the work being done and HECO powerlines.
- (2) HECO reserves the opportunity to further comment on the protection of existing powerlines and electric power facilities that may be affected by the project until construction plans are finalized.

Our point of contact for this project and the originator of these comments is Francis Hirakami, Principal Engineer (543-7539). I suggest that your staff and consultant deal directly with Francis to coordinate HECO's continuing input in this project.

Sincerely,

Kirk Tomita
Senior Environmental Scientist

cc: OEQC
Harold Mau (City & County)
F. Hirakami



WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP

Subj: Wahiawa Botanical Garden
Date: 9/23/2003 8:07:24 AM Hawaiian Standard Time
From: Michael_Molina@r1.hawaii.gov
To: geraldpark@aol.com
CC: Christa_Russell@r1.hawaii.gov, Jeff_Newman@r1.hawaii.gov, Gina_Shultz@r1.hawaii.gov

Gerald:
I spoke with Harold Mau about your request for comments on the update to the Master Plan for the Wahiawa Botanical Garden by 9/22. Due to internal year-end reporting requirements, we were unable to review the documents in time to meet your request. We are now able to look at the documents to determine if we have concerns related to fish and wildlife conservation. I told Harold that we would let him know as soon as possible if we determine that written comments are not necessary so you will know to not be waiting for a letter from us. If we determine that written comments are needed, we will inform Harold of that and let him know when to expect them. We appreciate your patience. Thanks.

Michael Molina
Environmental Review Coordinator
U.S. Fish and Wildlife Service, Pacific Islands
300 Ala Moana Blvd., Room 3122, Box 50088
Honolulu, Hawaii 96850
Tel: (808) 792-9400 Fax: (808) 792-9580
Email: michael_molina@hawaii.gov

----- Headers -----

Return-Path: <Michael_Molina@r1.hawaii.gov>
Received: from rty-xi03.mx.aol.com (172.20.116.81) by air-xi02.mail.aol.com (96.6) with ESMTP id MAILR023-4043f708bc43c6; Tue, 23 Sep 2003 14:07:24 -0500
Received: from fwohub1.lm.r9.hawaii.gov (fwohub1.lm.r9.hawaii.gov [164.159.176.242]) by rty-xi03.mx.aol.com (96.6) with ESMTP id MAILRELAY0X36-4d43f708bc43c6; Tue, 23 Sep 2003 14:07:02 -0400
Subject: Wahiawa Botanical Garden
To: geraldpark@aol.com
Cc: Christa_Russell@r1.hawaii.gov, Jeff_Newman@r1.hawaii.gov, Gina_Shultz@r1.hawaii.gov
X-Mailer: Lotus Notes Release 5.0.12 February 13, 2003
Message-ID: <OF6923DFC7.C71F83F5-0100A256DAA.0061FDAC-0A256DAA.006238890@um.r9.hawaii.gov>
Date: Tue, 23 Sep 2003 07:58:28 -1000
X-NNMTrack: Serialized by Router on FW0HUB1/FWS/DO (Release 5.0.12 [February 13, 2003]) at 09/23/2003 12:10:50 PM
MIME-Version: 1.0
Content-type: text/plain; charset=us-ascii
X-AOL-IP: 164.159.176.242
X-AOL-SCOLL-Score: 0:XXX:XX
X-AOL-SCOLL-URL_COUNT: 0

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD#03-1108

August 29, 2003

Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Blvd. - Suite 211
Honolulu, HI 96814

SUBJECT: WAHIAWA BOTANICAL GARDEN - MASTER PLAN
UPDATE - DEA

Dear Mr. Park:

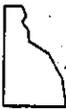
Thank you for the opportunity to review and comment on the above referenced DEA to update the Wahiawa Botanical Garden Master Plan to make additional improvements to the property.

The Office of Hawaiian Affairs (OHA) requests that Section 3.B - Short-term Impacts (page 17) and Section 7.1 (page 26) be amended to reflect that if subsurface archaeological or cultural features or burials are unearthed, work will stop immediately and the State Historic Preservation Division and the Oahu Island Burial Council will be contacted.

If you have any questions, please contact Jerry B. Norris at 594-1847 or email him at jerryn@oha.org.

Sincerely,

Peter L. Yee
Director
Nationhood and Native Rights Division



GERALD PARK
Urban Planner

Planning
Land Use
Research
Environmental
Studies

1221 Kapiolani Blvd
Suite 211
Honolulu, Hawaii
96814

Telephone: (808) 596-7484
Facsimile: (808) 596-7485
email: geraldpark@oha.org

October 27, 2003

Peter L. Yee
Director
Nationhood and Native Rights Division
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Yee:

Subject: Wahiawa Botanical Garden Master Plan Update
TMK: 7-04-017-001
Wahiawa, Oahu, Hawaii

Thank you for reviewing and commenting on the Draft Environmental Assessment prepared for the subject project. We offer the following response to your comment.

Section 3.B-Short-term Impacts (page 17) and Section 7.1 (page 26) will be left as is. The Oahu Island Burial Council will be notified if burials are uncovered. It is the responsibility, however, of the Department of Land and Natural Resources (through the State Historic Preservation Division) and not the Department of Design and Construction to initiate the notification process with the Oahu Island Burial Council.

We thank the Office of Hawaiian Affairs for participating in the environmental review process.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park
Principal

c: H. Mau, DDC

received
7.3.03

CITY AND COUNTY OF HONOLULU

3375 KOPIKA STREET, SUITE 4125 • HONOLULU, HAWAII 96819-1817
TELEPHONE (808) 831-7761 • FAX (808) 831-7750 • INTERNET www.honolulu.gov

JEREMY HARRIS
MAYOR



ATTILIO LEONARDI
FIRE CHIEF

JOHN CLARE
DEPARTMENT CHIEF

September 9, 2003



Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Wahiava Botanical Garden Master Plan Update
Wahiava, Oahu, Hawaii
Tax Map Key: 7-4-017: 001

We received your letter dated August 14, 2003, requesting our comments on the Environmental Assessment for the above-mentioned project.

The Honolulu Fire Department (HFD) requires that the following be complied with for the Entry Pavilion:

1. Provide a private water system where all appurtenances, hydrant spacing, and fire flow requirements meet Board of Water Supply standards.
2. Provide a fire department access road within 150 feet of the first floor of the most remote structure. Such access shall have a minimum vertical clearance of 13 feet 6 inches, be constructed of an all-weather driving surface complying with Department of Transportation Services (DTS) standards, capable of supporting the minimum 60,000-pound weight of our fire apparatus, and with a gradient not to exceed 20%. The unobstructed width of the fire apparatus access road shall meet the requirements of the appropriate county jurisdiction. All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround having a radius complying with DTS standards.

Mr. Gerald Park
Page 2
September 9, 2003

3. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 831-7778.

Sincerely,

ATTILIO K. LEONARDI
Fire Chief

AKL/SK:bh

cc: Harold Mau, Department of Design and Construction

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

1000 ULUKOHA STREET, SUITE 200 • MAPOLE, HAWAII 96707
PHONE: (808) 892-5501 • FAX: (808) 892-5131 • INTERNET: WWW.CO.HONOLULU.HI.US



WILLIAM D. BAUFUR, JR.
DIRECTOR
EDWARD T. "SHUPPA" DAZ
DEPUTY DIRECTOR

JERRY HARRIS
MAYOR

September 12, 2003



October 27, 2003

GERALD PARK
Urban Planner

Attilio K. Leonard, Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819-1869

Dear Chief Leonard:

Subject: Wahiawa Botanical Garden Master Plan Update
TMK: 7-04-017: 001
Wahiawa, Oahu, Hawaii

Thank you for reviewing and commenting on the Draft Environmental Assessment prepared for the subject project. Responses to your comments are provided in the order presented.

1. The water system for the Wahiawa Botanical Garden will be upgraded and new distribution lines installed as needed. All water system improvements to include fire flow requirements will comply with Board of Water Supply standards.
2. This comment has been forwarded to the Department of Design and Construction for consideration in design plans for structures that are proposed within the botanical garden.
3. Civil drawings prepared for improvements within the botanical garden will be submitted to the HFD for review and approval

We thank the Honolulu Fire Department for participating in the environmental review process.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park
Gerald Park
Principal

c: H. Mau, DDC

Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Wahiawa Botanical Garden Master Plan Update
TMK: 7-4-17:01
Wahiawa, Oahu, Hawaii

Thank you for the opportunity to review and comment on the Draft Environmental Assessment relating to the Wahiawa Botanical Garden Master Plan Update.

The Department of Parks and Recreation strongly recommends that the pavilion be constructed on the alternative site. The designated preferred pavilion site is too steep and will be expensive to build on.

In addition, we have the following miscellaneous comments:

- A. Page 1, under "Horticulture," second bullet: Replace horticultural with horticulturally.
- B. Page 3, last paragraph, last sentence: Spelling correction from Malanisian to Malanesian.
- C. Page 5, under "Lighting and Security," first paragraph: On July 9, 2003, Mr. Stanley Oka and Mr. Derrick Miyasaki of the Division of Urban Forestry, Botanical Gardens; Mr. Gregg Hee of the Department of Design and Construction; and a consultant of Siringer Tusher Architect, Inc., discussed security concerns at a meeting held at Wahiawa Botanical Garden. It was decided that a fence and gate are necessary for parking lot security on California Avenue.
- D. Page 10, second paragraph, second sentence: Replace "Koko Head" with Koko Crater.

Mr. Gerald Park
Page 2
September 12, 2003

- E. Page 10, third paragraph, third sentence: Replace "most impressive" with most historic.
- F. Page 11, fifth paragraph, second sentence: Delete "caretaker's residence." The residence no longer exists.
- G. Page 13, under "Flora and Fauna," second paragraph: The last sentence should state, "The species that are listed on the Federal endangered species list include...", as they are all on that list.
- H. Page 14, last paragraph, second sentence: Delete reference to caretaker's cottage, as it no longer exists. The sentence should state, "the maintenance facility is fed...."

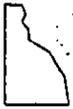
Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

Sincerely,


for WILLIAM D. BALFOUR, JR.
Director

WDB:cu
(12/17)

cc: Mr. Don Griffin, Department of Design and Construction



October 27, 2003

GERALD PARK
Urban Planner

Planning
Land Use
Research
Environmental
Studies

1271 Kookonee Blvd
Suite 211
Honolulu, Hawaii
96814

Telephone:
(808) 592-7484
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(808) 592-7485
e-mail:
geraldpark@aol.com

William D. Balfour Jr., Director
Department of Parks and Recreation
City and County of Honolulu
1000 Uluohia Street, Suite 309
Kapolei, Hawaii 96707

Dear Mr. Balfour:

Subject: Wahiawa Botanical Garden
TMK: 7-4-017:001
Wahiawa, Oahu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. The grammatical and typographical errors you pointed out have been corrected. References to the caretaker's cottage have also been deleted.

The addition of a fence and gate at the California Avenue parking lot will be included in the Final Environmental Assessment.

We thank the Department of Parks and Recreation for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER


Gerald Park
Principal

cc: H. Mau, DDC

CITY AND COUNTY OF HONOLULU

DEPARTMENT OF PLANNING AND PERMITTING
450 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE (808) 525-4118 • FAX (808) 527-8743 • INTERNET WWW.HONOLULU.HI



PERMITTING
DIVISION

Mr. Gerald Park
Gerald Park Urban Planner
Page 2

If you have any questions, please contact Bonnie Arakawa of our staff at 527-5837.

2003/ELOG-2741 (BA)

September 22, 2003

Mr. Gerald Park
Gerald Park Urban Planner
1221 Kapiolani Blvd., Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Wahiawa Botanical Garden Master Plan Update
Draft Environmental Assessment Review
Tax Map Key 7-4-017: 001

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for the proposed master plan. We offer the following comments:

Civil Engineering

The DEA should state that under long-term impacts any adverse impacts on drainage due to proposed master-planned improvements will be mitigated. Also address impacts to water quality and associated mitigative measures.

Wastewater

The improved visitor center (the additional employees, and the increase in visitor count) will increase the wastewater generated at the Wahiawa Botanical Gardens.

The Wahiawa Wastewater Treatment Plant is under moratorium and all requests for additional wastewater capacity must be sent to the Department of Planning and Permitting Wastewater Branch for coordination with the Department of Environmental Services. The applicant is required to submit a Site Development Division Master Application for Sewer Connection.

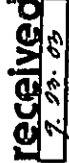
Other

According to the City Exceptional Tree List, there is a mindanao gum tree located at the Wahiawa Botanical Gardens. Please note or show its location and determine if there are any impacts to this exceptional tree.

Sincerely yours,

ERIC G. CRISPIN, AIA
Director of Planning and Permitting

EGC:lh
dec21/03





October 27, 2003

GERALD PARK
Urban Planner

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Research
Environmental
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1221 Kapiolani Blvd
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gerald@dot.gov

Eric G. Crispin, AIA, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Crispin:

Subject: Wahiawa Botanical Garden
TMK: 7-4-017: 001
Wahiawa, Oahu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. Responses to your comments are presented in the order given.

Civil Engineering

Wahiawa Botanical Garden is located within a narrow gulch that receives stormwater discharge from the upper areas of Wahiawa. Large culverts at the upper end of the gulch discharge significant volumes of runoff. For example, discharge from a 7' X 7' box culvert has been estimated at 1,276 cfs for the 100-year flood.

The Department of Parks and Recreation recommended clearing the gulch bottom of debris and providing a semi-natural basin for runoff to flow and that visitors and maintenance vehicles may travel. In this way, there will be no danger of floodwaters uprooting and washing away any vegetation or hardened path and maintenance can be performed with existing staff and equipment. This is an acceptable level of mitigation considering the existing drainage pattern where there is no runoff control.

Potential water quality impacts were discussed in the Draft Environmental Assessment. Because there are no stream, lakes, or ponds within the botanical garden, the assessment described chemical constituents most likely to be found in storm discharge and likely to be deposited into the garden and downstream locations.

Wastewater

The Department of Design and Construction will consult with staff of the Department of Planning and Permitting and Department of Environmental Services for hook-up to the existing wastewater system.

An Application for Sewer Connection will be submitted to the Department of Planning and Permitting during the design phase for the proposed Entry Pavilion and its support facilities. Wastewater flow projections will be provided at that time.

Eric G. Crispin
Page 2
October 27, 2003

Other

The Master Plan Update does not propose improvements near the Mindanao Gum (*Eucalyptus deglupta*), which is listed as an Exceptional Tree by the City and County of Honolulu. The location of this tree shall be identified on the Master Plan Update Plan in the Final Environmental Assessment.

We thank the Department of Planning and Permitting for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER


Gerald Park
Principal

cc: H. Mau, DDC



DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 522-4339 • FAX: (808) 522-4730 • INTERNET: www.ci.honolulu.hi.us



JEREMY HARRIS
MAIL ROOM

CHERYL D. SOON
DIRECTOR
GEORGE W. ROBERTS
SENIOR DIRECTOR

TP8803-32389R

September 19, 2003

received
7.28.03

Mr. Gerald Park
Gerald Park, Urban Planner
1221 Kapiolani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Mr. Park:

Subject: Wahiawa Botanical Garden Master Plan Update

This is in response to your August 14, 2003 request for comments on the Environmental Assessment for updating the Wahiawa Botanical Garden master plan.

We request that you submit a traffic assessment of the project for a fuller review of the plan. The assessment should ensure the adequacy of the street system and mitigation of any potential congestion on the public thoroughfares due to queuing.

The study should address other concerns such as access, on-site circulation, parking, loading, and the thoroughfares. To further improve the botanical garden, we suggest provisions be made also to accommodate the bicycling public by installing bike parking racks and other amenities for their convenience.

Should you have any questions on the matter, please contact Bruce Nagao of the Transportation Planning Division at 527-6899.

Sincerely,

CHERYL D. SOON
Director

GERALD PARK
Urban Planner

Planning
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96814

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geraldp@hawaii.gov

October 27, 2003

Cheryl D. Soon, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Wahiawa Botanical Garden Master Plan Update
TMK: 7-04-017-001
Wahiawa, Oahu, Hawaii

Thank you reviewing and commenting on the Draft Environmental Assessment prepared for the subject project. Your request for a traffic assessment has been forwarded to the Department of Design and Construction for consideration.

We thank the Department of Transportation Services for participating in the environmental review process.

Sincerely,

GERALD PARK, URBAN PLANNER

Gerald Park
Principal

c: H. Mau, DDC

LINDA LINDALE
GOVERNOR OF HAWAII



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813
TELEPHONE (808) 548-1185
FACSIMILE (808) 548-1186
E-MAIL: oec@hawaii.gov

GENEVEVE SALMONSON
DIRECTOR

received
7-29-03

September 22, 2003

Mr. Harold Mau
Department of Design and Construction, City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mr. Gerald Park, Urban Planner
Gerald Park, Urban Planner
1221 Kapi'olani Boulevard, Suite 211
Honolulu, Hawaii 96814

Dear Messrs. Mau and Park:

We have reviewed the July 2003, Chapter 343, Hawaii Revised Statutes draft environmental assessment entitled "Wahiawa Botanical Garden Master Plan Update" Tax Map Key 7-4-17, parcel 1, in the judicial district of Wahiawa. We offer the following comments for your consideration and response.

1. MOSQUITO MITIGATION: Please describe what plans will be undertaken to minimize or reduce mosquito proliferation at the garden, given the current concerns with dengue fever and West Nile virus.
2. SUSTAINABLE BUILDING GUIDELINES, CLASSICAL AND NATIVE PLANTS IN LANDSCAPING: We ask that you consider the use of grasses for roadway paving and native plants in your landscaping for the facility. Please consider reviewing the Environmental Council's Sustainable Building Guidelines. These documents are available on the Internet at <http://www.state.hi.us/health/mosq/index.html>.

Again we thank you for the opportunity to comment. If there are any questions, please call me or Leslie Segundo at (808) 586-4185.

Sincerely,

Genevieve Salmonson
GENEVEVE SALMONSON
Director



October 27, 2003

Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813-2437

Dear Ms. Salmonson:

Subject: Wahiawa Botanical Garden
TMK: 7-4-017-001
Wahiawa, Oahu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. Responses to your comments are provided in the order presented.

Mosquito Mitigation

All the areas of Wahiawa Botanical Garden are checked for standing water on a monthly basis. If only a small amount of standing water is found, it is either removed through use of a blower (to spread the water in a thin film that evaporates easily) or by digging a trench to drain it. If there is a large amount of water that cannot be removed, *Bacillus thuringiensis* "dunks", charcoal-like briquettes containing bacteria that destroys mosquito larvae, are placed in the water. The "dunks" are not hazardous to plant life and humans.

During the rainy season, and during periods of high alert to mosquito borne disease such as dengue and West Nile virus, checks for standing water are done on a weekly basis.

Sustainable Building Guidelines

This information has been passed on the Department of Design and Construction.

We thank the Office of Environmental Quality Control for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER
Gerald Park
Gerald Park
Principal

c: H. Mau, DDC



THE OUTDOOR CIRCLE

1314 South King St., Suite 306 • Honolulu, HI 96814
Phone: 808-593-0300 Fax: 808-593-0525

received
7-23-03



GERALD PARK
Urban Planner

Established 1912
A Non-profit Organization
BRANCHES
OAHU

Kaunaloa
Lani Kai
North Shore
Waialae Kai
Waialae Kaha

HAWAII

Hilo
Kilauea
Kona
Waikoloa Village
Waimea

KAUAI

MAUI

GARDEN CIRCLE

Lani Kai

September 22, 2003

Mr. Harold Mau
City & County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, HI 96813

RE: Wahiawa Botanical Garden Master Plan Update

Dear Mr. Mau:

On behalf of The Outdoor Circle I would like to submit the following comments and questions regarding the Wahiawa Botanical Garden Master Plan Update:

- As shown in Figure 9, there are many new buildings and gardens that will be created during this project, as well as the renovations of several additional ones. Please indicate how many trees (and what species) for each individual project (as indicated on pages 34-35) will be impacted by construction, i.e. how many will be removed, relocated, or remain for each segment of the project. In this way, we can determine the project's cumulative impacts.
- Much of the construction detailed in this master plan will impact trees that will remain in the Garden. Indicate that there will be a Certified Arborist on hand at all times to make qualified decisions about root pruning. This will definitely be an issue for most of your proposed sidewalk, path and ADA construction needs.
- Please indicate whether the Exceptional *Eucalyptus deglupta* will be impacted by the construction.
- The Master Plan should enumerate tree protection measures that will be employed in order to ensure the protection of all trees at Wahiawa Botanical Garden.

Thank you for the opportunity to comment. We look forward to hearing your reply.

Sincerely,

Kimberly Hillebrand
Landscape and Planting Project Manager

CC: ✓Gerald Park Urban Planner
OEQC

October 27, 2003

Kimberly Hillebrand
Landscape and Planting Project Manager
The Outdoor Circle
1314 South King Street, Suite 306
Honolulu, Hawaii 96814

Dear Ms. Hillebrand:

Subject: Wahiawa Botanical Garden
TRMK: 7-4-017: 001
Wahiawa, Oahu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. Responses to your comments are provided in the order presented.

Trees to Be Impacted

The projects proposed in the Wahiawa Botanical Garden Master Plan Update are conceptual in nature and the exact number of trees and species that may be impacted by individual projects cannot be determined until detailed designs are developed for the projects. The City and County of Honolulu Department of Parks and Recreation and Honolulu Botanical Garden staff, including arborists, horticulturists, and other botanical experts, will be involved in the design development process and provide advice to ensure significant trees are preserved, protected, or relocated as appropriate. Measures to minimize impacts to existing trees will be considered in the design development stages of individual projects and during construction. Also see response to Tree Protection Measures below.

Certified Arborist

The EA shall be revised to include the following text in Section 3.B on page 17:

Throughout the design and implementation processes of the Master Plan Update, the Department of Parks and Recreation staff, specifically the Honolulu Botanical Garden staff and the Arborist Advisory Committee, as well as botanical experts such as certified arborists shall be consulted to ensure that existing trees and their roots are protected whenever possible.

Exceptional Eucalyptus

No improvements are proposed near the exceptional *Eucalyptus deglupta* in the Wahiawa Botanical Garden Master Plan Update. A statement has been included in the Final Environmental Assessment to emphasize this point.

Tree Protection Measures

As noted throughout the Master Plan Update, existing exceptional and significant plants shall be preserved. For the various improvement projects that now occur in the garden, it is the general practice for staff horticulturists to flag the trees to either remain or those that can be removed.



DISABILITY AND COMMUNICATION ACCESS BOARD

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph. (808) 586-8121 (V/TDD) • Fax (808) 586-8129

Kimberly Hillebrand
Page 2
October 27, 2003

Trees identified for removal can be removed because they are found elsewhere in the garden or another botanical garden, can be readily propagated, and are not considered rare, threatened, or endangered. Trees to be removed can either be replanted elsewhere in the garden or demolished. During construction, temporary fencing can be erected around the tree to prevent damage from the movement of heavy construction equipment. Other measures may be stipulated depending on topographical conditions, general site conditions within the project area, and the experience of the general contractor in working under similar conditions. These measures would be promulgated in consultation with the general contractor and staff of the Department of Parks and Recreation and Honolulu Botanical Garden staff. Refer also to the above responses under Trees to Be Impacted and Certified Arborist.

We thank The Outdoor Circle for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER


Gerald Park
Principal

c: H. Mau, DDC

September 25, 2003

Mr. Gerald Park
Urban Planner
1221 Kapiolani Boulevard
Suite 211
Honolulu, HI 96814

Regarding: Wahiawa Botanical Garden - Master Plan Update - July 2003

Dear Mr. Park,

Thank you for the opportunity to review the recent "Wahiawa Botanical Garden - Master Plan Update," a draft environmental assessment dated July 2003. We still recommend to replace the term "Accessibility Approval" with "Accessibility Review" under Section 6 "LIST OF PERMITS AND APPROVALS," page 25, as stated in our letter of response to Mr. Russell Chung of PBR Hawaii, dated August 30, 2001 (see attachment). We also recommend that the Disability and Communication Access Board be included in the list of "REFERENCES."

Again, thank you for this opportunity to provide comments. We look forward to working with you again.

Sincerely,


FRANCINE WAI
Executive Director

Attachment





DISABILITY AND COMMUNICATION ACCESS BOARD

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph. (808) 586-8121 (V/TDD) • Fax (808) 586-8129

August 30, 2001

Mr. Russell Chung
Executive Vice-President
PBR Hawaii
Pacific Tower
1001 Bishop Street
Suite 650
Honolulu, Hawaii 96813-3429

Regarding: Wahiawa Botanical Garden Master Plan Update Report (Draft)
Wahiawa Botanical Garden Draft Environmental Assessment (Draft)

Dear Mr. Chung:

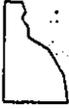
Thank you for the opportunity to review the updated version of the Wahiawa Botanical Garden Master Plan. We are pleased that accessibility is being addressed in the planning process and includes all our comments on your previous drafts. We are also pleased to see that the Master Plan is incorporating the proposed guidelines for outdoor-developed areas.

The only adjustment we recommend is on page 24 under "LIST OF PERMITS AND APPROVALS." Please replace "Accessibility Approval" with "Accessibility Review."

Again, thank you for this opportunity to provide comments. We look forward working with you again.

Sincerely,

FRANCINE WAI
Executive Director



October 27, 2003

GERALD PARK
Urban Planner

Francine Iwazi, Executive Director
Disability and Communication Access Board
State of Hawaii
919 Ala Moana Boulevard, Room 101
Honolulu, Hawaii 96814

Dear Ms. Iwazi:

Subject: Wahiawa Botanical Garden
THK: 7-4-017: 001
Wahiawa, Oahu, Hawaii

Thank you for reviewing the Draft Environmental Assessment prepared for the subject project. The following responses to your comments are provided in the order presented.

1. Section 6, List of Permits and Approvals. The term "Accessibility Approval" will be replaced with "Accessibility Review".
2. References. The Disability and Communication Access Board will be included as a Reference.

We thank the Disability and Communication Access Board for participating in the environmental assessment review process.

Sincerely,

GERALD PARK URBAN PLANNER

Gerald Park
Principal

c: H. Mau, DDC