
Management and Fiscal Audit of the Harold L. Lyon Arboretum

A Report to the
Governor
and the
Legislature of
the State of
Hawaii

Report No. 04-14
December 2004



THE AUDITOR
STATE OF HAWAII

The Office of the Auditor

The missions of the Office of the Auditor are assigned by the Hawaii State Constitution (Article VII, Section 10). The primary mission is to conduct post audits of the transactions, accounts, programs, and performance of public agencies. A supplemental mission is to conduct such other investigations and prepare such additional reports as may be directed by the Legislature.

Under its assigned missions, the office conducts the following types of examinations:

1. *Financial audits* attest to the fairness of the financial statements of agencies. They examine the adequacy of the financial records and accounting and internal controls, and they determine the legality and propriety of expenditures.
2. *Management audits*, which are also referred to as *performance audits*, examine the effectiveness of programs or the efficiency of agencies or both. These audits are also called *program audits*, when they focus on whether programs are attaining the objectives and results expected of them, and *operations audits*, when they examine how well agencies are organized and managed and how efficiently they acquire and utilize resources.
3. *Sunset evaluations* evaluate new professional and occupational licensing programs to determine whether the programs should be terminated, continued, or modified. These evaluations are conducted in accordance with criteria established by statute.
4. *Sunrise analyses* are similar to sunset evaluations, but they apply to proposed rather than existing regulatory programs. Before a new professional and occupational licensing program can be enacted, the statutes require that the measure be analyzed by the Office of the Auditor as to its probable effects.
5. *Health insurance analyses* examine bills that propose to mandate certain health insurance benefits. Such bills cannot be enacted unless they are referred to the Office of the Auditor for an assessment of the social and financial impact of the proposed measure.
6. *Analyses of proposed special funds* and existing *trust and revolving funds* determine if proposals to establish these funds are existing funds meet legislative criteria.
7. *Procurement compliance audits* and other *procurement-related monitoring* assist the Legislature in overseeing government procurement practices.
8. *Fiscal accountability reports* analyze expenditures by the state Department of Education in various areas.
9. *Special studies* respond to requests from both houses of the Legislature. The studies usually address specific problems for which the Legislature is seeking solutions.

Hawaii's laws provide the Auditor with broad powers to examine all books, records, files, papers, and documents and all financial affairs of every agency. The Auditor also has the authority to summon persons to produce records and to question persons under oath. However, the Office of the Auditor exercises no control function, and its authority is limited to reviewing, evaluating, and reporting on its findings and recommendations to the Legislature and the Governor.



THE AUDITOR

STATE OF HAWAII

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OVERVIEW

Management and Fiscal Audit of the Harold L. Lyon Arboretum

Report No. 04-14, December 2004

Summary

As requested by the Legislature in Senate Concurrent Resolution 115 of the 2004 Regular Session, we conducted a management and fiscal audit of the Harold L. Lyon Arboretum (Lyon Arboretum). In its resolution, the Legislature noted concerns regarding operational and fiscal accountability at the arboretum. The Lyon Arboretum is an organized research unit administratively attached to the College of Natural Sciences of the University of Hawaii at Manoa. Located at the head of Oahu's Manoa Valley, the arboretum covers approximately 194 acres harboring a collection of native and exotic plants.

We found that, for over half a century, the University of Hawaii has neglected its stewardship of the arboretum. The university was entrusted with "full powers of management and control . . . to use, maintain, and preserve the granted premises as an arboretum and botanical garden only" when the Hawaii Sugar Planters' Association gifted the facility to the institution in 1953. However, the university administration has not provided the strategic direction needed to fully explore and develop the arboretum's potential contribution to the institution's mission. Instead, the arboretum's course has been left to its caretakers—the facility's staff—without affirmative integration into the university's strategic mission.

The university's neglect has been reflected in its spare funding support of the arboretum and its tolerance of the facility's physical deterioration. The funds provided to the arboretum by the university have barely sustained the status quo. No regularly scheduled repair and maintenance have been performed, and the arboretum's upkeep relies heavily on the help of volunteers. At our urging, the university assessed the arboretum's condition and temporarily closed the premises for health and safety reasons.

The arboretum also suffers from organization disarray. Effective management controls are missing, exposing the arboretum to disorder. Without a strategic plan, the arboretum's resources cannot be effectively deployed. The arboretum lacks a systematic budgeting process, an updated organizational structure, and accurate position descriptions. Under this state of affairs, no meaningful staff performance evaluations can be accomplished.

We also found that a disinterested university administration has overlooked irregular and improper operations at the arboretum. The university was recently fined \$10,250 for several land use violations and cannot undertake construction or other land use projects on its premises, other than routine maintenance for health and safety reasons, without first resolving these violations. Arboretum employees have also planned for and built structures without proper permits. Furthermore, the arboretum must resolve federal wastewater disposal issues by April 2005 or face substantial fines.



We also found the arboretum's financial and inventory accounting to be substandard. The arboretum has tolerated the Lyon Arboretum Association's encroachment on fiscal and operational affairs, leading to a blurring of areas of responsibilities between the two entities. Uncertainty surrounds the arboretum's inventory of equipment and other resources. The arboretum and the association cannot confirm ownership of certain equipment purchased by the association; for operational expediency, certain arboretum contracts and grants have been administered by the association to circumvent university policies and procedures; and certain association fundraising activities have involved use of university employees and resources. In addition, the association and other organizations have occupied arboretum premises and expended associated utilities rent-free, with no lease agreements.

Recommendations and Response

We recommended that the University of Hawaii's Board of Regents, its administration, and the chancellor of the Manoa campus determine whether the university's continued stewardship of the arboretum is in concert with the institution's overall mission. If the stewardship is to continue, we recommended that the university begin a strategic planning process with definite deadlines and inclusion of appropriate stakeholders and that it ensure the management tools flowing from a strategic plan be developed. In addition, we recommended that the arboretum be brought into conformance with conservation district and other applicable requirements. We also recommended that roles and responsibilities between the arboretum, the association, and other organizations occupying arboretum facilities be defined and appropriate documents be prepared to memorialize the relationships. Finally, we recommended that the arboretum's financial and inventory accounting systems be brought into conformance with university requirements.

In its response to our draft report, the university appears to be in general agreement with our findings and recommendations. It reports that the university has already addressed some of the recommendations and will address each of them within the next year. The university, however, is disappointed that our report did not sufficiently recognize the efforts made since June to correct "the shortcomings in past practices." It points to certain remedial measures taken to reopen the arboretum in January 2005, its \$3 million request for capital improvements at the arboretum, and formation of a task force. However, strategic questions concerning the arboretum's mission, its role in the university's overall mission, and the arboretum's continued association with the university still remain unanswered.

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Submitted by

THE AUDITOR
STATE OF HAWAII

Report No. 04-14
December 2004

Foreword

We conducted this management and fiscal audit of the Harold L. Lyon Arboretum pursuant to Senate Concurrent Resolution No. 115, Regular Session of 2004. This legislative request was prompted by concerns of arboretum employees and private citizens.

We wish to express our appreciation for the cooperation and assistance extended to us by officials and staff of the Harold L. Lyon Arboretum and the University of Hawaii and others whom we contacted during the course of the audit.

Marion M. Higa
State Auditor

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Chapter 1

Introduction

Prompted by concerns of employees and private citizens, the 2004 Legislature requested, in Senate Concurrent Resolution No. 115 (SCR 115), that the State Auditor conduct a management and fiscal audit of the University of Hawaii's Harold L. Lyon Arboretum. Legislative committees noted allegations of mismanagement, dubious spending patterns, overcommercialization, possible conservation zoning violations, lack of administration support of educational programs, disrespect of the host culture and environment, and hostility toward whistle blowers.

Specifically, SCR 115 asked the State Auditor to verify and address any concerns and complaints raised about the arboretum, including examining the efforts of the University of Hawaii to address any alleged concerns and complaints of mismanagement and pinpointing any areas of weakness within the arboretum; provide a baseline assessment of any efforts and actions currently being taken by the arboretum to address concerns and remedy any problems; and recommend possible solutions. The resolution further directed the State Auditor to submit a report of findings and recommendations to the 2005 Legislature.

Background

Gifted to the University of Hawaii in 1953, the Harold L. Lyon Arboretum harbors a collection of native and exotic plants. Its grounds comprise a total of 194 acres deep within the Manoa Valley on the island of Oahu.

History of the Harold L. Lyon Arboretum

The Harold L. Lyon Arboretum sprang from attempts by an association of sugar planters to restore watershed areas denuded of sandalwood, stripped by firewood harvesters, and damaged by wandering cattle. Healthy watersheds contain multi-layered canopy forests that capture and retain rainfall, allowing the water to seep into underground aquifers. When degraded, forests and watersheds capture less rainfall, potentially creating more soil erosion and landslides. Ensuing damage includes polluted waterways and diminished water being deposited into underground aquifers. Seeing their water supply for sugar crops threatened, the association of sugar planters, later called the Hawaii Sugar Planters' Association, joined a government effort to rehabilitate watersheds by restoring Hawaii's forests.

The experiment station

In 1918, the Hawaii Sugar Planters' Association set up an experiment station at the head of the Manoa Valley, later to be known as the Manoa Arboretum (and eventually renamed the Harold L. Lyon Arboretum). Dr. Harold L. Lyon, a botanist, arrived in Hawaii from Minnesota in 1907 to work for the Hawaii Sugar Planters' Association as a plant pathologist. The association placed Dr. Lyon in charge of the Manoa Arboretum. He was, at the same time, superintendent of the Territory's Department of Botany and Forestation. Dr. Lyon remained with the arboretum until he died in 1957.

One of Dr. Lyon's tasks at the arboretum was to identify trees suitable for rebuilding watersheds. Dr. Lyon observed that the adverse conditions of soil created from volcanic rock erosion appeared to affect the growth, survival, and eventual death of many tree species. He also noted that native plants did not thrive in areas that were previously trampled by cattle and other animals. The experiment station's goal was to find trees that not only could survive in soil containing volcanic rock components, but also would comprise efficient water-conserving forests.

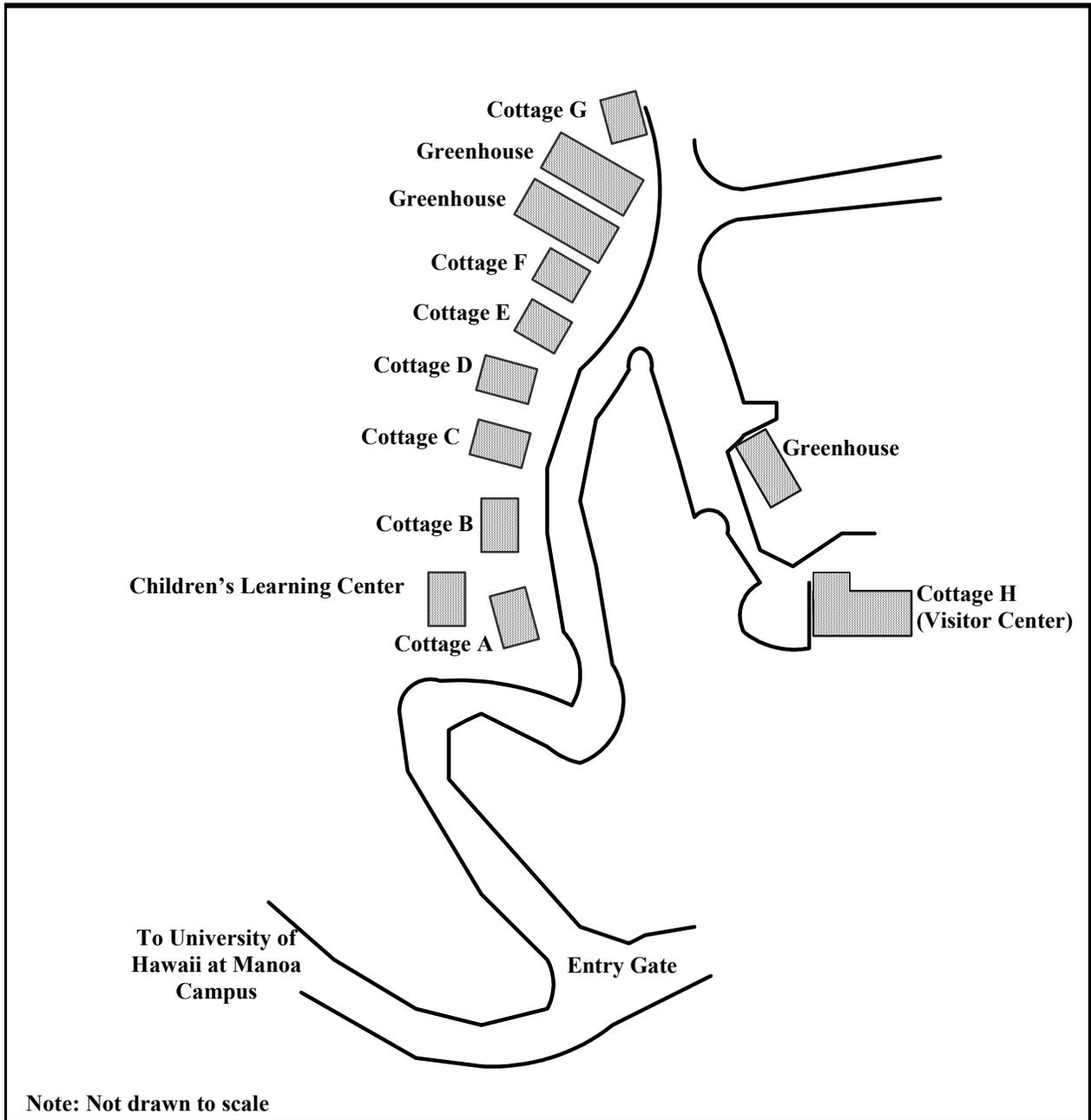
Various trees and plants were imported from diverse areas of the world including Madagascar, Australia, India, Brazil, the Malay states, China, the Philippines, southern Europe, the East Indies, the West Indies, New Zealand, Central America, and South Africa. Trees that successfully survived the Manoa Valley soil conditions and promoted water conservation were then widely planted throughout the arboretum. In 1924, Dr. Lyon predicted that it would take between 10 to 15 years for the area to be well forested.

During that decade, eight cottages were built on the arboretum site for staff use.¹ The cottages were given alphabetical designations, beginning with cottage "A" at the foot of the hill leading into the arboretum site and ending with cottage "H" at the top of the hill. Lands surrounding the cottages were planted with sugar cane. Dr. Lyon also erected an orchid greenhouse between cottages "F" and "G," which is still used today. Cottage "H" was expanded over time and is now the main center of the Harold L. Lyon Arboretum, housing offices, a reception area, an educational office, and a book and gift shop. Over the years, arboretum staff have occasionally lived in certain cottages. Today, the arboretum's building maintenance worker resides in cottage "F." See Exhibit 1.1 for a drawing showing the relative location of cottages on the arboretum grounds.

Conveyance to the University of Hawaii

In his 1949 annual report to the Hawaii Sugar Planters' Association entitled, *What is to be the fate of the arboretum?*, Dr. Lyon declared the

Exhibit 1.1
Relative Location of the Cottages at the Harold L. Lyon Arboretum



Source: Office of the Auditor

Manoa Arboretum's mission to test new plant introductions to be essentially complete, and expressed his desire that the arboretum be transformed into a botanical garden. Dr. Lyon's vision for the arboretum included providing seed and other propagating material for watershed and public use; a museum of live plants for scientific research; and a recreation destination and tourist attraction. He believed that the Hawaii Sugar Planters' Association should not remain the arboretum's custodian.

Dr. Lyon speculated that a new custodian and financier could be the City and County of Honolulu, the University of Hawaii, or the Board of Agriculture and Forestry. His personal preference was to have the arboretum become part of a botanical garden system, along with the Foster Gardens in downtown Honolulu. He felt the arboretum's change to a botanical garden required building and maintaining paths, shelters, and comfort stations. Such construction would be impossible without institutional support. Dr. Lyon proposed transferring the arboretum to the University of Hawaii because the university seemed to be the best entity to fulfill the arboretum's potential. Dr. Lyon also believed that access to the arboretum, which had not been open to the public, should be controlled and limited.

On July 1, 1953, the Hawaii Sugar Planters' Association conveyed the Manoa Arboretum, then consisting of 124 acres, to the Board of Regents of the University of Hawaii. The regents were individually entrusted with the fiduciary duty of maintaining the arboretum. In 1962, the Board of Regents transferred the arboretum to the University of Hawaii as a body corporate under the newly written State Constitution.

The conveyance gave the Board of Regents, and subsequently the University of Hawaii, "full powers of management and control solely for the use and benefit of the University of Hawaii." In addition, the university would enjoy all the benefits of ownership with one restriction: If at any time the premises were not to be used as an arboretum or botanical garden for a continuous period of one year, the premises would revert to the grantor, or its successor, as if the conveyance had not been made. When Dr. Lyon died in 1957, the Board of Regents renamed the facility the Harold L. Lyon Arboretum (Lyon Arboretum) in honor of the man so closely associated with its growth and fruition. The arboretum has been receiving the net income from a trust created under Dr. Lyon's will "solely for the maintenance, further development and improvement of the arboretum . . ."; otherwise, the net income is to be paid to the Board of Regents of the University of Minnesota.

Administration of the Lyon Arboretum

Consistent with the conveyance, the arboretum's administration was initially under the university's Board of Regents. From 1961 to 1964,

the College of Tropical Agriculture and Human Resources was responsible for the arboretum's administration. In 1965, the facility was designated an organized research unit and placed under the vice president for research and graduate education. In 2002, while still retaining its status as an organized research unit, the arboretum became part of the College of Natural Sciences, where it remains today.

Arboretum directors

Dr. Lyon remained with the arboretum as its first director under the regents' and university's stewardship. After Dr. Lyon's death in 1957, an advisory committee directed the arboretum until 1961, when Dr. George Gillette assumed the directorship on a part-time basis. In 1967, Dr. Yoneo Sagawa directed the arboretum also under a part-time basis; he served until 1991. Dr. Charles Lamoureux, the arboretum's first full-time director, served from 1992 to 2000. Dr. Clifford Smith filled the position on an interim basis, from 2000 to 2001. He was succeeded by Dr. Alan Teramura, who remained until April 2004. Thereafter, Dr. Gerald Carr, chair of the University of Hawaii at Manoa Botany Department, served as interim director from May 3, 2004, to June 30, 2004. Dr. Charles Hayes, interim dean of the College of Natural Sciences, now serves as acting director.

Arboretum activities

When the university first acquired the arboretum, Dr. Lyon, as its director, continued the Hawaii Sugar Planters' Association's practice of static upkeep and no public access. Under Dr. Sagawa's tenure, the arboretum was opened to the public through activities such as plant sales, workshops, field trips for school children, and guided tours. Over the years, the arboretum's plant collection has increased and diversified, and a micropropagation laboratory to save endangered plant species was established.

In April 2002, the arboretum opened its Marilyn Goss Children's Learning Center, a permanent classroom structure for educational programs. Funds for the learning center came from private sources. As of April 2003, the arboretum, through the Lyon Arboretum Association, had collected close to \$85,000 for the learning center's construction and maintenance and an associated children's garden.

In July 1991, a micropropagation laboratory was set up as a collaborative undertaking between the Lyon Arboretum and the Hawaii State Department of Land and Natural Resources. The laboratory provides long-term propagation storage of, or a safety net for, genetic material of Hawaii's critically endangered plants. The Lyon Arboretum received a grant from the U.S. Department of the Interior, Fish and Wildlife

Service, to assist the U.S. Army in managing rare and endangered plant species found on its installations in Hawaii. Under the grant, the arboretum provides propagation and storage services *in vitro*, meaning “within glass” or in an artificial environment. The current contract with the Department of the Interior ends on December 31, 2005. The arboretum also receives various grants from other sources for micropropagation services.

Dispersed throughout the arboretum are about 1,500 native accessions, as well as 15,000 exotic flora accessions introduced by Dr. Lyon and others. The arboretum also features special plant collections. An ethnobotanical garden named in honor of Dr. Beatrice H. Krauss was dedicated in 1987. The late Dr. Krauss taught Hawaiian ethnobotany at the University of Hawaii and received an honorary doctorate from the institution. She also offered her expertise to the Lyon Arboretum, conducting informal classes in ethnobotany and teaching plant crafts. The garden contains cultivated and native species that early Hawaiians used in the course of their lives. The plantings are generally grouped by natural habitat associations or by use, such as for food, construction, clothing and dyes, medicine, and musical instruments. Another special collection, the Native Hawaiian Garden, is sponsored by the Lyon Arboretum Association, and features native Hawaiian plants. The arboretum also sponsored and provided the site for the Hawaii Pacific Islands Kava Festival held in 2003.

Auxiliary organizations

As part of the arboretum’s effort to provide community outreach, past directors have made office space at the arboretum available to outside organizations. These auxiliary organizations share the arboretum’s interests in horticulture and botany.

The Lyon Arboretum Association

The Lyon Arboretum Association, a non-profit organization, was formed in 1976 and is administered by a board of directors, on which the arboretum’s director serves as an ex officio member. The association’s main function is to raise funds to support the arboretum. According to its literature, the association funds special staff positions, educational conferences, special research projects, educational programs, summer interns, cultural festivals, equipment purchases, and facility improvements for the arboretum. It serves as the repository of revenue and funds derived from various activities such as plant sales; the book and gift shop; classes, workshops, fieldtrips, and special events; donations; and certain grants and contracts. The association reported revenues of over \$723,000 in a three-year period ending June 30, 2003: \$205,432 in FY 2000-01; \$197,764 in FY 2001-02; and \$320,782 in FY 2002-03. For its 2000, 2001, and 2002 fiscal years, the association

reported expending \$148,718, \$190,230, and \$279,339, respectively, on program services for the arboretum.

Among its money-raising projects, the association sponsors three annual plant sales. Association members also prepare jams and jellies in the arboretum kitchen for sale at the association's book and gift shop located on the arboretum grounds. In addition, the association conducts craft group activities such as cloisonné-making, lei making, and *oshibana*, or pressed flower design work.

The Garden Club of Honolulu

The Garden Club of Honolulu also maintains an office on the arboretum grounds. The organization's purposes are to stimulate knowledge and love of gardening among the general public; educate the public in horticultural and botanical subjects; aid in the protection of native flora; encourage beautification of public streets, parks, arboreta, and other public places; and assist scientific and botanical research.

Prior evaluations

The State Auditor has not conducted any prior audits or studies of the Harold L. Lyon Arboretum. The university itself has arranged for periodic evaluations of the facility. During the 1980s and early 1990s, the American Association of Museums, the Museum Management Consultants, and a consultant each evaluated the arboretum and reported findings and recommendations to the university administration.

Objectives of the Audit

1. Evaluate the effectiveness of the University of Hawaii in its strategic planning and management control of the Harold L. Lyon Arboretum.
2. Assess the managerial, operational, and fiscal environment of the Harold L. Lyon Arboretum.
3. Make recommendations as appropriate.

Scope and Methodology

The audit focused on the university's strategic planning for and management control of the arboretum. We included an assessment of factors that may have given rise to a memorandum dated January 16, 2004, to the Board of Regents, from certain arboretum employees expressing their concerns about the facility's management. We interviewed former and current arboretum staff and university officials involved with the arboretum's administration. In addition, we reviewed planning documents, evaluation reports, organizational and budget

reports, and relevant policies and procedures. We used management criteria and best practices to evaluate the effectiveness of the university's planning and control.

We assessed the managerial, operational, and fiscal environment of the arboretum by observing and recording, to the extent possible, the physical aspects of the arboretum. Our documentation review included, but was not limited to, applicable policies and procedures on facilities management, permitting regulations, and zoning statutes and regulations. We also reviewed documentation and related policies and procedures of the arboretum to determine its compliance with relevant university policies and procedures and with policies and procedures of agencies charged with oversight of construction and conservation lands.

We also reviewed relevant contracts, agreements, and other documents, conducted interviews, and performed limited tests of transactions regarding grants and other funding sources. We selected and reviewed relevant documents on the management of the arboretum to determine whether there is documentary evidence of on-going monitoring of arboretum operations. In addition, we reviewed documentation regarding the relationships between the arboretum and organizations connected with the arboretum. Further, we assessed any current efforts implemented to improve the fiscal and managerial environment of the arboretum. The audit focused on FY 2003-04 and earlier years as necessary.

Our audit was conducted from May 2004 to December 2004 according to generally accepted government auditing standards.

Chapter 2

The University of Hawaii Has Neglected Its Stewardship of the Harold L. Lyon Arboretum

As steward of the Harold L. Lyon Arboretum for over half a century, the University of Hawaii has done little with the legacy entrusted to it by Dr. Lyon and the Hawaii Sugar Planters' Association. Today, the arboretum's potential as a research, scientific, and educational institution remains largely untapped. With a disinterested university administration, arboretum staff have been able to contravene statutes and regulations for operational expediency. The arboretum's organization suffers from disarray, and its facilities have deteriorated, prompting university officials to temporarily close the arboretum for health and safety reasons. Without an affirmative mission and a strategic map, the arboretum's future course is uncertain.

Summary of Findings

1. Providing little strategic direction, the University of Hawaii has undervalued and underutilized a significant resource, the Lyon Arboretum.
2. A disinterested university administration has overlooked irregular and improper activities at the arboretum.

The University Has Undervalued and Underutilized a Significant Resource, the Arboretum

In 1953, by letter to then university president Gregg Sinclair, Dr. Lyon shared his vision of a "golden opportunity" for the institution to build upon the work of the Hawaii Sugar Planters' Association at the arboretum and create a world-renowned facility for the study of plant life in the tropics. He saw the facility as a laboratory for study and research in tropical botany and forestry, and believed the university to be the appropriate steward because of the research it conducted and the botany and horticulture classes it offered.

But university policy makers failed to embrace Dr. Lyon's vision or to design their own vision for the resource given to them. Instead, the arboretum's course has been left to its caretakers—the facility's staff—without affirmative integration into the university's strategic mission. Lacking a strategic map to guide its course, the arboretum now finds itself directionless at a crossroad: it cannot proceed without the substantial infusion of resources to remedy health and safety hazards, yet resources cannot be prudently allocated without a consensus on the arboretum's mission and programs.

Without strategic direction, the arboretum's potential contribution to the university has not been fully explored or developed

Current activities at the arboretum essentially display the preferences or expertise of its staff, rather than carefully drawn program plans directed toward a mission. This open-ended situation reflects the university administration's historical practice of leaving the arboretum's development to its staff. While some of the arboretum's offerings have gained wide popularity and acclaim, the university has yet to assess whether these offerings complement the institution's overall mission.

When the university first acquired the arboretum, Dr. Lyon, as its director, continued the Hawaii Sugar Planters' Association's practice of static upkeep and no public access. After Dr. Lyon's death, the university provided minimal, if any, guidance and support, leaving the arboretum to be managed by a committee or a part-time appointed director. Over the years, directors have been given oral or written directives as they assumed their post with the arboretum, ranging from "see what you can do with [the arboretum]" to an itemized list of expected accomplishments, including the development of a mission statement and a strategic plan. Directors have either set what they believed to be the best course for the arboretum or conceded failure to meet expectations for various reasons. A former director cited difficulty in obtaining a consensus as the reason for his failure to develop a mission statement or undertake long-term planning. During his tenure, the last arboretum director was attempting to construct a strategic plan and business plan for the arboretum. That process was placed on hold with his resignation.

The university administration is not unaware of its strategic planning shortcomings regarding the arboretum. Assessments of the arboretum were conducted by the American Association of Museums, the Museum Management Consultants, and a consultant in 1982, 1989, and 1991, respectively. These evaluations have pointed out the university's short-sightedness in failing to develop and fully utilize the arboretum, especially its research and scientific potential. These reports have urged the university to recognize the importance of the arboretum and to fully commit to the management and financial support of the facility. The reports also criticized the lack of a mission statement and a strategic or master plan for the arboretum.

The university administration has acknowledged the need for a mission statement and strategic plan for the arboretum, and has even invited input from faculty members as a first step in a planning initiative. In the late 1980s, Dr. David Yount, vice president for research and graduate education, formed a committee of faculty members to "review the arboretum as a resource for the university's teaching, research, and public service programs; to examine options for its future development in the light of those responsibilities, and to select and outline the most promising ones."

Input from the faculty revealed an uncertainty about the arboretum's role. One faculty member expressed a perception that the arboretum's mission was based mainly on community service and that a college of the University of Hawaii at Manoa with similar horticultural interests had "used the facilities of the arboretum very sparingly." The Horticulture Department chair, in summarizing the sentiments of certain faculty members, echoed the arboretum's emphasis on public service, which she concluded was "at the expense of its instructional and research functions." She added, "University classes could possibly make better use of the facilities and materials. The same might be said for researchers." Another comment pointed out the arboretum's "several fine collections and areas of expertise . . . have happened more as a result of the interest of individuals than because of any master plan." Other comments recognized the merit of conducting more extensive research at the arboretum, but could not agree on specific emphases. Not surprisingly, faculty members preferred research covering their individual academic leanings.

In tandem with the committee's efforts, Dr. Yount retained a consultant to assess the arboretum's situation. When the next arboretum director, Dr. Charles Lamoureux, came on board, Dr. Yount applied the fruits of the committee's and consultant's labor to charge the new leader to:

1. Enhance the arboretum's identity as a university-wide resource by supporting its use by other university programs for teaching, research, and service purposes.
2. Enhance the arboretum's identity as a community resource by improving, as feasible, the public's access to, and use of, this unique facility.
3. Prepare a comprehensive mission statement integrating the arboretum's teaching, research, and service goals and reflecting its identity as a university-wide and community resource.
4. Prepare a program statement addressing the arboretum's staffing, financial, and physical needs; and initiate work on a master plan for the arboretum's development.
5. Promptly solicit external funding from both federal and private sources to promote the arboretum's mission statement, program statement, and master plan.
6. Join forces with the College of Natural Sciences, the Hawaiian Evolutionary Biology Program of the Pacific Biomedical Research Center, the College of Tropical Agriculture and Human Resources,

and related units to promote plant conservation and conservation biology in Hawaii; and participate in the solicitation of funds for this purpose.

7. Establish a Lyon Arboretum Advisory Committee, with representation from relevant teaching and research units of the university and from the community, to assist the director in furthering the objectives of this charge.

Before his appointment as director, Dr. Lamoureux estimated that a mission statement could be prepared for administrative review within six months and that a strategic plan could be developed within six to nine months after administrative review of the mission statement. However, in a self-evaluation of his 1992-1993 tenure, Dr. Lamoureux reported that neither a mission statement nor strategic plan had been completed. He considered it naïve on his part to believe his earlier deadlines could be achieved, specifically in achieving consensus among stakeholders within that time frame.

During his tenure as director, Dr. Teramura engaged a group of graduate students in the university's masters of business administration program to develop strategic and business plans for the arboretum. They were paid over \$20,000 for their efforts. Dr. Teramura sought support of the plans, but encountered strong resistance from arboretum staff and has since resigned as director. As a result, the fate of these plans is uncertain at this time, according to the chancellor of the university's Manoa campus.

The chancellor has recognized the importance of articulating a mission for the arboretum and determining its fit with the university's overall mission. He has pointed out that this fundamental task will determine the arboretum's future and the resources the university administration would be willing to invest in that future; he has not ruled out considering whether the arboretum should be returned to the Hawaii Sugar Planters' Association if the facility's mission does not support the university's overall mission or if the university cannot fulfill the conveying deed's requirements. The chancellor has also acknowledged that a mission statement is essential to deciding specific program emphases and funding needs of the arboretum.

In September 2004, the chancellor announced his intention to charge a task force with:

- Reviewing and defining the missions of the arboretum to be in concert with the core missions of the university—education and research;

- Developing a long-term master plan and a short-term business plan that support the missions of the arboretum; and
- Considering the findings of the State Auditor.

The task force will be headed by Dr. Andrew Rossiter, director of the university's Waikiki Aquarium. Members will include individuals from the community, faculty of the Manoa campus, and a senior arboretum employee.

We note that, nonetheless, the university administration recently proposed funding \$3 million in capital improvement projects for the arboretum. This proposal is very likely, in part, a reaction to the public outcry that followed the temporary closing of the arboretum in August 2004. Upon our urging, university officials assessed the physical condition of the facility and closed it because of hazards posed by decrepit buildings, unstable pathways, and unsafe access to structures for children's activities. See Appendix A for a copy of the letter, dated August 11, 2004, from the State Auditor to the acting president of the University of Hawaii.

The university has since undertaken some remedial action and plans to reopen the arboretum to the public on January 2, 2005. Remedial measures are generally desirable. However, the commitment of funds for capital improvements ought to be made only after the university has determined that the arboretum's facilities are necessary to achieving the arboretum's strategic goals. And those strategic goals have yet to be pondered and articulated.

The university has neglected basic needs of the arboretum and its staff, creating safety and management problems

The arboretum's course has been unfocused and subject to the personal decision-making of those with a captive stake in the geographically separate facility—its line staff and members of the Lyon Arboretum Association—rather than the university's policy makers. Without an overarching strategic or program plan, arboretum staff have determined the scope and priorities of research, educational, and community outreach activities. In the past, the Lyon Arboretum Association has also exercised a measure of decision-making by requiring its approval of all association funding sought by the arboretum.

The university administration's apathy extended to the facility's physical plant and to its management as well. Perhaps out of the Manoa campus' sight, the arboretum's physical decline and staff independence were easy to ignore. Nonetheless, had there been a commitment to their stewardship, university administrators would have recognized the need for oversight and proper management controls at the arboretum. Instead, what has come to pass is disorderly management of the facility and its personnel and the deterioration of the arboretum's physical plant.

The arboretum has received spare funding support from the university administration

The university administration's record of general fund support to the arboretum has been less than generous. A former director's recollection is that Dr. Lyon did not receive any compensation as director of the arboretum at the outset of the university's stewardship. Moreover, Dr. Lyon expended his own money to defray payroll for the staff at the arboretum.

The university provided no general fund support for at least a decade (between 1953 and 1964) after the university acquired the arboretum. The arboretum's operations were funded by private sources and grants. One of the main funding sources during that period was income from the trust created under Dr. Lyon's will; the University of Hawaii Foundation is the repository of this income for the benefit of the arboretum. When a former director requested funds from the university administration to renovate the facility, he was told that the arboretum "had its own money," supposedly from the trust fund created by Dr. Lyon.

The university administration continued its sparing support of the arboretum. In the 1960s, the arboretum received a grant from the National Institutes of Health. This multi-year grant covered the arboretum's collection of plant specimens from the Pacific area for medicinal purposes. According to a former director, the renewal of the relationship between the National Institutes of Health and the arboretum was contingent on the arboretum's ability to hire a taxonomist, one who classifies plants into categories based on shared features. Unsuccessful in convincing the university administration to fund such a position, the director could not get the grant renewed. It was eventually given to the Bishop Museum, which had a taxonomist on its staff.

As a result, the arboretum's past directors and staff have resorted to resourceful and creative means to fund the facility's operations. According to a former director, the Lyon Arboretum Association itself was created to serve as a vehicle for the collection of donations, admissions fees, and class registration fees, allowing the arboretum easy access to these moneys. The same director recalled that arboretum employees would also appeal directly to individual legislators for capital improvement program funds, in effect bypassing the university's budget process. For example, in 1990-91, the arboretum received approximately \$175,000 in capital improvement project funds that were not allocated from the university's appropriations.

The funds provided to the arboretum by the university has barely sustained the status quo. For example, the arboretum's micropropagation laboratory is supported essentially by federal and other grants and

contracts. Throughout its existence, the laboratory has been housed in one of the 80-year old wooden cottages on the arboretum grounds. Although air conditioned, the cottage's aging state hardly reflects the significance of its contents, many of which represent endangered or threatened plant species. In addition, the staff has relied on the help of volunteers to maintain the arboretum. The manual labor donated by a cadre of about 400 volunteers has filled the general funding void to some extent. But heavy reliance on the charity of volunteers for essential maintenance work leaves the upkeep of the arboretum vulnerable to shifting individual interest and the capacity of staff to sustain and inspire voluntary input. The recent closing of the arboretum to the public, including volunteers, has brought this tenuous relationship into sharp focus.

Without a strategic plan, however, the arboretum is challenged in compiling a meaningful budget and competing with other university programs for scarce funds. It can hardly educate the university's budget decision makers on the arboretum's strategic goals when none exist. We feel that it would be difficult, if not impossible, to clothe the arboretum's budget requests attractively enough to stand out among other competing requests when it can offer no promise of program accomplishments beyond maintaining the status quo.

The university administration has tolerated the facility's deterioration

The university's neglect of the arboretum is visibly evidenced by the poor conditions of structures at the facility. See Appendix B for photographs of visible damage. As part of our fieldwork, audit team members visited the arboretum to observe the arboretum's buildings and grounds. During these visits, an arboretum employee accompanied our staff and pointed out safety concerns, including frayed electrical wiring, termite damage, deteriorating support beams, tilting structures, and questionable load-bearing limits of the second-story classroom in cottage "H."

Based on these observations and on the university's own safety assessments, in a letter dated August 11, 2004, we raised our concerns about the arboretum's physical condition, and the university's possible exposure to liability. It was our understanding that the university had intended not to take any major action until the release of our audit report. We urged the acting president to investigate the arboretum's condition and take appropriate precautionary actions quickly. On August 27, 2004, the university closed the arboretum to the public. It has since been opened on a limited basis.

In interviews with television media, the interim vice president for research disclosed that the closure was not unexpected and

acknowledged that safety problems at the arboretum have existed for decades. In early September 2004, structural engineers retained by the university inspected cottages “E,” “F,” “G,” and “H,” and the children’s learning center. The inspection did not include architectural, mechanical or electrical, safety code requirements, or environmental issues. Their report, dated September 15, 2004, rated cottage “E” as marginal, cottages “F” and “H” as fair, cottage “G” as poor, and the children’s learning center as good. As a result, the university has condemned cottage “G” and prohibited access to the building. Earlier, the university had already condemned and closed cottages “A,” “B,” and “C.”

These cottages were constructed in the 1920s. Over the years, the university has sporadically made improvements and renovations, but has not provided regularly scheduled repair and maintenance. Independent assessments of the arboretum, as far back as 1989, have noted that the facilities were poorly maintained and in need of major repair and maintenance. In the early 1990s, moneys were allocated for various repair requirements of the arboretum. However, the funds were diverted to address damage caused by Hurricane Iniki and have never been restored.

In addition, during March 2004, the Hawaii Occupational Safety and Health Division (HIOSH) of the Department of Labor and Industrial Relations conducted an inspection of the arboretum and issued a Citation and Notification of Penalty to the university’s College of Natural Sciences for “serious” violations at the facility. While several violations covered the use of pesticides and related training and the safe operation of utility vehicles, several violations involved exposure of employees to potential electrocution hazards. According to the university, all of the violations were addressed by May 2004. HIOSH originally fined the university \$18,000; in consideration of the university’s prompt abatement of the violations, HIOSH reduced the fine to \$9,000.

The university also faces a potential situation relating to the arboretum’s waste disposal system. On May 17, 2004, the U. S. Environmental Protection Agency informed the facility that federal regulations require the closing of all large-capacity cesspools by April 5, 2005, and, where needed, replacement by an alternative treatment system. Under federal regulations, a large-capacity cesspool is one that can serve 20 or more persons per day. A large-capacity cesspool owner who does not close the unit before April 5, 2005, may be fined \$32,500 per day for each large-capacity cesspool. Federal regulations also ban construction of new cesspools.

According to the university, the arboretum has one active large-capacity cesspool, which services cottages “D” and “E.” To replace this cesspool,

the university plans to obtain an underground injection control permit and evaluate options for upgrading the wastewater system by the April 2005 deadline. The arboretum has two other cesspools that can service 20 or more people or have been connected to multiple structures: the visitor center (cottage “H”) cesspool, which was upgraded with a septic tank in 2003, and the cesspool for cottages “A” and “B.” The latter has been taken out of service, and the university intends to avoid classification of that cesspool as a large-capacity cesspool.

The deteriorating state of the arboretum’s physical plant is not recent news, as university officials have acknowledged to the media. Evaluation reports by external agencies have criticized the poor maintenance of arboretum facilities and the need for major repair work. And in February 2001, then Interim Director Clifford Smith presented a list to the senior vice president for research and dean of the graduate division, outlining numerous problems that required attention and funding. Needed repairs included rehabilitating cottages “A” through “G,” upgrading greenhouses, restoring plantings, rehabilitating trails, and repaving the access road to the arboretum. In his assessment, “most of the buildings at the arboretum are in a serious state of disrepair and need to be fixed in order to bring the arboretum into compliance with safety regulations, the Americans with Disabilities Act, and to make the arboretum functional at a normal operating level.” He also identified problems with the electrical system, roofs, foundation, plumbing, and termite damage.

To date, some electrical and plumbing repair work has been performed; the access road has been repaved; and cottage “H” has been re-roofed. Since there is no repair and maintenance schedule, almost all of the repair work responds to problems as they arise. While the university recently requested \$3 million for capital improvements at the arboretum, it must first consider the arboretum’s mission, strategic plan, and land use regulations in determining the appropriateness of such expenditures. The university’s mission and strategic plan for the arboretum have not yet come to light.

Effective management controls are missing, exposing the arboretum to disorder

Lack of a strategic plan has handicapped the arboretum from developing the management tools that derive from it—namely, program and operational plans, including a budget, an organizational scheme, position descriptions, and evaluation mechanisms. In the course of our audit, we requested documents that are fundamental to an organization’s planning and management: statements of the arboretum’s objectives, the program plans to accomplish those objectives, organizational charts, budgets, and

position descriptions. The documents presented for our review depict an organization in disorder.

The arboretum has articulated the activities it engages in—on its web site, as well as in brochures promoting the facility. However, the program analysis that an earlier planning initiative found lacking still remains undone. A rudimentary understanding of the arboretum’s mission revolves around three areas: research, education, and community service. And an observation of the current activities at the arboretum would loosely bear this out. However, there is no clear articulation of the arboretum’s mission that would inform current and potential stakeholders of, among many other essentials, the arboretum’s compatibility with the university’s overall mission; the programs the university intends, if any, in each of the areas of research, education, and community service; and the desired apportionment of scarce resources among the arboretum’s programs.

The arboretum’s budgeting reflects this disorder. We could find no systematic budgeting process or any budget documents methodically setting out the arboretum’s revenue and expenditure plans. We did obtain a document laying out the arboretum’s revenues and expenditures for FY 2004 that was prepared by a former director, Dr. Teramura. We were informed, however, that the document was his attempt to capture the arboretum’s revenues and expenditures for himself—not as part of an established process guided by written policies and procedures.

Further, the current deployment of arboretum personnel does not correlate with an approved organizational chart. The former director, Dr. Teramura, had designed an organizational structure in line with his reading of past evaluations of the arboretum. Some of the evaluations recommended a layer of middle managers for more effective and efficient operations. Before his departure, Dr. Teramura installed a full-time associate director of research and part-time associate directors of business and education, but these organizational changes still have not received the requisite university approvals. Dr. Teramura also attempted a move to conform jobs and position descriptions, but met with resistance from line staff. In addition, we found that performance evaluations of employees are not regularly performed. In any event, given the lack of program plans and accurate position descriptions aligned with arboretum programs, meaningful performance evaluations are not possible at this time.

A Disinterested University Administration Has Overlooked Irregular and Improper Operations at the Arboretum

The university administration effectively ceded stewardship of the facility to its staff that, over the years, developed a proud identity with the arboretum that is distinct and apart from the university. The university's disinterest generated enough resentment among some of the arboretum's employees, prompting them this past year to air their concerns directly with the Board of Regents and the Legislature, without following the institution's chain of command. Among their dissatisfactions were the administration's selection of the last director without a national search (as they believe had been promised); the particular appointment of Dr. Teramura as director (who, they believe, ignored the arboretum's need for major repair and renovations when he was a university system vice president); and Dr. Teramura's installation of associate directors as middle managers responsible for day-to-day operations ("outsiders" who, the employees felt, did not understand the arboretum and its mission).

Ignored and left to their own resources, arboretum employees developed activities they felt were in line with the mission and goals of the university, with operational expediency as the guiding principle. As well-intentioned as these decisions may have been, this expedient approach was used often at the expense of regulatory and statutory requirements.

The disarray evokes images of the organizational pathology in the Nut Island Effect case study

In a 2001 Harvard Business Review article entitled *The Nut Island Effect: When Good Teams Go Wrong*, Paul F. Levy outlines "a destructive organizational dynamic" he terms the *Nut Island Effect*.¹ Mr. Levy describes an organizational pathology that developed at the Nut Island sewage treatment plant, which was actually located on a small, isolated peninsula in Quincy, Massachusetts. Put into operation in 1952, the plant was billed as the solution to Quincy's wastewater problems. With its touted modern design, it was intended to treat all the sewage from the southern half of the Boston metropolitan area, which in the past had been piped straight into Boston Harbor. Underfunded and ignored by senior management, the employees struggled proudly and diligently with faulty, poorly maintained equipment. The plant staff grew protective of the facility, preferring to be left alone by management and using external allies, instead, to obtain funds for needed repairs. Out of touch with the outside world, the staff made up its own rules, adherence to which indicated operational success to them. The staff's good intentions could not forestall the eventual deterioration of the plant or prevent the release of billions of gallons of raw sewage into Boston Harbor. The facility closed in 1997.

Mr. Levy premises the Nut Island effect on “a homogeneous, deeply committed team working in isolation that can be physical, psychological, or both. Pitted against this team are its senior supervisors, who are usually separated from the team by several layers of management.”²² He identifies five predictable phases involved in the deterioration of an organizational dynamic. In the first phase, management assigns a vital, but low-visibility, task to a team and gives the team a liberal amount of autonomy. The team, usually comprising members with a strong work ethic, opts for obscurity and becomes skilled at managing itself. In the second phase, senior management takes the team’s self-sufficiency for granted and ignores the team’s request for assistance or warnings of conditions needing attention. When a situation occurs, the team feels betrayed by management and reacts with resentment. In the third phase, a feeling of us-against-the-world permeates the team. Team members deny problems to outsiders. Conversely, management accepts the team’s silence that all is going well. The fourth phase is characterized by the team’s own rule-making. The team convinces itself that the rules enable it to fulfill its mission. As a result, the rules may give a false sense of quality in the team’s performance and hide serious shortfalls. Finally, in the fifth phase, management and the team form distorted realities that are difficult to resolve. Team members refuse to listen to outsiders attempting to point out problems; management continues to believe, “No news is good news.” Eventually, this quagmire is stirred by some external event.

Although Mr. Levy’s case study differs in certain aspects from the situation at the Lyon Arboretum, the similarities render the *Nut Island Effect* instructive here: the isolation in which arboretum staff operate; the university administration’s apathy; the line staff’s self-sufficiency and self-governance; and the arboretum’s condition eventually coming to light through the staff’s public airing of its grievances. Paralleling somewhat the Nut Island plant’s decline, the arboretum now suffers from organizational dysfunction and physical deterioration.

Without diligent oversight by the university administration, the arboretum has run afoul of land use and other requirements

The arboretum as a whole has been subjected to periodic evaluations. As an organized research unit, the university’s executive policy requires that the arboretum be “reviewed periodically at intervals of five years or less, in conformance with Board of Regents’ Bylaws and Policies.” The related Board of Regents policy requires organized research units to be “reviewed periodically at intervals of seven years or less, according to procedures established by the President.”

The latest review provided to our office is dated April 1989 and was performed by Museum Management Consultants. Based on university policy, the Office of the Vice President for Research and Graduate Education called for reviews of the arboretum that were scheduled to be

conducted in 1996 and again in 1999. However, university administration cannot confirm that these reviews were conducted. In 2002, the university administration noted that over ten years had passed since the last review of the arboretum. A reason proffered for the skipped reviews is limited available funds. Nonetheless, policies set by both the board and the university president require these reviews, with no mitigating circumstances to excuse or waive this requirement.

Without diligent oversight of the arboretum by the university administration, employees at the arboretum and their supporters—especially the Lyon Arboretum Association volunteers—effectively assumed management and operation of the facility. The staff designed and implemented activities that they perceived to be in concert with the mission and goals of the arboretum. Although almost certainly well-intended, their unsupervised efforts often strayed from established state and university regulations. Recent land use proposals at the arboretum have brought certain regulatory violations to the attention of the Office of Conservation and Coastal Lands of the Department of Land and Natural Resources, the agency that administers land use requirements for the conservation district. We also uncovered the irregular administration of grants and donations and substandard fiscal and inventory accounting.

The arboretum cannot undertake construction or other land use projects on its premises without first resolving existing alleged violations

Throughout the arboretum's history, the university administration's apathy and the facility's geographic isolation have served to shield its activities from outside scrutiny. However, staff concerns over recent land use proposals for the arboretum were brought to the attention of the Office of Conservation and Coastal Lands within the Department of Land and Natural Resources. As a result, certain regulatory and statutory violations have come to light, even beyond those raised by the staff. Many of the arboretum's past and proposed projects took an irregular course because of scarce funding and staff preference.

The arboretum sits on parcels that were classified as part of a conservation district on October 1, 1964. Use of and activities on arboretum lands are thus subject to Chapter 183C, Hawaii Revised Statutes (HRS), and Chapter 13-5 of the Hawaii Administrative Rules (HAR). These statutes and rules generally provide for the regulatory requirements, such as permits and site plan approvals, applicable to land uses in conservation districts. Land use requirements apply to activities beyond construction of buildings; they can apply as well to such activities as data collection, research, education, resource evaluation, sign erection, and plant removal.

Currently, the Office of Conservation and Coastal Lands administers land use permits and prosecutes land use violations. The office has informed the arboretum that facilities constructed and activities begun before October 1, 1964, are “nonconforming uses” but are considered permissible under Chapter 13-5, HAR; conversely, all subsequent construction and activities are subject to land use requirements applicable to conservation districts.

In a letter dated July 28, 2004, in response to a request from the arboretum to review a proposal to construct a *hale* (a native Hawaiian structure) on the premises, the Office of Conservation and Coastal Lands notified the interim dean of the College of Natural Sciences (as the current acting director) and the Lyon Arboretum that, under Section 13-5-6(c), HAR, “no permit shall be processed by the department until any violations pending against the subject parcel are resolved.” The office pointed out potential land use violations by the arboretum involving boardwalks, a bridge, a greenhouse, cottages, and the visitor center, among others, which were probably completed without the requisite permits and approvals. The arboretum was accordingly informed that it cannot initiate any new activities or land uses on arboretum grounds (except for those required to prevent health and safety concerns) without first resolving the alleged violations.

On October 14, 2004, the Office of Conservation and Coastal Lands conducted a site inspection of the arboretum grounds. On December 10, 2004, the agency issued a report to the Board of Land and Natural Resources regarding seven alleged violations of land use statutes and regulations resulting from the University of Hawaii’s failure to obtain the appropriate approvals for:

- Renovations and alterations to cottages "B," "C," "D," "H," and "F" and a wood workshop/garage;
- Construction of the children’s learning center;
- All landscaped features (memorial garden, water features, signs, statues, benches, trails and pathways, and drainage);
- Commercial uses on the grounds;
- Construction of a visitor kiosk, rain shelter, and pavilion;
- Erection of a prefabricated storage shed; and
- Construction of a "large greenhouse/headhouse/shade house/acclimation yard."

These matters are being referred directly to the board, rather than to a hearings officer, “because of the seriousness of the violations.” The report recommends assessing the University of Hawaii a total of \$9,250 in fines and \$1,000 for administrative costs associated with the violations. Under Section 7 of Chapter 183C, HRS:

Any person violating this chapter or any rule adopted in accordance with this chapter shall be fined not more than \$2,000 per violation in addition to administrative costs and costs associated with land or habitat restoration, or both, if required, and damages to state land. After written or verbal notification from the department, wilful violation of this section may incur an additional fine of up to \$2,000 per day per violation for each day in which the violation persists.

The report further recommends that certain actions be taken by the University of Hawaii: submitting and executing an after-the-fact conservation district use application and management plan within 180 days of board action and refraining from further work on the land without the requisite approvals of the Department of Land and Natural Resources (or be subject to an additional fine of \$2,000 per day). Additional recommendations call for a fine of \$2,000 per day and referral of this matter to the attorney general for failure to comply with any order resulting from the report. At a hearing held on December 10, 2004, the board accepted all of the report's recommendations.

Arboretum employees have planned for and built structures without proper permits

The staff, as well as the arboretum’s last full-time director, have undertaken or contemplated construction activities on the premises without the requisite approvals. In 2003, a member of the Lyon Arboretum Association contacted the Office of Conservation and Coastal Lands to question a charcoal-making project that Dr. Teramura, as director, was proposing on arboretum grounds. No conservation district use application had been submitted for the project, and the proposal was ultimately dropped.

One of the land use violations involves Dr. Teramura’s effort to make use of limited resources by allowing the reconstruction of several cottages in order to create two-level structures. Certain replacement or reconstruction of existing structures may not require a land use permit, especially those involving nonconforming structures such as the arboretum cottages. However, the rules of the Department of Land and Natural Resources require that repair or maintenance of nonconforming structures “not exceed the size, height or density of the structure which existed immediately prior to October 1, 1964 or at its inclusion into the

conservation district.” See HAR Section 13-5-37. The reconstruction did raise the height of the cottages involved. Improper planning also caused structural damage to several cottages, including the cottage that housed the micropropagation laboratory. The structural damage was severe enough to force the condemnation of three cottages and the destruction of micropropagation specimens. This reconstruction activity also occurred without the requisite city permits.

A situation posing another potential land use violation involves the proposal to construct a *hale* in one of the arboretum gardens. Arboretum employees contracted for services and supplies to build a *hale* to complement the Beatrice Krauss Ethnobotanical Garden without first complying with state, city, and university regulations on procurement and construction. Funds for the *hale* came from private sources and were collected by the Lyon Arboretum Association. Arboretum employees executed the construction contract and paid the contractor half the contract amount for building supplies before the project was halted for lack of a conservation district use permit.

Several regulations were overlooked by the employees. Under university rules, funds for the project should have been deposited with the Office of Research Services or the University of Hawaii Foundation, not with the Lyon Arboretum Association. In addition, the project did not have the required building permits and approvals from relevant city and state departments. And, under other university rules, requests for construction requirements must be made through the applicable facilities planning office; however, the responsibility of coordinating construction projects rests with the fiscal officer, not individual employees.

The children’s learning center was also built with external funds and coordinated in a fashion similar to the *hale* situation. The structure was built without a conservation district use application to obtain a conservation district use permit. In addition, the requisite building permit was not obtained from the City and County of Honolulu. Adding to its regulatory deficiencies, the construction of the children’s learning center raises concerns regarding access and comfort facilities. Most school buses cannot negotiate the narrow and winding access road leading to the arboretum and the learning center. As a result, school children are dropped off at the parking lot of Paradise Park, an adjoining facility, and must walk the access road to reach the arboretum’s gate and the learning center. This treacherous situation was pointed out in a 2001 memorandum from the then interim director to the senior vice-president for research (who later became the arboretum’s director). In the memorandum, the interim director warned that the “the mix of children and traffic on the road pavement is highly undesirable.”

Additionally, the route used by physically challenged students to access the children's learning center included passing through the supporting columns under cottage "A." After the cottage was condemned, students were taken around the structure, passing under a low footbridge attached to access the main floor of the cottage. The route is not paved and only marked by loose gravel.

In addition, arboretum staff have had to struggle with restroom availability for young students attending classes at the children's learning center. Arboretum staff originally planned for children visiting the learning center to use bathrooms at an adjacent cottage. Due to the cottage's condemnation for health and safety reasons, the children, accompanied by staff or chaperones, were required to cross the facility's access road to get to bathrooms located in cottage "H." The arboretum has since arranged to have portable toilets available for the children's use.

Arboretum employees use irregular avenues to administer donations and grants

As the university administration's reluctance or refusal to financially support the facility became apparent, arboretum employees devised ingenious ways to obtain outside funding. They appealed directly to individual legislators for capital improvement project appropriations to fund construction and repair requirements. They also solicited donations and grants, which, in part, created the Lyon Arboretum Association.

The Lyon Arboretum Association, an Internal Revenue Service 501(c)(3) non-profit organization, was the brain-child of former employees, conceived to essentially collect arboretum admission fees and donations. In addition, the association has received and expended grant moneys on behalf of the arboretum. This arrangement afforded the arboretum a great deal of fiscal flexibility. The arboretum could avoid dealing with the main campus repositories for grants (the Office of Research Services or the Research Corporation of the University of Hawaii) and donations (the University of Hawaii Foundation).

Under Section 304-7, HRS, the university's Board of Regents is the entity responsible for overseeing all university fundraising, which has been entrusted to the exclusive domain of the University of Hawaii Foundation. In addition, university executive policy requires that, for organized research units, "[s]olicitation and administration of external grants and contracts . . . must be processed through the university's Office of Research Administration . . ." (now known as the Office of Research Services) and approved by the university's director of research. The alternative administrator of grants would be the Research Corporation of the University of Hawaii, which is a state agency

established by the Legislature in 1965 and attached to the University of Hawaii for administrative purposes. Because the corporation is exempt from state statutes such as those involving procurement and personnel, it can process transactions expeditiously.

The Lyon Arboretum Association did consult with the University of Hawaii Foundation with respect to fundraising and related activities. Because of the foundation's requirements in accessing funds and its administrative fees, the association determined that there was no advantage to partnering with the foundation. This same attitude has surfaced with respect to complying with requirements involving the Office of Research Services and the Research Corporation of the University of Hawaii.

The association has been serving as a conduit for research and educational grants that benefit the arboretum, contrary to university regulations. And in most cases, the arboretum employees, not the association employees, are writing the proposals for the grants. This practice allows the arboretum staff to avoid university red-tape and administrative fees.

In fact, for two grants, the arboretum may have paid an overhead fee that exceeds the rate usually charged by the Research Corporation of the University of Hawaii. A professor from the university's Hilo campus used the arboretum and the association to process two grants from the U.S. Fish and Wildlife Service: one for \$25,000 for an assessment of the Puu Waawaa water system, another for \$30,000 to produce a field guide to Hawaii island endangered plants. The association submitted the proposals, listing the arboretum director as a contact; the association managed the grant proceeds; and the researcher served as a subcontractor to the arboretum. For these two grants, the association retained 10 percent of grant funds for administrative overhead. If the Research Corporation of the University of Hawaii had administered the grant, its fee would not have exceeded 5 percent.

While the arboretum's arrangement with the association may have freed the facility from the university administration's oversight and provided easier access to funds, it also created its own set of problems. Former directors have expressed their occasional frustration with the association's control of funds. Until recently, arboretum directors and staff were required to request funds or reimbursements on an as-needed basis from the association. This arrangement prevented the arboretum from creating annual budgets that incorporated the association's contributions. In addition, during the course of our fieldwork, both arboretum employees and association representatives expressed tension between the two organizations.

The arboretum's financial and inventory accounting is substandard

The entanglement of the arboretum and the association in each other's affairs has created a convoluted fiscal web for the arboretum. The arboretum's fiscal entanglements with the association hampered our ability to discern a complete and accurate financial picture of the facility. Because arboretum funds are managed outside the university's accounting system, fiscally related transactions are not reported in one document or by one entity, as often dictated by university procedures and forms.

In an interview, the association's accountant credited the immediate former arboretum director as the only person who could likely piece together the facility's financial puzzle. Like the University of Hawaii Foundation, the association is a non-profit corporation. The association was established to support the arboretum's goals through fundraising. The foundation, as an Internal Revenue Service 501(c)(3) corporation, legally separate from the university and its affiliates, must be reported as a component unit of the university as required by the Governmental Accounting Standards Board. This requirement may apply as well to financial reports of the association and the arboretum. We could not discern or confirm that such financial reports have been prepared by the arboretum or the association.

While most fundraising is managed and accounted for by the University of Hawaii Foundation, some organizations, such as the Lyon Arboretum Association, support university programs independent of foundation oversight. Officials at the foundation and the Board of Regents have expressed concern about this lack of oversight and the potential associated risk to the university's reputation posed by these groups. The Board of Regents lacks policies to guide fundraising and receives inadequate information from these groups to effectively monitor their fundraising activities. We recommend a review to determine whether the Board of Regents has fulfilled its responsibility to protect the university from any adverse effects caused by the independent fundraising of the Lyon Arboretum Association. This issue was also raised in our *Audit of the University of Hawaii Contract with the University of Hawaii Foundation*, Report No. 04-08, dated May 2004.

The arboretum has tolerated the Lyon Arboretum Association's encroachment on fiscal and operational affairs

To the outside world, there may be little distinction between the Lyon Arboretum and the Lyon Arboretum Association. According to a former director, the association was established to assist the facility in creating public interest and to facilitate access to non-university funds. However, because it relies on the association for certain fiscal operations, the arboretum may have acquired a different problem. Currently, the lines of

control are blurred between the two entities, and accountability cannot be easily apportioned.

Before July 1, 2004, the association received the admission “donations” from individual visitors and tour groups. As an Internal Revenue Service 501(c)(3) non-profit organization, the association may accept donations and proceeds from money-raising activities. However, according to the current associate director, because the admission “donations” may be viewed as an exchange for the value that visitors receive from the arboretum, and not from the association, such proceeds should be controlled by the arboretum. As a result of a transition in fiscal management, these “donations” are now collected by arboretum staff and deposited into an account with the University of Hawaii Foundation in order to be consistent with the practices of other university units.

The association also has been collecting course fees for classes organized by an arboretum employee and conducted on arboretum premises. The classes are not fundraising activities of the association. Yet, course fees are deposited into an association account and withdrawn by the association for the arboretum’s educational activities. This arrangement is expedient for the arboretum but permits staff to avoid university policies and procedures on the collection of fees.

The association itself sponsors money-raising activities that include a series of annual plant sales. We were informed by the former arboretum director that, although an appropriate association activity, plant sales utilize arboretum employees on state time (one employee spends 50 percent of her working hours growing plants for the Lyon Arboretum Association’s plant sales, while another spends 50 percent of her hours watering the plants), greenhouse facilities, and supplies possibly purchased with state funds. The association manages the sales receipts and expenses and retains the net proceeds. The association also operates a gift shop on the arboretum’s premises that sells jams and jellies made by association volunteers in the arboretum’s kitchen. On June 29, 2004, the Department of Health notified the association that food preparation permit violations had been committed and that the labeling of jams and jellies was insufficient.

The blurring of lines between the association and the arboretum is further evidenced by the association’s rent-free use of office space and a cottage on arboretum premises. The association does not pay for utilities associated with its offices, gift shop, and other activities on the premises. There is no lease agreement between these two entities, contrary to university rules. Further, the association pays directly for certain expenses of the arboretum, reimburses arboretum employees directly for purchases, and at times pays the salary of certain employees working at and for the arboretum.

Underlying much of the confusion is the lack of defined responsibilities and expectations of each entity in relation to the other. The association's bylaws broadly express its support of the arboretum, but are not specific about the nature of that support. Likewise, the arboretum's responsibilities toward, and its expectations of, the association have not been documented. Clarifying each entity's role will aid both of them to act in conformance with regulatory and statutory requirements.

The co-dependent relationship between the arboretum and the association grew from a desire to facilitate activities at the facility. However, the two entities have become partners in circumventing university and other governmental regulations. Without oversight by the university administration, essential management controls will continue to erode.

The arboretum cannot account for its inventory

Uncertainty surrounds the arboretum's inventory of equipment and other resources. The arboretum and association cannot confirm the ownership of certain equipment purchased under present fiscal and financial arrangements. The arboretum does not consistently maintain proper documentation or tagging of the equipment in question as part of the university's fixed asset inventory.

For example, in April 2004, the association purchased a laptop for the Lyon Arboretum's educational activities. The laptop is within the threshold requiring placement on the university's inventory listing for theft-sensitive personal property. However, it is not listed; nor was the ownership of the laptop transferred to the university.

Further, the association also applied grant moneys and donations to purchase three digital cameras. We have been informed that the physical location of one of these cameras is currently unknown. Initially, we were told that purchases such as these are considered to be gifts to the university. Later, clarification indicated that the association does not have any policies and procedures addressing the ownership of equipment purchased using grant moneys. Due to the indeterminate practices of the Lyon Arboretum Association, the ownership of equipment purchased by the association for use by the arboretum remains unclear.

Under its environment of loose management controls, the arboretum agreed orally with an employee hired to renovate certain cottages that any personal equipment he used for the job would be replaced if damaged. In addition to the employee's personal equipment, tools were also purchased by the Lyon Arboretum Association for the renovation job. When the employee was terminated, the arboretum could not determine with certainty the ownership of equipment used on the project

and relied on the terminated employee to identify his belongings and those that required replacement under his oral agreement with the arboretum.

Conclusion

In response to man's disregard of the environment, the Hawaii Sugar Planters' Association and Dr. Harold L. Lyon undertook rehabilitating a section of the Manoa Valley into an arboretum and botanical garden. This undertaking provided watershed and rainforest protection of part of the island's groundwater supply and instruction on how to replicate the effort elsewhere. They, in turn, entrusted the arboretum to the University of Hawaii, envisioning that the institution could assume this stewardship and develop the natural resource's scientific and educational potential in ways that a privately funded organization could not.

Over half a century has passed and that trust has not been fulfilled. The university administration's inattentiveness over the years left the arboretum in the hands of operational personnel assigned to its care. Without strategic guidance and funding support, the arboretum has slid into disorder, disrepair, and dysfunction. The facility's personnel, faced with an indifferent university administration, became a committed and dedicated force in the survival of the arboretum for over half a century. However, this commitment and dedication resulted in an attitude of proprietorship and defensiveness over the facility and ultimately had a part in its deterioration.

The time is long overdue for the university to honor its stewardship. If the arboretum is to grow and prosper under its care, the university must fully embrace the arboretum into its administrative and academic family and commit itself to fulfilling this resource's potential.

Recommendations

The University of Hawaii's Board of Regents, its administration, and the chancellor of the Manoa campus should:

1. Determine whether the university's continued stewardship of the Harold L. Lyon Arboretum is in concert with the institution's overall mission;
2. If the stewardship is to continue, begin a strategic planning process immediately. Set a schedule for the planning process with definite deadlines reflecting the urgency of the arboretum's condition. The appropriate stakeholders, including but not limited to, the Office of Conservation and Coastal Lands of the Department of Land and Natural Resources, the Hawaii Agricultural Research Center

(successor to the Hawaii Sugar Planters' Association), and the Lyon Arboretum Association, should be invited to participate early in the planning process;

3. Reassess the appropriateness of placing the arboretum under the administration of the College of Natural Sciences;
4. Ensure that the management tools that flow from a strategic plan are developed, including an organizational chart, position descriptions, written policies and procedures, and an operations manual;
5. Bring the arboretum in conformance with conservation district and other applicable requirements, and submit the necessary filings before commencing any land use activities on the arboretum grounds;
6. Define the roles and responsibilities between the arboretum, the association, and other organizations occupying arboretum facilities and prepare the appropriate documents to memorialize the relationships; and
7. Conform the arboretum's financial and inventory accounting systems to university requirements.

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Appendix A

STATE OF HAWAII
OFFICE OF THE AUDITOR
465 S. King Street, Room 500
Honolulu, Hawaii 96813-2917



MARION M. HIGA
State Auditor
(808) 587-0800
FAX: (808) 587-0830

August 11, 2004

The Honorable David McClain
Acting President
University of Hawaii
2444 Dole Street
Bachman Hall, Room 202
Honolulu, Hawaii 96822

Re: Safety concerns regarding the Harold L. Lyon Arboretum

Dear Dr. McClain:

I bring to your attention certain conditions at the Harold L. Lyon Arboretum that may merit immediate action by the University of Hawaii. As you know, my office is conducting an audit of the arboretum pursuant to last session's Senate Concurrent Resolution No. 115.

In the course of background research, my audit team visited the arboretum and interviewed several of the staff there. The team also reviewed many documents, among which were engineering and other reports regarding arboretum facilities. Team members noted, or were told of, the deteriorating or undesirable state of certain arboretum structures. In particular, they observed that one of the cottages leans precariously off-center, toward a facility used for children's classes; also, the team was told that the facility has no bathroom accommodations and that children must traverse the arboretum's narrow access road to reach the restroom in another building.

An engineering report, dated March 3, 2003, comments on the need to strengthen buildings to prevent collapse. The report makes "emergency recommendations" to shore three buildings that were each raised to add another floor. Team members were also told of exposed electrical wiring that charred surrounding material, of cesspool overflow, and of the questionable load-bearing ability of a second-story room used for classes.

The audit is still in its preliminary stages, and, accordingly, no definitive findings have been made on the severity or significance of the arboretum's physical condition. Under the government auditing standards adopted by our office, however, I abide by the policy of notifying authorities about deficiencies under certain circumstances. In this case, the potential for harm to the public and arboretum employees (and the university's possible exposure to liability) prompts me to raise these concerns with you now, and to urge you to investigate the arboretum's condition and take appropriate precautionary actions quickly.

The Honorable David McClain
August 11, 2004
Page 2

If you have any questions on this matter, please contact me or Sandra Hoshida, who is the supervisor of the Lyon Arboretum audit. We can be reached at 587-0800. Also, I would appreciate being kept informed of the university's actions on this matter.

Sincerely yours,



Marion M. Higa
State Auditor

c: The Honorable Patricia Lee, Board of Regents
The Honorable Peter Englert, Chancellor

Appendix B
Photographs of Visible Damage to Arboretum Structures



Plant growth in gutters



Old single-strand electrical wiring

Source: Office of the Auditor



Support post damage



Wood rot damage near cottage base

Source: Office of the Auditor



Support beam damage



Gap between roof and exterior wall

Source: Office of the Auditor

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Notes

Chapter 1

1. Information regarding buildings on the grounds of Lyon Arboretum was obtained from the Lyon Arboretum website at http://www.lyonarboretum.com/aboutLyon_HistManoa.php (citing Charles Bouslog, et al., *Manoa, the Story of a Valley*, Honolulu, Hawaii, Mutual Publishing, 1994, pp. 200-203).

Chapter 2

1. Paul F. Levy, *The Nut Island Effect: When Good Teams Go Wrong*, Harvard Business Review, March 2001.
2. Ibid., p. 6.

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Responses of the Affected Agencies

Comments on Agency Responses

On December 14, 2004, we transmitted a draft of this report to the interim president and the Board of Regents of the University of Hawaii. A copy of the transmittal letter to Interim President David McClain is included as Attachment 1; a similar letter was sent to Dr. Patricia Lee, chair of the Board of Regents. The university's response is included as Attachment 2. The Board of Regents did not respond separately.

In its response, the university expresses gratitude for our review and appears to be in general agreement with our findings and recommendations. It reports that it has already addressed some of the recommendations. It is disappointed, however, that our report did not sufficiently recognize the institutional efforts since June 2004 to correct "the shortcomings in past practices." It points to the announced January reopening of the arboretum as evidence of the speed with which the university has moved on this matter (we learned that this announcement was made on the same day as the university's comments to us on our report). And the university notes further its request for \$3 million to improve the arboretum's infrastructure and the formation of a task force to address strategic issues regarding the arboretum (all of which we did acknowledge in our report).

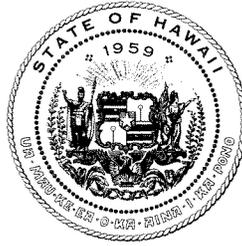
Closure of the arboretum for health and safety reasons occurred only after our letter of August 11, 2004, to the university's interim president, raising concerns about the facility's deteriorating state. We had learned that the university intended to take no major action until our audit was completed. Given the potential for harm to the public and arboretum employees (and possible exposure to liability), we urged the interim president to investigate and take appropriate precautionary actions quickly. Only after it closed the arboretum on August 27, 2004, did the university submit its \$3 million request and announce formation of the task force.

As our report pointed out, the commitment of funds for capital improvements ought to be made only after the university has determined that the arboretum's facilities are necessary to achieving the arboretum's mission. And that mission has yet to be articulated. The recently constituted task force has not completed reviewing the arboretum's mission and its role in the university's overall mission. Moreover, the Manoa chancellor has not ruled out the possibility that returning the arboretum to its original owner may be in order. Although the university

may have taken remedial measures to reopen the arboretum, these strategic questions remain unanswered.

We made minor editorial changes and added information regarding the reopening of the arboretum.

STATE OF HAWAII
OFFICE OF THE AUDITOR
465 S. King Street, Room 500
Honolulu, Hawaii 96813-2917



MARION M. HIGA
State Auditor

(808) 587-0800
FAX: (808) 587-0830

December 14, 2004

COPY

The Honorable David McClain
Interim President
University of Hawaii
Bachman Hall
2444 Dole Street
Honolulu, Hawaii 96822

Dear Dr. McClain:

Enclosed for your information are three copies, numbered 6 to 8 of our confidential draft report, *Management and Fiscal Audit of the Lyon Arboretum*. We ask that you telephone us by Thursday, December 16, 2004, on whether or not you intend to comment on our recommendations. If you wish your comments to be included in the report, please submit them no later than Monday, December 20, 2004.

The University of Hawaii Board of Regents, Governor, and presiding officers of the two houses of the Legislature have also been provided copies of this confidential draft report.

Since this report is not in final form and changes may be made to it, access to the report should be restricted to those assisting you in preparing your response. Public release of the report will be made solely by our office and only after the report is published in its final form.

Sincerely,

A handwritten signature in cursive script, appearing to read "Marion M. Higa".

Marion M. Higa
State Auditor

Enclosures



UNIVERSITY OF HAWAII

JAMES R. GAINES
INTERIM VICE PRESIDENT FOR RESEARCH

December 20, 2004

Ms. Marion M. Higa
State Auditor
Office of the Auditor
465 S. King Street, Room 500
Honolulu, HI 96813-2917

RECEIVED
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OFFICE OF THE AUDITOR
STATE OF HAWAII

Dear Ms. Higa,

I am writing in response to your letter of December 14, 2004 inviting comments on the confidential report, *Management and Fiscal Audit of the Lyon Arboretum*. The comments are as follows:

The University of Hawaii is grateful to the State Auditor for her review of the University's stewardship of the Lyon Arboretum over the past several decades, however, the University Administration is disappointed that so little recognition was given to the efforts of the University, staff, and administration of Lyon Arboretum since last June which have addressed many of the shortcomings in past practices. The announcement by UH Mānoa Chancellor Englert that the Lyon Arboretum will be fully reopened to the public in January underscores the speed with which UH has moved on this issue. UH looks forward to working with the Governor and the Legislature to secure the necessary \$3 million in funds to make further essential improvements in the Arboretum's physical infrastructure.

A Task Force representing the Mānoa Faculty Senate, the Hawaii Agricultural Research Center, the Lyon Arboretum Staff, the Garden Club of Hawaii, Malama O Mānoa, the Hawaii Nature Center, the Sierra Club of Hawaii, the Nature Conservancy of Hawaii, the Outdoor Circle, Hui Hana, the Lyon Arboretum Association, and the Mānoa Neighborhood Board has been formed. This Task Force will complete its review of the Arboretum's mission and the appropriate role of the facility in the University's mission to teach, conduct research, and serve the community. In addition, a Mānoa faculty committee is looking for opportunities to augment the Arboretum's research programs as a means of expanding its funding resources. The State Auditor's report made seven specific recommendations. Some of these have already been addressed but within the next year, the University will respond to each of the recommendations.

Sincerely, ,

James R. Gaines
Interim Vice President for Research

c: David McClain
Sam Callejo