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# Financial and Management Audit of the Moloka'i Irrigation System

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A Report to the  
Governor  
and the  
Legislature of  
the State of  
Hawai'i

Report No. 08-03  
February 2008



**THE AUDITOR**  
STATE OF HAWAI'I

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## Office of the Auditor

The missions of the Office of the Auditor are assigned by the Hawai'i 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.
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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.
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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.

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### THE AUDITOR STATE OF HAWAI'I

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# OVERVIEW

## *Financial and Management Audit of the Moloka'i Irrigation System*

Report No. 08-03, February 2008

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### Summary

We conducted this audit in response to Senate Concurrent Resolution No. 176, of the 2007 legislative session. The Moloka'i Irrigation System provides about 1.4 billion gallons of water annually to its users. Construction was started in 1957 to bring water from the eastern end of Moloka'i to the central farming areas as part of a federal and state commitment to native Hawaiian homesteaders. The system consists of collection dams and deep wells; a transmission tunnel, pipes, and flume; a reservoir; and distribution pipes to customers. Among the customers is the Moloka'i Ranch, via a rental agreement.

We found that while the Department of Agriculture inherited a broken system, little has been done to learn about system problems or to create a plan to address them. The department received historical data on the system from the Department of Land and Natural Resources, and yet it was not clear that department personnel understood the significance of its history. Numerous studies recommended management and operational improvements. For example, problems reported in a 1987 study still exist today, unaddressed.

The department's flawed management endangers agriculture in Moloka'i. It has been unable to reconcile its responsibilities as stewards to the irrigation system and obligations to the Hawaiian homesteaders. While it recognizes the homesteaders' two-thirds water preference accorded by Section 168-4, HRS, this is not reflected in any planning. Non-homestead farmers consume approximately 80 percent of the system's available water. Effectively, the two seemingly complementary responsibilities have become competitors with the needs of the homesteaders subsumed to the interests of larger agricultural business.

A lack of procedures over maintenance and a lack of appropriate tools and equipment contributed to the further decline of an already broken system. For example, system flow would increase if at least some of the air relief valves were replaced. At the time of our field work, 16 of 17 valves were inoperable. Exacerbating the problem was the large workload shared among a small staff. We found miscommunication and lack of communication between levels of management, with district offices making requests that divisional management was not aware of. And while the audit request asks us to determine costs for upkeep, it is necessary to first bring the system to efficient operational order before that can be addressed.

Department leadership is also lacking in the long-term planning for the system. The department's strategic plan should provide overarching goals for the divisions, while the divisional action plan should outline the steps to achieve those goals.



However, this was not apparent in the plans we reviewed. Goals were vague with no specific implementation plans or performance metrics. Multiple studies have been commissioned with little return on their investment and their recommendations allowed to languish. The users' advisory board is underutilized.

Further, weaknesses in the department's fiscal management leave the MIS to struggle financially. The department did not make use of internal financial reporting as a management tool. Records of activity (cash collections, expenditures) specific to the MIS maintained by the fiscal office and the division were not reconciled. Accounts receivable collection is a large problem, with more than 90 percent of receivables outstanding more than 60 days. The division also manages four other irrigation systems, and the records for all five systems were maintained in aggregate, leaving divisional management to make decisions based on the whole, as opposed to addressing the individual needs of the different systems. We tried our hand at breaking out MIS revenues and expenditures and concluded that in FY2006-07, MIS generated \$498,000 in cash receipts and expended \$428,000. The receipts included \$136,000 from the pipeline services rental agreement.

The department was unable to provide detailed information on its financial statements without outside assistance. This lack of knowledge leaves the department susceptible to greater problems, because staff would be unable to identify key accounting issues and bring them to management's attention. Additionally, the department relies heavily on annual general fund appropriations for the Irrigation System Revolving Fund, contrary to the intent of a revolving fund.

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## Recommendations and Response

We recommend that the department prioritize critical system needs to bring the system to proper working condition and present the rationale to the Legislature. Additionally the material and equipment needs must be addressed. In short, to begin planning for greater efficiencies the department must first fix the broken system. At the same time, the department needs to begin addressing its long term plans for the MIS. The system is approaching the end of its original design life. The people of Moloka'i are highly dependent on this system and the department needs to ensure that disruption of service does not occur.

The department responded to a draft of the report. The department pointed out some technical inconsistencies which have been corrected in the final version of the report. Otherwise, we stand on our report. Other department comments include corrective actions in process or initiated after the completion of our audit fieldwork. While we applaud the department for taking proactive steps generally, it would be premature for us to comment on those actions. Most importantly, we note that the department agreed with the recommendations, which is encouraging, and offers hope for improvement of the Moloka'i Irrigation System.

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Governor  
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Submitted by

**THE AUDITOR**  
STATE OF HAWAI'I

Report No. 08-03  
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## Foreword

This is a report on the management audit of the Department of Agriculture's Moloka'i Irrigation System in response to Senate Concurrent Resolution No. 176, of the 2007 legislative session. We conducted the audit pursuant to Section 23-4, Hawai'i Revised Statutes, which requires the Auditor to conduct postaudits of the transactions, accounts, programs, and performance of all departments, offices, and agencies of the State and its political subdivisions.

We wish to express our appreciation for the cooperation and assistance extended to us by the Board of Agriculture, the director and staff of the Department of Agriculture, and others whom we contacted during the course of the audit.

Marion M. Higa  
State Auditor

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# Chapter 1

## Introduction

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Prompted by concerns of the users advisory board and private citizens, the 2007 Legislature requested, in Senate Concurrent Resolution No. 176 (SCR 176) that the State Auditor conduct a financial and management audit of the Moloka'i Irrigation System (MIS). Legislative committees noted allegations of management's failure to provide adequate maintenance of the system and the diversion of revenues generated by the MIS to subsidize other irrigation systems managed by the Department of Agriculture. Additionally, in spite of years of making recommendations on improvements to the system, users of the MIS continue to deal with an inadequate irrigation system and continue to pay fees and charges that do not allow for a flourishing agricultural industry on Moloka'i.

Specifically, SCR 176 asks the Auditor to include a determination of:

1. The total annual revenues generated from users of the Moloka'i Irrigation System for the last three years.
2. The total annual costs of operation and maintenance of the Moloka'i Irrigation System for the last three years.
3. The anticipated major costs for upkeep of the Moloka'i Irrigation System over the next three years.
4. Any anticipated capital improvement costs that the Moloka'i Irrigation System may require over the next three years.
5. The funds, if any, generated from users of the Moloka'i Irrigation System that are being diverted by the Department of Agriculture to subsidize other irrigation systems or other department operations throughout the State.
6. The measures that may be implemented to improve the physical facilities and the operations of the Moloka'i Irrigation System.
7. The measures that may be implemented to reduce the cost of irrigation to users of the Moloka'i Irrigation System.

Our work was performed pursuant to Section 23-4, Hawai'i Revised Statutes (HRS), which requires the Auditor to conduct postaudits of the transactions, accounts, programs, and performance of all departments, offices, and agencies of the State and its political subdivisions.

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## Background

Rooted in the intent of the Hawaiian Homes Commission Act to rehabilitate native Hawaiians by returning them to the land in preservation of culture and tradition, the Moloka‘i Irrigation System continues the island’s long history of agriculture by providing approximately 1.4 billion gallons of water annually to its users.

### ***The Hawaiian Homes Commission Act, 1920***

The Hawaiian Homes Commission Act, 1920, was originally enacted by the United States Congress as a federal law. However, pursuant to section 4 of the Act to provide for the admission of the State of Hawai‘i into the Union, the Hawaiian Homes Commission Act now constitutes a provision of the Constitution of the State of Hawai‘i. Land exchange is permitted, subject to the approval of the Secretary of the Interior. The State is also permitted to amend the Hawaiian Homes Commission Act, with the consent of the United States Congress.

The act brought into reality the wishes of the 1919 Legislature of the Territory of Hawai‘i to advocate the rehabilitation of Hawaiians. The act’s stated purpose “is to enable native Hawaiians to return to their lands in order to fully support self-sufficiency for native Hawaiians and the self-determination of native Hawaiians. . .and the preservation of the values, traditions, and culture of native Hawaiians.” The act places native Hawaiians on lands specifically listed to assure their long term tenancy to beneficiaries and their successors. On the island of Moloka‘i, the lands set aside as Hawaiian home lands are listed below:

On the island of Moloka‘i: Pālā‘au (eleven thousand four hundred acres, more or less), Kapa‘akea (two thousand acres, more or less), Kalama‘ula (six thousand acres, more or less), Ho‘olehua (three thousand five hundred acres, more or less), Kamiloloaa I and II (three thousand six hundred acres, more or less), and Makakupa‘ia (two thousand two hundred acres, more or less) and Kalaupapa (five thousand acres, more or less).

More importantly, as it relates to the Moloka‘i Irrigation System, the act further acknowledges the rights of the Hawaiians and their need for water to provide “adequate amounts of water and supporting infrastructure, so that homestead lands will always be usable and accessible.”

### ***The Moloka‘i Irrigation Project***

The Department of Land and Natural Resources determined that the deep and fertile soils of central and west Moloka‘i were ideally suited for agriculture. Moreover, there was an adequate source of water supply in the Waikolu Valley for an irrigation project. Following the determination by the Bureau of Reclamation that an irrigation project

would be feasible, with direct annual benefits exceeding the annual costs, the Territory of Hawai‘i began its endeavor to create this system.

In February 1957, construction of this project began, starting with an access road to the tunnel portal site. The tunnel “holed through” to Waikolu Valley on November 1, 1960. It was estimated that the remaining work would be completed during the summer or fall of 1961.

In August of 1960, following statehood, the provisions of the Small Reclamations Project Act of 1956 were extended to Hawai‘i through the Hawai‘i Omnibus Bill. Since the Moloka‘i project was eligible for a loan under the act of 1956, the Department of Land and Natural Resources applied for federal funds to “bolster the agricultural economy on the Island of Moloka‘i. No purpose other than irrigation (was) considered in the plans (of the irrigation system).”

Prior to the loan application, the tunnel portion of the system was being constructed with state funds. With the loan application approved and with funding provided by the State, the remaining system was constructed—a supply conduit, transmission and distribution lines, and a storage reservoir. The system became operational in 1967 upon completion of primary irrigation facilities.

The purpose of the proposed project was to bring under irrigation an area of 13,650 irrigable acres of land, which was dry farmed, thereby increasing and stabilizing the crop yield and economy of the principle farm area on the island of Moloka‘i. As originally conceived, the system was designed to serve irrigation water to 13,250 acres of pineapple and 400 acres of diversified crops. With the completion of the tunnel and supply conduit, an additional 3,150 acres of pineapple land and 660 acres of irrigable diversified cropland were added.

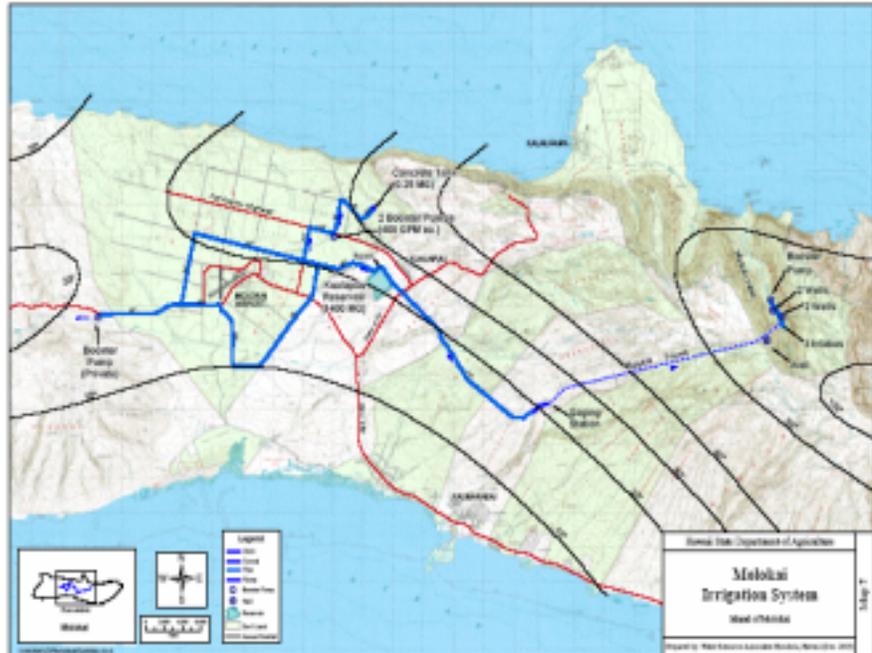
Although the Department of Land and Natural Resources was the designated sponsoring agency responsible for the project construction, operation and maintenance, the Department of Hawaiian Home Lands and the Moloka‘i Ranch, Ltd. also benefited from the Moloka‘i Irrigation System. Therefore the department contracted with them to pay irrigation charges.

### ***Physical Components of the Moloka‘i Irrigation System***

The original master plan consisted of four phases, which would collect water from both the Waikolu and Pelekunu Valleys for distribution into the farming areas in central Moloka‘i. However, only Phase I was completed. As originally conceived, the total amount of water from the system was estimated to be 43.1 million gallons per day (mgd). As it

stands today, the system's average inflow is approximately 4.0 million gallons per day. Figure 1.1 diagrams basic components of the system.

### Exhibit 1.1: Moloka'i Irrigation System



Source: Department of Agriculture

The irrigation system consists of the following facilities:

1. Waikolu Valley water collection system: consists of four surface water diversion dams and six deep wells.
2. Moloka'i tunnel: approximately 5.1 miles long, has a horseshoe cross-section that is eight feet wide and eight feet high and cut into natural rock. Its primary purpose is to convey the developed surface and deep well water in Waikolu Valley through the mountain to the Leeward side (west portal).
3. Water transmission system: the system of pipes and flume transporting water from the west portal to the Kualapu'u Reservoir.
4. Kualapu'u Reservoir: a 1.4 billion gallon capacity, butyl rubber lined, open reservoir. It was designed for a maximum depth of 54 feet and encompasses approximately 100 acres.
5. Water distribution system: water is distributed from the reservoir to customers primarily in the Ho'olehua and Mahana areas via a system

of pipes. Additionally, the pipeline services the Moloka‘i Ranch by means of a rental agreement, delivering water up until Mahana whereby Moloka‘i Ranch's pipeline carries water to the west end.

## **Administration**

The system is currently under the administration of the Department of Agriculture. However, its history is rooted in other government agencies. The Moloka‘i Water Board was created in 1943 to construct a water irrigation and utilization project for the island of Moloka‘i. The board was empowered to serve and supply lands set aside as Hawaiian homelands on Moloka‘i. Therefore, members from the Hawaiian Homes Commission sat on the board. In 1953, the board’s duties were transferred to the Hawai‘i Irrigation Authority, which consisted of five commissioners who were appointed by the governor. In 1957, the authority was renamed the Hawai‘i Water Authority.

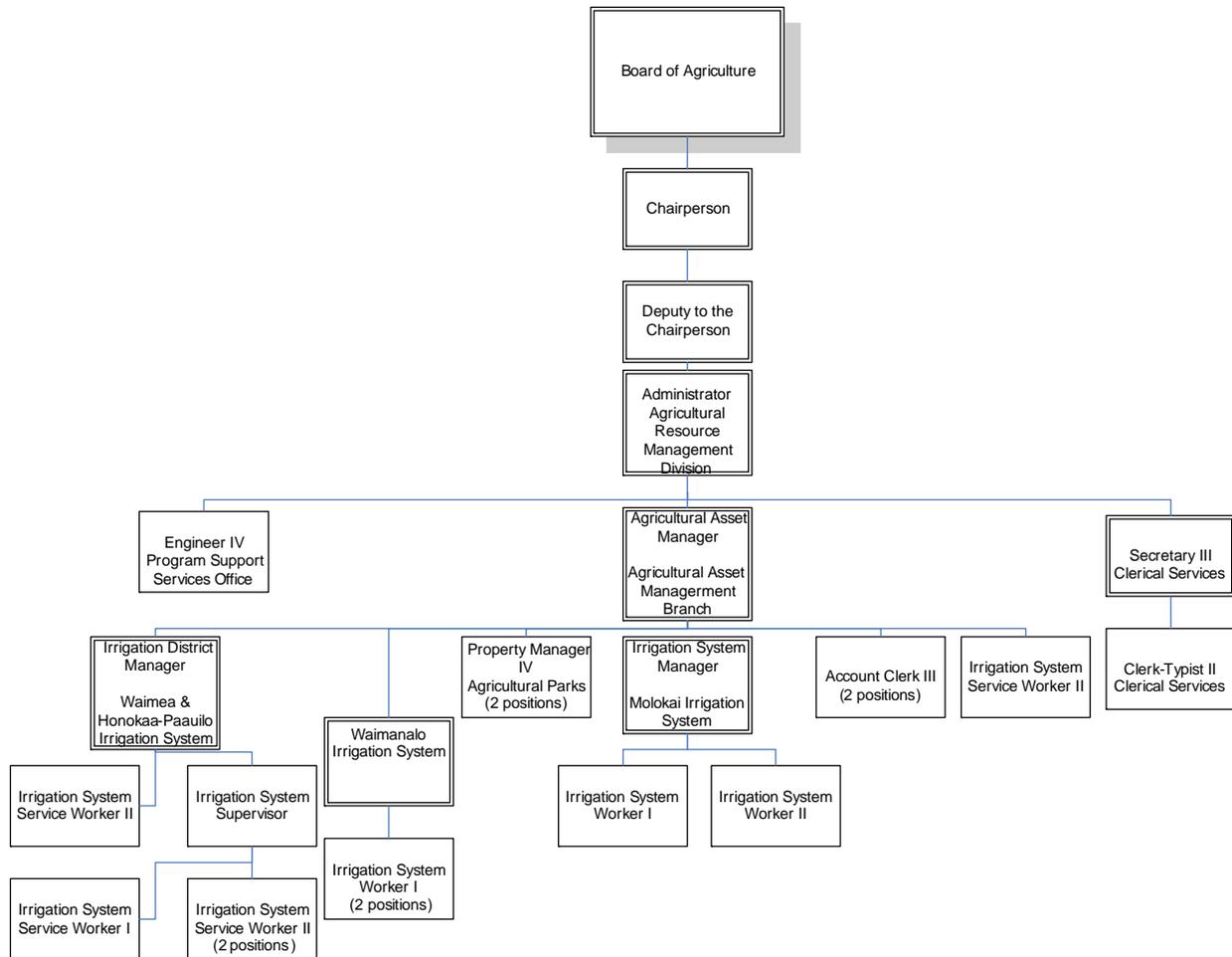
In 1961, Act 166 transferred administration of the Moloka‘i Irrigation System from the Hawai‘i Water Authority to the Board of Land and Natural Resources. Then, in 1987 the Legislature enacted Act 306 stating that agricultural production needed to be developed as fully as possible and that water at the time tapped for irrigation was inadequate. Because the Legislature determined that additional water and water facilities were necessary for the development of agriculture in the State, it felt the system should be administered by the Department of Agriculture. In 1989, the Department of Agriculture assumed its duties as custodian of the State’s irrigation systems, including the Moloka‘i Irrigation System.

Within the department, the Moloka‘i Irrigation System falls under the Agricultural Resource Management Division, which maintains and operates four other irrigation systems: Waimānalo, Kahuku, Honoka‘a-Pa‘auilo, and Waimea; as well as ten agricultural parks, and three agricultural produce processing and marshalling facilities on Hawai‘i, O‘ahu, and Moloka‘i. Figure 1.2 details the organization and staffing levels of the department as it relates to the irrigation systems.

## **Board of Agriculture**

The Department of Agriculture is headed by an executive board consisting of ten members, one each from the counties of Hawai‘i, Maui, and Kaua‘i; four at-large; the chairperson of the board of land and natural resources; the director of business, economic development, and tourism; and the dean of the University of Hawai‘i College of Tropical Agriculture and Human Resources. The chairperson of the Board of Agriculture is appointed by the governor and concurrently serves as the department director.

**Exhibit 1.2  
Irrigation Systems Organization Chart and Staffing**



The chairperson leads six divisions, one staff office, and an attached program in its mission to stimulate growth in agriculture in Hawai‘i. The department’s main objectives are to preserve, promote and develop essential agricultural resources and infrastructure; to create and maximize opportunities for exporting; and facilitate growth of existing and new agricultural commodities and by-products.

In addition, as it relates to the Moloka‘i Irrigation System the board may:

1. Acquire water and water sources, watershed, reservoir sites, rights-of-way over lands and property necessary for the construction and maintenance of water facilities for distribution and transmission of water for irrigation and domestic use;

2. Make and execute contracts to exercise the powers of the board for the purchase or sale of water, purchase or lease of water facilities for irrigation, and for securing a priority right to the owners and occupiers of land already using water in a project;
3. Make, amend, and repeal bylaws and rules to carry into effect the powers and purposes of the board;
4. Make surveys to determine the engineering and economic feasibility of each project;
5. Conduct comprehensive studies of the crops, livestock, and poultry which may be profitably grown or produced and the probable market for each;
6. Conduct feasibility studies of the economic potential of the area;
7. Determine the probable costs and value of providing water for irrigation in any proposed project;
8. Investigate and make surveys of water resources, including the possibility and feasibility of inducing rain by artificial or other means; and
9. Define and redefine the boundaries of projects and to consolidate or separate projects, existing or proposed.

The board is empowered to prepare detailed plans for the acquisition or construction of facilities for irrigation or for economic development which, in its opinion, are economically feasible, to prepare estimates of the probable cost of each, and to prepare estimates of the water tolls and acreage assessments required for the cost of operation and the amortization of the investment of each project, so that the project shall be self-supporting.

***Moloka‘i Irrigation  
System Water Users’  
Advisory Board***

Section 167-23, Hawai‘i Revised Statutes (HRS) establishes a Moloka‘i Irrigation System Water Users’ Advisory Board, appointed by the governor. The advisory board consists of six members, as follows: (1) A homestead farmer user on Moloka‘i; (2) A non-homestead farmer user on Moloka‘i; (3) The designee (by name rather than office) of the Moloka‘i Farm Bureau; (4) The designee (by name rather than office) of Hikiola Cooperative, Inc.; (5) The designee (by name rather than office) of the Moloka‘i-Lāna‘i soil and water conservation district; and (6) the designee (by name rather than office) of the Department of Hawaiian Home Lands (DHHL).

The members of the advisory board serve without compensation, but are entitled to reimbursement for necessary expenses while attending meetings and discharging their duties. For administrative purposes, the advisory board is placed within the Department of Agriculture. The advisory board's duties and responsibilities include advising the department on matters of concern to the users of the system, providing support for improvements to the irrigation facilities, participating in the long-range planning of the system, and acting as liaison between the users and the department.

### ***The Irrigation System Revolving Fund***

Section 167-22, HRS establishes the Irrigation System Revolving Fund to which all legislative appropriations and revenues received by the Board of Agriculture for the operation of the irrigation systems are deposited. The fund must be used and expended for 1) payment of operating and maintenance costs; 2) reimbursement to the State the amount of any principal or interest due upon any bond issued under Chapter 168, HRS; 3) administrative costs, engineering surveys, economic studies, plans, and maps; and 4) other water projects or purposes of the board of Agriculture.

### ***Prior audits***

This is our first audit of the Department of Agriculture's operation of the Moloka'i Irrigation System; however we have performed audits on the department as a whole.

In 2005, our *Financial Audit of the Department of Agriculture* found several deficiencies in the department's internal control over financial reporting and operations. This included a lack of formal written policies and procedures for many of its basic processes and management functions including the administration of agricultural loans, certain accounts receivables, and contract management. We also found that the department's management of its accounts receivables was ineffective, the collection procedures at one division inadequate, and at another, not adhered to. Additionally, we found that the department's year-end financial reporting process was ineffective.

We recommended that the department improve its administration of agricultural loans, revise its policies and procedures over accounts receivable collections, write-offs, and allowance, and strengthen management oversight on collection efforts, and adhere to established policies and procedures. We also recommended that the department implement a process to ensure accurate and timely year-end financial reporting.

In 2003, 1999, and 1994, our *Review of Revolving Funds, Trust Funds, and Trust Accounts of the Departments of Accounting and General*

*Services, Agriculture, Budget and Finance, and Land and Natural Resources* found that the Irrigation System Revolving Fund is not self-sustaining and requires general fund appropriations to supplement operations.

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## **Objectives of the Audit**

1. To determine the effectiveness of the Department of Agriculture's management practices, operational, and financial procedures over the Moloka'i Irrigation System.
  2. To determine the amount of revenues and expenditures directly attributable to the Moloka'i Irrigation System in comparison to the other irrigation systems managed by the Department of Agriculture.
  3. Make recommendations as appropriate.
- 

## **Scope and Methodology**

The audit focused on the Department of Agriculture's management practices and controls within the Moloka'i Irrigation System. As requested by the Legislature, our audit includes the three fiscal years prior to the request and focuses on FY2006-07 to the present, as necessary. As relevant to our audit, we evaluated responsibilities and functions of related boards, such as the Board of Agriculture and the Moloka'i Irrigation System Water Users Advisory Board. We conducted site visits to the Moloka'i Irrigation System during the course of our fieldwork. Our assessments cover primarily the most recent three fiscal years and through fiscal year 2006-2007.

Audit procedures included interviews with legislators, administrators, management and users of the system, an examination of the organizations strategic and operating plans, policies and procedures, reports, accounting transactions, and other relevant documents to assess management's effectiveness of operation. We reviewed management controls within financial management, procurement, personnel and reporting. We also reviewed relevant documents on the costs of operating and maintaining the system.

This audit was performed between July and November 2007 and was conducted according to generally accepted government auditing standards.

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# Chapter 2

## The Department of Agriculture's Poor Stewardship Jeopardizes the Survival of the Moloka'i Irrigation System

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The Department of Agriculture is remiss in its oversight of the Moloka'i Irrigation System. While the department inherited a deteriorating system, it has done little to learn about the system and its contentious history. Previous reports speak of critical needs and areas for improvement that took years to address or have not been addressed at all. Instead, the department has made piecemeal improvements to match the allotted funding, leaving physical components without proper maintenance to further deteriorate. The department is unable to balance its responsibilities in promoting agriculture, while guaranteeing Hawaiian homesteaders' rights to two-thirds of the water within the Moloka'i Irrigation System. The department's mission to stimulate growth in agriculture in Hawai'i includes the preservation, promotion, and development of essential agricultural resources and infrastructure. However, it also has an obligation to Hawaiian homesteaders as expressed in the Hawaiian Homes Commission Act, 1920. The latter obligation has been set aside to promote agriculture among non-homestead farmers. The growth of agriculture among non-homestead farmers has come at the high cost of exhausting the water resources of the Moloka'i Irrigation System.

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### Summary of Findings

1. The Department of Agriculture's flawed management endangers agriculture in Moloka'i.
2. Weaknesses in the department's fiscal management leave the Moloka'i Irrigation System to struggle financially.

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### The Department of Agriculture's Flawed Management Endangers Agriculture in Moloka'i

The Moloka'i Irrigation System (MIS) is not only vital to agriculture in Moloka'i, but also central to the revitalization of Hawaiian homesteaders. This unique relationship of Hawaiian homesteaders to the MIS is not addressed in any departmental or division plans. While the department has a mission to stimulate agriculture, its haphazard maintenance of physical components, failure to implement decades-old recommendations, and lack of planning for system sustainability does not reflect the vital nature of the irrigation system. Though the department recognizes the system is in dire need of repairs, no plans have been formulated to repair the MIS or plan for its future. With the island's

great dependence on the MIS, management's failure to address these concerns endangers the survival of agriculture on Moloka'i.

***The department's obligation to Hawaiian homesteaders is not a priority***

In the course of the audit, we sought to determine the amount of water consumed by homesteaders and non-homesteaders. The department could not provide us a complete, detailed listing of the Hawaiian homesteaders utilizing the Moloka'i Irrigation System. The Agricultural Resource Management Division administrator maintained that 220 out of 253 accounts were homesteaders, but department documents provided show that homesteaders comprise only 158 of 249 accounts. In our attempt to confirm the information, we discovered data that could not be verified to any source. The agricultural asset manager was unsure if original applications were filed in Moloka'i and the Honolulu office did not maintain summary records. At the close of fieldwork, we received no conclusive information from the department. We were only able to determine FY2007 account classifications, acreage, and water consumption, as noted in Exhibit 2.1.

**Exhibit 2.1  
FY2007 MIS Account Classification, Acreage, and Water Consumption**

Account Classification	No. of Accounts		Acreage	Water Consumption	% of Total Water Consumption
Homesteaders	158		936	114,511,000	12%
Non-Homesteaders	30		1470	791,548,000	84%
Unidentified Accounts	61	*	473	40,448,000	4%
Total	249		2,879	946,507,000	

\*Note that 18 of these accounts had zero consumption for FY2007.

Source: Department of Agriculture

The department does not take seriously its responsibility of stewardship to the Hawaiian homesteaders. The unique relationship of the Hawaiian homesteaders to the MIS is found within HRS and the department's administrative rules. However, the deputy director informed us that, "The reality is we will not have to cut back (water) unless homesteaders quadruple their usage. There is no likelihood in the future that we will have to protect homesteaders' water rights." With the system set up initially to rehabilitate the native Hawaiians who have the opportunity to increase their water usage, this is a bold statement to make.

Section 174C-101, HRS states, "the State shall, to the extent applicable and consistent with other legal requirements and authority, incorporate and protect adequate reserves of water for current and foreseeable

development and use of the Hawaiian homelands as set forth in section 221 of the Hawaiian Homes Commission Act." The department's responsibility to provide water to homesteaders on Hawaiian homelands is clear. However the department's inability to identify the homesteaders coupled with the mindset that homesteaders will not likely assert their claims is irresponsible.

***Ineffective management contributes to the Moloka'i Irrigation System's deterioration***

The department readily admits to the disrepair of the Moloka'i Irrigation System. The most immediate fix would involve providing tools and equipment for maintenance. However, this most basic step has yet to be taken. The division has not set forth prescribed guidelines, nor does it have written operational procedures in place. This lack of operating procedures ultimately reduces system efficiency, compromising the flow of information from district manager upwards. Elevating a concern from an operational level to an administrative or upper management level is crucial, or corrective action will be slow in coming. This is evident in the number of studies that the department has procured of the MIS, with multiple recommendations gone unaddressed by the department.

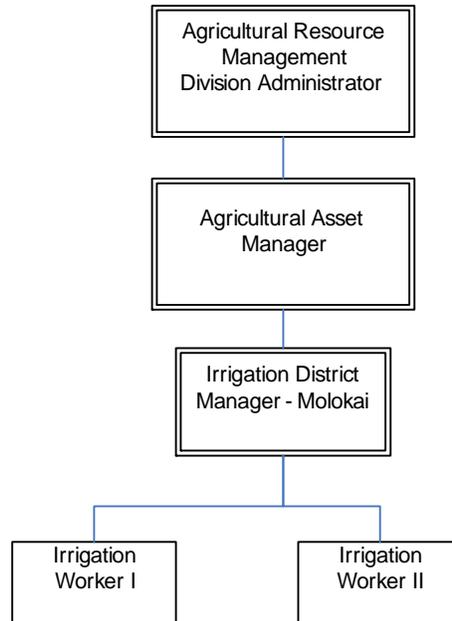
**Lack of operating procedures and equipment reduces system efficiency**

Operating procedures would help ensure management objectives are achieved and provide assurance of effective and efficient operations. But the department lacks formal operating procedures for the Moloka'i Irrigation System, resulting in system inefficiencies. Exhibit 2.2 details the organizational structure for the MIS.

The director, deputy director, and division administrator have little involvement or knowledge of the day-to-day operations of the system. Oversight is left to the agricultural asset manager located in the Honolulu office. When questioned about the lack of operating procedures, the agricultural asset manager replied the irrigation district manager and workers have job descriptions for guidance on how to perform their jobs. Although the job descriptions include most of the tasks they perform, there are no time allocations or evaluation criteria on job performance.

Aside from obvious operational issues, a lack of formal procedures poses serious health and safety risks for employees. For example, MIS staff employed a telemetry system for remotely accessing measurement and reporting of information. However, because the telemetry system became inoperable two years ago, irrigation workers now perform these tasks manually. The tasks require staff to drive to the east portal side of the system through the five mile irrigation tunnel that begins at the west portal side. A drive through the tunnel is dark and bumpy, with no access to communications. For safety reasons, the driver cannot go

## Exhibit 2.2 Agricultural Resource Management (ARM) and MIS Organization Chart



Source: Department of Agriculture

faster than 15 miles per hour, resulting in a 30 minute drive through the tunnel. When asked about possible safety risks for the staff, the irrigation district manager said the crew usually travels in pairs. Before they enter the tunnel, they coordinate with remaining staff an expected return time. If they do not return by the designated time, the remaining staff member should come looking for them. If staff become ill or are injured while in the tunnel or at the east portal, they would have to wait for someone to drive or hike for help. When asked what they would do if heavy rains start, the irrigation district manager said they would have to camp out until the rain stops. However, they do not stock provisions that could sustain the crew for any length of time.

Irrigation workers have insufficient tools, equipment, and supplies to perform their jobs, leaving components of the system in disrepair. During a site visit with department staff we noticed many inoperable blow out valves and air relief valves along the irrigation system. The agricultural asset manager claimed the inoperable equipment did not significantly impact the system because no problems were evident – that problems would manifest themselves by water hammering or bubbling, or one would be able to feel the vibrations within the pipes. He maintains that inoperable air relief valves are not an indication of air in the pipeline.

We contacted a manufacturer of valves similar to those used on the MIS who concluded that if the non-functioning valves were replaced, system flow would increase. In a subsequent interview the agricultural asset manager conceded that if the air relief valves and blow outs were working properly, it would “absolutely” be a more efficient system; otherwise they would not have been installed as part of the original design. Several weeks later, irrigation workers found three of 15 blow outs and 16 of 17 air relief valves inoperable.

**Exhibit 2.3  
MIS Tunnel**



The only well-lit portions of the tunnel are those lit by sunlight at the entry points at the west and east portals.

### Exhibit 2.4 Manually Operated Blow-Out Valve



Because the telemetry system is inoperable, MIS staff must travel through the tunnel to the east portal to flush out water in this area.

The agricultural asset manager stated that none of the maintenance logs reflect the condition of the valves, so staff in Honolulu was unaware of the problems. However, we found these problems were noted in several studies dating back to 1987. Additionally, maintenance logs supplied by the department describe only oil changes in vehicles and replacement of parts on a riding lawnmower. There were no notations for repairs to any other equipment. When this was brought to the attention of the agricultural asset manager, he said the crew writes repair notations on the monthly Kualapu'u Reservoir inspection checklists. A review of the March 2006 through June 2007 reservoir checklist confirms equipment repair notations; however, originals are faxed to the Honolulu office and remain in paper form, making follow up and tracking difficult.

Inventory is also a major issue for MIS staff. While the Moloka'i office maintains a tool shed with some meter parts, the staff there are not required to send an inventory listing to the Honolulu office. The agricultural asset manager says each irrigation system is responsible for maintaining a supply list to address its particular needs. Moloka'i Irrigation System staff estimates there are 14 meters that need replacement with no inventory on hand. At the end of the fiscal year, the agricultural asset manager submits a "wish list" of supplies and materials

### Exhibit 2.5 Inoperable Air Relief Valves



Fully operational air relief valves contribute to water transmission efficiency.

### Exhibit 2.6 Irrigation System Blow Out Valves



Blow out valves should be accessible to flush out accumulated debris within the transmission lines.

to irrigation district managers. However, the wish list is limited to supplies valued at \$15,000 or less. The MIS district manager said in years past the wish lists have not been fulfilled. In spite of needing fourteen 2" meters and because of the \$15,000 threshold, during 2007 he requested only five meters valued under \$2,000. The division administrator indicated the division had \$1,000 to buy supplies for the MIS, which resulted in the acquisition and replacement of two meters - leaving 12 meters in need of replacement.

Vehicles available to irrigation staff are in poor condition. During the site visit, we rode in a 2001 Jeep Cherokee which clearly had problems with its transmission based on the sounds emitted and jerkiness of the vehicle. Irrigation staff cannibalizes parts from old vehicles stored at the MIS office because they lack replacement parts. Both the interior and

exterior of the vehicle was damaged. The front passenger window was broken and holes were visible in the front passenger side floor. Nevertheless, the irrigation district manager maintains it was the best vehicle to take through the tunnel because it has enough clearance to fit into the tunnel and make the tight turn at the east portal end. A new vehicle was purchased during 2006; however it cannot fit in the irrigation tunnel and was not intended for travel through the tunnel. However, given the limited funding for the MIS, it would have been prudent to consider purchasing a vehicle for multiple uses.

**Exhibit 2.7  
Mower in Need of Repairs**



Side panels of mower were removed to prevent over-heating. Repairs to hold parts in place made use of rope.



Mower tires are in need of replacement. Left tire has patches of rubber missing and right tire has worn tire tread.

**Exhibit 2.8**  
**Photos of Vehicle Interior and Vehicles Cannibalized for Parts**



Vehicle interior of operable jeep is in need of repair. Outside MIS offices, vehicles sit to be cannibalized for repair parts.

The agricultural asset and irrigation district managers identified other equipment problems such as broken meters at the west portal and reservoir outtake meter. The reservoir outtake meter has been broken for over two years. A propeller, a key component, broke and has not been replaced, leaving MIS staff unable to precisely measure the outflow of water from the reservoir. The irrigation district manager requested a replacement meter from Honolulu, but the meter costs \$10,000 to \$15,000, and his request was denied. Overall, the irrigation district manager appears to do the best he can with limited resources. Given that there are approximately 20 working days per month with nine days in the dry season and 18 days in the wet season devoted to cutting grass on the reservoir, two days monthly for billings, and daily visual measurements and inspections, resources are thin for the remainder of the system.

**Exhibit 2.9**  
**Kualapu'u Reservoir**



The Kualapu'u Reservoir covers an area of approximately 100 acres, with a capacity of 1.4 billion gallons.

**Information does not flow to all levels of management**

The agricultural asset manager controls the flow of information for the irrigation systems, which resulted in delays with our audit fieldwork and raised questions on the selective sharing of information. For example,

we needed to make repeated requests of the deputy director, division administrator, and agricultural asset manager for reports and studies performed on the Moloka'i Irrigation System. We requested from the agricultural asset manager all reports relevant to the Moloka'i Irrigation System. Among the reports we finally received, one was missing: a 2004 study which identified many Occupational Safety and Health Administration (OSHA) violations, and which stated that the MIS did not meet National Electrical Safety Code (NESC), Nation Electrical Code (NEC) standards. We were informed of this report by a former Moloka'i Irrigation System Water Users Advisory Board member and later provided a copy by the district manager in Moloka'i. The report included several 'emergency' recommendations, which the division administrator and agricultural asset manager conceded would be addressed in a contract to be completed only in 2009. Breakdowns in internal controls designed to ensure communication flows through the appropriate levels of management, slowed bringing these emergency fixes to upper management's attention within a better timeframe to respond.

The Moloka'i Irrigation System has an advisory board. As outlined within Section 167-23, HRS, the Moloka'i Irrigation System Water Users Advisory Board (MIS advisory board) should advise the department on matters of concern to system users and provide support for improvement and long-range planning. It should advise the department on matters of concern to system users, provide support for improvements to irrigation facilities, participate in long range planning, and act as liaison between users and the department. But it is an underutilized resource and its purpose is ultimately not being met. There is no clear process in place to ensure issues raised at advisory board meetings are communicated to the director or the Board of Agriculture (BOA). Board of Agriculture members' knowledge of the MIS is limited to what is presented at the board meetings. Our review of BOA minutes found that certification of acreage assessments, amendments to administrative rules, and increases in water rates were the MIS topics discussed by the board over the past four years. Moreover, several BOA members stated that they had not seen communication from MISWUAB other than what had been presented by the division administrator or agricultural asset manager.

When asked about advisory board recommendations, the division administrator said he reviews minutes or notes taken by the agricultural asset manager. The division administrator addresses the recommendations or forwards them to the director or deputy if he cannot adequately address them. While the deputy said the advisory board's recommendations "were given a very high weight for its value," there are no means for us to substantiate the claim. The department does not have formal procedures to track progress of outcomes from the advisory board meetings. Moreover, none of the advisory board members or department

personnel could provide us a complete set of finalized meeting minutes. This is a violation of Section 92-9, HRS. It was not clear to the department personnel or advisory board members who should be responsible for this task. The minutes we reviewed were limited to the tenure of the current secretary and in draft form. When we informed the division administrator that we were unable to locate finalized minutes for the board, he simply shrugged and said, "Please don't be too harsh. It's Moloka'i. They have a voluntary board with rotating members and sometimes members are absent." It is the "it's Moloka'i" attitude that fuels many of these issues, resulting in information not being passed along. With information lacking, the MIS advisory board is not performing as intended.

According to discussions with the director and deputy director, the division administrators are responsible for day-to-day operations, including the creation of policies and handling of operational emergencies. Division administrators generally provide pertinent data to the director, with high level weekly updates. Additionally, the department has staff meetings two to three times a month during non-legislative session periods. Both the director and deputy have varying degrees of knowledge about the irrigation systems. While they both identified distrust of state government as a major issue between department and MIS users, they identified only the large size of the reservoir and electricity costs as priority issues.

Leadership of an organization must find the balance between delegating tasks and trusting employees will complete adequate follow-through. Internal controls are put in place to keep the organization on course toward goals and achievement of its mission, and to minimize surprises along the way. One component of internal controls is information and communication. Pertinent information must be identified, captured, and communicated in a form and timeframe that enable people to carry out their responsibilities. Effective communication also must occur in a broader sense, flowing down, across, and up the organization. All personnel must receive a clear message from top management that internal control responsibilities must be taken seriously. They must understand their own role in the internal control system, as well as how individual activities relate to the work of others. They must have a means of communicating significant information upstream. There also needs to be effective communication with external parties. This is clearly lacking in the MIS and should be revisited by management.

### **The department suffers from "Analysis Paralysis" and recommendations are not implemented**

The department suffers from "analysis paralysis"; it does not implement many of the recommendations from studies of the Moloka'i Irrigation

System. Since 2001, the department has contracted over \$500,000 of state and federal funds studying specific problems with the Moloka'i Irrigation System, and an additional \$1 million on the Hawai'i Water Resources Study Agricultural Water Use and Development Plan. The water plan includes inventories and recommendations for the irrigation systems, capital and maintenance improvements, and current and future agricultural irrigation water demands -- many issues addressed in earlier studies.

Additionally, problems identified over two decades ago have not been corrected. For example, a 1987 Legislative Reference Bureau report identified water delivery and capacity, maintenance, electricity costs, long-range planning, and trust as issues farmers were concerned about -- many of the same problems addressed in this report. Other studies identified key issues that impact the overall efficiency of the system: 1) the need for a maintenance program to repair equipment such as the air release valves and blow outs; 2) the advisability of reducing the Kualapu'u reservoir into smaller sections to reduce water loss from evaporation; and 3) the need to find an alternative source of power to reduce electrical costs.

Planning guides we consulted for this audit recommend that organizations identify their strengths, weaknesses, opportunities and challenges to ensure identification of strategic issues and focusing on the best results possible. Performance measurement systems must also provide intelligence for decision makers, not just a compilation of data. The Department of Agriculture does not have a system that tracks study recommendations or uses the recommendations to map out a unified plan to improve the Moloka'i Irrigation System. The division administrator was aware of key issues in the lack of progress despite the study recommendations, yet offered few viable solutions.

The director said "You have to go after the money. Currently there are repairs highlighted earlier that are now part of our funded CIP projects. We will continue to go after CIP funds and will continue to put projects into the budget." An analysis of the 103 study recommendations made over the past ten years found the department investigated 61 of the recommendations while requesting capital improvement funds for 26 of them.

On the same question of the department's failure to implement many of the recommendations, the division administrator said consultants can recommend anything from an academic standpoint or perspective, but the actual implementation of the recommendation is usually very costly, creates operational issues, conflicts with what is currently in place, or requires more staff or money that is unavailable. Yet the department continues to fund studies that make recommendations it may not implement.

***The department has not planned for the sustainability of the Moloka'i Irrigation System***

The Moloka'i Irrigation System disrepair did not occur overnight. The department inherited a system needing repairs. A lack of staff, funding, and other problems contributed to further deterioration. While working to fix the problems of the past the department must also begin to look forward to spur agriculture's growth in Moloka'i. Creating an action plan clearly aligned to the department's strategic plan will ensure that it is mission-focused. Committing to work together with the Moloka'i Irrigation System Water Users Advisory Board based on the working agreement developed during the department's community discussions will contribute to a streamlined improvement for all parties. This commitment cannot be fleeting as it will lead to further demise of an already broken system.

**Lack of forward planning prevents the department from progressing out of a reactive mode**

Time management author Alan Lankein said: "Failing to plan is planning to fail." Department management reacts to changing events rather than planning for the future. Its emergency driven management perpetuates a history of complaints of ineffective management. Complaints from Moloka'i Irrigation System users precipitated the transfer of the irrigation systems from the Department of Land and Natural Resources to the Department of Agriculture.

Even with a two year lead-in time, between passing legislation that transferred the MIS to DOA, the department did not adequately train personnel on the specifications of the MIS. This remains an issue today. While the division develops a yearly action plan, it has limited use because it lacks identifiable goals, metrics to gauge performance, and a timeframe for achieving goals, as demonstrated below.

Management fails to take advantage of opportunities to evaluate and improve its operations of the Moloka'i Irrigation System through its strategic planning process. The department's strategic plan lacks clarity and direction. In 1997, a consultant recommended a sound maintenance program for addressing future needs because diversified crops and expansion of Hawaiian homelands would increase water demands. Yet, the department's current strategic plan's broad goals and objectives lack targeted measures of accountability for addressing these issues. For example, goal two is to increase production value. The objectives for meeting this goal are to assure availability of land, water, and financing for farming and to assure availability of tools needed for production agriculture. The accompanying activities for achieving these objectives are vague and do not target the individual needs of the irrigation systems. For example, the department seeks to improve the reliability, capacity, and operational efficiency of existing state operated irrigation systems

and appurtenances. However, the strategic plan does not provide any guidance to branch and division staff responsible for developing action plans targeting these activities. The Agricultural Resource Management Division's action plan for providing water resources for the irrigation systems is to evaluate existing state systems to improve their reliability. But, the "reliability" of a system is not defined within the plan. The action plan lacks benchmarks and comprehensive performance measures to monitor progress and provide accountability.

Strategic planning should include identification of measurable outcomes, current baselines, and desired benchmarks with objectively quantifiable measures. These measures define the performance to be achieved and the means for monitoring performance and accounting for results. While the strategic plan defines the expected outcomes, performance measures keep a plan on target and provide accountability to stakeholders. The department's strategic planning process did not include the Board of Agriculture (BOA) members, the Moloka'i Irrigation System Water Users Advisory Board (advisory board) members, or system users. A review of BOA and advisory board meeting minutes for the past four years shows no discussion to the strategic planning process. Strategic planning guides we consulted for this audit emphasize the involvement of stakeholders to ensure a plan is successfully developed and implemented.

When asked about the strategic planning process, the director and deputy director cited broad goals for the department and deferred questions about specific details about the plan to the division administrator. Both acknowledged the plan lacks specific details for the individual irrigation systems. The following sections highlight specific areas of concern within the MIS and the need for long-term planning.

#### Operational planning

With the strategic plan laying out the long-term goals for the department, the division needs to outline the initial steps to take them there. From an operational standpoint, the division does not have the means to begin that process. It lacks the equipment to measure water intake, system losses, and tools and equipment to perform preventative maintenance on the system. The department needs to consider water in reserve at the Kualapu'u Reservoir and the impact of running the water pumps on both the environment and the budget, from the higher costs of electricity.

#### Water usage

The availability of water is a major issue for the MIS. The department does not have equipment to measure the amount of water flowing into the reservoir or equipment to measure evaporation losses at the reservoir. The only measurement that is performed is meter readings at the end of a billing cycle. However, without a means to compare with the flow of water coming in, accountability is lost. Although the district manager is

a seasoned waterworks professional, water flow estimation by sight cannot be the foundation for water usage planning. Moreover, evaporation loss has been more recently estimated at 25 percent. The current month-to-month agreement with Moloka'i Properties Limited includes a recharge of only 10 percent to account for losses.

*Transmission Line Rental Agreement*

The Moloka'i Irrigation System was deemed to have excess transmission capacity. On July 11, 1975 the State entered into an agreement first with Kaluako'i Corporation to rent pipeline and other water facilities of the Moloka'i Irrigation System to convey the water from its well. The original agreement term was 20 years, ending in December 1995. Various assignments and extensions brought the current agreement to Kaluako'i Water, LLC, (KWLLC) a Hawai'i limited liability company wholly owned by Moloka'i Properties, Limited. With the existing agreement extended through April 30, 2006, the State and KWLLC began negotiations for a further extension of the transmission line agreement. However, before an agreement could be reached, the attorney general's office became involved.

On September 4, 2007, the attorney general's office opined that an environmental study was required before a new contract could be issued to use the state-run system. The opinion also stated that Moloka'i Ranch should get off the Moloka'i Irrigation System as quickly as possible. Currently, there is no signed transmission line rental agreement in place between the State and KWLLC. Both continue to operate on the basis of prior agreements on a month-to-month basis.

*Reservoir Depth*

The Kualapu'u Reservoir has a 1.4 billion gallon capacity. Over the last 35 years, the reservoir has averaged approximately 756 million gallons per year. Over the past twenty years, MIS users raised concerns about the depth of the reservoir and ultimately, the availability of water for consumption. The reservoir collects water intercepted from surface flows of the Waikolu Stream. When surface flows are insufficient to meet water demands the original design had water withdrawn from the ground-water reservoir below the diversion dam to augment the surface supply. However, the MIS instead pumps the high level dikes to sustain reservoir levels and meet demand. Because of the large fluctuations in the daily and monthly runoff of Waikolu Stream, regulation by reservoir storage is essential to meeting irrigation requirements.

Following a severe drought in 2001, the reservoir reached a record low of approximately 4 feet. It became necessary to run the pumps for longer periods of time to make up the shortage of surface flow. As pumping increased, staff was advised to stop pumping because one of the

wells was going dry. Persistent drought conditions caused a greater reliance on water pumped from ground sources.

### **Attempts to lay foundation for future planning in “road map” meetings lacked homesteader participation**

The department director and division administrator recognize the decades of mistrust and adversarial relationships on Moloka'i that need to be overcome. The director identified building a working relationship with the advisory board as one of the most critical things facing the Moloka'i Irrigation System. Farmers should be brought together because one party does not have all the answers. The deputy director believes the department needed a venue to find common ground and establish mutual benefits so all parties could move forward together. He stated, “We are looking to hit singles as opposed to home runs. It is the beginning to building trust.” The department held a series of “road map” meetings which would begin to address these issues. The meetings resulted in a non-binding working agreement between the department and the advisory board.

Three “road map” meetings were held in August, September and October 2007. Attendance at the first two meetings averaged in the mid-20s while attendance dwindled to 11 by the third meeting. Few Hawaiian homesteaders attended the three meetings. When asked about the dwindling attendance or lack of homesteader participation, the deputy director suggested departmental staff might have done their jobs. “We were clear, inclusive, and people were given the chance to attend. We will never get 100 percent support from the community. Those who complain were given the opportunity to participate and chose not to, or maybe the drop off was because it's not what was expected – not talking about what they wanted to talk about.” However, rather than assume success, the department should reach out even more.

In spite of the department's efforts, the destination of the road map meetings is unknown because low attendance by Hawaiian homesteaders and the non-binding nature of the working agreement jeopardizes the roadmap meetings' success. Future administrators are not obligated to recognize the working agreement because it is simply an agreement between parties without the force and effect of law under the Hawai'i Revised Statutes or Hawai'i Administrative Rules.

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**Weaknesses in the Department's Fiscal Management Leave the Moloka'i Irrigation System To Struggle Financially**

Accountability demands that the department make stringent efforts in its coordination of available resources, supervision of working assets, and oversight in financial management and reporting. The department relies heavily on general fund appropriations to support the Irrigation System Revolving Fund, contrary to the legislative intent of a revolving fund. In examining the internal controls over financial processes and reporting, we determined that for daily operations clerks within the Agricultural Resource Management (ARM) division and the department's fiscal office are proficient in particular tasks. However, there is no clear oversight to address the financial data processed by the fiscal office. Both internal and external financial reporting is limited. The department would be well-served to implement a means of comprehensive review of all the financial information for use in forecasting, comparisons of budget to actual, and other detailed analyses. Without this, the MIS will continue to struggle financially at the expense of its users as described in the previous finding.

***Internal financial reporting is an underutilized management tool***

Financial information should be accurately communicated to both internal and external users. Internal financial reporting should be designed to meet management's needs, to include monitoring performance and strategic planning. External reporting should be designed to meet the needs of those with an interest in a government's finances. Qualified accounting personnel should be employed to record and report financial transactions and results, and to design and monitor a system of internal control over the process to ensure the reliability of the process and accuracy of the reports. These components are especially critical to state agencies as they receive and expend public moneys. We found the department does not have formal procedures over internal financial reporting that specify what types of data should be reported, how frequently it should be prepared, or who is responsible for reviewing it. This leaves the Board of Agriculture, the Moloka'i Irrigation System Water Users Advisory Board, and operational management without the pertinent data to steer the organization in line with its overall mission.

**High volume of uncollectible accounts receivables is still on the books**

The department has a high volume of uncollectible accounts receivables reflected within its financial statements. In our detailed review of MIS accounts receivable, we noted that the vast majority of accounts receivable had balances that were over 60 days outstanding. Exhibit 2.10 details accounts receivable at year end FY2004 through FY2007.

**Exhibit 2.10**

**MIS Accounts Receivable at June 30, 2004 through June 30, 2007**

ACCOUNTS RECEIVABLE	CURR	CURR/ TOTAL	1-30 DAYS	1-30/ TOTAL	31-60 DAYS	30-60/ TOTAL	OVER 60 DAYS	OVER 60/ TOTAL	TOTAL REC
as of June 30, 2004	2,568.24	0.84%	4,910.15	1.6%	3,759.52	1.2%	292,925.95	96.3%	304,163.86
as of June 30, 2005	(2,791.35)	-0.90%	9,506.23	3.1%	5,406.76	1.7%	298,034.79	96.1%	310,156.43
as of June 30, 2006	(3,951.13)	-1.32%	10,271.65	3.4%	5,111.50	1.7%	287,056.18	96.2%	298,488.20
as of June 30, 2007	(9,202.06)	-3.07%	11,780.95	3.9%	5,955.09	2.0%	291,099.79	97.2%	299,633.77

Source: Department of Agriculture, Agricultural Resource Management Division

Recognizing that accounts receivable balances will fluctuate often due to timing, we reviewed accounts having high balances as of June 30, 2007. This amounted to ten active accounts and one non-active account which comprise a total of 81.3 percent of total outstanding receivable. ARM division management was well aware of the problems with account collections, with many of these accounts having been historically contentious. However, while the division communicated to the department's financial statement auditors under its FY2006 audit that some of these accounts would be terminated, we noted eight accounts have been accumulating additional charges and one should have been written off completely, but was still included within listings. Only one account showed progress payments were being made with total outstanding balance less than the prior period.

While we were provided with copies of collection procedures, the effectiveness of the designed procedures is doubtful as receivable balances outstanding more than 60 days have remained excessively high and have not significantly improved during the past four fiscal years. Exacerbating the problem is the assignment of responsibility to manage and follow up on collections to the irrigation district manager on Moloka'i even though resources to address them, as laid out within the department's prescribed policies, are situated in Honolulu. Without the appropriate resources, it is unrealistic to expect a problem to be addressed. The division should review the current system in an effort to achieve a better rate of collections.

Another item to note is that the division staff was unable to generate specific reports within Agricultural Resource Management Information System (ARMIS). The division administrator and staff were unsure about the capabilities of the ARMIS, other than functions currently in use. It was not known if a user manual was available. Routine, monthly activity was performed. Documents were printed, with the hard copies maintained for historical information. There was no evidence of additional analysis beyond the monthly reporting performed.

### **Reconciliations between billings and cash collections are not performed**

Another area of concern is the lack of reconciliations performed between the fiscal office's cash basis records and ARM division's accrual basis. Revenues and expenditures for the MIS are centrally tracked on a cash basis by the department's fiscal office. Simultaneous to that, the ARM division also maintains revenues and accounts receivable information within ARMIS. However, the two interrelated functions are not reconciled. The Committee on Sponsoring Organizations (COSO), an industry standard, recognizes that account reconciliations provide an extra layer of control to track if management's directives are carried out. Reconciliations help ensure that receipts and expenses are properly recorded, and any errors are discovered. Currently, no one has been tasked with the responsibility to compare revenues and receivables as recorded within ARMIS to actual cash collections recorded within the state's Financial Accounting and Management Information System (FAMIS). FAMIS is the state's overall accounting system maintained by the Department of Accounting and General Services. The financial reporting of the state is dependent on reliable data within the departmental level. Moreover, this exacerbates the problem of collections as mistakes made on accounts may not be identified in a timely manner. For a system that relies on a revolving fund, the inflow of moneys dictates the amount of moneys that can be spent.

### **Financial information is not tracked to a specific irrigation system**

As the revenues and expenditures for the different irrigation systems are maintained within the Irrigation System Revolving Fund, it was not a matter of practice to consistently assign activity to a specific system. Revenue information was difficult to segregate because the fiscal office maintained records on a cash basis, while ARM records on an accrual basis. Further, the two sets of records were not reconciled. Expenditure information was less difficult to segregate because the fiscal office identified expenditures to specific systems. Shared costs for the systems were not applied pro-rata; rather, they were assigned a separate category of 'administration.' But, the same was not true of revenue data. It was not until approximately January 2007 that revenues were coded by the fiscal office for deposit by system.

There is concern among MIS users about the inequity in spending for the MIS given the amount of revenue generated by the system. The MIS, compared to the other systems, has generated a net profit for fiscal years ending 2004 through 2007. However, when revenue generated via the transmission rental line agreement is isolated, the MIS incurred a net loss, except in FY2004.

There is no formal process for budgeting for the individual irrigation systems according to the division administrator. Instead, there is heavy reliance on the district managers to inform divisional management of their needs. And while the division had thought about giving the district managers budgets to work with, apparently there was an overall concern about the learning curve. However, district managers compile a “wish list” at the end of the fiscal year or near the beginning of the legislative session. Similarly, as it relates to inventory, the district managers will track and inform divisional management of what’s needed so it can be procured.

While the individual systems do not create their own budgets, financial plans provided by the division administrator indicate that revenue figures are projected on a per system basis, taking into consideration water consumption levels and acreage assessments. Expenditures are aggregate only and are taken from the end of the previous year, factoring in a 4 percent increase. Any anticipated specific expenditures would be factored in on top of the prior year’s actual figures. Failing to identify specific expenditures to individual systems speaks to the inequity articulated by MIS users.

The larger issue with a lack of segregated data is management’s ability to analyze the utility of a particular system. Feeding into this view of inadequate information is what should be a coordinated effort among the divisions, instead of disjointed pieces of information that do not connect or flow through each other. Rather than leveraging off resources that may be available in one division or other working group, several pieces of available information are not streamlined, bringing into question data reliability.

We emphasize that the ARM clerical staff and fiscal office staff is proficient with day-to-day tasks and responsibilities, such as recording cash receipts and requests for payments. This is evidenced by the fact that our review revealed few discrepancies on a transactional level. However, without formal internal reporting procedures or skilled accounting personnel, the department may not be able to get the most benefit out of available data, recognize significant and relevant accounting issues, or accurately report financial transactions and results to management and stakeholders. Further, without qualified accounting personnel, the department does not have a full understanding of the value of establishing, monitoring, and evaluating internal controls over financial reporting functions. To properly record transactions, effective internal controls are crucial in providing assurance that transactions are executed with proper authorization; and accountability is maintained over

the department's assets. Sound internal controls will help protect government resources against waste, mismanagement, or misappropriation.

***Fiscal office cannot provide details on the departmental financial statements***

We found that the department does not have accounting staff who understand accounting principles, particularly those relative to government entities. When we inquired about specific items presented within the department's financial statements such as revenue data, accounts receivables and allowance for doubtful accounts, the fiscal office was unable to provide details.

Annually, the department undergoes a financial statement audit in which the primary objective is to receive an opinion and have an independent auditor's report on the fairness of management's presentation of the department's financial statements. That financial statement audit takes into account the requirements of Governmental Accounting Standards Board Statement No. 34, *Basic Financial Statements and Management's Discussion and Analysis – for State and Local Governments*. GASB Statement No. 34 sharpens the focus of government financial statements by bringing in some new information, most notably the use of government-wide financial statements, prepared using accrual accounting. This is important to users of financial statements because accrual accounting measures current assets and liabilities, plus takes into account long-term assets and liabilities. Accrual accounting requires the reporting of all revenues and all costs incurred for providing services each year, not just those received or paid in the current year or soon after year-end. The reports required by GASB Statement No. 34 should give government officials a new and more comprehensive way to demonstrate their stewardship in the long term, in addition to the way they currently demonstrate their stewardship in the short term, and through the budgetary process.

However, the department is not able to create the basic financial statements without assistance from its contracted CPA firm. Because of the department's over reliance on outside CPA firms, the fiscal staff has not found it necessary to become familiar with financial reporting requirements applicable to the department. While it is not uncommon for departments to receive assistance in compiling their financial statements, the department should be able to prepare the supporting audit schedules and be knowledgeable of, and responsible for, the information presented in the financial statements; otherwise, the department may not be in a position to detect misstatements and other accounting errors.

**Reliance on annual appropriations is contrary to revolving fund self-sustainability**

The Moloka'i Irrigation System is funded through the Irrigation System Revolving Fund, established by Section 167-22, HRS. The main sources of revenue are the moneys collected for the five DOA managed irrigation systems – MIS, Waimanalo, Kahuku, Waimea, and Honoka'a-Pa'auilo — and legislative appropriations. Moneys in the fund are used for: administrative costs, engineering surveys, economic studies, plans, and maps, and other water projects or purposes of the board. Section 37-52.4, HRS defines the criteria for the establishment and continuance of revolving funds. The four key criteria are that it: 1) serves the purpose for which it was originally established, 2) reflects a clear nexus between the benefits sought and charges made upon the users of the program, 3) provides an appropriate means of financing for the program, and 4) demonstrates the capacity to be financially self-sustaining.

However, in several previous reviews of the department's revolving funds, trust funds, and trust accounts, we determined that the Irrigation System Revolving Fund does not meet all criteria of a revolving fund. Specifically, we determined that the Irrigation System Revolving Fund is not self sustaining and requires general fund appropriations to supplement operations. And while in our 2003 review the department was in the process of increasing water user fees to become self-sufficient, it currently relies heavily on legislative appropriations as a funding source. Exhibit 2.11 below shows Irrigation System Revolving Fund activity for fiscal years 2004 through 2007.

Both the director and division administrator are well aware of statutory requirements on the self-sustainability of revolving funds. However, the department has argued that the current state of all the irrigation systems is very poor, primarily due to under funding. According to the division administrator, morale is declining and there are too few employees to run the MIS in an efficient, professional matter. Furthermore, the lack of adequate safety gear and proper equipment creates a significant legal liability for the MIS and the State. The program desperately needs more funds to service an increasing number of customers.

**Exhibit 2.11  
Irrigation System Revolving Fund, FY2004 – FY2007**

Description	FY2004	FY2005	FY2006	FY2007
Water Delivery & Acreage Assessments	627,878.73	560,412.67	615,858.71	662,385.68
Other Revenues	22,611.94	109,028.81	161,010.66	368,473.50
General Fund Appropriations	140,400.00	240,400.00	425,000.00	425,000.00
Total Revenues	790,890.67	909,841.48	1,201,869.37	1,455,859.18
Total Expenditures	840,187.13	961,469.56	1,179,085.38	1,312,476.33
Net	(49,296.46)	(51,628.08)	22,783.99	143,382.85

Source: Department of Agriculture

To address this, in August 2004, division staff presented draft rules for preliminary approval to the Board of Agriculture to focus specifically on the financial state of the Irrigation System Revolving Fund and the condition and needs of the systems. The draft rules would result primarily in a simplified rate structure and incorporate an overall rate increase. An examination of the financial state of the irrigation program and the need for increased water rates was specifically addressed in the department's report, *Proposal for Agricultural Water Pricing Adjustments*. Two revenue scenarios were developed: 1) maintain the existing general fund subsidy, as the program would not last without it, and 2) self-sufficiency where general fund subsidy would be eliminated and rates for water and acreage would be increased to balance the program's operating, maintenance and administrative costs. The program needs to generate additional revenues to support itself as program expenditures continue to exceed revenues.

In addressing the self-sustainability of the fund, the department advocated an increase in water rates. In fiscal year 2005, the water rate ranged from \$0.25 per thousand gallons of water for Honoka'a-Pa'auilo to \$0.32 per thousand gallons of water for Kahuku. Rates proposed ranged from \$0.40 - \$0.45 for fiscal year 2006, eventually reaching \$0.62 - \$0.67 for fiscal year 2011. The report identified issues against rate increases, namely, the adverse impact that higher production costs would have on the economic viability of small farmers, and how it may deter farmers from expanding and discourage potential farmers from new ventures, contrary to DOA's primary goal. But the larger concern was that the program would run out of money if rates were not increased, and the revolving fund would be repealed, if efforts to attain self-sufficiency are not continued.

In March 2005, the department approached the governor for guidance on this particular issue. Recognizing the importance of agriculture, and in spite of our recommendation to repeal the revolving fund, the governor reiterated that there should be some general fund support of the fund. However, the governor felt the rate of \$0.62 was too much too fast. Based on discussions between the governor, legislators, and the department, a solution was reached that would ease the burden to the farmers and still address the need to improve maintenance of the irrigation systems. The governor and legislators agreed that the general fund supplement to the irrigation fund would be increased from approximately \$240k to \$425k. The rate proposal to accompany this general fund supplement would gradually increase from 31-1/2 cents to 50 cents by 2011. This rate increase was approved by the Board of Agriculture in its September 2005 meeting.

The department has interpreted this \$425,000 general fund appropriation as ongoing for the foreseeable future. Financial plans for the irrigation

systems have factored in this appropriation through fiscal year 2012. Reliance on a future appropriation such as this clearly shows the revolving fund's inability to be financially self-sustaining. Moreover, with the department lacking in proper controls over financial reporting, self-sustainability will be difficult to obtain.

***Specific replies to  
Senate Concurrent  
Resolution 176***

SCR 176 requests the auditor to address certain specific issues in the course of our audit.

*Revenues Generated and MIS Diverted Funds*

Exhibit 2.12 below details the Irrigation System Revolving Fund revenues and expenditures for fiscal years 2004-2007. It illustrates the amount of funds generated and used by the MIS compared to other irrigation systems managed by the Department of Agriculture. Based on the figures below it is reasonable to conclude that the revenues generated by the MIS are able to sustain it. However, it is important to note that without funds received from the transmission line rental agreement of \$136,397 annually, the MIS would be in the same position as the other irrigation systems. All of the other irrigation systems collectively are operating at a net loss, and require general fund support.

*Current Operation and Maintenance Costs & Projections*

The current level of moneys expended by the department for operations and maintenance of the MIS is inadequate. Initially, the economic feasibility and justification of the project was based on the assumption of continued use of the area for pineapple production. It was determined that production increase would be sufficient to pay for operation and maintenance of the irrigation system, for required replacements to maintain an operable system, and to repay the cost of construction over a 40-year period, either with or without interest. The MIS now supports a greater amount of diversified agriculture and initial assessments based on pineapple production do not apply. Exhibit 2.13 detail the MIS other current expenditures for fiscal years 2004 through 2007.

The operational efficiency of the system has been compromised by a lack of regular, routine maintenance. Before we can address the anticipated costs of upkeep or even the possibility of reducing costs to users, it is first necessary to address items needed to bring the system to working order. This includes the replacement of non-working air relief valves (ARVs) and repair of blow out valves. Early estimates are \$7,200, with minimal costs of labor as the work can be performed by ARM staff. The department should procure 'wish list' items to ensure adequate amounts of consumable supplies are on hand. FY2007 wish list items amount to approximately \$12,000. Additionally, to address current work load requirements, additional personnel must also be considered. Only after

**Exhibit 2.12  
Irrigation System Revolving Fund (MIS Broken-Out), FY2004-FY2007**

<b>Fiscal Year 2007</b>	<b>Molokai</b>	<b>All Other Systems</b>	<b>Admin</b>	<b>Adjustments</b>	<b>Total</b>
Billed for Water Service *	377,509.47	336,407.73	-	-	713,917.20
Received for Water Service *	361,923.91	298,680.06	-	6,104.14	666,708.11
Use of Gov't Land for Specific Purpose	136,496.76	-			136,496.76
Investment Pool Interest		-	27,030.78		27,030.78
Other Income		-	200,623.53		200,623.53
General Fund Appropriation		-	425,000.00		425,000.00
Total Cash Receipts	498,420.67	298,680.06	652,654.31	6,104.14	1,455,859.18
<b>Expenditures</b>					
Payroll & Fringe	157,666.48	304,908.74	61,906.24	-	524,481.46
Other Expenses	270,737.18	343,860.28	173,397.41	-	787,994.87
Total Expenditures	428,403.66	648,769.02	235,303.65	-	1,312,476.33
Net Change	70,017.01	(350,088.96)	417,350.66	6,104.14	143,382.85
* Water Service includes water consumption charges, acreage assessments, and delinquent interest.					
<b>FY2006</b>	<b>Molokai</b>	<b>All Other Systems</b>	<b>Admin</b>	<b>Adjustments</b>	<b>Total</b>
Billed for Water Service *	353,009.49	309,853.88	-	-	662,863.37
Received for Water Service *	346,998.31	275,026.70	-	(3,781.87)	618,243.14
Use of Gov't Land for Specific Purpose	136,496.76	-			136,496.76
Investment Pool Interest		-	19,896.10		19,896.10
Other Income		-	2,233.37		2,233.37
General Fund Appropriation		-	425,000.00		425,000.00
Total Cash Receipts	483,495.07	275,026.70	447,129.47	(3,781.87)	1,201,869.37
<b>Expenditures</b>					
Payroll & Fringe	150,327.95	282,287.43	53,596.32		486,211.70
Other Expenses	254,564.30	319,209.50	119,099.88		692,873.68
Total Expenditures	404,892.25	601,496.93	172,696.20	-	1,179,085.38
Net Change	78,602.82	(326,470.23)	274,433.27	(3,781.87)	22,783.99
<b>FY2005</b>	<b>Molokai</b>	<b>All Other Systems</b>	<b>Admin</b>	<b>Adjustments</b>	<b>Total</b>
Billed for Water Service *	299,166.28	278,329.69	-	-	577,495.97
Received for Water Service *	277,057.03	234,817.69	-	(2,148.14)	509,726.58
Use of Gov't Land for Specific Purpose	136,496.76	-			136,496.76
Investment Pool Interest		-	16,614.82		16,614.82
Other Income		-	6,603.32		6,603.32
General Fund Appropriation		-	240,400.00		240,400.00
Total Cash Receipts	413,553.79	234,817.69	263,618.14	(2,148.14)	909,841.48
<b>Expenditures</b>					
Payroll & Fringe	126,749.35	255,787.51	39,416.76		421,953.62
Other Expenses	196,630.99	315,106.07	27,778.88		539,515.94
Total Expenditures	323,380.34	570,893.58	67,195.64	-	961,469.56
Net Change	90,173.45	(336,075.89)	196,422.50	(2,148.14)	(51,628.08)

FY2004	Molokai	All Other Systems	Admin	Adjustments	Total
Billed for Water Service *	320,352.62	263,712.57	-	-	584,065.19
Received for Water Service *	252,941.02	229,483.85	-	10,101.96	492,526.83
Use of Gov't Land for Specific Purpose	136,497.00	-			136,497.00
Investment Pool Interest		-	16,364.98		16,364.98
Other Income		-	5,101.86		5,101.86
General Fund Appropriation		-	140,400.00		140,400.00
Total Cash Receipts	389,438.02	229,483.85	161,866.84	10,101.96	790,890.67
<b>Expenditures</b>					
Payroll & Fringe	132,543.11	207,115.65	36,843.28		376,502.04
Other Expenses	113,188.15	311,762.87	38,734.07		463,685.09
Total Expenditures	245,731.26	518,878.52	75,577.35	-	840,187.13
Net Change	143,706.76	(289,394.67)	86,289.49	10,101.96	(49,296.46)

**Exhibit 2.13  
MIS Detail of Other Current Expenditures, FY2004-FY2007**

Description	FY2007	FY2006	FY 2005	FY 2004
<b>Other Current Expenditures:</b>				
Electricity	247,841.82	228,337.35	179,137.55	89,941.28
Motor Vehicle Maintenance	9,909.50	9,912.96	7,325.89	11,141.71
Materials & Supplies	4,579.22	349.69	865.28	1,279.67
Meal/Travel	3,635.72	1,225.29	2,598.91	661.00
Telephone	3,394.33	3,033.53	3,717.52	4,146.45
Services on a Fee Basis		10,348.80	1,595.03	4,697.37
Repairs & Maintenance, Irrigation System			354.16	3.91
Repairs & Maintenance, Others	186.72	791.66	670.69	800.00
Equipment Rental	302.08		229.17	
Uniforms/Protective Wear	96.57	252.00		249.00
Freight, Postage, Delivery	17.87	197.88		190.34
Fuel, Oil, Lubricants	69.13		60.22	
Misc Other	71.51			
Office Supplies	237.50	33.90	15.16	16.82
Printing/Binding	116.96			
Training	180.00			
Water	98.25	81.24	61.41	60.60
Total Other Current Expenditures	270,737.18	254,564.30	196,630.99	113,188.15

the system is brought to a better operational standpoint, ensuring all equipment is in place, can there be appropriate tools to plan for the future.

Given an obvious lack of maintenance on the department's part, it is also worth considering in the near future the eventual replacement of major components of the system. Initially, the estimated useful life of the steel pipe, when properly installed and coated, is about 50 years. The tunnel and reservoir were believed to have useful lives well in excess of 50

(ARVs) and repair of blow off valves. Early estimates are \$7,200, with minimal costs of labor as the work can be performed by ARM staff. The department should procure 'wish list' items to ensure adequate amounts of consumable supplies are on hand. FY2007 wish list items amount to approximately \$12,000. Additionally, to address current work load requirements, additional personnel must also be considered. Only after the system is brought to a better operational standpoint, ensuring all equipment is in place, can there be appropriate tools to plan for the future.

Given an obvious lack of maintenance on the department's part, it is also worth considering in the near future the eventual replacement of major components of the system. Initially, the estimated useful life of the steel pipe, when properly installed and coated, is about 50 years. The tunnel and reservoir were believed to have useful lives well in excess of 50 years. And while ordinary maintenance should have kept all other parts of the project in operable condition, a full assessment of the system must be done to determine the impact of the lack of maintenance.

*Capital Improvement Projects*

Capital improvement projects lack a cohesive long-term plan to improve the overall health of the Moloka'i Irrigation System. Although department administrators were aware of longstanding problems such as high electrical costs and the large size of the Kualapu'u Reservoir, capital improvement project prioritization is done piecemeal at the division level. The division administrator said projects are prioritized on an annual basis, but that it is tough to prioritize projects. Some projects identified in studies procured by the department are listed in Exhibit 2.14 below:

**Exhibit 2.14  
Capital Improvement Projects**

<b>Description</b>	<b>Estimated Cost</b>
Kualapuu Reservoir	53,954,006.00
MIS Tunnel: Life Safety Items	1,689,890.00
MIS Tunnel: Emergency Repairs	90,300.00
MIS Tunnel: Maintenance	243,075.00
Hydropower Project	596,400.00

Source: Moloka'i Irrigation System Assessment, Ronald N.S. Ho & Associates, June 2004, Final Report Engineering Services for Moloka'i Irrigation System Kualapu'u Reservoir Improvement Study, URS Corp, December 2005, Refinement of Concept Proposed Kualapu'u Hydropower Project, U.S. Department of the Interior, April 2006

the concerns of MIS users are now on the forefront. In order to adequately address those concerns, the department must first address the health of the physical components of the system.

Recognizing that the department's inattentiveness over the years has left the system in disrepair, both department personnel and MIS users alike must move forward to ensure this vital system will continue to function. Fiscal practices of not segregating data and not reconciling accounts must be discontinued. Concerns from users and recommendations from the MIS advisory board cannot continue to go unanswered. Basic tools, supplies, and equipment need to be provided to this ailing system.

To promote agriculture effectively, the department must honor its commitment to the Moloka'i Irrigation System. If the MIS is to continue its role as the lifeline to the island of Moloka'i, it is imperative that the department fully commit itself to all aspects of the system. The costs of neglecting that stewardship are too high.

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## Recommendations

1. Relating to management efficiency, the department should:
  - a. Create a strategic plan specific to the MIS with measurable goals and timeline for implementation.
  - b. Create policies and procedures related to the operations and maintenance of the MIS. Include detailed maintenance tasks and frequency to ensure optimal delivery of water through the system;
  - c. Make a full inventory of the MIS. Any future modifications should be filed in a central library within the Agricultural Resource Management Division; and
  - d. Develop a state of readiness plan to address various emergency situations, that includes, at a minimum, a mode of communication, equipment needs, evacuation, and emergency water sources.
2. Relating to operations and maintenance, the department should:
  - a. Review previous professional studies performed on the system and identify and prioritize critical system needs to bring the MIS to proper working condition, then present its rationale to the Legislature; and

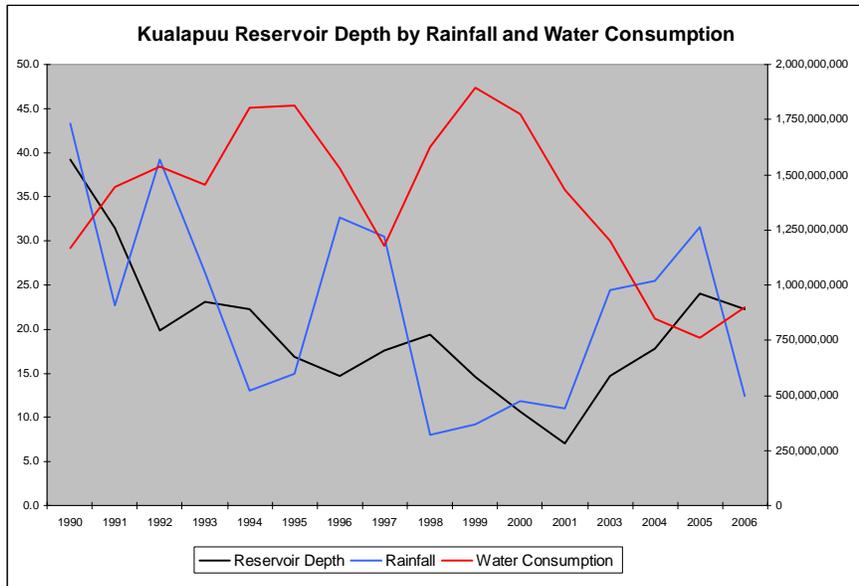
- b. Assess the needs, materials, supplies, and equipment of the MIS. Obtain and install flowmeters to accurately measure water movement. Obtain equipment to measure water losses and system efficiency for future planning. Update current system for meter reading and billings;
    - c. Train staff at all levels to ensure that the MIS has the opportunity to be exposed to new and better irrigation techniques; and
    - d. Review the current flow of information on the MIS in order to keep upper management abreast of the situation. The reporting structure needs to ensure that important information is not left at the operational level.
3. Relating to the MIS Water Users Advisory Board, the department should:
  - a. Document the rationale behind the advisory board membership recommendations and procedural rules for the sake of transparency;
  - b. Consider adding additional homestead farmer seat(s) and develop procedural guidelines on how seats are filled; and
  - c. Define “homestead farmer” as it relates to the advisory board to remove any appearance of impropriety; and work with the advisory board to create a unified mission statement.
4. Relating to community relations, the department should:
  - a. Ensure the correct information is disseminated to the Moloka'i community; and
  - b. Address questions related to the MPL agreement and the action plan necessitated by the opinion of the attorney general.
5. Relating to fiscal management, the department should:
  - a. Work with the Legislature to identify the best means to fund the operation of the State's irrigation system, if the annual appropriation for the Irrigation System Revolving Fund is necessary;
  - b. Consider adding staff to the fiscal office that is proficient in the creation of GAAP financial statements. If this is not feasible, ensure that CPA firms contracted to compile financial statements are independent of any further work (that is, audit services);

- c. Develop the ability to segregate financial information on a system by system basis, for use as a planning tool; and
- d. Review receivables collection process, and if necessary consider employing more aggressive tactics.

## Issues for Further Study

Demand for water equals available water. Another area of concern is the Kualapu'u Reservoir's decreasing water level and limited rainfall. To gain a better understanding of the relationship, we reviewed historical data on average reservoir level, rainfall and water consumption. We anticipated a direct correlation between these variables. However, as shown in Exhibit 2.15 below, the results do not reflect that. Additional questions arise from this analysis – how has the reservoir level been maintained historically through lower level of rainfall and higher water consumption?

**Exhibit 2.15**  
**Historical Comparisons of Reservoir Depth, Rainfall and Water Consumption**



Source: Data compiled by the Legislative Auditor's Office based on information provided by the Department of Agriculture and the U.S. Geological Survey

We were unable to get satisfactory responses from department personnel. This type of analysis has not been performed by department staff. Again, this speaks to the lack of long-term planning given available resources. While we could not delve further into this topic during the course of the audit, we would recommend this as an issue for further study.

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## Response of the Affected Agency

### Comments on Agency Response

We transmitted drafts of this report to the Department of Agriculture on February 8, 2008. A copy of the transmittal letter to the department is included as Attachment 1. The response from the Department of Agriculture is included as Attachment 2.

The Department of Agriculture provided both general and specific comments to the audit, and disagreed with some of the conclusions as being more dramatic than warranted. In its general comments, the Department of Agriculture was disappointed that many steps taken to make repairs, procure equipment, improve relations and communications, and increase involvement with the advisory board on Moloka'i were given only cursory mention. However, what must be kept in mind is that while we were tasked with an audit of approximately a four year period, it was necessary to go deeper into the system's management history. Many of the steps presented by the department have been taken only within the last few years; meanwhile the department has been responsible for the irrigation systems since 1989. Therefore, these steps are mentioned without great detail as they began or were in process at the end of our audit fieldwork. We cannot adequately comment on whether these changes will bring about the desired outcomes.

We do give the department credit, however, for beginning to bring the MIS to a better state of repair, and working with the advisory board to correct wrongs of the past. The department's additional clarifying items were included in the final report, as deemed necessary.

The department disagreed with our statement that it could not provide a complete, detailed listing of the Hawaiian homesteaders utilizing the Moloka'i Irrigation System for the years 2004-2007. In its response, the department provided us with additional information for Exhibit 2.1. But this does not change the fact that the data could not be verified to any source during our fieldwork despite our repeated attempts with several department officials. As this data was provided well after fieldwork completion, with no means to verify to the source, our original exhibit remains in the body of the report.

The department is concerned that we did not acknowledge that its working agreement with the advisory board contains benchmarks to monitor progress and provide accountability. But not only does the impact remain to be seen, the process of developing the working

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agreement coincided with our fieldwork, with the plan finalized after fieldwork completion. We cannot adequately comment on the plan and its success or failure at this time.

The department questioned our terminology on evaporation loss. We have changed the term to ‘evaporation’ as opposed to ‘pan evaporation.’ However, the reported evaporation rate was taken from one of the department’s own reports, the URS Final Report Engineering Services for Moloka‘i Irrigation System Kualapu‘u Reservoir Improvement Study.

With regard to the issue of low attendance at MIS meetings, the department continues to maintain that it gave users the opportunity to participate and non-attendance simply reflects individual choice. The department’s response reinforces our point—that the department needs to be more closely attuned to the issues of closest concern to MIS users and needs to demonstrate more proactively that it is sincere about tangible responses to those concerns.

The department disagreed with the finding that its internal and external financial reporting for MIS is limited. The department maintains that financial information through state systems and internally prepared reports has always been made available to internal users and the advisory board. We maintain that while the information might have been available, there was no clear evidence of consistent use for internal control and as a management tool. Moreover, some of this data has only recently become available, after our period of review, but we commend the department for attempting to provide appropriate tools for decision-making.

The department recognizes that that there is much to do to repair the system and improve operational efficiency. This is most clearly evident in the department’s agreement with the majority of our recommendations. The department claims that many of the items addressed, such as the need for ARVs, BVs, replacement meters, safety improvements and measuring equipment, are already being addressed. As these improvements are ongoing or only in the planning phase, we can only hope that they correct the problems identified in this report.

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

February 8, 2008

*COPY*

The Honorable Sandra Lee Kunimoto  
Chairperson  
Department of Agriculture  
1428 South King Street  
Honolulu, Hawaii 96814

Dear Ms. Kunimoto:

Enclosed for your information are three copies, numbered 6 to 8, of our confidential draft report, *Financial and Management Audit of the Moloka'i Irrigation System*. We ask that you telephone us by Monday, February 11, 2008, 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 Wednesday, February 13, 2008.

The 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,

Marion M. Higa  
State Auditor

Enclosures

LINDA LINGLE  
Governor



SANDRA LEE KUNIMOTO  
Chairperson, Board of Agriculture

DUANE K. OKAMOTO  
Deputy to the Chairperson

State of Hawaii  
DEPARTMENT OF AGRICULTURE  
1428 South King Street  
Honolulu, Hawaii 96814-2512

February 13, 2008

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OFC. OF THE AUDITOR  
STATE OF HAWAII

Ms. Marion Higa  
State Auditor  
Office of the Auditor  
465 S. King St., Room 500  
Honolulu, Hawaii 96813

Dear Ms. Higa:

Thank you for the opportunity to review and provide comments on the Legislative Auditor's (Auditor) draft report of the Financial and Management Audit of the Molokai Irrigation System (MIS). The Hawaii Department of Agriculture (HDOA) has reviewed the Auditor's draft report and recommends the following changes be made to the draft to correct certain misstatements, errors, or omissions:

Pg. 2. Last paragraph. Need to reference here that water was supposed to come from Pelekunu Valley as well as Waikolu Valley to be consistent with description on pg 3.

Pg. 3. Last sentence. Should read "...the system's average daily flow..."

Pg. 4. 4. Kualapuu Reservoir is an open reservoir, not partially opened reservoir.

Pg. 4. 4. 100 acres is approx. 4,356,000 square feet. Not 2,000 square feet.

Pg. 5. 5.0 Water distribution system. Should say "water is distributed from the reservoir to customers primarily in the Hoolehua and Mahana areas." MIS does not go to west end. Molokai Properties Limited (MPL) own pipeline carries its own water to the west end.

Pg. 6 Organization chart. There are two missing ISSW I positions for Waimanalo and one missing ISSW II position for Honokaa Paauilo.

**Pg. 12.** First complete paragraph. The department did provide information that could identify homesteader and non-homesteader accounts for the years 2004-2007. A corrected Exhibit 2.1 is provided below:

	2003-2004	2004-2005	2005-2006	2006-2007
<b>Accounts</b>				
Homesteaders	218	222	222	220
Non-Homesteaders	33	32	34	30
<b>Acreage</b>				
Homesteaders	1,646	1,678	1,287	1,473
Non-Homesteaders	1,823	1,762	1,820	1,396
<b>Water Usage</b>				
Homesteaders	165,585,000	139,477,000	161,650,000	263,679,000
Non-Homesteaders	681,945,000	619,049,000	745,760,000	682,828,000



Pg. 12-13. MIS water does not come from the Kualapuu aquifer. MIS Water comes from Waikolu Valley and high level dikes in the valley, as stated on page 4 and in the Agriculture Water Use and Development Plan. Per the Commission on Water Resource Management, users of the Kualapuu aquifer are Department of Hawaiian Home Lands, Maui Department of Water Supply, and KMI. HDOA has no right to the water in the Kualapuu aquifer. If the statements that HDOA is exhausting water resources and endangering agriculture, and being irresponsible in long-term planning are based on use of water from Kualapuu aquifer, they are clearly based on a misunderstanding of the facts. The department does take seriously its stewardship of the MIS and responsibility to Hawaiian homesteaders. The unique relationship of Hawaiian homesteaders to the MIS and the HDOA is found in Chapter 168 HRS and HDOA rules, Chapter 4-157. No other relationship with any user group in the department is as clearly addressed and defined. Our procedures to protect homesteader's preference right to Waikolu Valley water are posted on our HDOA website.

Pg. 14. Currently there are job descriptions which include task assignments. The Agricultural Asset Manager is in the process of developing an Operations & Maintenance Manual. The division has also implemented daily and monthly checklists that identify specific areas of the system to be maintained and/or inspected.

Pg. 14-15. The contract which will address many of the safety concerns described on these pages and page 20 has been awarded to Ron Ho and Associates. One of the safety measures in the contract provides for telephones at the east and west portals of the tunnel, one in the middle of the tunnel, and one in the pump gallery located in Waikolu Valley.

The procedure the workers are to follow if weather starts to turn bad is to cease any scheduled work in the valley and immediately exit the valley before the water level in the tunnel rises. The furthest point in the valley to the east portal is approximately 3 minutes by vehicle, 15 minutes walking. If staff were to begin walking immediately, within 15-25 minutes they could be in the jeep and exiting the valley and in that time the water in the tunnel would not have built up to a depth that would prevent exit. As a safety measure, we will purchase MRE's, water purification tablets, space blankets and extra flashlights and batteries to be placed in the vehicles.

Pg. 16. Specifications for the Air Relief Valves (ARVs) and the three inoperable blow out valves (BV) are being developed as part of the contract awarded to Ron Ho and Associates.

Pg. 18. There are 12 broken meters and all are on order as of January 2008. Regarding the "wish list", District Managers are always encouraged to submit supply and materials requests whenever needed. Division administrator makes priority decisions based on availability of funds. Items such as meters are the responsibility of the District Manager to bring to the attention of the Ag. Asset Manager when they are needed. Safety items on the "wish list are on order, all other priority items are being scheduled for purchase.

Pg. 19. Last paragraph. Specifications for the inoperable flow meters are being developed as part of the Ron Ho and Associates contract.

Pg. 20. First paragraph. The 2004 report referenced is the Ron Ho & Associates assessment report on the condition of MIS infrastructure and was delivered to the auditor with the other reports as requested. Further, the items identified in the Ron Ho report are to be addressed within the SCADA/Telemetry contract to be awarded in 2008.

Pg. 21. Second complete paragraph. "they (director and deputy)... identified only large size of the reservoir and electricity costs as priority issues. This is contradictory to what is stated on pg. 26: "The director identified building a working relationship with the advisory board as one of the most critical things facing the Molokai Irrigation System".

Pg. 22. Second complete paragraph. Air relief and blow out valves are under contract for replacement/repair; 2) partitioning of the reservoir is economically unrealistic; 3) hydropower project is being addressed with budget request for \$150K for an Environmental Assessment (EA) for a hydro project. We are unclear why only these projects are used as examples when on page 38 it is acknowledged that improvements to the tunnel, including many of the identified safety issues are being addressed through an awarded contract, that funding for the EA alternative power in the form of a mini-hydro project is included in the FY09 supplemental budget request, and as we pointed out previously, specifications are being developed for the ARVs and blow out valves and will be installed as part of a follow-on contract in 2008.

Pg. 24. Second paragraph. The Working Agreement includes benchmarks to monitor progress and provide accountability.

Pg. 25. Water Usage. What is the source for the 25% pan evaporation loss and over what period of time is it calculated? If a valid source, it is a relevant statistic in calculating the MPL recharge assessment, currently set at 10%. However, the critical detail is the duration of time for the evaporation loss to occur.

Pg. 26. Reservoir depth. The discussion of pumped ground-water reservoir is inaccurate. Reference should be corrected to refer to "high-level dikes" and the dikes should be properly described and explained.

Pg. 26. Question from the auditor was "Were we disappointed with attendance at third meeting?" Our response was "yes" but that we felt that HDOA had made every attempt to get people to attend. Notices were sent out with monthly bills; an announcement was made in both newspapers and broadcast on radio. Announcements were posted around town. We were also surprised at low attendance because a frequent complaint heard at MIS meetings was there was a lack of understanding of how HDOA set water rates and especially how HDOA would protect homesteader's right to 2/3 water. We felt that those two issues were the ones most people were concerned about.

As stated previously, our primary goal was in improving communication and trust with the MISWUAB. We were realistic enough to know that trust with the community was going to take a long time but we were willing to include the community in the process if the board agreed. At the end of the meetings, we believe that we have a much stronger relationship with the board and while we'll never get 100% agreement among all the water users, at least we willingly engaged in discussions, stood up and answered questions, and demonstrated our commitment to the relationship.

The road map agreement is one of the "singles" we tried to hit. It is informal, and meant to evolve. Hopefully we will be in a much better position of mutual trust in future years when all parties are comfortable with each other.

Pg. 26. End of paragraph 3. Last sentence. "...*agreement between the department and users.*" The agreement is between the MIS board and HDOA. Original intent was that the Roadmap meetings were a means to improve relations between the board and HDOA. Community members at an MISWUAB meeting asked to participate and board agreed.

Pg. 27. Financial information by way of FAMIS and internally prepared reports has always been made available to internal users. More recently, access to Data Mart, a financial system, has allowed internal users the ability to review and oversee financial transactions. Currently, expenditures and revenue data are provided quarterly to administration for use internally and at meetings with the MISWUAB.

Pg. 28. Exhibit 2.10 The Agriculture Resource Management division records reflect total receivables for MIS as of 6/30/07 of \$299,633.77. The Auditor table indicates Current balance is \$9,202.06. It should be (\$9,202.06) per Aging Report. The June 30, 2005 total in the Auditor table indicates Current balance of (557.98). Should be (\$2,791.35) per Aging Report. The June 30 balance of each of the four audit years

includes the non-active account of Coffees of Hawaii with a balance of \$103,434.28. This account is listed as an inactive account because bankruptcy proceedings have concluded. ARMD is submitting a request to the March 2008 Board of Agriculture to write off the balance.

Pg. 28. To aggressively enforce collections as recommended would mean that we would eventually have to terminate service to a number of homesteaders. Our current practice is to encourage payment to catch up but we do not terminate service quickly because of our desire to encourage agriculture and our understanding that farmers face many uncontrollable events (weather, disruption in transportation, competition, etc.) We will discuss this with the MISWUAB as it has the potential to become very divisive.

Pg. 29. Although reconciliations between ARMIS and FAMIS are not performed, cash receipts are reconciled with FAMIS at the departmental level which provides assurance that revenue sources appropriate to the program are being recorded. We will require reconciliation between FAMIS and ARMIS to be performed.

Pg. 29. Commencing in FY2007, revenue and expenditures by specific irrigation systems have been reported quarterly to administration to be used as a management tool. In FY 2008, access to Data Mart has enabled quarterly reporting of revenue by specific irrigation systems to administration. In addition, since FY 2007, object of expenditure details for MIS have been reported quarterly to administration and object of expenditure details by irrigation systems have been reported annually at fiscal year end.

The department will further develop its ability to internally segregate financial information on a system by system basis for use as a management and strategic planning tool in forecasting and budgeting for each system's operational requirements and in monitoring and analyzing each system's financial status.

Pg. 30. Third paragraph. Should read "And while the division had thought..."

Pg. 31. The department recognizes that it has always relied on an independent accountant to prepare financial statements on an accrual basis.

Pg. 32. Last paragraph. As the report acknowledged, "the director and administrator are well aware of statutory requirements on the self-sustainability of revolving funds." In order to reduce reliance on the general fund appropriation, HDOA is implementing/considering the following actions on all irrigation systems. For example, 1) investments that increase productivity, e.g. purchases of labor saving equipment that reduces the need for future personnel increases (backhoe on Molokai); 2) investments that save costs, e.g. hydro electric units (on Molokai and currently considering a study for hydro on the Waimea Irrigation System), SCADA on Molokai, and replacement of older inefficient water pump (Waimea Irrigation System); 3) investments that optimize the available water for irrigation, e.g. Waimanalo Irrigation System.

The aggressive collections tactics that are suggested in the Recommendations section deserve serious consideration as the amount of outstanding receivables is clearly a potential source of revenue and therefore a means to reduce the fund's reliance on the legislative appropriation. While we have expressed our disagreement with the amount of receivables the auditor believes are outstanding, nevertheless, the amount is significant. However, aggressive collections tactics can also be a divisive issue as over 97% of the outstanding accounts as of June 30, 2007, are held by homesteaders. We believe that patiently working with all water users with back due accounts is the approach most likely to keep them in agriculture. This is a Recommendation that is especially important to get input from the MISWUAB and the rest of the community.

#### Regarding Recommendations

Pg. 38. Recommendation 1a. & b. Should be done with both homesteaders and non-homesteaders through the MISWUAB. No point in "pitting" groups by excluding someone.

Pg. 39. Recommendation 2a. Should read "...ensure optimal delivery...

We agree with recommendations 2a-2c.

Pg. 39. Recommendations 3a-3c.

We agree with all recommendations.

Pg. 39. Recommendations 4a-4c.

Before we respond, we will speak to the MISWUAB about the recommendations.

Pg. 40. Recommendations 5a-5b.

We agree with both recommendations.

Pg. 40. Recommendations 6a-6d

Recommendation a. Completion of strategic plan or at least MISWUAB & community discussions should take place before discussions with the legislature.

Recommendation b. We agree in concept and will consult with Fiscal office staff about implementation.

Recommendation c. We agree with the recommendation.

Recommendation d. We need to discuss with MISWUAB and user community before deciding on course of action.

Pg. 40-41. We agree that the issue has merit and deserves further study.

## Summary

The characterizations in the title of Chapter 2 and some of the statements in bold within that section are far more dramatic than warranted by the specifics in the report. We are disappointed that many of the steps to make repairs, procure equipment, improve relations and communications, and generally increase our involvement with the MISWUAB over the past year were given cursory mention and considered of little if any value. We do however, very much appreciate the statement that "...both department personnel and MIS users alike must move forward to ensure this vital system will continue to function." This was the purpose of the Road Map meetings-to begin to move forward together.

We recognize that there is much to do to improve the system and improve operational efficiency. Our planning can be more comprehensive and our communication within the department and to the MISWUAB and the water user community can improve. We already have addressed the need for ARVs, BVs, replacement meters and safety improvements as well as new measuring instruments. We have ordered replacement water meters and are in the process of buying a backhoe. We need to complete our Operations and Maintenance manual and purchase sufficient equipment and supplies to have as backup replacement parts. We need to ensure that we have sufficiently planned for emergencies and have safety equipment available and that staff is trained in its use. In general, we need to do a better job of training staff, and particularly we need to give our District Manager training in administrative and communication skills. We will review the Auditor's financial recommendations on ways to strengthen the department's financial management capabilities.

Ms. Marion M. Higa  
February 13, 2008  
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We would like to thank your staff for their professionalism and effort to understand the complexities of the Molokai Irrigation System. Thank you again for the opportunity to review and respond to your draft audit report.

Sincerely,

A handwritten signature in black ink, appearing to read "Sandra Lee Kunimoto". The signature is fluid and cursive, with the first name "Sandra" being the most prominent.

Sandra Lee Kunimoto, Chairperson  
Board of Agriculture