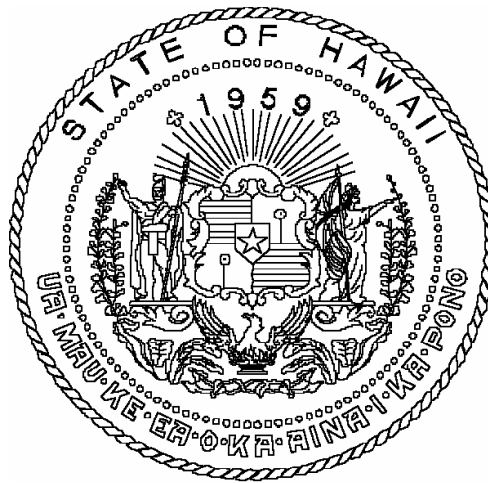


REPORT TO THE TWENTY-FOURTH LEGISLATURE
REGULAR SESSION OF 2008
ON
THE DAM AND RESERVOIR SAFETY PROGRAM
FOR FISCAL YEAR 2007



PREPARED BY
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

IN RESPONSE TO SECTION 179D, HAWAII REVISED STATUTES

HONOLULU, HAWAII
NOVEMBER 2007

THE DAM AND RESERVOIR SAFETY PROGRAM FOR FISCAL YEAR 2007

PURPOSE

Act 262, Session Laws of Hawaii 2007, amended Section 179D, Hawaii Revised Statutes (HRS) and added a requirement for an annual report to be prepared by the Department of Land and Natural Resources (DLNR) concerning the activities of the newly titled Dam and Reservoir Safety Program to be submitted to the Governor and Legislature by January 5 of each year.

This annual report has been prepared by DLNR's Engineering Division for the Dam and Reservoir Safety Program for Fiscal Year (FY) 2007 (July 1, 2006 to June 30, 2007).

INTRODUCTION

DLNR's Engineering Division administers the Hawaii Dam and Reservoir Safety Program (Program). Authorization for the Program is provided under Hawaii Revised Statutes, Chapter 179D "Hawaii Dam and Reservoir Safety Act of 2007", and Hawaii Administrative Rules, Chapter 13-190 "Dams and Reservoirs" which establishes the rules governing the design, construction, operation, maintenance, enlargement, alteration, repair, and removal of dams, reservoirs, and appurtenant works in the State of Hawaii.

BACKGROUND

Dams and reservoirs in Hawaii were historically developed by the agriculture industry. Today, dams and reservoirs continue to be used by the agriculture industry, in addition to providing storage for drinking water, flood control, recreation, and other purposes.

Only dams that meet a certain size (height and volume) criteria are regulated under the Program. Regulated dams are identified as having artificial barriers, together with appurtenant works, which are 25-feet or more in height or have an impounding capacity of 50-acre-feet (~17 million gallons) or more. Dams less than 6-feet in height, regardless of storage capacity, or that have a storage capacity not in excess of 15-acre-feet (5 million gallons) regardless of height, do not fall under State's jurisdiction, unless specified by the Program.

PROGRAM

The general duties of the Program include establishing policies and guidelines, conducting investigations and inspections, reviewing plans and issuing permits, emergency action planning, maintaining the inventory of dams for the State, conducting training and awareness for dam safety, and issuing enforcement orders as necessary for protection of public safety.

FUNDING

The Program currently receives funding in part from the State, the Federal Emergency Management Agency (FEMA), the Association of State Dam Safety Officials (ASDSO), and from fees charged for various services. Additionally in Fiscal Year (FY) 2007, the Program continued to use \$5 million in state emergency funds secured from the 2006 Legislature as a result of the 2006 flood emergencies (Act 118).

ACTIVITIES

- A. Approvals of plans and specifications for the construction of dam and reservoirs and for alterations, modifications, repairs, removals, and enlargements of any dams and reservoirs;

Eight new permit applications were submitted to the Program in FY 2007. Some of the applications were incomplete or preliminary in nature and DLNR is awaiting formal submittal of plans and specifications for those projects. Several of the permit applications were for emergency work needed to repair and remediate damage as a result of the floods in March 2006. A listing of the current permits that the Program is evaluating is listed in Attachment A.

The Program expects to continue to field more permit applications in FY 2008 as dam owners in the State work to remediate damages from the floods and earthquakes, for general remediation of dam structures and features that have not been maintained over the years, and breach/removal plans for reservoirs that are no longer desired by the owners.

- B. A listing of dam and reservoir safety inspections made;

In FY 2006, as a result of the March 2006 floods, all 136 regulated dams under the purview of the Dam Safety Program (now known as the Dam Safety and Reservoir Safety Program) were inspected by the United States (US) Army Corps of Engineers via a limited visual inspection for dam safety. After the October 15, 2006 earthquake off of the northwest coast of the Island of Hawaii, the Program contracted with the Department of Interior - US Bureau of Reclamation, private consultants, and the US Army Corps of Engineers to again conduct limited visual inspections for almost all regulated dams statewide as noted in Attachment B.

Additional dam safety inspections were conducted by the Program or its consultants for dam safety as noted in Attachment B.

The Program has contracted with several consultants to perform Phase I Dam Safety Inspections in FY 2008.

C. Use of appropriated funds;

In FY 2007, the Dam Safety Program received operating general funds from the State and special funds by way of DLNR's Special Land and Development Fund, emergency funds from the 2006 Legislature, federal assistance funds for dam safety from FEMA and a small training grant from ASDSO in addition to fees for permit reviews.

Much of the operating general funds, special funds, and FEMA funds were directed to the salaries for DLNR's Dam Safety Section Head and Dam Safety staff. The remaining FEMA funds were used to conduct the dam safety owner training conference, and for staff to attend training and conferences in and out of the State. A summary of the funds expended can be found in Attachment C.

The \$5 million in emergency funds from the 2006 Legislature has greatly helped the Program jumpstart projects to assess the condition of dams statewide. Projects include:

- Dam break scenario modeling and hazard classification evaluations to provide emergency responders with information for emergency planning and evacuation and to update the hazard classification of regulated dams;
- Inventory verification and database development to gather updated physical data on the dams and importing this information into a database for staff to use for management of the dam inventory and inspection program.
- Dam owner and operator training provided statewide on each major island to promote and provide basic dam safety knowledge to owners and operators who are out in the field. Training enables owners to improve their own internal inspection and assessment programs. Attendees also included local engineers, emergency management responders and attorneys.
- Phase I Visual Inspections and reviews of Phase I Dam Safety Inspection reports from owners will be conducted throughout FY 2008 on all dams statewide.

D. Rules adopted or amended;

The Dam Safety Program staff worked closely with the 2007 Legislature on updating and revising the Dam Safety law, under Chapter 179D, (HRS). Numerous bills on the House of Representatives and Senate sides were introduced and heard throughout the 2007 Legislative Session.

On July 6, 2007, the Governor signed Senate Bill 1976 Senate Draft 2 House Draft 2 Conference Draft 1 into law (Act 262), as the "Hawaii Dam and Reservoir Safety Act of 2007", which made substantial amendments to Chapter 179D, HRS.

New administrative rules shall be promulgated by January 2009 to effectuate the amendments made to Chapter 179D, HRS.

E. Enforcement orders and proceedings;

The Dam Safety Program did not start or have any continued enforcement orders in FY 2007.

F. Dam and reservoir failures and department evaluations of the reasons for the failure, if known;

There were no known dam or reservoir failures in FY 2007.

G. Any other available data regarding the effectiveness of the State's Dam and Reservoir Safety Program.

Non-regulated dams research

The Program is working to identify and confirm dams that exists, but are not currently regulated by the Program, as part of an inventory verification project with consultant Oceanit. The unregulated structures have been initially identified using aerial photography, U.S. Geological Survey quadrangle maps and other similar maps where bodies of water larger than 1 acre-feet (0.3259 million gallons) were flagged. Based on size, Oceanit will then follow up with site visits to further verify whether these flagged bodies of water would qualify as a dam and reservoir and whether they should be regulated. Oceanit will be looking to identify such items as the location, height, width, upstream/downstream slopes, inlet, outlet and spillway structures. Depending on the results of this study and site visits, the Program may still have to conduct further research and/or more in-depth studies to confirm whether these newly found structures should be regulated.

Owner and Operator Training

The US Bureau of Reclamation was contracted to present a Dam Safety Owner and Operator Training Course, one on each major islands. From October to December 2006 four, three day classes were presented to dam owners, operators, local engineers, emergency response personnel and others interested in dam safety statewide. The courses were held on Oct 25 – 27 in Kamuela on the Big Island, Oct 30 – Nov 1 in Honolulu on Oahu, Nov 29 – Dec 1 in Kahului, Maui and Dec 4 – 6 in Lihue, Kauai, and had around 200 attendees.

Phase I Dam Safety Inspections

The Program continues to work towards ensuring the safety of dams by utilizing a portion of the 2006 emergency appropriation to conduct Phase I Dam Safety Inspections and reviews of Phase I Dam Safety Inspections conducted by owners and submitted to the Program. This work will continue through FY 2008 and will assist the Program by providing another baseline on the actual physical condition of dams in the State. As a result of these inspections, the Program will be able to provide owners additional information on potential remediation needed to continue to maintain safe dams.

SUMMARY

The Dam Safety Program has been working hard at the Legislature, with the owners and operators and to support emergency management officials in their planning over the past year. As a result of Act 262, Session Laws of Hawaii 2007, the Program will need to update the Hawaii Administrative Rules, Chapter 13-190 “Dams and Reservoirs” for alignment with the updated statutes. Along with updating the rules and regulations, the Program will work with owners and operators in enhancing their emergency response plans, developing and maintaining operations and maintenance programs, will continue with the regulatory inspection program and work on permit approvals for new dams, alterations, modifications, repairs, removals, and enlargements of dams and reservoirs.

A. FY 2007 Dam Safety Permit Reviews for the Approvals of Plans and Specifications for
Dam and Reservoir Construction, Alterations, Modifications, Repairs, Removals, Enlargements

DAM SAFETY PERMITS								
Permit ID	Date Rec'd	Dam ID	Dam Name	Dam Owner	Applicant	County	Description of Improvements	Status
19	10/21/02	141	Kehalani (Wailuku Proj. Dist.) Retention Basin	Wailuku Agribusiness Co., Inc.	Stanford Carr Development, LLC	Maui	New Construction	Under Construction
20	4/1/06	98	Alexander Dam	Kauai Coffee Company	LFR, Inc.	Kauai	Emergency Spillway Repairs/Veg	Project under reievw by DLNR consultant
21	3/22/07	28	Puu Ka Ele Reservoir	Jurassic Kahili Ranch LLC	Walter Kortschak	Kauai	Dam Removal by lowering embankment	Design / Planning phase - waiting for formal plans to be submitted.
22	4/3/07	18	Opaepa Reservoir No. 1	Kamehameha Schools	Oceanit	Oahu	Emergency Repairs to existing Spillway Tunnel	Emergency - Provided verbal to proceed, will review after as this is an emergency.
23	5/7/07	112	Aepoeha Reservoir	A&B Properties, Inc.	Engineering Concepts, Inc.	Kauai	Reconstruction of embankment and spillway.	Construction work completed, submitting after the fact permit.
24	5/26/06	37	Reservoir 510	Kamehameha Schools	The Gentry Companies Waiawa Development Co.	Oahu	Dam Removal.	Preliminary Permit application submitted - waiting for formal plans.
25	5/26/06	38	Reservoir 530	Kamehameha Schools	The Gentry Companies Waiawa Development Co.	Oahu	Dam Removal.	Preliminary Permit application submitted - waiting for formal plans.
26	5/26/06	39	Reservoir 545A	Kamehameha Schools	The Gentry Companies Waiawa Development Co.	Oahu	Dam Reconstruction	Preliminary Permit application submitted - waiting for formal plans.
27	1/1/07	135	Field 21 Reservoir	DLNR - Land Division	DLNR - Land Division	Kauai	Emergency Repairs to Spillway	Emergency - 2006 Floods - emergency remediation
28	6/13/07	141	Kehalani (Wailuku Proj. Dist.) Retention Basin	Wailuku Agribusiness Co., Inc.	Spencer Homes	Maui	Enlargement of Reservoir	Expands the Detention Basin still under construction - Permit 19 - waiting for formal plans.
29	7/16/07	29	Morita Reservoir	Joyce Doty		Kauai	Removal of Existing Breached Embankment	Dam is currently breached as a result of unsafe conditions following Kaloko dam failure.

B. FY 2007 Listing of Dam and Reservoir Safety Inspections

HAWAII COUNTY DAM NAME	October 2006 Earthquake Inspections			Other FY2007 Inspections	
	BOR	USACE	Other		
HI00026 LALAKEA RESERVOIR	19-Oct-06	01-Nov-06			
HI00027 E-13 RESERVOIR	19-Oct-06	01-Nov-06			
HI00040 WAIKOLOA 50 MG RESERVOIR 1	20&21-Oct-06	30-Oct-06			
HI00042 WAIMEA 60 MG RESERVOIR		31-Oct-06			
HI00043 PUUKAPU WATERSHED RETARDING DAM R-1	20-Oct-06	30-Oct-06			
HI00049 KEAIWA RESERVOIR		31-Oct-06	18-Oct-06		
HI00050 HAWI NO. 3 RESERVOIR	19-Oct-06	01-Nov-06			
HI00051 HAWI NO.5 RESERVOIR	16-Oct-06	31-Oct-06			
HI00052 KEHENA RESERVOIR		31-Oct-06			
HI00122 WAIKOLOA 50 MG RESERVOIR 2	20&21-Oct-06	30-Oct-06			
HI00123 PUU PULEHU RESERVOIR		31-Oct-06			
HI00131 PAAUILO RESERVOIR	18&19-Oct-06	30-Oct-06			
HI00136 WAIKOLOA 50 MG RESERVOIR 3	20-Oct-06	01-Nov-06			

OAHU COUNTY DAM NAME	October 2006 Earthquake Inspections			Other 2007 Inspections	
	BOR	USACE	Other		
HI00001 NUUANU DAM NO. 4		03-Nov-06			
HI00017 WAHIAWA DAM		02-Nov-06			
HI00018 OPAEULA 01 RESERVOIR		03-Nov-06			
HI00019 OPAEULA 02 RESERVOIR		03-Nov-06			
HI00020 OPAEULA 15 RESERVOIR		03-Nov-06			
HI00021 KEMOO 5 RESERVOIR		02-Nov-06			
HI00022 UPPER HELEMANO RESERVOIR		03-Nov-06			
HI00023 HELEMANO 6 RESERVOIR		03-Nov-06			
HI00025 KU TREE RESERVOIR		08-Nov-06			
HI00037 RESERVOIR 510		02-Nov-06			
HI00038 RESERVOIR 530		02-Nov-06			
HI00039 RESERVOIR 545A		07-Nov-06			
HI00045 HELEMANO 16 RESERVOIR		03-Nov-06			
HI00124 KANEOHE DAM		03-Nov-06			
HI00129 WAIMANALO 60 MG RESERVOIR		03-Nov-06			
HI00137 OAHU RESERVOIR NO. 155		03-Nov-06			

B. FY 2007 Listing of Dam and Reservoir Safety Inspections

KAUAI COUNTY DAM NAME	October 2006 Earthquake Inspections			Other 2007 Inspections	
	BOR	USACE	Other		
HI00002 PUU LUA RESERVOIR		31-Oct-06			
HI00003 PUU OPAE RESERVOIR		31-Oct-06			
HI00004 KITANO RESERVOIR		30-Oct-06			
HI00005 MANA RESERVOIR		31-Oct-06			
HI00006 WAIKAIA RESERVOIR		1-Nov-06			
HI00007 KEPANI RESERVOIR		1-Nov-06			
HI00008 WAIKOLOI RESERVOIR		1-Nov-06			
HI00009 KAAWANUI RESERVOIR		1-Nov-06			
HI00010 WAIKALUA RESERVOIR		30-Oct-06			
HI00011 AII RESERVOIR		30-Oct-06			
HI00012 KAPAIA RESERVOIR		30-Oct-06			
HI00013 UPPER KAPAHI RESERVOIR		30-Oct-06			
HI00014 OKINAWA RESERVOIR		30-Oct-06			
HI00015 KANEHA RESERVOIR		31-Oct-06			
HI00016 MIMINO RESERVOIR		31-Oct-06			
HI00024 KALIHUWAI RESERVOIR		01-Nov-06			
HI00028 PUU KA ELE RESERVOIR		31-Oct-06			
HI00029 MORITA RESERVOIR		31-Oct-06		Oceanit	21-Mar-07
HI00030 KOLOKO RESERVOIR				Earth Tech	10-Oct-06
HI00044 AHUKINI RESERVOIR		01-Nov-06			
HI00060 WAILUA RESERVOIR		30-Oct-06			
HI00061 LOWER KAPAHI RESERVOIR		30-Oct-06			
HI00062 TWIN RESERVOIR		30-Oct-06			
HI00063 AAHOAKA RESERVOIR		30-Oct-06			
HI00064 FIELD 2 KEALIA RESERVOIR		31-Oct-06			
HI00065 UPPER ANAHOLA RESERVOIR		31-Oct-06			
HI00066 LOWER ANAHOLA RESERVOIR		31-Oct-06			
HI00067 FIELD 1 KEALIA RESERVOIR		31-Oct-06			
HI00098 ALEXANDER		01-Nov-06			
HI00099 WAITA RESERVOIR		31-Oct-06			
HI00100 KAPA RESERVOIR		30-Oct-06			
HI00101 HUKIWAI RESERVOIR		30-Oct-06			
HI00102 IOLEAU RESERVOIR		30-Oct-06			
HI00103 AEPO RESERVOIR		30-Oct-06			
HI00104 HUINAWAI RESERVOIR		30-Oct-06			
HI00105 ELIMA RESERVOIR		01-Nov-06			
HI00106 KUMANO RESERVOIR		30-Oct-06			
HI00107 PUU O HEWA RESERVOIR		31-Oct-06			

USACE = US Army Corps of Engineers
BOR = US Dept of Interior: Bureau of Reclamation

B. FY 2007 Listing of Dam and Reservoir Safety Inspections

KAUAI COUNTY DAM NAME	October 2006 Earthquake Inspections			Other 2007 Inspections	
	BOR	USACE	Other		
HI00108 KAUPALE RESERVOIR		30-Oct-06			
HI00109 IPUOLONO RESERVOIR		30-Oct-06			
HI00110 AEPOALUA RESERVOIR		30-Oct-06			
HI00111 AEPOEKOLU RESERVOIR		30-Oct-06			
HI00112 AEPOEHA RESERVOIR		30-Oct-06			
HI00113 OMAO RESERVOIR		30-Oct-06			
HI00114 PIWAI RESERVOIR		30-Oct-06			
HI00115 PIA MILL RESEROIR		31-Oct-06			
HI00116 MAU RESERVOIR		01-Nov-06			
HI00117 ELUA RESERVOIR		30-Oct-06			
HI00118 MANUHONUHONU RESERVOIR		30-Oct-06			
HI00119 MAUKA RESERVOIR		31-Oct-06			
HI00120 PAPUAA RESERVOIR		30-Oct-06			
HI00121 HALENANAHU RESERVOIR		30-Oct-06			
HI00135 HALAMANU FIELD 21		30-Oct-06			

MAUI COUNTY DAM NAME	October 2006 Earthquake Inspections			Other 2007 Inspections	
	BOR	USACE	Other		
HI00041 KUALAPUU RESERVOIR		02-Nov-06			
HI00046 WAIKAMOI DAM NO. 2	24-Oct-06				
HI00047 PIIHOLO 50 MG RESERVOIR	24-Oct-06				
HI00048 OLINDA RESERVOIR	24-Oct-06				
HI00054 HORNER RESERVOIR	26-Oct-06	02-Nov-06			
HI00055 WAHIKULI RESERVOIR	28-Oct-06				
HI00056 HANA KAOO RESERVOIR	26-Oct-06	02-Nov-06			
HI00057 KAHOMA RESERVOIR	28-Oct-06				
HI00058 HONOKOWAI RESERVOIR	23-Oct-06				
HI00059 UPPER FIELD 30 RESERVOIR	23-Oct-06				
HI00068 RESERVOIR 14	22-Oct-06				
HI00069 RESERVOIR 15	22-Oct-06				
HI00070 RESERVOIR 20	27-Oct-06				
HI00071 RESERVOIR 21	22-Oct-06				
HI00072 RESERVOIR 22	27-Oct-06				
HI00073 RESERVOIR 24	22-Oct-06				
HI00074 RESERVOIR 25	22-Oct-06				
HI00075 RESERVOIR 30	27-Oct-06				
HI00076 RESERVOIR 33	27-Oct-06				

USACE = US Army Corps of Engineers
BOR = US Dept of Interior: Bureau of Reclamation

B. FY 2007 Listing of Dam and Reservoir Safety Inspections

MAUI COUNTY DAM NAME	October 2006 Earthquake Inspections			Other 2007 Inspections	
	BOR	USACE	Other		
HI00077 RESERVOIR 40	27-Oct-06				
HI00078 RESERVOIR 42	27-Oct-06				
HI00079 RESERVOIR 52	25-Oct-06				
HI00080 RESERVOIR 60	22-Oct-06				
HI00081 RESERVOIR 61	22-Oct-06				
HI00082 RESERVOIR 70	22-Oct-06				
HI00083 RESERVOIR 73	22-Oct-06				
HI00084 RESERVOIR 74	22-Oct-06				
HI00085 RESERVOIR 80	25-Oct-06				
HI00086 RESERVOIR 81	25-Oct-06				
HI00087 RESERVOIR 82	25-Oct-06				
HI00088 RESERVOIR 84	25-Oct-06				
HI00089 RESERVOIR 90	22-Oct-06				
HI00090 RESERVOIR 92	22-Oct-06				
HI00091 PEAHI RESERVOIR	23-Oct-06				
HI00092 PAPAAEA RESERVOIR	23-Oct-06				
HI00093 KAUPAKULUA RESERVOIR	22-Oct-06				
HI00094 KAPALAALAEA RESERVOIR	23-Oct-06				
HI00095 HAIKU RESERVOIR	22-Oct-06				
HI00096 PAUWELA RESERVOIR	22-Oct-06				
HI00097 KOLEA RESERVOIR	23-Oct-06				
HI00125 HAPPY VALLEY FLOOD PREVENTION	23-Oct-06				
HI00126 KAHANA DAM	23-Oct-06				
HI00127 NAPILI 4-5 DESILTING BASIN	23-Oct-06				
HI00128 NAPILI 2-3 DESILTING BASIN	23-Oct-06				
HI00130 HONOKOWAI - STRUCTURE#8	23-Oct-06				
HI00132 TOP FIELD 14 RESERVOIR	23-Oct-06				
HI00133 PUU KOA RESERVOIR	24-Oct-06				
HI00134 KOAPALA BASIN	23-Oct-06				
HI00138 KAHAKAPAO RESERVOIRS	24-Oct-06	02-Nov-06			
HI00139 MAUI FIELD 290 RESERVOIR	24-Oct-06				
HI00141 KEHALANI OFFSITE RETENTION BASIN	27-Oct-06	02-Nov-06			
HI00142 MIDDLE FIELD 14 RESERVOIR	23-Oct-06				
HI00143 KAILI ILI RESERVOIR	24-Oct-06				
HI00144 MAUI COUNTY WATER WEST	23-Oct-06				

USACE = US Army Corps of Engineers
BOR = US Dept of Interior: Bureau of Reclamation

C. FY 2007 Use of Appropriated Funds

	FY07-DS General Funds	FY07-DS Federal Funds	FY07-06 Emergency Funds	Total
	G-07-010 Expenses	S-07-242 Expenses	G-06-305 Expenses	State & Federal
Personal Services**	\$ 33,108.65	\$ 49,458.50	\$ 193,260.00	\$ 275,827.15
Other Current Expenses	\$ 6,695.41	\$ 15.47	\$ 10,781.04	\$ 17,491.92
Travel	\$ 4,302.34	\$ 5,718.71	\$ 5,284.21	\$ 15,305.26
Services on a Fee Basis	\$ -	\$ 8,910.76	\$ 767,465.89	\$ 776,376.65
Equipment	\$ 3,470.35	\$ 1,916.54	\$ -	\$ 5,386.89
Total	\$ 47,576.75	\$ 66,019.98	\$ 976,791.14	\$ 1,090,387.87

Services on a Fee Basis	FY07-DS General Funds	FY07-DS Federal Funds	FY07-06 Emergency Funds	
Vendor	G-07-010 Expenses	S-07-242 Expenses	G-06-305 Expenses	Description
ASCE Hawaii Section		\$ 7,810.76		Dam Safety Owner & Operator Training
First Hawaiian (ASDSO)		\$ 1,100.00		Registration Fee - ASDSO Conference
ASCE Hawaii Section			\$ 4,756.78	Dam Safety Owner & Operator Training
Bureau of Reclamation			\$ 54,000.00	Dam Safety Owner & Operator Training
Bureau of Reclamation			\$ 23,585.86	Emergency Earthquake Inspections-Oct 06
DOI-USGS			\$ 10,700.00	Water Level Monitoring Gages-Kauai
DOI-USGS			\$ 78,870.00	Lidar Survey/Gages/Post Flood Study
Earth Tech, Inc			\$ 20,700.00	Inspection - Kaloko Reservoir (Phase I)
Earth Tech, Inc			\$ 9,990.00	Permit Review - Alexander - Spillway
Earth Tech, Inc			\$ 14,931.00	Inspection - Field 21 - Spillway
East-West Center			\$ 141,476.20	PDC-Dam Break and Hazard Reclassification
FAO-USAED-Honolulu			\$ 300,000.00	Emergency Flood Inspections-Mar/Apr 06
Oceanit Laboratories			\$ 108,456.05	Dam Inventory and database update
Total	\$ -	\$ 8,910.76	\$ 767,465.89	

** Personal Services may include Flood Control Program staff

** Personal Services include A and B services

** Personal Services may not include Dam Safety staff funded from DLNR Special Land Funds