

DEPT. COMM. NO. 42

DAVID Y. IGE
GOVERNOR OF
HAWAII



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CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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FIRST DEPUTY

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DEPUTY DIRECTOR - WATER

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BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAIHOLAWE ISLAND RESERVE COMMISSION
(LAND)
STATE PARKS

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 1, 2016

The Honorable Ronald D. Kouchi,
President
and Members of the Senate
Twenty-Eighth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Joseph M. Souki, Speaker
and Members of the House of
Representatives
Twenty-Eighth State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Souki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of The Hawaii Dam and Reservoir Safety Program State Fiscal Year 2016 report, as required by Section 179D-29, Hawaii Revised Statutes (HRS). In accordance with Section 93-16, HRS, a copy of this report has been transmitted to the Legislative Reference Bureau and the report may be viewed electronically at <http://dlnr.hawaii.gov/reports/>.

Sincerely,

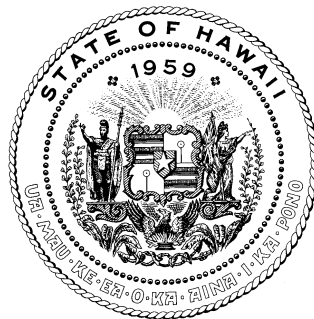
A handwritten signature in black ink, appearing to read "Suzanne Case".

SUZANNE CASE, Chair
Board of Land and Natural Resources

Enclosure

Report to the Twenty-Ninth Legislature
2017 Regular Session

**THE HAWAII DAM AND RESERVOIR SAFETY PROGRAM
STATE FISCAL YEAR 2016**



Prepared by the
Department of Land and Natural Resources
State of Hawaii

In response to
Section 179D-29, Hawaii Revised Statutes

November 2016

THE HAWAII DAM AND RESERVOIR SAFETY PROGRAM STATE FISCAL YEAR 2016

This report is prepared pursuant to Hawaii Revised Statutes (HRS) Section 179D-29 and covers the period from July 1, 2015 through June 30, 2016.

INTRODUCTION

The Department of Land and Natural Resources (Department), Engineering Division administers the Hawaii Dam and Reservoir Safety Act of 2007 (Act), codified as HRS Chapter 179D (Dam and Reservoir Safety Program). This Act, in conjunction with Hawaii Administrative Rules (HAR) Chapter 13-190.1, "Dams and Reservoirs", governs the design, construction, operation, maintenance, enlargement, alteration, repair, and removal of dams, reservoirs, and their appurtenant works in the State of Hawaii, to protect the health, safety, and welfare of the citizens of the State by reducing the risk of failure of the dams or reservoirs. Pursuant to HRS Section 179D-29, the Department shall submit an annual report to the governor and the legislature by January 5 of each year concerning the activities of the department relating to this chapter for the preceding fiscal year. The report shall include but not be limited to information on the following:

- (1) Approvals of plans and specifications for the construction of dams and reservoirs and for alterations, modifications, repairs, removal, and enlargements of any dams and reservoirs;
- (2) A listing of dam and reservoir safety inspections made;
- (3) Use of appropriated funds;
- (4) Rules adopted or amended;
- (5) Enforcement orders and proceedings;
- (6) Dam and reservoir failures and department evaluations of the reasons for the failure, if known; and
- (7) Any other available data regarding the effectiveness of the State's dam and reservoir safety program.

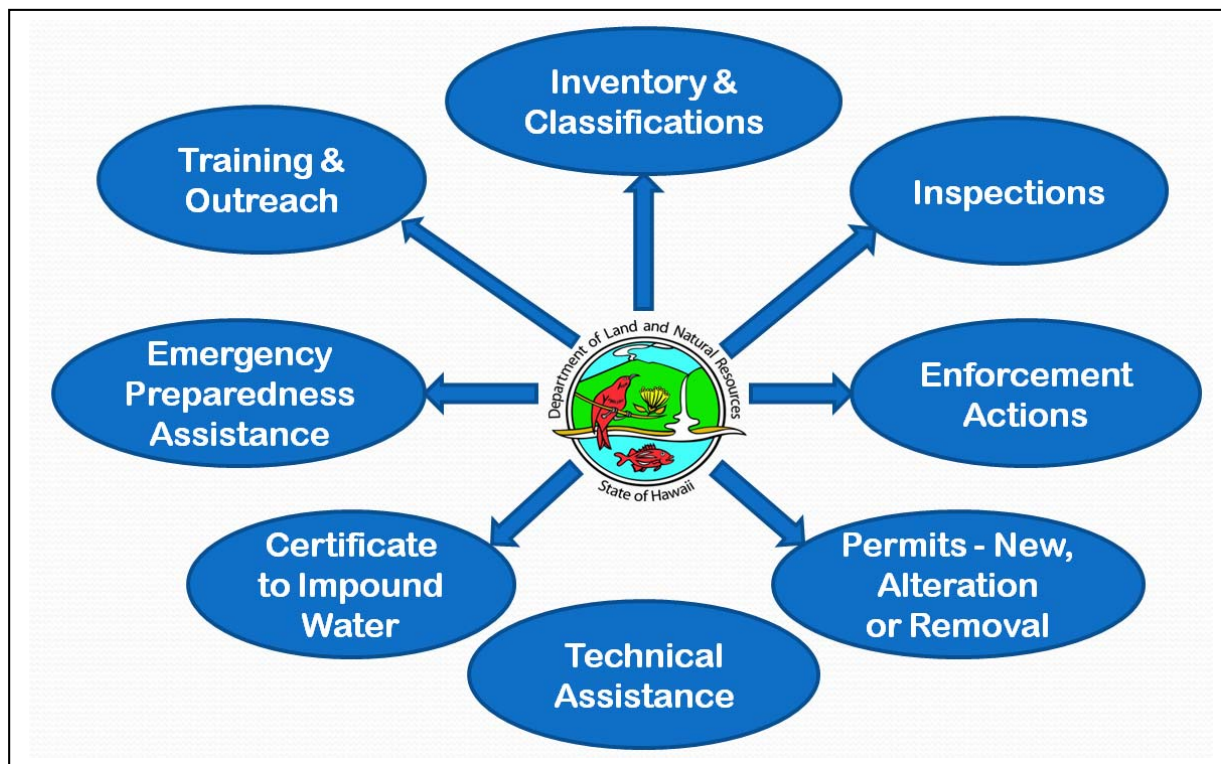
BACKGROUND

Historically, dams and reservoirs in Hawaii were predominately developed by the agriculture industry in the early 1900s. Today, dams and reservoirs continue to be used by the agriculture industry, in addition to providing storage for drinking water, flood control, hydro-electric, recreation and other purposes.

Only dams that meet a certain jurisdictional size criteria (height and volume) are regulated by the Department. Regulated dams are identified as having artificial barriers 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 of Hawaii jurisdiction, unless otherwise specified by the Dam and Reservoir Safety Program.

THE HAWAII DAM AND RESERVOIR SAFETY PROGRAM

The Dam and Reservoir Safety Program is comprised of several core functions:



Regulated Dam Inventory and Dam Classifications: The Department maintains a database of regulated structures, including classifications of each in regards to size, hazard potential and overall condition. The Department verified and updated their inventory of regulated dams in 2006. Hazard potential classifications were updated and assigned by the department as a product of their statewide dam break modeling analysis conducted between 2007 and 2011. Subsequent updates to the hazard classifications have been made for newly added facilities or those with new data affecting this classification. The overall condition assessment classification is a relatively new field which the Dam and Reservoir Safety Program is working to consistently apply across the state based on the condition assessments conducted on all regulated dams. All regulated dams were assessed and assigned an overall condition assessment classification during phase I inspections conducted statewide in 2007-2009. These condition assessment classifications are being updated based on ongoing inspection findings.

Dam Safety Inspections: The Department staff routinely inspects regulated structures statewide and retains consultants as necessary, to confirm or provide additional assessments. The Department currently inspects dams on a two year frequency, and is reevaluating this frequency as it updates the existing hazard classifications for all the regulated dams statewide. The Department also conducts construction or other informal inspections that are in addition to these visual dam safety inspections. Listings of the dams inspected this past fiscal year are included below.

Enforcement Actions: The Hawaii Dam and Reservoir Safety Act of 2007 authorized the Department to take enforcement action for both emergencies and any other violations of the Act. The Department has established administrative enforcement action procedures that are initiated by the following general deficiencies:

- Failure of dam and reservoir owners to comply with general requirements and responsibilities.
- Non-compliance with dam safety permit general terms and special conditions
- Non-compliance with certificate to impound terms and conditions

The Department did issue some penalty fines for delinquent submissions, however did not proceed with enforcement actions against any dam owner in Fiscal Year 2016 (see Section D)

Dam Safety Construction Permits: A permit from the Board of Land and Natural Resources (Board) is required for all dam construction, alteration, enlargement, modifications or removal work. Dams are uniquely engineered structures that require knowledge and experience in dam safety, particularly how to safely handle water flows in and out of the structure through appurtenant features, as well as mitigating the hazards of water passing through the dam embankment itself (seepage). Dams are often under sustained hydrostatic water loads, which if not properly designed can result in a failure of the dam. Dam safety permits allow the Department to review and check proposed improvements for concurrence with current dam safety practices and guidelines. Work that is not considered routine maintenance requires prior approval from the Board. Detailed procedures and requirements for this permitting process are provided in HAR Chapter 190.1. The Department also has developed additional guidance documents for dam owners and designers as well as a standard set of general permit requirements.

Certificate of Approval to Impound: The Certificate of Approval to Impound (CAI) water requirement was included in the Hawaii Dam and Reservoir Safety Act of 2007. Issuance of this certificate will be dependent on dam and reservoir owners ensuring their structures are remedied of critical deficiencies and meet minimum operational criteria.

The Department has developed guidelines and procedures for this certificate in coordination with dam owners on the implementation of this new requirement. The Department sent out notices to complete and submit CAI applications, to all owners of regulated dams and reservoirs in the state in Fiscal Year 2014. The Department received CAI applications for most of the regulated structures and is in the process of reviewing these submissions.

Understanding that many of these dams are over 80 years old, and almost all were constructed before the development of any modern dam safety standards, the department is working with owners to establish a reasonable improvement schedule for these facilities to meet current regulations. In the interim period, the department is working with owners to mitigate these deficiencies through operational restrictions or other types of mitigative actions.

Emergency Preparedness: HRS Chapter 179D requires that all dam owners of High and Significant Hazard Potential dams complete and submit an Emergency Action Plan (EAP) to the Department. The Department developed guidelines and an EAP template for dam owners to

utilize in formulating and executing a plan of action should a possible threat or deficiency occur on their dam facilities. The Department provides training and technical assistance to dam owners and emergency management officials to assist them in the completion and execution of the EAPs. Additionally, the Department is identified as a technical advisor during dam safety emergencies where an EAP is activated.

In April 2015, the Department coordinated EAP training and table top exercises on Oahu and Maui. Over 150 dam owners, operators, emergency managers, first responders and representative from supporting agencies participated in the event. The major objectives for this event was to provide training on basic technical understanding of typical dam failure modes and need of an EAP to mitigate these potential failures, run through several EAP test scenarios, and gain feedback from all participants on revising the current EAP template. Additional training exercises were conducted on Hawaii and Kauai in September 2015, with approximately 130 participants attending those exercises.

The Department has updated their EAP template based on the feed back from the recent testing and training event and worked with a consultant to develop an online EAP tool. This online version simplifies the creation and routine updates of the EAP process. The tool allows the department to easily update the statewide template quickly and users can process revisions to EAPs almost instantly. Owners have responded with positive feedback regarding this new tool.

Training and Outreach: The Department provides technical assistance to the dam owners, operators and consultants, as well as to the broader community of hazard mitigation partners and agencies. The Department works closely with the Association of State Dam Safety Officials, (ASDSO) to collaborate on public outreach and national awareness of the importance of dam and reservoir safety programs. Most recent training seminars included Operation and Maintenance Training and Emergency Action Planning Training.

The Department has retained a consultant to conduct a technical training seminar scheduled for April 2017 on rehabilitation improvements for embankment dams. This training will provide owners with a summary and primer on what studies are required to investigate various areas of their facilities and look at various alternatives used in addressing deficiencies or making improvements to dams. Owners will gain insight on how to procure and scope professional services for their facilities. Two additional days of training are planned for consultants to learn more in-depth technical training on current standard of practices for design and analysis of dams.

FUNDING

The Department's Dam and Reservoir Safety Program is funded under the State Land and Natural Resources LNR 810 Program, Prevention of Natural Disasters, and receives operational funding from two state special funds and one federal grant from the US Department of Homeland Security, Federal Emergency Management Agency (FEMA). The following is a breakdown of available funds to the department for its dam safety activities in FY 2016:

<u>Source</u>	<u>Approximate Funding</u>
State of Hawaii – Special Land and Development Fund (Dam Safety)	\$ 445,000
State of Hawaii – Dam and Reservoir Safety Special Fund (Appropriation only)	\$ 1,300,000
FEMA – National Dam Safety Program Grant (Federal FY 2015)	\$ 55,843
Total Available Funding	\$ 1,800,843

Expenditures from the various funding sources were made as follows:

	Operating Special Fund	Dam and Reservoir Safety Special Fund	Federal Funds	Total
Personnel Services	\$404,874	\$6,781	\$0	\$411,655
Consultant Services	\$0	\$180,068	\$15,000	\$195,068
Inspections Costs (including travel)	\$1,822	\$20,146	\$0	\$21,968
Training Expense (including travel)	\$0	\$0	\$11,324	\$11,324
Other Expenses (Supplies, Operating & Equipment)	\$4,948	\$90,992	\$22,580	\$118,520
B&F Management Fee	\$6,130	\$41,926	\$0	\$48,056
	\$417,774	\$339,913	\$48,904	\$806,591

Funding for the State LNR 810 Program supports multiple programs which include the State oversight of the National Flood Insurance Program, the State General Flood Control Plan and the Dam and Reservoir Safety Program. An attempt was made to isolate the dam safety portion of the allocation and expenditures in the above figures, however some overlap in expenditures between these programs are unavoidable. Most of the operating special funds were expended on salaries. Other major expenditures were for consultant contracts and travel. Travel expenses were incurred mainly from neighbor island inspections costs, and also include the costs for out-of-state training of dam safety personnel.

The Dam and Reservoir Safety Special Fund was intended to maintain a funding reserve should there be a dam safety emergency. The Hawaii Dam and Reservoir Safety Act of 2007 initially allocated \$2,000,000 to the Department's Dam and Reservoir Safety Program, however only \$1,000,000 was released to the Department. With the new Hawaii Administrative Rules becoming effective at the end of FY 2012, the Department was able to start collecting Dam Safety Annual Fees from regulated dam owners. The collection of these fees has enabled the Department to meet the targeted \$ 700,000 minimum emergency reserve. The Department ended the fiscal year with a balance of \$2,718,417 in the Dam and Reservoir Special Fund, although a portion of this balance includes contract encumbrances from previous years and also includes \$ 411,670 of contract encumbrances made this past year as well. The Department initiated several contracts this past year which included support for ongoing maintenance and enhancements to

the Dam Inventory Management System, Dam break modeling, and several contracts to start installing remote water level gages and the software application to monitor these gages.

DAM SAFETY 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;

During FY 2016, no new dam safety alteration permits were issued.

The following is a listing of active permits in FY 2016 and their current status.

Permit No.	Dam Inv.	Dam / Reservoir Name	Status
76	HI- 0067	Field 1 Kealia Reservoir	Submitted pending review / approval
73	HI- 0064	Field 2 Kealia Reservoir	Submitted pending review / approval
46	HI- 0135	Hanamaulu Field 21	Construction completed, waiting for closing documents
19	HI- 0141	Kehalani (Wailuku Proj. Dist.) Retention Basin	Under Construction, Defects observed which need to be resolved
75	HI- 0066	Lower Anahola Reservoir	Submitted pending review / approval
71	HI- 0061	Lower Kapahi Reservoir	Submitted pending review / approval
61	HI- 0149	Maunaolu Reservoir	Approved - constructed - pending final docs
66	HI- 0001	Nuuanu No. 4 Reservoir	Approved, pending construction, insufficient funds
68	HI- 0137	<i>Oahu Reservoir 155</i>	Submitted pending review / approval
39	HI- 0113	Omao Reservoir	Permit approved. No construction to date.
72	HI- 0020	Opaeula 15 Reservoir	Submitted pending review / approval
54	HI- 0131	Paauiilo Reservoir	Permit approved, waiting for construction
55	HI- 0123	Puu Pulehu Reservoir	Submitted pending review / approval
77	HI- 0140	Ukumehame Reservoirs	Submitted pending review / approval
74	HI- 0065	Upper Anahola Reservoir	Submitted pending review / approval

Permit No.	Dam Inv.	Dam / Reservoir Name	Status
42	HI- 0013	Upper Kapahi Reservoir	Construction completed, waiting for closing documents
44	HI- 0013	Upper Kapahi Reservoir	Construction completed, waiting for closing documents
59	HI- 0040	Waikaloa Reservoir No. 1	Submitted pending review / approval
43	HI- 0060	Wailua Reservoir	Construction completed, waiting for closing documents
47	HI- 0060	Wailua Reservoir	Construction completed, waiting for closing documents
53	HI- 0042	Waimea 60 MG Reservoir (Puukapu)	Permit approved. No construction to date.

The following is a listing of closed permits in FY 2016 and status at closure.

Permit No.	Dam ID	Dam Name	Status / Comments
38	HI- 0094	Kapalaalaea Reservoir	Permit approved. Problems during construction - Permit revoked, beyond 5 Year with no action
41	HI- 0118	Manuhonuhonu Reservoir	Project to be cancelled, beyond 5 years with no action
51	HI- 0063	Aahoaka Reservoir	Construction stopped - Redesign for new scope
70	HI- 0045	Helemano 16	Completed / Closed

Additionally, the Department assisted many dam and reservoir owners in the review of preliminary designs, and proposed work. The following are a listing of those reservoirs that were engaged in this type of technical assistance.

Dam ID	Dam / Reservoir Name	Proposed Improvements
HI- 0003	Puu Opae Reservoir	Proposed Pump storage rehabilitation
HI- 0095	Haiku Reservoir	Proposed Outlet repair and seepage remediation
HI- 0049	Keaiwa Reservoir	Proposed embankment remediation and spillway repairs

B. A listing of dam and reservoir safety inspections;

In FY 2015, The Dam and Reservoir Safety Program staff conducted 60 visual dam safety inspections on regulated dams. In addition to these inspections, the department also conducted 40 informal dam safety inspection visits (including post earthquake inspections) and conducted 23 inspections to monitor construction activity. Listings of the visual dam safety inspections are provided below:

Dams in Honolulu County

State ID	Dam Name	Type of Inspection	Date
OA-0017	Wahiawa Dam	Visual Dam Safety	5-Aug-15
OA-0018	Opaeula 01 Reservoir	Visual Dam Safety	29-Oct-15
OA-0020	Opaeula 15 Reservoir	Visual Dam Safety	29-Oct-15
OA-0022	Upper Helemano Reservoir	Visual Dam Safety	5-Aug-15
OA-0023	Helemano 6 Reservoir	Visual Dam Safety	5-Aug-15
OA-0025	Ku Tree Reservoir	Visual Dam Safety	3-Nov-15
OA-0045	Helemano 16 Reservoir	Visual Dam Safety	5-Aug-15
OA-0129	Waimanalo	Visual Dam Safety	5-May-16
OA-0137	Oahu Reservoir 155	Visual Dam Safety	14-Dec-15
OA-0154	Nuuanu Reservoir No. 1	Visual Dam Safety	30-Oct-15

Dams in Maui County

State ID	Dam Name	Type of Inspection	Date
MA-0068	HC&S Reservoir 14	Visual Dam Safety	13-Aug-15
MA-0069	HC&S Reservoir 15	Visual Dam Safety	13-Aug-15
MA-0071	HC&S Reservoir 21	Visual Dam Safety	13-Aug-15
MA-0073	HC&S Reservoir 24	Visual Dam Safety	30-Jul-15
MA-0074	HC&S Reservoir 25	Visual Dam Safety	30-Jul-15
MA-0080	HC&S Reservoir 60	Visual Dam Safety	30-Jul-15
MA-0081	HC&S Reservoir 61	Visual Dam Safety	28-Sep-15
MA-0083	HC&S Reservoir 73	Visual Dam Safety	24-Feb-16
MA-0084	HC&S Reservoir 74	Visual Dam Safety	28-Apr-16
MA-0089	HC&S Reservoir 90	Visual Dam Safety	28-Apr-16
MA-0090	HC&S Reservoir 92	Visual Dam Safety	28-Apr-16

Dams in Hawaii County

State ID	Dam Name	Type of Inspection	Date
HA-0040	Waikalua Reservoir No 1	Visual Dam Safety	15-Oct-15
HA-0042	Waimea 60 MG Reservoir	Visual Dam Safety	14-Apr-16
HA-0049	Keaiwa	Visual Dam Safety	26-May-16
HA-0122	Waikalua Reservoir No 2	Visual Dam Safety	15-Oct-15
HA-0123	Puu Pulehu Reservoir	Visual Dam Safety	14-Apr-16
HA-0131	Paauilo Reservoir	Visual Dam Safety	14-Apr-16
HA-0136	Waikalua Reservoir No 3	Visual Dam Safety	15-Oct-15

Dams in Kauai County

State ID	Dam Name	Type of Inspection	Date
KA-0003	Puu Opae Reservoir	Visual Dam Safety	18-Nov-15
KA-0004	Kitano Reservoir	Visual Dam Safety	22-Sep-15
KA-0005	Mana Reservoir	Visual Dam Safety	22-Sep-15
KA-0006	Waikaia Reservoir	Visual Dam Safety	27-Jan-16
KA-0007	Kepani Reservoir	Visual Dam Safety	27-Jan-16
KA-0008	Waikoloa Reservoir	Visual Dam Safety	27-Jan-16
KA-0009	Kaawainui Reservoir	Visual Dam Safety	27-Jan-16
KA-0011	Aii	Visual Dam Safety	3-May-16
KA-0012	Kapaia	Visual Dam Safety	3-May-16
KA-0014	Okinawa	Visual Dam Safety	3-May-16
KA-0015	Kaneha Reservoir	Visual Dam Safety	15-Mar-16
KA-0016	Mimino Reservoir	Visual Dam Safety	15-Mar-16
KA-0030	Kaloko Reservoir	Visual Dam Safety	12-Apr-16
KA-0060	Wailua Reservoir	Visual Dam Safety	30-Mar-16
KA-0061	Twin Reservoirs	Visual Dam Safety	30-Sep-15
KA-0064	Kealia Field 2	Visual Dam Safety	24-May-16
KA-0065	Lower Anahola	Visual Dam Safety	24-May-16
KA-0066	Upper Anahola	Visual Dam Safety	24-May-16
KA-0067	Kealia Field 1	Visual Dam Safety	24-May-16
KA-0099	Waita Reservoir	Visual Dam Safety	6-Apr-16
KA-0100	Kapa Reservoir	Visual Dam Safety	30-Mar-16
KA-0105	Elima Reservoir	Visual Dam Safety	23-Feb-16
KA-0107	Puu O Hewa Reservoir	Visual Dam Safety	10-Feb-16
KA-0109	Ipuolono Reservoir	Visual Dam Safety	30-Mar-16
KA-0115	Pia Mill Reservoir	Visual Dam Safety	10-Feb-16
KA-0116	Mau Reservoir	Visual Dam Safety	23-Feb-16
KA-0117	Elua Reservoir	Visual Dam Safety	23-Feb-16
KA-0118	Manohonu	Visual Dam Safety	3-May-16
KA-0119	Mauka Reservoir	Visual Dam Safety	10-Feb-16
KA-0120	Papuaa Reservoir	Visual Dam Safety	6-Apr-16
KA-0121	Halenanahu Reservoir	Visual Dam Safety	6-Apr-16
KA-0155	Pond No. 1 at Kauai Ranch	Visual Dam Safety	15-Mar-16

Other Inspections Conducted Statewide

State ID	Dam Name	Type of Inspection	Date
OA-0149	Maunaolu Reservoir	Const - Base Prep Meeting	29-Jan-16
KA-0013	Upper Kapahi Reservoir	Construction	22-Jul-15
KA-0013	Upper Kapahi Reservoir	Construction	7-Aug-15
KA-0013	Upper Kapahi Reservoir	Construction	18-Aug-15
KA-0013	Upper Kapahi Reservoir	Construction	25-Aug-15
KA-0013	Upper Kapahi Reservoir	Construction	26-Aug-15
KA-0013	Upper Kapahi Reservoir	Construction	27-Aug-15
KA-0013	Upper Kapahi Reservoir	Construction	22-Sep-15
OA-0045	Helemano 16 Reservoir	Construction	24-Sep-15
KA-0013	Upper Kapahi Reservoir	Construction	30-Sep-15
OA-0045	Helemano 16 Reservoir	Construction	2-Oct-15
OA-0045	Helemano 16 Reservoir	Construction	12-Oct-15
OA-0045	Helemano 16 Reservoir	Construction	21-Oct-15
OA-0149	Maunaolu Reservoir	Construction	21-Oct-15
OA-0045	Helemano 16 Reservoir	Construction	29-Oct-15
OA-0045	Helemano 16 Reservoir	Construction	3-Nov-15
MA-0141	Kehalani Offsite Retention Basin	Construction	28-Apr-16
KA-0013	Upper Kapahi Reservoir	Construction - Abandonment	15-Mar-16
KA-0013	Upper Kapahi Reservoir	Construction - Abandonment	30-Mar-16
KA-0013	Upper Kapahi Reservoir	Construction - Embanking	10-Feb-16
MA-0141	Kehalani Offsite Retention Basin	Construction - Inflow Channel	22-Feb-16
MA-0141	Kehalani Offsite Retention Basin	Construction - Inflow Channel	22-Feb-16
MA-0141	Kehalani Offsite Retention Basin	Construction - Inflow Channel	16-Mar-16
UOA-2035	Opaepala 6 MG Reservoir	Informal	29-Oct-15
KA-0060	Wailua Reservoir	Informal	10-Feb-16
UKA-1045	New Upper Kapahi Reservoir	Informal - Cofferdam	10-Feb-16
UKA-1016	Kuhumu Reservoir	Informal - Data Collection	27-Jan-16
MA-0068	HC&S Reservoir 14	Informal - Drive By	28-Sep-15
HA-0122	Waikoloa Reservoir No 2	Informal - EAP Training	31-Aug-15
KA-0010	Waiakalua Reservoir	Informal - Gage/Reservoir Level	30-Sep-15
UMA-006	E-2 Reservoir	Informal - Gannett Fleming	22-Feb-16
UMA-007	Crater Reservoir	Informal - Gannett Fleming	22-Feb-16
UMA-006	E-2 Reservoir	Informal - Gannett Fleming	24-Feb-16
UMA-006	E-2 Reservoir	Informal - Gannett Fleming	25-Feb-16
UMA-007	Crater Reservoir	Informal - Gannett Fleming	25-Feb-16
UMA-007	Crater Reservoir	Informal - GF - Tunnel	24-Feb-16
OA-0022	Upper Helemano Reservoir	Informal - Grass/Spillway Gage	12-Oct-15
MA-0093	Kaupakalua Reservoir	Informal - Inundation Area	30-Sep-15
OA-0018	Opeaula 01 Reservoir	Informal - LEVEL 1	3-Feb-16

State ID	Dam Name	Type of Inspection	Date
KA-0024	Kalihiwai Reservoir	Informal - Outlet Work	18-Aug-15
HA-0042	Waimea 60 MG Reservoir	Informal - Permit	31-Aug-15
HA-0123	Puu Pulehu Reservoir	Informal - Permit	31-Aug-15
OA-0154	Nuuanu Reservoir No. 1	Informal - UHSLC	9-Jul-15
OA-0154	Nuuanu Reservoir No. 1	Informal - UHSLC	27-Jul-15
KA-0099	Waita Reservoir	Informal - UHSLC	25-Aug-15
KA-0010	Waiakalua Reservoir	Informal - UHSLC	26-Aug-15
KA-0099	Waita Reservoir	Informal - UHSLC	27-Aug-15
KA-0010	Waiakalua Reservoir	Informal - UHSLC	27-Aug-15
MA-0073	HC&S Reservoir 24	Informal - UHSLC	28-Sep-15
MA-0073	HC&S Reservoir 24	Informal - UHSLC	29-Sep-15
MA-0093	Kaupakalua Reservoir	Informal - UHSLC	29-Sep-15
MA-0093	Kaupakalua Reservoir	Informal - UHSLC	30-Sep-15
OA-0154	Nuuanu Reservoir No. 1	Informal - UHSLC	19-Jan-16
OA-0154	Nuuanu Reservoir No. 1	Informal - UHSLC	19-Jan-16
OA-0154	Nuuanu Reservoir No. 1	Informal - UHSLC	3-Feb-16
OA-0018	Opeaula 01 Reservoir	Informal - UHSLC	17-Feb-16
KA-0010	Waiakalua Reservoir	Informal - UHSLC	15-Mar-16
MA-0093	Kaupakalua Reservoir	Informal - UHSLC	16-Mar-16
OA-0018	Opeaula 01 Reservoir	Informal - UHSLC	24-Mar-16
OA-0018	Opeaula 01 Reservoir	Informal - UHSLC	1-Jun-16
KA-0010	Waiakalua Reservoir	Informal - UHSLC - Install Pole	18-Aug-15
OA-0021	Kemoo 5 Reservoir	Informal - USGS Elevations	3-Nov-15
MA-0069	HC&S Reservoir 15	Informal Drive By	28-Sep-15

C. Rules adopted or amended;

No rules were adopted or amended.

The 2016 Legislature authorized the availability of varying amounts of Special Purpose Revenue Bonds (SPRB) to four dam owners/operators to fund improvements and modifications to their facilities. The approval of the SPRB issuance will require further discussion between the dam owner/operator and the Department of Budget & Finance, and satisfactory credit underwriting review of the financing components with respect to the proposed financing. The facilities for which SPRB are available are:

- KA-030 Kaloko Dam
- MA-141 Kehalani Offsite Retention Basin
- MA-140 Ukumehame Reservoirs
- MA-150 Wailuku Reservoir No.6

D. Enforcement orders and proceedings;

The Department did issue one penalty fine via enforcement action for delinquent submissions to the dam owner of the following dams in FY 2016:

KA-62 Twin Reservoirs (Delinquent Annual Fee) for \$ 97.50

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

There were no known dam failures or incidents in FY 2016.

F. Other available data regarding the effectiveness of the State's Dam and Reservoir Safety Program.

The Dam and Reservoir Safety Program are working with dam owners to complete Emergency Action Plans (EAP) for their facilities. EAPs are required by statute for only high and significant hazard potential classifications of dams. Out of the 132 regulated dams in FY 2016, 127 are classified as high or significant hazard potential structures, and only three high hazard dams do not have EAPs on file. Two of these were recently added to the State inventory and the Department is working with the owners to complete these plans and the third one is maintained empty. The following is a summary of EAPs on file with the Department for all classifications.

		Number of Dams with EAPs					
FY 2004	FY 2007	FY 2010	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
12	55	121	125	130	127	130	129 / 132