

**SENATE COMMITTEE ON ECONOMIC DEVELOPMENT AND TECHNOLOGY
DEPARTMENT OF LAND AND NATURAL RESOURCES
BUDGET REQUESTS FOR BIENNIUM BUDGET 2011- 2013**

January 23, 2012

Mission Statement

Enhance, protect, conserve, and manage Hawaii's unique and limited natural, cultural and historic resources held in public trust for current and future generations of visitors and the people of Hawaii nei in partnership with others from public and private sectors, with an emphasis on the protection and restoration of priority watershed areas above all other natural resources, all of which will in turn be carefully managed in a manner consistent with the primacy of watersheds.

The Department of Land and Natural Resources (DLNR) is responsible for our water resources, endangered species, Hawaii's historic and cultural sites, coral reefs, fisheries management, dam safety and rock fall mitigation. The expanse of this kuleana encompasses 1.3 million acres of state land, 2 million acres of conservation land, and 3 million acres of state ocean waters. In addition, we, with the help of the Legislature, keep the memories of robust natural resources alive, to fuel the efforts and dreams of today's leaders as we work to restore our resources for future generations and our economic recovery.

Economic Impact

Hawaii's natural and cultural resources continue to be our most important assets. Hawaii's visitor industry is dependent upon our ability to provide visitors' experiences that include beautiful sandy beaches, coral reefs teeming with life, clean oceans and freshwater streams, lush green forests, scenic parks, trails and vistas, and meaningful and well protected historic and cultural sites. Retaining the visitor market and spending that fuels our economy requires that we keep these resources healthy.

Sustainable agriculture and renewable alternative energy are growing sectors for our economic wellbeing and future. In many cases, DLNR has the lands appropriate for those uses, and is involved in the permit review and processing for many endeavors. Most importantly, DLNR manages and provides the fresh water necessary to support these developments and life and livelihood in our islands. Ensuring the continued supply of fresh and clean water is essential for our economic and social wellbeing.

Budget reductions over the past years have had significant impacts on Department staffing and operations, the provision of public services and protection and preservation of natural and cultural resources. However the present biennium budget and the proposed supplemental budget allow for limited program development, most notably in the areas of watershed protection and restoration.

General funds are vital to support core activities such as law enforcement, regulatory oversight, fiscal management, personnel management, permitting, and clerical services to the public. Additionally, general fund support is necessary to carry out those activities that cannot be paid by federal funds, or are not appropriate for special funds because of the statutory or program restrictions placed on those other sources. Over the past 20 years, there has been a policy push to reduce general fund support and shift funding to special and federal funds and increased fee assessments. Not all Department functions

can be self-supporting. The amount of funds provided for general funded positions in the budget is not adequate to cover actual payroll costs. However, with the passage of Act 55 and the creation of the Public Land Development Corporation, the Department expects to benefit from public-private development partnerships that could generate significant revenue.

The reduction in budget, primarily the loss of staff and general fund payroll, and furloughs through part of the last fiscal year have had a devastating impact on many divisions. The Division of Conservation and Resources Enforcement (DOCARE), State Parks, Engineering, the Division of Boating and Ocean Recreation (DOBOR), the Division of Forestry and Wildlife (DOFAW), the Division of Aquatic Resources (DAR) and Land Division struggled to meet the 24 hour per day, seven days per week enforcement and emergency response for land and ocean management responsibilities with reduced and frozen staff and hours. DOCARE was forced to adopt drastic cost cutting measures including: (1) scheduling officers to work during the hours of 6 a.m. to 6 p.m., and eliminating regular and holiday overtime and night differentials, (2) assigning 2 officers per vehicle, per shift, to reduce motor vehicle gas/oil/repair costs, thus limiting patrol coverage, response to complaints and requests for service from the public, (3) cutting nonessential services; for example, the after-hours live answering service was eliminated as officers were not able to respond to complaints after 6 p.m., and (4) delaying the purchase of vehicles and equipment that are critical to public and officer safety. As a result, patrol time has been reduced by almost 20%, coverage had decreased by almost 30%, and enforcement actions (arrests, citations/warnings, investigations and inspections) are down by an average of 34%. Presently, the division is slowly increasing its patrol time and coverage, partly due to a unique opportunity provided by a multi-year grant from Conservation International that created a dedicated Fishery patrol unit in Maui Nui.

Alternatives Considered

DLNR's budget support has shifted to federal funds and special funds, many of which are fee-generated, such as the State Parks camping and entry fees, and Boating small boat harbor slip fees.

The Division of State Parks has been generating additional revenue through increased cabin and camping permit fees; establishing parking fees for non-residents at 8 high visitor destination parks on Oahu, Kauai, Maui and Hawaii; and negotiating commercial and concession leases on state parks to supplement repairs and maintenance costs. State parks are becoming increasingly popular for staycations, family gatherings, and celebrations during these difficult economic times placing greater demands on our recreational facilities and resources. Budget restrictions have required the costs for park repairs, tree trimming, maintenance, etc. to be shifted to other non-general funds to ensure public health and safety and to prevent park closures.

DOBOR has implemented a parking plan at the Ala Wai Small Boat Harbor, Oahu, that has resulted in a significant amount of additional revenue per month. DLNR is considering plans to implement additional parking plans at other facilities as well. DLNR has entered into a development agreement for the fast lands located in the Ala Wai Small Boat Harbor and the developer expects to break ground on the project in March 2012.

DLNR also increased its revenues by aggressively seeking new federal grants and working with partners to sustain a basic level of services in protecting the resources. These include working with watershed partnerships, invasive species councils and federal, county, and private partners. DLNR will continue to leverage all federal funding opportunities and explore public/private partnerships, and county/state partnerships.

DLNR did not privatize any functions due to reductions in force, and did not consolidate or eliminate programs, but is currently in the early stages of re-structuring the Division of Aquatic Resources and re-organizing it into an aquatics resources program within the Division of Forestry and Wildlife. The Department expects this exercise to be completed by the end of the calendar year, and that the next biennium budget will reflect this change on structure. No legislatively mandated function of the current Division of Aquatic Resources will be affected by this structural change.

We recognize that these are difficult times for every agency in the State and we will continue to work on ways to uphold our responsibilities to the public and fulfill our mission of protecting, conserving and managing Hawaii's unique and limited natural, cultural and historic resources.

Department of Land and Natural Resources
Department-Wide Budget Summary

Table 1

Fiscal Year 2012				
Act 164/11 Appropriation	Restriction	Emergency Appropriation	Total FY12	MOF
\$ 26,715,205.00			\$ 26,715,205.00	A
\$ 61,423,874.00	\$ (726,510.00)		\$ 60,697,364.00	B
\$ 19,328,809.00	\$ (73,198.00)		\$ 19,255,611.00	N
			\$ -	R
			\$ -	S
			\$ -	T
			\$ -	U
			\$ -	V
\$ 868,383.00	\$ (6,445.00)		\$ 861,938.00	W
			\$ -	X
\$ 108,336,271.00	\$ (806,153.00)	\$ -	\$ 107,530,118.00	Total
Fiscal Year 2013				
Act 164/11 Appropriation	Reductions	Additions	Total FY13	MOF
\$ 26,165,205.00	\$ (1,176,673.00)	\$ 5,847,700.00	\$ 30,836,232.00	A
\$ 60,571,874.00	\$ (776,837.00)	\$ 3,166,228.00	\$ 62,961,265.00	B
\$ 19,131,309.00	\$ (79,487.00)	\$ 347,145.00	\$ 19,398,967.00	N
				R
				S
		\$ 136,197.00	\$ 136,197.00	T
		\$ 800,000.00	\$ 800,000.00	U
			\$ -	V
\$ 868,383.00	\$ (7,030.00)		\$ 861,353.00	W
			\$ -	X
\$ 106,736,771.00	\$ (2,040,027.00)	\$ 10,297,270.00	\$ 114,994,014.00	Total

Department of Land and Natural Resources
Priority List of Functions

Table 2

Pri #	<u>Description of Function</u>	<u>Activities</u>	<u>Prog ID(s)</u>	<u>Statutory Reference</u>
	<u>Boating and Ocean Recreation - LNR 801</u>			
1	Managing and administrating the ocean-based recreation and coastal areas programs of the state	Establish, maintain, and revise Hawaii Administrative Rules (HAR). HAR governs the use of state harbors, ramps, and ocean recreation areas. Active oversight and responsibility of managing state small harbors, ramps and ocean recreation areas. Maintains, repairs, and replaces aids to navigation as well as ensuring access to small boat harbors and ramps to the boating and non-boating public. The division is also responsible for managing the use of all near shore waters. This includes regulating the use of ocean waters for surfers, stand-up paddleboarders, kayakers and other users of the nearshore waters. Issues marine activity permits for organized uses of the nearshore waters for regattas, surf contests, etc.	LNR 801	Chapter 200
2	Planning, developing, operating, administering, and maintaining small boat harbors, launching ramps, and other boating facilities and associated aids to navigation throughout the state	Operate, maintain, and repair 16 small boat harbors and 52 small boat ramps statewide. Also maintain, repair and replace navigational aids and aids to navigation statewide. Responsible for dredging harbor and ramp entrance channels.	LNR 801	Chapter 200
3	Developing and administering an ocean recreation management plan	Work with community to develop appropriate uses for state ocean waters.	LNR 801	Chapter 200
4	Administering the boating special fund	DOBOR has a fiscal staff to oversee the boating special fund. Division process all receipts in accordance with Department of Budget and Finance (B&F) guidelines. Also responsible for processing payments and preparing budgets, financial reports and forecasts.	LNR 801	Chapter 200
5	Regulating the commercial use of boating facilities	The division issues commercial permits in accordance with HAR. Use of commercial use of boating facility is governed by the HAR.	LNR 801	Chapter 200
6	Administering and operating a vessel registration system for the state	Registers all new and existing vessels in the state. This includes vessel sales and transfers.	LNR 801	Chapter 200
7	Conducting public education in boating safety	Promotes safe boating activities state wide through educational activities at boat shows, schools and other public, marine gatherings. This includes coordinating activities with USCG Reserve and USCG Auxiliary.	LNR 801	Chapter 200

Department of Land and Natural Resources
Priority List of Functions

Table 2

Pri #	<u>Description of Function</u>	<u>Activities</u>	<u>Prog ID(s)</u>	<u>Statutory Reference</u>
8	Administering a marine casualty and investigation program	Tracks marine accidents statewide as well as coordinates investigations of marine accidents. Accident reports are tracked and submitted to the United States Coast Guard (USCG).	LNR 801	Chapter 200
9	Regulating boat regattas and other ocean water events	The division issues marine event permits for regattas as well as for surf contests.	LNR 801	Chapter 200
10	Removing nonnatural obstructions and public safety hazards from the shoreline, navigable streams, harbors, channels, and coastal areas of the state	Removes grounded vessels, submerged vehicles, whale carcasses, and other debris from beaches and near shore waters.	LNR 801	Chapter 200
<u>Historic Preservation - LNR 802</u>				
1	Review of State and Federal projects	Review reports, photos, inventories, meet with project proponents, enter into agreements with other agencies regarding the treatment of historic or cultural properties	LNR802	6E-8, 6E-10, 6E-42 National Historic Preservation Act as amended (NHPA)
2	Inventory and Survey	Inventory and catalogue significant cultural and historic sites	LNR802	6E-3, NHPA
3	National Register	staff the Historic Hawaii Review Board (HHRB), review nominations for completeness, present nominations to the HHRB, forward appropriate nominations to the National Register, maintain files on	LNR802	6E-3, 6E5.5
4	Burial protection	Staff the island burial councils (5), make determinations on inadvertent finds, review genealogies and make recommendations to the burial councils, review burial treatment plans and make recommendations to the burial councils. Attend meetings with descendants and project proponents.	LNR802	6E-3, 6E-43, 6E-43.5, 6E-43.6
5	Certified Local Governments (GLSs)	Work with the counties to ensure historic preservation programs on all islands. Provide grants to Maui and Kauai in alternate years, as they are the 2 counties with CLGs.	LNR802	6E-3, NHPA
6	Planning	Develop the statewide Historic Preservation Plan and update every 5 years	LNR802	6E-3, NHPA
7	Education and Outreach	Develop programs to educate the public about historic preservation and its importance to the state	LNR802	6E-3, NHPA

Department of Land and Natural Resources
Resources by Program ID

Table 3

Prog ID	Program Title	MOF	As budgeted in Act 164/11 (FY12)			Governor's Submittal (FY13)			Percent Change of \$\$\$
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	
LNR 801	Ocean-Based Recreation	B	104.00	-	\$ 16,808,643	104.00	-	\$ 16,618,658	-1.1%
		N	-	-	\$ 1,001,411	-	-	\$ 1,000,703	-0.1%
	LNR 801 Totals		104.00	-	\$ 17,810,054	104.00	-	\$ 17,619,361	-1.1%
LNR 802	Historic Preservation	A	17.00	3.00	\$ 1,360,596	17.00	3.00	\$ 1,245,006	-8.5%
		B	-	2.00	\$ 151,228	-	2.00	\$ 146,124	-3.4%
		N	-	8.00	\$ 751,089	-	8.00	\$ 734,069	-2.3%
	LNR 802 Totals		17.00	13.00	\$ 2,262,913	17.00	13.00	\$ 2,125,199	-6.1%
	Totals By MOF								
	General		17.00	3.00	1,360,596	17.00	3.00	1,245,006	-8.5%
	Special		104.00	2.00	16,959,871	104.00	2.00	16,764,782	-1.2%
	Federal		-	8.00	1,752,500	-	8.00	1,734,772	-1.0%
	Trust		-	-	-	-	-	-	-
	Interdepartmental		-	-	-	-	-	-	-
	Revolving		-	-	-	-	-	-	-

Department of Land and Natural Resources
Current Year (FY12) Restrictions

Table 4

<u>Prog ID</u>	<u>Div</u>	<u>MOF</u>	<u>Restriction \$\$\$</u>	<u>Percent of Act 164/11 Appropriation</u>	<u>Impact</u>	
LNR 801	DOBOR	B	\$ (177,677)	-1.1%	Labor savings adjustments	
		N	\$ (652)	-0.1%	Labor savings adjustments	
LNR 802	HP	B	\$ (4,773)	-3.2%	Labor savings adjustments	
		N	\$ (11,069)	-1.5%	Labor savings adjustments	
Total			\$ (194,171)	-1.0%		

Department of Land and Natural Resources
Proposed Budget Reductions

Table 5

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Reduction</u>	<u>Impact of Reduction</u>	<u>MOF</u>	<u>Pos (P) FY13</u>	<u>Pos (T) FY13</u>	<u>\$\$\$\$ FY13</u>	<u>Carry-over? (Y/N)</u>
LS	LNR 801	Labor savings adjustments	No impact	B			(189,985)	N
LS	LNR 801	Labor savings adjustments	No impact	N			(708)	N
LS	LNR 802	Labor savings adjustments	No impact	A			(40,590)	N
LS	LNR 802	Labor savings adjustments	No impact	B			(5,104)	N
LS	LNR 802	Labor savings adjustments	No impact	N			(12,020)	N

Department of Land and Natural Resources
Proposed Supplemental Year Additions

Table 6

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Addition</u>	<u>Explanation</u>	<u>MOF</u>	<u>Pos (P) FY13</u>	<u>Pos (T) FY13</u>	<u>\$\$\$ FY13</u>
		None					

Department of Land and Natural Resources
Non-General Fund Balances

Table 7

		<u>Name of Fund</u>	<u>Statutory Reference</u>	<u>MOF</u>	<u>Beginning FY12 Unencumbered Cash Balance</u>	<u>Estimated FY12 Revenues</u>	<u>Estimated FY12 Expenditures and Encumbrances</u>	<u>Estimated FY12 Net Transfers</u>	<u>Estimated FY12 Ending Unencumbered Cash Balance</u>	<u>Balance in Excess of Program Needs</u>
		Special Funds:								
LNR 801	S-359/360	Ocean-Based Recreation	Sec 248-8, HRS	B	\$ 4,224,209	\$ 12,400,000	\$ (11,623,547)	\$ (1,500,000)	\$ 3,500,662	\$ -
LNR 802	S-321	Hawaii Historic Preservation SF	Section 6E-16, HRS	B	\$ 49,004	\$ 45,000	\$ (50,000)	\$ -	\$ 44,004	\$ -
		Trust Funds:								
LNR 801	T-915	Boating Security Deposits	Sec 171-18, HRS	T	\$ 1,126,341	\$ 70,000	\$ (75,000)	\$ -	\$ 1,121,341	\$ -
LNR 801	T-921	Boating Ceded Land Proceeds - Oahu	Sec 171-18, HRS	T	\$ 18,815	\$ 300,000	\$ (318,815)	\$ -	\$ -	\$ -
LNR 801	T-922	Boating Ceded Land Proceeds - Maui	Sec 171-18, HRS	T	\$ 33,829	\$ 550,000	\$ (583,829)	\$ -	\$ -	\$ -
LNR 801	T-923	Boating Ceded Land Proceeds - Hawaii	Sec 171-18, HRS	T	\$ 7,133	\$ 90,000	\$ (97,133)	\$ -	\$ -	\$ -
LNR 801	T-924	Boating Ceded Land Proceeds - Kauai	Sec 171-18, HRS	T	\$ 6,631	\$ 100,000	\$ (106,631)	\$ -	\$ -	\$ -

Department of Land Natural Resources
Emergency Appropriation Requests

Table 8

<u>Prog ID</u>	<u>Description of Request</u>	<u>MOF</u>	<u>Pos (P)</u> <u>FY12</u>	<u>Pos (T)</u> <u>FY12</u>	<u>\$\$\$ FY12</u>
	None				

Department of Land and Natural Resources
Budget Decisions

Table 9

Prog ID	Description	MOF	Initial Department Request			Budget and Finance Recommendation			Governor's Decision		
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$
LNR 802	Establish 2 Office Assistant III positions for Hawaii Island & Oahu (\$48,768); other operating funds, (\$5,100); replacement of a motor vehicle, (\$35,000).	A	2.00		88,868						
LNR 802	Request for additional staffing (\$53,000); motor vehicle (\$35,000) and other operating expenses (\$28,000), to manage Salt Pond	A	1.00		116,000						
		A	3.00	-	204,868	-	-	-	-	-	-
		B	-	-	-	-	-	-	-	-	-
		N	-	-	-	-	-	-	-	-	-
		T	-	-	-	-	-	-	-	-	-
		U	-	-	-	-	-	-	-	-	-
		W	-	-	-	-	-	-	-	-	-

Department of Land and Natural Resources
Program Review Proposals

Table 10

Prog ID	Description	MOF	Budget and Finance Proposal			Department Proposal			Governor's Final Decision		
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$
Various	General Fund - Reduction Planning Target	A			(1,267,321)						
	No reduction for LNR 801 and 802										
	Totals				(1,267,321)	0.00		0	0.00		0

Department of Land and Natural Resources
Position Vacant as of November 30, 2011

Table 11

<u>Prog ID</u>	<u>Date of Vacancy</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>Temp Perm (T/P)</u>	<u>FTE</u>	<u>MOF</u>	<u>Budgeted Amount</u>	<u>Actual Salary Last Paid</u>	<u>Exempt (Y/N)</u>	<u>Authority to Hire (Y/N)</u>	<u>Occupied by 89 Day Hire (Y/N)</u>
LNR 801CH	7/5/2011	9785	HARBOR AGENT II	SR12	03	P	1.00	B	\$33,756	\$33,756	N	N	N
LNR 801CH	6/2/2011	16911	ACCOUNT CLERK IV	SR13	03	P	1.00	B	\$33,756	\$33,756	N	Y	N
LNR 801CH	6/2/2011	22942	HARBOR AGENT III	SR14	03	P	1.00	B	\$39,480	\$39,480	N	Y	N
LNR 801CH	10/24/2011	26307	GENERAL LABORER II	BC03	01	P	1.00	B	\$34,164	\$34,164	N	N	N
LNR 801CH	10/11/2011	27192	HARBOR AGENT III	SR14	03	P	1.00	B	\$33,756	\$30,804	N	N	N
LNR 801CH	12/6/2010	32852	HARBOR AGENT III	SR14	03	P	1.00	B	\$44,412	\$44,412	N	Y	N
LNR 801CH	8/1/2010	34702	ACCOUNT CLERK II	SR08	03	P	1.00	B	\$35,064	\$35,064	N	Y	Y
LNR 801CH	6/1/2011	46141	OFFICE ASSISTANT III	SR08	03	P	1.00	B	\$26,700	\$26,700	N	N	N
LNR 801CH	12/1/2009	46609	OFFICE ASSISTANT III	SR08	03	P	1.00	B	\$26,700	\$25,668	N	N	N
LNR 801CH	12/31/2010	46731	GENERAL LABORER II	BC03	01	P	1.00	B	\$34,164	\$34,164	N	Y	N
LNR 801CH	12/13/2010	48181	OFFICE ASSISTANT III	SR08	03	P	1.00	B	\$23,736	\$28,836	N	Y	Y
LNR 801CH	7/1/2011	48186	ACCOUNT CLERK III	SR11	03	P	1.00	B	\$32,424	\$35,064	N	N	N
LNR 801CH	9/1/2009	118379	HARBOR AGENT II	SR12	03	P	1.00	B	\$31,212	\$31,212	N	N	N
LNR 801CH	7/1/2010	119001	OFFICE ASSISTANT III	SR08	03	P	1.00	B	\$25,667	\$32,424	N	N	N
LNR 801CH	New	120396	GENERAL LABORER I	BC02	01	P	1.00	B	\$27,122	\$0	N	N	N
LNR 801CH	New	120397	GENERAL LABORER I	BC02	01	P	1.00	B	\$27,122	\$0	N	N	N
LNR 801CH	Pending Establishment	91206C	BLDG MTNCE WKR I	BC09	1	P	1.00	B	\$39,864	\$0	N	N	N
LNR 801CH	Pending Establishment	91207C	HARBOR AGENT II	SR12	03	P	1.00	B	\$30,036	\$0	N	N	N
LNR 801CH	Pending Establishment	91208C	ACCOUNT CLERK II	SR08	03	P	1.00	B	\$26,700	\$0	N	N	N
LNR 801CH	Pending Establishment	91209C	ENGINEER V	SR26	23	P	1.00	B	\$60,489	\$0	N	N	N
LNR 801CH	Pending Establishment	99046C	OFFICE ASSISTANT III	SR08	03	P	1.00	B	\$23,000	\$0	N	N	N
LNR 801CH	Pending Establishment	99055C	PLANNER IV	SR22	13	P	1.00	B	\$40,000	\$0	N	N	N
LNR 802HP	New	120320	SECRETARY III	SR16	63	P	1.00	A	\$35,064	\$0	N	N	N
LNR 802HP	7/16/2010	100379(E)	HP ARCHAEOLOGIST IV	SRNA	13	P	1.00	A	\$59,488	\$60,024	Y	Y	N
LNR 802HP	9/11/2010	100530(E)	ARCH & HIST PRES MGR	SRNA	13	P	1.00	A	\$72,174	\$88,848	Y	Y	N
LNR 802HP	Restored - no funds*	102288(E)	CULTURAL SPCLT	SRNA	13	T	1.00	A	\$0	\$53,352	Y	N	N
LNR 802HP	Restored - with funds**	102393(E)	MAUI ASST ARCHAEOLOGIST	SRNA	13	P	1.00	A	\$53,000	\$47,172	Y	Y	N
LNR 802HP	8/13/2011	102394(E)	CULTURAL HISTORIAN	SRNA	13	P	1.00	A	\$41,942	\$41,628	Y	N	N
LNR 802HP	Restored - with funds*	103085(E)	HSPS I	SRNA	13	P	1.00	A	\$51,312	\$51,312	Y	N	N

Department of Land and Natural Resources
Position Vacant as of November 30, 2011

Table 11

<u>Prog ID</u>	<u>Date of Vacancy</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>Temp Perm (T/P)</u>	<u>FTE</u>	<u>MOF</u>	<u>Budgeted Amount</u>	<u>Actual Salary Last Paid</u>	<u>Exempt (Y/N)</u>	<u>Authority to Hire (Y/N)</u>	<u>Occupied by 89 Day Hire (Y/N)</u>
LNR 802HP	4/18/2008	103121(E)	HSPS II	SRNA	13	T	1.00	B	\$62,424	\$62,424	Y	N	N
LNR 802HP	4/23/2010	112243(E)	ARCHITECTURAL HISTORIAN	SRNA	13	T	1.00	B	\$60,024	\$60,024	Y	N	N
LNR 802HP	New	120336(E)	BURIAL SITES SPCLT	SRNA	13	P	1.00	A	\$53,000	\$0	Y	Y	N
LNR 802HP	New	120337(E)	BURIAL SITES SPCLT	SRNA	13	P	1.00	A	\$53,000	\$0	Y	Y	N
LNR 802HP	New	120351(E)	INTAKE SPCLT	SRNA	13	T	1.00	B	\$38,644	\$0	Y	Y	N
LNR 802HP	New	91215C	BURIAL SITES SPCLT	SRNA	13	P	1.00	A	\$53,000	\$0	Y	N	N
LNR 802HP	Pending Establishment	91216C	BURIAL SITES SPCLT	SRNA	13	P	1.00	A	\$53,000	\$0	Y	N	N
LNR 802HP	Pending Establishment	91217C+	LIBRARIAN/ARCHIVIST	SRNA	13	T	1.00	N	\$60,000	\$0	Y	N	N
LNR 802HP	Pending Establishment	91218C+	CERT LOCAL GOV. GRANT SPCLT	SRNA	13	T	1.00	N	\$53,000	\$0	Y	N	N
*Position abolished by the previous Administration.													
**Position abolished by the previous Administration; Re-established per Act 164, SLH 2011.													
***Position abolished by the previous Administration; Re-established per Act 180, SLH 2010.													

Department of Land and Natural Resources
Personnel Separations

Table 12

<u>Prog ID/Org</u>	<u>Separation Date</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>T/P</u>	<u>MOF</u>	<u>Budgeted FTE</u>	<u>Budgeted Salary</u>	<u>Actual FTE</u>	<u>Actual Salary</u>
LNR 801CH	9/1/2010	1068	OFFICE ASSISTANT IV	SR10	03	P	B	1.00	\$ 33,756	1.00	\$33,756
LNR 801CH	12/31/2010	1102	GENERAL LABORER II	BC03	01	P	B	1.00	\$ 34,164	1.00	\$34,164
LNR 801CH	10/12/2011	27192	HARBOR AGENT III	SR14	03	P	B	1.00	\$ 33,756	1.00	\$30,804
LNR 801CH	7/31/2010	34702	ACCOUNT CLERK II	SR08	03	P	B	1.00	\$ 35,064	1.00	\$35,064
LNR 801CH	12/4/2010	45345	OFFICE ASSISTANT III	SR08	03	P	B	1.00	\$ 26,700	1.00	\$26,700
LNR 801CH	12/31/2010	46731	GENERAL LABOER II	BC03	01	P	B	1.00	\$ 34,164	1.00	\$34,164
LNR 801CH	7/1/2011	48186	ACCOUNT CLERK III	SR11	03	P	B	1.00	\$ 32,424	1.00	\$35,064
LNR 801CH	3/18/2011	49291	BOAT & OCEAN REC SPLCT IV	SR22	13	P	B	1.00	\$ 47,412	1.00	\$47,412
LNR 801CH	10/30/2010	50939	ACCOUNTANT III	SR20	13	P	B	1.00	\$ 49,332	1.00	\$49,332
LNR 801CH	7/2/2010	119001	OFFICE ASSISTANT III	SR08	03	P	B	1.00	\$ 25,667	1.00	\$32,424
LNR 802HP	7/16/2010	100379	HP ARCHAEOLOGIST IV	SRNA	13	P	A	1.00	\$ 59,488	1.00	\$60,024
LNR 802HP	9/11/2010	100530	ARCH & HIST PRES MGR	SRNA	13	P	A	1.00	\$ 72,174	1.00	\$88,848
LNR 802HP	8/13/2011	102394	CULTURAL HISTORIAN	SRNA	13	P	A	1.00	\$ 41,942	1.00	\$41,628

Department of Land and Natural Resources
New Hires

Table 13

<u>Prog ID/Org</u>	<u>New Hire Effective Date</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>T/P</u>	<u>MOF</u>	<u>Budgeted FTE</u>	<u>Budgeted Salary</u>	<u>Actual FTE</u>	<u>Actual Salary</u>
LNR 801CH	1/18/2011	27192	HARBOR AGENT III	SR14	03	P	B	1.00	\$ 33,756	1.00	\$ 30,804
LNR 801CH	4/1/2011	48191	SECRETARY II	SR14	03	P	B	1.00	\$ 32,424	1.00	\$ 37,512
LNR 801CH	6/1/2011	111077	ENGINEER IV	SR24	13	P	B	1.00	\$ 47,448	1.00	\$ 48,744
LNR 801CH	4/1/2011	117733	GEN PROF IV	SR22	13	P	B	1.00	\$ 41,064	1.00	\$ 43,296
LNR 801CH	9/1/2011	117735	GEN PROF IV	SR22	13	P	B	1.00	\$ 41,064	1.00	\$ 43,296
LNR 801CH	5/2/2011	118867	PLANNER IV	SR22	13	P	B	1.00	\$ 40,000	1.00	\$ 43,296
LNR 802HP	10/10/2011	100377(E)	ARCHITECTURAL HISTORIAN	SRNA	13	T	N	1.00	\$ 53,000	1.00	\$ 52,992
LNR 802HP	5/2/2011	100380(E)	ARCHITECTURAL BRANCH CHIEF	SRNA	13	P	A	1.00	\$ 72,174	1.00	\$ 68,400
LNR 802HP	3/28/2011	102064(E)	HP ARCHAEOLOGIST III	SRNA	13	T	N	1.00	\$ 43,824	1.00	\$ 41,628

Department of Land and Natural Resources
RIF Related Grievances

Table 14

<u>Prog ID/Org</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU</u>	<u>T/P</u>	<u>MOF</u>	<u>FTE</u>	<u>RIF Date</u>	<u>Grievance Date</u>	<u>Current Status</u>
LNR 801CH	48181	OFFICE ASSISTANT III	SR08	03	P	B	1.00	11/21/2009	10/30/2009	Closed

Department of Land and Natural Resources
Expenditures Exceeding Appropriation Ceilings

Table 15

<u>Prog ID</u>	<u>MOF</u>	<u>Date of Increase</u>	<u>Appropriation Ceiling</u>	<u>Amount Exceeding Appropriation</u>	<u>Increase Percent</u>	<u>Reason for Exceeding Ceiling</u>	<u>Recurring (Y/N)</u>	<u>GF Impact (Y/N)</u>
		None						

Department of Land and Natural Resources
Federal Grants

Table 16

<u>Prog ID</u>	<u>CFDA No.</u>	<u>Award Description</u>	<u>Awarding Federal Agency</u>	<u>Anticipated or Actual Date of Award</u>	<u>Anticipated or Actual Award Amount</u>	<u>State Fiscal Year</u>	<u>State Matching Requirement or Other Commitment (Describe)</u>	<u>Anticipated Reduction or Discontinuance (Y/N)</u>	<u>Comments</u>
LNR801	11-452	Enhanced Vessel Registration Data System	Commerce	10/1/2011	\$ 100,000.00	FY12	\$ -	N	
LNR801	97-012	Recreational Boating Safety, FY09	DHS	10/1/2009	\$ 867,906.00	FY09 - FY12	\$ 1,989,024.00	N	
LNR801	97-012	Recreational Boating Safety, FY10	DHS	10/1/2010	\$ 846,334.00	FY10 - FY12	\$ 1,930,953.00	N	
LNR801	97-012	Recreational Boating Safety, FY11	DHS	10/1/2011	\$ 796,521.00	FY11 - FY12	\$ 2,169,742.00	N	
LNR801	97-036	December 2008 Storm	DHS	10/1/2009	\$ 615,540.88	FY09 - OPEN	\$ 205,180.30	N	
LNR801	15-605	Honokohau Small Boat Harbor	Interior	10/1/2011	\$ 541,358.00	FY11 - FY12	\$ 180,453.00	N	
LNR801	15-622	Construct Tie-Up Facilities - Ala Wai SBH	Interior	10/1/2005	\$ 100,000.00	FY05 - FY12	\$ 33,340.00	N	Boating Infrastructure Grant (BIG) for construction of mooring facilities for transiting recreational vessels.
LNR801	15-622	Construct Tie-Up Facilities - Ala Wai SBH	Interior	10/1/2006	\$ 100,000.00	FY06 - FY12	\$ 33,340.00	N	Boating Infrastructure Grant (BIG) for construction of mooring facilities for transiting recreational vessels.

Department of Land and Natural Resources
Federal Grants

Table 16

<u>Prog ID</u>	<u>CFDA No.</u>	<u>Award Description</u>	<u>Awarding Federal Agency</u>	<u>Anticipated or Actual Date of Award</u>	<u>Anticipated or Actual Award Amount</u>	<u>State Fiscal Year</u>	<u>State Matching Requirement or Other Commitment (Describe)</u>	<u>Anticipated Reduction or Discontinuence (Y/N)</u>	<u>Comments</u>
LNR801	15-622	Construction of Tie-Up Facilities at Ala Wai SBH	Interior	10/1/2007	\$ 100,000.00	FY07 - FY12	\$ 33,340.00	N	Boating Infrastructure Grant (BIG) for construction of mooring facilities for transiting recreational vessels.
LNR801	15-622	Tie-up Facilities - Transient Vessels at Ala Wai SBH	Interior	10/1/2009	\$ 100,000.00	FY09 - FY12	\$ 178,250.00	N	Boating Infrastructure Grant (BIG) for construction of mooring facilities for transiting recreational vessels.
LNR801	15-622	Tie-up Facilities - Transient Vessels at Ala Wai SBH	Interior	10/1/2010	\$ 100,000.00	FY10 - FY12	\$ 78,250.00	N	Boating Infrastructure Grant (BIG) for construction of mooring facilities for transiting recreational vessels.
LNR801	15-622	Keehi SBH Pier 600 Replacement	Interior	10/25/2010	\$ 1,000,000.00	FY10 - FY13	\$ 340,860.00	N	
LNR801	15-622	Assessment Report for Future Maint Dredging	Interior	10/1/2010	\$ 113,544.00	FY10 - FY13	\$ 46,456.00	N	

Department of Land and Natural Resources
Federal Grants

Table 16

<u>Prog ID</u>	<u>CFDA No.</u>	<u>Award Description</u>	<u>Awarding Federal Agency</u>	<u>Anticipated or Actual Date of Award</u>	<u>Anticipated or Actual Award Amount</u>	<u>State Fiscal Year</u>	<u>State Matching Requirement or Other Commitment (Describe)</u>	<u>Anticipated Reduction or Discontinuence (Y/N)</u>	<u>Comments</u>
LNR801	20-500	Ferry Boat Acquisition & Pier Improvements	Transportation	10/1/2005	\$ 12,633,409.00	FY05 - OPEN	\$ 3,158,352.00	N	FOR construction of ferry facilities in Maui County. DOBOR is a sub-grantee of this FTA grant. DOT is the grantee.
LNR801	20-500	Ferry Commuter Pier Improvements	Transportation	10/1/2006	\$ 22,635,451.00	FY06 - OPEN	\$ 5,633,863.00	N	FOR construction of ferry facilities in Maui County. DOBOR is a sub-grantee of this FTA grant. DOT is the grantee.
LNR801	20-500	Ferry Commuter Pier Improvements	Transportation	10/1/2007	\$ 4,832,000.00	FY07 - OPEN	\$ 1,208,000.00	N	FOR construction of ferry facilities in Maui County. DOBOR is a sub-grantee of this FTA grant. DOT is the grantee.
LNR802	15-904	FY10 Annual HPF Grant	Interior	6/30/2010	\$ 571,458.00	FY10 - FY12	\$ 380,972.00	N	
LNR802	15-904	FY11 Annual HPF Grant	Interior	2/11/2011	\$ 570,695.00	FY11 - FY13	\$ 380,463.00	N	
LNR802	15-904	FY12 Annual HPF Grant	Interior	3/31/2012	\$ 570,695.00	FY12-FY14	\$ 380,463.33	N	

Department of Land and Natural Resources
Intrdepartmental Transfer of Funds

Table 17

<u>Date of Transfer</u>	<u>MOF</u>	<u>Amount Transferred</u>	<u>From Prog ID</u>	<u>Percent of Imparting Program ID Appropriation</u>	<u>To Prog ID</u>	<u>Percent of Receiving Program ID Appropriation</u>	<u>Reason for Transfer</u>	<u>Recurring (Y/N)</u>
		None						

Department of Land and Natural Resources
Intradepartmental Transfer of Funds

Table 17

<u>Date of Transfer</u>	<u>MOF</u>	<u>Amount Transferred</u>	<u>From Prog ID</u>	<u>Percent of Imparting Program ID Appropriation</u>	<u>To Prog ID</u>	<u>Percent of Receiving Program ID Appropriation</u>	<u>Reason for Transfer</u>	<u>Recurring (Y/N)</u>
		None						

Department of Land and Natural Resources
 Intradepartmental Transfer of Funds

Table 17

<u>Date of Transfer</u>	<u>MOF</u>	<u>Amount Transferred</u>	<u>From Prog ID</u>	<u>Percent of Imparting Program ID Appropriation</u>	<u>To Prog ID</u>	<u>Percent of Receiving Program ID Appropriation</u>	<u>Reason for Transfer</u>	<u>Recurring (Y/N)</u>
		None						

Department of Land and Natural Resources
CIP Summary

Table 18

Priority	Project Title	FY12 \$\$\$	FY13 \$\$\$	MOF
	LNR 801 - DOBOR:			
	Comfort Station Improvements	500,000	500,000	C
	Mala Boat Ramp Loading Dock	200,000		C
	Mala Boat Ramp Loading Dock	600,000		N
	Pier Repair/Reconstruction	650,000	800,000	C
	Kaunakakai Harbor Loading Dock Impr.	100,000		C
	Kaunakakai Harbor Loading Dock Impr.	300,000		N
	Electrical Contractor Services	300,000		C
	Structural Engineering Services	150,000		C
	Electrical Engineering Services	150,000		C
	Kikiaola SBH Sand By-Pass Project	400,000	1,000,000	N
	LNR 802 - SHPD:			
	None			
	Totals	3,350,000	2,300,000	
	Totals by MOF			
	General Obligation Bond Funds	2,050,000	1,300,000	C
	Federal Funds	1,300,000	1,000,000	N

Department of Land and Natural Resources
Active Contracts

Table 19

Prog ID	Contract No.	MOF	Amount	Frequency (M/A/O)	Max Value	Outstanding Balance	Date Executed	Term of Contract		Organization	Category G/S/E/L	Description	Explanation of How Contract is Monitored	POS Y/N
								From	To					
LNR 801	40105	S-06-359	4,840,320	O/quarterly	5,231,295	91,623	9/1/1994	9/1/94	8/31/24	WILLIAMS, DON &	L	LEASE RENT AGREEMENT NO. B-94-4 FOR PARCEL OF LAND AT MAALAEA, ISLAND	Invoice	N
LNR 801	41424	S-97-359	6,967	O	25,000	18,033	10/9/1996			OKAHARA AND ASSO	S	STATEWIDE CORRECTIVE MAINT MECHANICAL ENG SERVICES	Invoice/ Inspection	Y
LNR 801	41425	S-97-359	19,464	O	25,000	5,536	10/9/1996			ENGINEERS-SURVEY	S	STATEWIDE CORRECTIVE MAINT SURVEYING SVS	Invoice/ Inspection	Y
LNR 801	42916	S-98-359	105,616	O	115,675	10,059	10/10/1997			OCEANIT LABORATO	S	MAINTENANCE DREDGING OF WAILUA RIVER, KAUAI	Invoice/ Inspection	Y
LNR 801	50875	S-04-359	21,957	O	93,318	71,361	8/1/2003			OCEANIT LABORATO	S	MONITOR BEACH NOURISHMENT & SAND RETENTION DEVICE, MAUNALUA BAY	Invoice/ Inspection	Y
LNR 801	52396	S-XX-359	55,302	M	57,321	1,368	10/25/2011	12/1/11	11/30/12	KCOM CORP	L	LEASE FOR SPACE AT 159 KALANIKOA	Invoice	N
LNR 801	53650	S-06-359	882,372	M	912,670	30,118	10/26/2011	12/1/11	2/28/12	MELIM BUILDING,	L	LEASE AGREEMENT OFC SPACE FOR THE DIV OF BOATING & OCEAN	Invoice	N
LNR 801	54246	S-06-359	125,908	M	130,667	661	10/3/2008	11/1/08	10/31/09	VMB, LLC	L	LEASE#95-23-0525 HOLD OVER CLAUSE OPT TO EXTEND 4 YR. 11MOS.		
LNR 801	54867	S-06-359	230,090	M	244,408	9,618	10/13/2011	11/1/11	1/31/12	WATAMULL KUKUI,	L	LEASE#94-23-0421 HOLD OVER CLAUSE MAY EXTEND 4 YR 11 MOS.	Invoice	N
LNR 801	55057	S-06-359	70,550	O	100,000	29,450	8/24/2006			OKUBO, ARNOLD T.		STATEWIDE STRUCTURAL ENGINEERING SVCS PROJECT#B00BS81A.		
LNR 801	56410	S-XX-359	503,767	M	549,696	45,930	10/15/2007	10/15/10	10/14/11	PACIFIC WASTE IN	S	REFUSE COLLECTION SERVICES FOR SBH FOR ISLAND OF HAWAII	Invoice/ Inspection	Y
LNR 801	59656	S-11-359	83,929	M	127,787	43,859	9/9/2011	10/1/11	9/30/12	SUPPORT SERVICES	S	REFUSE COLLECTION SERVICE FOR SBH OAHU HI/IFB 10-010-05	Invoice/ Inspection	Y
LNR 801	60226	S-11-359	0	M	83,117	83,117	7/11/2011	6/1/11	5/31/12	MAUI DISPOSAL CO	S	FURNISH REFUSE COLLECTION SVC FOR VARIOUS SBH & RAMPS	Invoice/ Inspection	Y
LNR 801	58038	S-12-359	\$ 72,310	O	\$ 119,112	\$ 46,802	7/14/2011	3/16/2011	3/15/12	SEA ENGINEERING	S	FURNISH BUOY MAINTENANCE SVC FOR OAHU DISTRICT.	Invoice/ Inspection	Y

Department of Land and Natural Resources
Active Contracts

Table 19

<u>Prog ID</u>	<u>Contract No.</u>	<u>MOF</u>	<u>Amount</u>	<u>Frequency (M/A/O)</u>	<u>Max Value</u>	<u>Outstanding Balance</u>	<u>Date Executed</u>	<u>From</u>	<u>To</u>	<u>Organization</u>	<u>Category G/S/E/L</u>	<u>Description</u>	<u>Explanation of How Contract is Monitored</u>	<u>POS Y/N</u>
LNR 801	CF 06-0720-0	S-09-359	\$ -	O	\$ 59,000	\$ 59,000	2/1/2010	2/14/10	1/31/12	GLAD'S LANDSCAPING AND TREE TRIMMING, INC	S	REMOVAL OF DEBRIS FROM TRAP AT THE ALA WAI SMALL BOAT HARBOR	Invoice/ Inspection	Y
LNR 801	CF 10-008-11	S-11-359	\$ -	O	\$ 59,375	\$ 59,375	4/1/2011	4/29/11	4/28/12	PAUL'S ELECTRIC	S	REPAIR STREET LIGHTING AND ELECTRICAL SYSTEMS FOR OAHU DISTRICT FACILITIES	Invoice/ Inspection	Y
LNR802	60247	G-11-082	71,687	M	186,387	114,700	6/29/2011	6/17/2011	8/1/12	SOLUTIONS PACIFIC	S	IMPLEMENTATION OF SELECTED ELEMENTS OF THE STATE HISTORIC PRESERVATION	Administrator meets regularly with contractor to review progress, issues, and invoices.	

Department of Land and Natural Resources
CIP Summary

Table 20

Priority	Prog ID	Project Title	FY13 \$\$\$	MOF
8	LNR 801	Honokohau Small Boat Harbor Improvements, Phase II. Construction of parking lot, road, water system, electrical and other misc. work. Additional funds are needed to implement this project: \$150,000 for design and \$500,000 for construction.	650,000	C
		Totals	<u>\$ 650,000.00</u>	

Department of Land and Natural Resources
Division Resources

Table 21

<u>Division</u>	<u>Associated Program IDs</u>			
Land	101			
Engineering	141	810		
Aquatic Resources	153	401	805	
Forestry and Wildlife	172	402	407	804
Commission on Water Resource Management	404			
Conservation and Resources Enforcement	405			
Boating and Ocean Recreation	801			
Historic Preservation	802			
State Parks	806			
Natural Physical Environment- Administration (Chair's Office, ASO, Personnel, IT)	906			

Department of Land and Natural Resources
Organization Changes

Table 22

<u>Year of Change</u> FY12/FY13	<u>Page</u> <u>Number</u>	<u>Description of Change</u>
FY12	49	Budgeted exempt positions 100377, 100378 and 102287 extended effective 07/01/11, NTE 06/30/12.*
FY12	49	Budgeted civil service position 120320 Secretary III established effective 08/04/11 per Act 164, SLH 2011.
	49	Budgeted exempt positions 120336 and 120337 established effective 08/11/11 per Act 164, SLH 2011.
	49	Budgeted exempt position 120351 Intake Specialist established effective 09/06/11 per FY09 Supplemental Budget.
	49	Budgeted civil service position 43185 redescribed from Clerk Stenographer II to Office Assistant III effective 01/01/12.**
	50	Budgeted exempt positions 102055, 102301 and 102064 extended effective 07/01/11, NTE 06/30/12.*
	50	Budgeted exempt position 102301 Historic Preservation Archaeologist III moved from Oahu to Hawaii effective 07/06/11.
	50	Budgeted exempt position 102393 Maui Assistant Archaeologist re-established effective 12/08/11 per Act 164, SLH 2011.
	50	Budgeted exempt position 102393 redescribed from Maui Assistant Archaeologist to Historic Preservation Archaeologist III effective 12/15/11.
	56	Budgeted civil service positions 120396 and 120397 General Laborer II established effective 10/19/11 per Act 164, SLH 2011.
		Key:
		*Subject to further extensions beyond 06/30/12.
		**Action not shown on organizational chart; pending approval.

SENATE COMMITTEE ON ECONOMIC DEVELOPMENT AND TECHNOLOGY
TESTIMONY OF THE
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
JANUARY 23, 2012

Chair Fukunaga and Members of the Senate Committee on Economic Development and Technology:

Thank you for allowing me to testify on four of our department's programs.

1. AGS-131 Information Processing and Communication Services
2. AGS-818 King Kamehameha Celebration Commission
3. AGS-881 State Foundation on Culture and the Arts
4. AGS-889 Spectator Events and Shows – Aloha Stadium

The Information Processing and Communication Services (ICSD) program improves government efficiency and effectiveness through information processing and communication technologies. It is responsible for managing the information processing and telecommunication systems in order to provide services to all agencies of the State of Hawaii. The ICSD is our department's largest challenge as it lost a total of 60 (55 permanent and 5 temporary) positions or 30% through the reduction in force and abolishment of vacant positions in FY 10 and FY 11. Sustaining production capabilities with the loss of staff have been challenging and problems rapidly become crisis. Staffing is not the only challenge facing ICSD, other critical needs include upgrades in hardware and software to convert to newer and more efficient equipment. Fiscal year 2012 authorized the establishment of the Chief Information Officer (CIO) position and office which are attached to the department. In July 2011, the CIO's office was started with the hiring of the State's first CIO. Subsequently, the CIO's office, the Office of Information Management and Technology (OIMT) issued a report outlining the current level of resources and issues faced by the State's information technology offices. This is the foundation step in the determining the "gap" between where we are now and where we want to be in terms of both technology and business processes.

The King Kamehameha Celebration Commission, a 13 member commission appointed by the Governor, coordinates and assists with planning the annual King Kamehameha Day celebration activities that are held statewide. These activities educate and entertain residents and visitors. It also provides activities for leisure time, in addition to bringing awareness to a wider audience on the traditions and history of Hawaii.

The State Foundation on Culture and the Arts promotes, perpetuates, and encourages culture and the arts, history and the humanities as central to the quality of life of the people of Hawaii. Under the Art in Public Places Program, the Foundation – whose nine members are appointed by the Governor – serves as consultant to the State Comptroller to determine the funding available for works of art for capital-improvement projects, and is responsible for managing selection of works, commissioning of artists, and selecting locations for works of art.

The Spectator Events and Shows – Aloha Stadium program provides people of all ages with the opportunity to enrich their lives through attendance at spectator events and shows. The Aloha Stadium is a venue where football, soccer, concerts, and other events are staged.

The total requirement of our four operating programs is \$41,457,719 (218.50 permanent and 6 temporary positions) for FY 2013. The general fund requirement is \$22,866,452 (117 positions and 2 temporary positions) for FY 2013. The non-general fund requirement is \$18,591,267 (101.50 permanent and 4 temporary positions) for FY 2013.

The four programs have nine (9) operating budget requests and one (1) CIP request for additional funding and positions which are as follows:

AGS 131 Office of Information Management & Technology (OIMT)

1. General fund request for Chief Information Officer (CIO) initiative – Business process and IT/IRM Reengineering \$5,000,000.
2. General fund request for CIO initiative – IT Integration Pilot Projects, \$1,825,000 and adding two (2) temporary positions.
3. General fund request for CIO initiative – Technology triage to ensure business operations of mission critical, \$3,442,141 and adding two (2) permanent positions.
4. Special Fund request for CIO Initiative – Conversion of seven (7) temporary positions to permanent, no additional special fund ceiling increase is required.

AGS 881 SFCA

5. General fund request for DOE Schools in Artists Program that were eliminated by the program review, \$215,284.
6. U Fund request to reduce interdepartmental transfer means of financing, correction of program review adjustments, (\$215,284).
7. U Fund request to increase appropriation ceiling due to additional TAT funds from the Hawaii Tourism Authority. Includes restoring the .50 position count for three positions, \$100,150.
8. Special fund request to convert an Arts Program Specialist III from temporary to permanent. No additional special fund ceiling increase is required.
9. U Fund request to reduce appropriation ceiling for TANF funding, (\$625,000).

10. Capital budget request for OIMT Statewide Financial System Enterprise Reengineering (ERP) \$15,000,000.

The tables (except for table 1) submitted to the Senate Committee on Ways and Means for these four programs are also attached.

My staff and I are available to answer any questions you may have concerning these programs.

**SENATE COMMITTEE ON ECONOMIC DEVELOPMENT AND TECHNOLOGY
TESTIMONY OF THE
CHIEF INFORMATION OFFICER
JANUARY 23, 2012**

Chair Fukunaga, Vice-Chair Wakai, and Members of the Senate Committee on Economic Development and Technology, thank you for allowing me to testify on the efforts by the Information Processing and Communication Services division (ICSD) and the Office of Information Management and Technology (OIMT).

The State's long-term plan to transform its technology is now well underway. In September 2011, we published a detailed baseline assessment of the State's services and current information technology environment, inclusive of systems, procedures, processes, and applications. This was just the first step in the multi-year, multi-phased transformation initiative.

We are currently in the next phase of the initiative and are developing the business transformation and information technology strategic plan, which will provide the roadmap for the journey ahead. The goal of the technology transformation initiative is to make government more efficient and improve services for the people of Hawaii while reducing costs.

While we are still developing detailed information for the strategic plan, at a high level we have identified the following as our strategic priorities, which serves as the framework and context for identifying and organizing specific initiatives and implementation plans:

1. Governance Solutions
2. Disaster Recovery and Continuity of Operations
3. IT Procurement Solutions
4. Security and Privacy Solutions
5. Open Government and Social Media Solutions
6. Collaboration and Work Flow Solutions
7. Enterprise Application Solutions
8. Enterprise Infrastructure Solutions
9. Wireless/Mobile Solutions

10. Process Engineering Opportunities and Solutions

The strategic plan will also address human resource needs, communications and outreach activities, and will identify and recommend any needed statutory changes to support the implementation of the plan.

While the details on specific projects of the transformation initiative are still being refined, there are critical foundational elements that we know must be addressed immediately. To that end, we have submitted four (4) operating budget requests totaling \$10,267,141 and one (1) CIP request for \$15,000,000 to:

1. Implement business process and information technology reengineering projects - \$5,000,000
2. Initiate IT integration pilot projects in the areas of information assurance (security), unified communications (VoIP), collaborative working environment, GIS, and records management - \$1,825,000
3. Support technology triage projects to ensure continuity of mission critical business operations - \$3,442,141 and adding two (2) permanent positions
4. Develop and identify requirements for a new statewide financial and human resources management system - \$15,000,000 in CIP

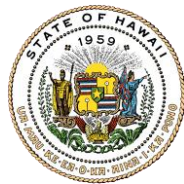
I am available to answer any questions you may have concerning the technology transformation initiative.

Senate Committee on Economic Development & Technology

AGS 131

Informational Briefing

January 23, 2012



- No CIO in place when biennium budget was developed; no unifying, singular vision for IT/IRM in the State of Hawai'i until now.
- Strategic Plan in development; will include IT Investment Management approach. All departments are contributing to the Plan and are in agreement with the vision.
- Implementing foundational elements of the Plan in advance of the next biennium budget is critical to success.

6/1/2011

9/30/2011

Final Strategic Plan Submitted 7/31/2012

7/1/2013

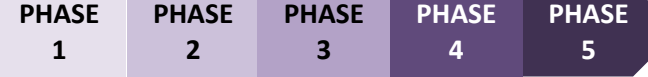
Ongoing

ORGANIZE AND PLAN

CENTRALIZE AND IMPLEMENT

PHASE A

PHASE B



Governance		Develop Governance Plan	Planning & Oversight			
Strategic Plan		Develop Strategic Plan	<ul style="list-style-type: none"> • Governance • Strategic Planning • Enterprise Architecture • Business Process Reengineering • Policy 			
Enterprise Architecture		Develop Architecture				
Projects	Triage	<ul style="list-style-type: none"> • AD/DNS • DLP • Training 	<ul style="list-style-type: none"> • Infrastructure • IRS Audit • Compliance • Retirement 	<ul style="list-style-type: none"> • Benefit System Modification • Update out-of-support software 		
	Pilots	<ul style="list-style-type: none"> • Summit • Wireless • Open Data • Dashboard 	<ul style="list-style-type: none"> • Digital Archives • GIS • Info Assurance 	<ul style="list-style-type: none"> • Unified Communications • Hawaiian Homelands Homestead dB 		
	Major Initiatives			<ul style="list-style-type: none"> • Health IT • Longitudinal Education • Hawaii Broadband Initiative 		
				<ul style="list-style-type: none"> • ERP • Infrastructure Improvements • Taxation 		
			<ul style="list-style-type: none"> • Future Year Major Initiatives 			
		Operations	<ul style="list-style-type: none"> • Radios & Communications • Maintenance • Licensing • Personnel Transfers 			

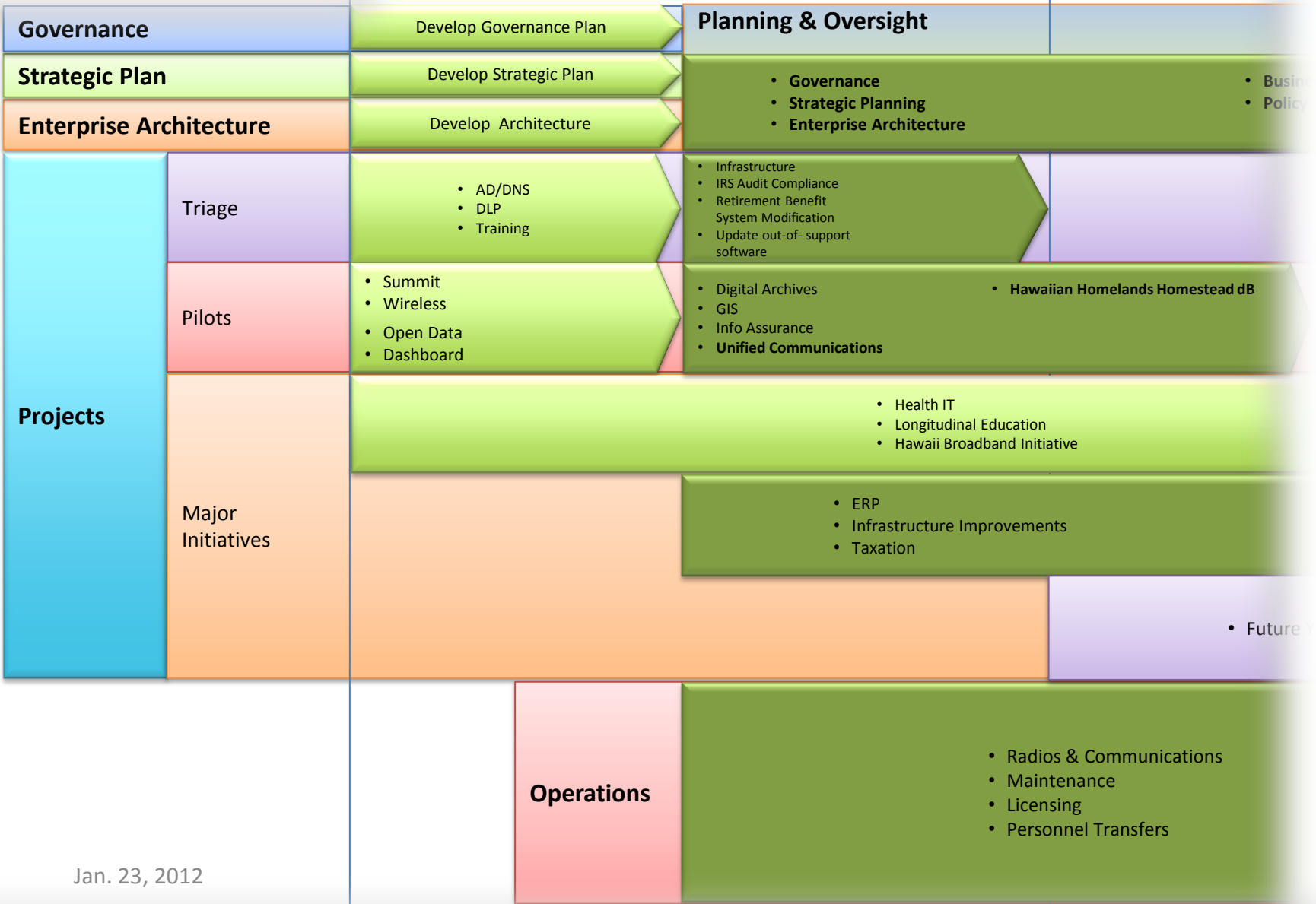


10/1/11 – 7/31/12



8/1/12 – 6/30/13

7/1/20



Gap between HCF funding and FY14

PHASE B

PHASE 1

PHASE 2

PHASE 3

PHASE 4

PHASE 5



8/1/12 – 6/30/13

7/1/2013 – 6/30/2022

Planning & Oversight

- Governance
- Strategic Planning
- Enterprise Architecture

- Business Process Reengineering
- Policy

- Infrastructure
- IRS Audit Compliance
- Retirement Benefit System Modification
- Update out-of-support software

- Digital Archives
- GIS
- Info Assurance

- Unified Communications
- Hawaiian Homelands Homestead dB

- Health IT
- Longitudinal Education
- Hawaii Broadband Initiative

- ERP
- Infrastructure Improvements
- Taxation

• Future Year Major Initiatives

- Radios & Communications
- Maintenance
- Licensing
- Personnel Transfers

The transformation will benefit:

- **State citizens** through improved delivery of services and programs (e.g. going “online” instead of “waiting in line”); a more transparent and responsive government; and increased access to information and data.
- **State employees** with streamlined workflow processes allowing more focus on serving customers and access to a wider range of new technologies to support departmental mission, programs and services.
- **State government** through efficiently aligned services; reduced costs and unnecessary redundancies; increased reliability and security; and improved outcomes and accountability.

- CIO/OIMT supplemental budget requests are needed to lay foundational elements required for larger transformation initiative to be successful and realize greatest benefits.
- Departmental IT requests were evaluated by the CIO and are in alignment with the future vision and are important to ongoing operations.

IT Supplemental Budget Requests



CIO Initiatives	6	\$26 Million
Other Departments	25	\$17 Million
TOTAL	31	\$43 Million

- CIO reviewed all initial requests.
- All requests were not approved, and only certain projects and portions of requested funds, were incorporated into the budget.
- CIO is working closely with Departments to ensure that their modified and scaled-down plans are either:
 - Triage and urgent in nature; or
 - Generally align with the CIO long-term plans
- CIO will evaluate department plans and report back to the legislature on results.

CIO/OIMT – CIP Funds (\$15M)



- \$15 million in CIP funds to:
 - Develop the requirements and specifications for an enterprise solution for the State’s financial system – DOTAX, DAGS, B&F, & DHRD
 - Reengineer and transform the statewide financial , acquisition and human management processes;
 - Identify all business requirements associated with a new integrated system to support the financial , acquisition and human management activities within the State;
 - Develop and execute the procurement actions under an acquisition plan for an integrated financial management system for the State of Hawai‘i
 - Request for Information
 - Request for Proposal and Quotation
 - High-Level Project Plan for System Implementation

- \$11 million operating funds:
 - \$5M for Business Process & IT/IRM Reengineering
 - \$2M for BPR
 - \$2M for IT/IRM Reengineering
 - \$1M for governance support and information management and reporting tools
 - \$1.8M for IT Integration Pilot Projects
 - \$1M for Information Assurance & Cyber Security
 - \$225K for Unified Communications (Voice Over IP)
 - \$225k for Collaborative Environment Services
 - \$375 for Geospatial Information Services
 - \$375,000 for Digital Archives Project
 - \$3.4M for ICSD Triage Items to Ensure Business Operations of Mission Critical Government Services

- Initiate statewide business process and IT transformation efforts that lay the foundation for an adaptive enterprise and begin mitigating the critical challenges we face today
- Institute a culture of continuous improvement and the capability to more easily adapt to future changes as they arise
- Implement an integrated lifecycle governance structure
 - Align resources to strategic objectives
 - Improve efficiency and effectiveness of the State government
 - Reduce complexities and simplify processes
 - Deliver greater value at reduced cost to the citizens of Hawaii

Strategic Plan will Include IT Investment Management Process for Next Year



	CIO Likely Answer	Unless...	Rationale
This Year	“Yes...”	Proposed investment was clearly not in alignment with accepted best practices or target vision	Without a thorough understanding of the Departments’ business and IT environment, or a clearly defined target state architecture to require them to adhere to, tendency was to support requests unless completely in conflict with vision
Next Year (and beyond)	“No...”	Proposed investment clearly aligns with business and technology architectures and moves the State forward to the target vision	Inconsistent, incompatible, and redundant investments mean that Hawai‘i spends more money and receives less capability than it could. We must maximize the value of our investment dollars by creating a coherent State business and IT environment that shares services and information among the Departments

Department IT Supplemental Budget Requests



Department	Number of Items	Budget Requested	Triage (Urgent for Current Operations)	Supports CIO Future Vision
ATG	4	\$462 K	√	
BED	2	\$1.4 M		√
BUF	1	\$6 M	√	
CCA	6	\$605 K	√	
EDN	1	\$15 M (CIP)	√	
LBR	3	\$0 (Personnel Transfers)	√	
LNR	5	\$927 K	√	√
TAX	1	\$1.4 M		√
TRN	2	\$740 K	√	

Department of Accounting and General Services
Priority List of Functions

Table 2

Priority #	Description of Function	Activities	Prog ID(s)	Statutory Reference (HRS, PL, etc.)
7	AGS-131, Office of Information Management and Technology - Chief Information Officer Program			
	Develop statewide information technology strategic plans, as well as organize, manage, and oversee statewide information technology governance and supervision and oversight of the Information and Communication Services Division.	<ul style="list-style-type: none"> a. Develop, implement, and manage statewide technology governance. b. Develop, implement, and manage the State information technology strategic plans. c. Develop and implement statewide technology standards. d. Chair and work in conjunction with the Information Technology Steering Committee to: 1) develop and implement State information technology strategic plans; 2) Assess executive branch departments progress in meeting objectives defined in the state information technology strategic plans and identify best practices for shared or consolidated services; 3) Ensure 	AGS-131 New ID to be assigned next biennium	HRS 27-43
		technology projects are selected based on their potential impact and risk to the State as well as their strategic value; 4) Ensure that executive branch departments maintain sufficient tools to assess the value and benefits of technology initiatives; and 5) Clarify the roles, responsibilities, and authority of the Information and Communication Services Division specifically as it relates to statewide duties.		

Department of Accounting and General Services
Priority List of Functions

Table 2

Priority #	Description of Function	Activities	Prog ID(s)	Statutory Reference (HRS, PL, etc.)
7	AGS-131, Information Processing & Communication Services			
	Plans, coordinates, organizes , directs, and administers the statewide information processing and telecommunications services and programs, and establishes and operates an overall program for improving government efficiency and effectiveness through telecommunications and information processing technologies.	<p>a. Administers, supports, and hosts State agency computing systems such as: Welfare, Child Support and Enforcement, General Excise & Income Tax, Unemployment Insurance Benefits, State Bureau of Conveyances, and Criminal Justice Information at the State's Data Center.</p> <p>b. Prints and accounts for over 10,000 checks and warrants and over 42,500 pages of reports per day for agencies statewide.</p> <p>c. Develops and operates the statewide Anuenue emergency first responder communications network and the statewide Next Generation Network (NGN) and HAWAIIAN data communications networks.</p> <p>d. Develops and maintains mission critical information processing applications such as State Employee Payroll, FAMIS, Warrant Writer & Reconciliation, Professional Licensing, Labor</p>	AGS-131	HRS 26-6
		<p>Unemployment, Personnel Systems, Jury Payroll, and Campaign Spending.</p> <p>e. Reviews all executive branch computing and telecommunications referrals/requests.</p> <p>f. Manages and schedules the statewide networked video conference centers.</p> <p>g. Provides cyber security consulting and alerts to all State and county agencies.</p> <p>h. Hosts e-mail, Blackberry, and Anti-spam for 65% of the Executive Branch.</p> <p>i. Hosts, develops, and supports 90 URLs (uniform resource locator) for state agencies.</p>		

Department of Accounting and General Services
Priority List of Functions

Table 2

Priority #	Description of Function	Activities	Prog ID(s)	Statutory Reference (HRS, PL, etc.)
		j. Develops and executes Statewide telecommunications contracts. k. Assists agencies during audits to ensure compliance with IRS Publication 1075-Tax Information security guidelines and undergoes annual Statement on Standards for Attestation Engagements (SSAE) No. 16 audits.		

Department of Accounting and General Services
Priority List of Functions

Table 2

Priority #	Description of Function	Activities	Prog ID(s)	Statutory Reference (HRS, PL, etc.)
21	AGS-889, Spectator Events & Shows-Aloha Stadium			
	A special-funded program which maintains, operates, and manages the Aloha Stadium and appurtenant facilities; prescribes and collects rents, fees, and charges for the use and enjoyment of the stadium or any of its facilities; supports and assists in the promotion of Hawaii's visitor industry and socio-cultural advancement; and exercises all powers necessary, incidental or convenient to carry out and effectuate this function.	<ul style="list-style-type: none"> a. Program planning; promotion of facilities; directs, coordinates, and controls operations and maintenance of facilities. b. Internal management, fiscal, budgetary, personnel, and administrative services; contract management and payroll processing; and preparing testimony and tracking legislation affecting the Stadium Authority. c. Directing event, scoreboard, parking, and swap meet operations. d. Engineering and related administrative matters and overall planning, control and coordination of the development, construction, maintenance and general services programs for the stadium, artificial field surface, and appurtenant facilities. e. Box Office operations to include cashiering, computerized interface with other ticketing agencies, and 	AGS-889	HRS 109, HRS 226-8b(1)(2) and (3) and HRS 226-23
		<ul style="list-style-type: none"> ticket sales activities. f. Security services; disaster and evacuation planning. 		
22	AGS-881, State Foundation on Culture and the Arts			
	The State Foundation on Culture and the Arts (SFCA) mission is to promote, perpetuate, preserve, and encourage culture and the arts, history and the humanities as central to the quality of life of the people of Hawaii. The SFCA through its programs offers biennium grants to support funding for projects that preserve and further culture and the arts, history and the humanities, administers statewide public visual arts program; conducts apprenticeship program to perpetuate cultural traditions, collaborates with organizations and educational institutions on arts education projects, conducts workshops, and provides staff resources to build communities, develop nonprofit arts organizations, and bolster the careers of local artists.	<ul style="list-style-type: none"> a. Manage and operate the SFCA Biennium Grants Program in accordance with federal partnership with the National Endowment for the Arts. b. Manage and operate community projects and initiatives in accordance with federal partnership with the National Endowment for the Arts. c. Manage and operate the Art in Public Places Program. d. Manage and operate the Hawaii State Art Museum. 	AGS-881	HRS 9 and HRS 103-8.5

Department of Accounting and General Services
Priority List of Functions

Table 2

Priority #	Description of Function	Activities	Prog ID(s)	Statutory Reference (HRS, PL, etc.)
23	AGS-818, King Kamehameha Celebration Commission			
	Coordinates, plans, and administers the annual King Kamehameha celebration throughout the State by working with State, County, and private agencies.	<p>a. To honor and perpetuate the life and deeds of King Kamehameha I and to enrich the leisure time of residents and visitors through cultural presentations during a month long statewide celebration of traditional arts, crafts, skills, customs, and lores of the various ethnic groups in Hawaii.</p> <p>b. Secure consistent funding resources to sustain program and activities.</p>	AGS-818	HRS 8-5

Department of Accounting and General Services
Resources by Program ID

Table 3

Prog ID	Program Title	MOF	As budgeted in Act 164/11 (FY12)			Governor's Submittal (FY13)			Percent Change of \$\$\$
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	
AGS-131/EA	Info Proc and Comm Services-Administration	A	7.00		809,669	9.00	2.00	11,052,259	1265.0%
AGS-131/EB	Info Proc and Comm Services-Sys Svcs	A	12.00		2,120,034	12.00		2,117,484	-0.1%
AGS-131/EC	Info Proc and Comm Services-Prod Svcs	A	38.00		2,640,473	38.00		2,758,464	4.5%
AGS-131/ED	Info Proc and Comm Services-Tech Supp Svcs	A	16.00		1,354,703	16.00		1,319,624	-2.6%
AGS-131/EE	Info Proc and Comm Services-Client Svcs	A	25.00		1,871,655	25.00		1,817,165	-2.9%
AGS-131/EF	Info Proc and Comm Services-Telecomm	A	17.00		3,608,389	17.00		3,586,172	-0.6%
AGS-881/LA	State Foundation on Culture and the Arts	A	-		936,332	-		215,284	-77.0%
AGS-131-EA	Info Proc and Comm Services-Administration	B		1.00	74,410	7.00	1.00	86,944	16.8%
AGS-881/LA	State Foundation on Culture and the Arts	B	15.50	1.00	4,215,466	16.50		4,175,415	-1.0%
AGS-889/MA	Spectator Events & Shows-Aloha Stadium	B	38.50	2.00	8,944,121	38.50	2.00	8,841,719	-1.1%
AGS-881/LA	State Foundation on Culture and the Arts	N	5.00		1,306,936	5.00		1,298,127	-0.7%
AGS-818/KA	King Kamehameha Celebration Commission	T		1.00	57,874		1.00	55,280	-4.5%
AGS-131/EA	Info Proc and Comm Services-Administration	U	5.00		1,188,911	5.00		1,188,911	0.0%
AGS-131/EB	Info Proc and Comm Services-Sys Svcs	U	1.00		568,980	1.00		568,980	0.0%
AGS-131/EC	Info Proc and Comm Services-Prod Svcs	U	17.00		750,207	17.00		750,207	0.0%
AGS-131/EE	Info Proc and Comm Services-Client Svcs	U	10.00		804,486	10.00		804,486	0.0%
AGS-881/LA	State Foundation on Culture and the Arts	U			625,000	1.50		821,198	31.4%
			207.00	5.00	\$ 31,877,646	218.50	6.00	\$ 41,457,719	30.1%

Department of Accounting and General Services
Current Year (FY12) Restrictions

Table 4

<u>Prog ID</u>	<u>MOF</u>	<u>Restriction \$\$\$</u>	<u>Percent of Act 164/11 Appropriation</u>	<u>Impact</u>
AGS-131/EA	B	\$ 2,180	2.9%	Labor Savings
AGS-881/LA	B	\$ 37,165	0.9%	Labor Savings
AGS-889/MA	B	\$ 96,880	1.1%	Labor Savings
AGS-881/LA	N	\$ 8,248	0.6%	Labor Savings
AGS-818/KA	T	\$ 2,420	4.2%	Labor Savings
		\$ 146,893		

Department of Accounting and General Services
Proposed Budget Reductions

Table 5

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Reduction</u>	<u>Impact of Reduction</u>	<u>MOF</u>	<u>Pos (P) FY13</u>	<u>Pos (T) FY13</u>	<u>\$\$\$\$ FY13</u>	<u>Carry-over? (Y/N)</u>
LS	AGS-131/EA	Labor Savings	None - Reflects collective bargaining labor savings	A			24,551	N
LS	AGS-131/EB	Labor Savings	None - Reflects collective bargaining labor savings	A			30,300	N
LS	AGS-131/EC	Labor Savings	None - Reflects collective bargaining labor savings	A			82,537	N
LS	AGS-131/ED	Labor Savings	None - Reflects collective bargaining labor savings	A			35,079	N
LS	AGS-131/EE	Labor Savings	None - Reflects collective bargaining labor savings	A			77,278	N
LS	AGS-131/EF	Labor Savings	None - Reflects collective bargaining labor savings	A			37,873	N
LS	AGS-131-EA	Labor Savings	None - Reflects collective bargaining labor savings	B			3,072	N
LS	AGS-881/LA	Labor Savings	None - Reflects collective bargaining labor savings	B			40,051	N
LS	AGS-889/MA	Labor Savings	None - Reflects collective bargaining labor savings	B			102,402	N
LS	AGS-881/LA	Labor Savings	None - Reflects collective bargaining labor savings	N			8,809	N
LS	AGS-818/KA	Labor Savings	None - Reflects collective bargaining labor savings	T			2,594	N
PR	AGS-881/LA	Program Review	Change means of financing from general funds to Transient Accommodation Tax (TAT), Tourism Special Fund	A			\$ 936,332	N
O	AGS-881/LA	Other	Reduce interdepartmental transfer for increase in SFCA change in means of financing from general to TAT, Tourism Special Fund, provided in the Program Review Adjustments	U			\$ 215,284	N
O	AGS-881/LA	Other	Reduction for TANF funds	U			\$ 625,000	N

Department of Accounting and General Services
Proposed Supplemental Year Additions

Table 6

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Addition</u>	<u>Explanation</u>	<u>MOF</u>	<u>Pos (P) FY13</u>	<u>Pos (T) FY13</u>	<u>\$\$\$ FY13</u>	
PR	AGS-881/LA	Change means of financing from general funds to Transient Accommodation Tax (TAT), Tourism Special Fund	Change means of financing from general funds to Transient Accommodation Tax (TAT), Tourism Special Fund	U			\$	936,332
AP	AGS-131/EA	Business Process and IT/IRM Reengineering	OIMT and DAGS are requesting \$5M for consulting support to initiate Statewide business transformation and information technology (IT) modernization efforts that will align resources to strategic objectives, improve efficiency and effectiveness of the State government, and deliver greater value at reduced cost to citizens.	A			\$	5,000,000

Department of Accounting and General Services
Proposed Supplemental Year Additions

Table 6

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Addition</u>	<u>Explanation</u>	<u>MOF</u>	<u>Pos (P) FY13</u>	<u>Pos (T) FY13</u>	<u>\$\$\$ FY13</u>
AP	AGS-131/EA	Chief Information Officer Initiative - IT Integration Pilot Projects	<p>The objective of this request is to provide \$1.8 million in general funds to begin transforming the State's information technology systems and infrastructure. These funds will be used to develop and execute projects that will expand the use of operational capabilities by leveraging scalability, add or enhance operational capability and enhance maturity and organization skills. Cost-savings can be realized through these projects. These are one-time projects with only personnel costs occurring in the out years.</p> <p>The identified projects will result in reduced costs, increased employee productivity and process efficiencies, improved information assurance and cyber security standards, and enhanced capabilities and capacity.</p>	A		2.00	\$ 1,825,000

Department of Accounting and General Services
Proposed Supplemental Year Additions

Table 6

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Addition</u>	<u>Explanation</u>	<u>MOF</u>	<u>Pos (P) FY13</u>	<u>Pos (T) FY13</u>	<u>\$\$\$ FY13</u>
AP	AGS-131/EA	Chief Information Officer Initiative - Technology Triage to Ensure Business Operations of Mission Critical	This request is to ensure business operations of mission critical government services in the following areas: physical and cyber security, emergency responder communications, data backup and storage, electronic file transfer and critical systems redundancy for continuity of operations.	A	2.00		\$ 3,442,141
AP	AGS-131/EA	Chief Information Officer Initiative - Conversion of 7 Temporary Positions to Permanent. No additional special fund ceiling increase is required	Pursuant to Act 200, SLH 2010, (the Act) a new Chief Information Officer (CIO) position was created and assigned the responsibility to organize, manage, and oversee the statewide information technology governance. This is a permanent program therefore we are requesting to move the positions currently approved as temporary to permanent. The seven positions are funded by the Shared Services Technology Special Fund.	B	7.00		
O	AGS-881/LA	Restore General Funds for the DOE Artists in the Schools Program that were eliminated by the Program Review.	Artists in the Schools Program funding must be retained in General Funds as school programming would not meet TAT objectives.	A			\$ 215,284

Department of Accounting and General Services
Proposed Supplemental Year Additions

Table 6

<u>Request Category</u>	<u>Prog ID</u>	<u>Description of Addition</u>	<u>Explanation</u>	<u>MOF</u>	<u>Pos (P)</u>	<u>Pos (T)</u>	<u>\$\$\$ FY13</u>	
					<u>FY13</u>	<u>FY13</u>		
AP	AGS-881/LA	Increase in the U Fund Appropriation Ceiling Due to Additional TAT, Tourism Special Fund, From the Hawaii Tourism Authority. Includes restoring the .50 position counts and funding for the Accountant IV, Information Specialist III, and Secretary II positions.	The reinstatement of the three half positions would make possible work in public relations (including more comprehensive marketing), fiscal management (the SFCA was a model foundation prior to losing half of its fiscal staff in 2010) and support to the executive director and Commission (the need for skilled clerical support has not been adequately addressed in the current staffing plan).	U	1.50		\$	100,150
O	AGS-881/LA	Converting the Arts Program Specialist III, Position No. 52289 from a Temporary to Permanent Position	The need for the Arts Program Specialist is to ensure continuity in project management through permanent status. The position has had an ongoing heavy workload since its inception approximately ten years ago.	B	1.00	(1.00)		

Department of Accounting and General Services
Non-General Fund Balances

Table 7

<u>Name of Fund</u>	<u>Statutory Reference</u>	<u>MOF</u>	<u>Beginning FY12 Unencumbered Cash Balance</u>	<u>Estimated FY12 Revenues</u>	<u>Estimated FY12 Expenditures and Encumbrances</u>	<u>Estimated FY12 Net Transfers</u>	<u>Estimated FY12 Ending Unencumbered Cash Balance</u>	<u>Balance in Excess of Program Needs</u>
Spectator Events & Shows - Aloha Stadium	Section 109-3, HRS	B	\$ 5,536,165	\$ 7,487,684	\$ 9,924,323	\$ (2,500)	\$ 3,097,026	\$ -
Stadium Manager's Discretionary Fund	Act 164, SLH 2011	B	\$ 909	\$ -	\$ 3,409	\$ 2,500	\$ -	\$ -
Works of Art Special Fund	Section 103-8.5, HRS	B	\$ 4,348,033	\$ 2,590,000	\$ 4,178,301	\$ -	\$ 2,759,732	\$ -
Information Processing Services	Act 164, SLH 2011	U	\$ 322,071	\$ 3,312,584	\$ 3,312,584		\$ 322,071	\$ -
DHS(BESSD) - DAGS(SFCA) TANF Funds	Act 164, SLH 2011	U	\$ 25,640	\$ 13,978	\$ 39,618		\$ -	\$ -
Access Hawaii Committee	Act 101, SLH 2010	B	\$ 24,000	\$ 72,230	\$ 72,230		\$ 24,000	\$ -
State Foundation on Culture and the Arts	Administratively Established	T	\$ 182,596	\$ 28,000	\$ 15,000		\$ 195,596	\$ -
Stadium Authority's Account (Not in S/T)	Section 109-6, HRS	T	\$ 214,441	\$ 2,400,000	\$ 2,400,000		\$ 214,441	\$ -
Kamehameha Day Celebration-Donation/Gift	Section 8-5, HRS	T	\$ 1,190		\$ 57,874	\$ 56,684	\$ -	\$ -
Temporary Deposits - Stadium Authority	Holding Account	T	\$ -	\$ -	\$ -		\$ -	\$ -
Hawaii FYI	Administratively Established	T	\$ 6				\$ 6	
University of Hawaii Ticket Receipts	Administratively Established	T	\$ 116	\$ 200	\$ 316		\$ -	\$ -
Kamehameha Day Celebration-Donation/Gift	Section 8-5, HRS	T	\$ 115,268	\$ 45,595		\$ (56,684)	\$ 104,179	\$ -

Department of Accounting and General Services
Budget Decisions

Table 9

Prog ID	Description	MOF	Initial Department Request			Budget and Finance Recommendation			Governor's Decision		
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$
AGS-131/EA	Labor Savings	A			(24,551)			(24,551)			(24,551)
AGS-131/EA	Labor Savings	B			(3,072)			(3,072)			(3,072)
AGS-131/EB	Labor Savings	A			(30,300)			(30,300)			(30,300)
AGS-131/EC	Labor Savings	A			(82,537)			(82,537)			(82,537)
AGS-131/ED	Labor Savings	A			(35,079)			(35,079)			(35,079)
AGS-131/EE	Labor Savings	A			(77,278)			(77,278)			(77,278)
AGS-131/EF	Labor Savings	A			(37,873)			(37,873)			(37,873)
AGS-818/KA	Labor Savings	T			(2,594)			(2,594)			(2,594)
AGS-881/LA	Labor Savings	B			(40,051)			(40,051)			(40,051)
AGS-881/LA	Labor Savings	N			(8,809)			(8,809)			(8,809)
AGS-889/MA	Labor Savings	B			(102,402)			(102,402)			(102,402)
AGS-881/LA	Change means of financing from general funds to	A			(936,332)			(936,332)			(936,332)
AGS-881/LA	Accommodation Tax (TAT)	U			936,332			936,332			936,332
AGS-131/EA	Business Process and IT/IRM Reengineering	A			5,000,000			5,000,000			5,000,000
AGS-131/EA	Chief Information Officer Initiative - IT Integration Pilot Projects	A		2.00	1,825,000		2.00	1,825,000		2.00	1,825,000
AGS-131/EA	Chief Information Officer Initiative - Technology Triage to Ensure Business Operations of Mission Critical	A	2.00		3,442,141	2.00		3,442,141	2.00		3,442,141
AGS-131/EA	Chief Information Officer Initiative - Conversion of 7 Temporary Positions to Permanent. No additional special fund ceiling increase is required.	B	7.00	(7.00)	-	7.00	-	-	7.00	-	-
AGS-881/LA	Restore General Funds for the DOE School In Artists Program That Were Eliminated by the Program Review	A			215,284			215,284			215,284
AGS-881/LA	Reduce interdepartmental transfer for increase in SFCA change in means of financing from general to TAT, Tourism Special Fund, provided in the Program Review Adjustments	U						(215,284)			(215,284)
AGS-881/LA	Increase in the U Fund Appropriation Ceiling Due to Additional TAT Funds From the Hawaii Tourism Authority. Includes restoring the .50 position counts and funding for the Accountant IV, Information Specialist III, and Secretary II positions.	U	1.50		3,063,668	1.50		100,150	1.50		100,150

Department of Accounting and General Services
Budget Decisions

Table 9

Prog ID	Description	MOF	Initial Department Request			Budget and Finance Recommendation			Governor's Decision		
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$
AGS-881/LA	Converting the Arts Program Specialist III, Position No. 52289 from a Temporary to Permanent Position	B	1.00	(1.00)	-	1.00	(1.00)	-	1.00	(1.00)	-
AGS-881/LA	Reduction for TANF funding	U						(625,000)			(625,000)
	Total		11.50	(6.00)	13,101,547	11.50	1.00	9,297,745	11.50	1.00	9,297,745
	Total by MOF	A	2.00	2.00	9,258,475	2.00	2.00	9,258,475	2.00	2.00	9,258,475
		B	8.00	(8.00)	(145,525)	8.00	(1.00)	(145,525)	8.00	(1.00)	(145,525)
		N			(8,809)			(8,809)			(8,809)
		T	-	-	(2,594)	-	-	(2,594)	-	-	(2,594)
		U	1.50		4,000,000	1.50		196,198	1.50		196,198
		W									
			11.50	(6.00)	13,101,547	11.50	1.00	9,297,745	11.50	1.00	9,297,745

Department of Accounting and General Services
Program Review Proposals

Table 10

Prog ID	Description	MOF	Budget and Finance Proposal			Department Proposal			Governor's Final Decision		
			Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$	Pos (P)	Pos (T)	\$\$\$
AGS-881/LA	Change means of financing from general funds to Transient Accommodation Tax (TAT), Tourism Special Fund	A			(936,332)			(936,332)			(936,332)
AGS-881/LA	Same as above.	U			936,332			936,332			936,332

Department of Accounting and General Services
Position Vacant as of November 30

Table 11

<u>Prog ID</u>	<u>Date of Vacancy</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>Temp Perm (T/P)</u>	<u>FTE</u>	<u>MOF</u>	<u>Budgeted Amount</u>	<u>Actual Salary Last Paid</u>	<u>Exempt (Y/N)</u>	<u>Authority to Hire (Y/N)</u>	<u>Occupied by 89 Day Hire (Y/N)</u>
AGS-131	7/1/2009	03275	ADMINISTRATIVE SERVICES ASST	SR22C	13	P	1.00	A	\$ 45,576	\$ 47,412	N	Y	N
AGS-131	2/1/2011	118185	INFORMATION TECH SPECIALIST V	SR24C	13	P	1.00	A	\$ 47,448	\$ 57,708	N	Y	N
AGS-131	4/18/2011	37859	INFORMATION TECHNOL MGR	EM05	35	P	1.00	A	\$ 73,344	\$ 74,868	N	Y	N
AGS-131	7/1/2011	92015M	INFORMATION TECH SPECIALIST VII	SR28C	73	T	1.00	A	\$ 46,818		N	Y	N
AGS-131	7/1/2011	92012M	INFORMATION TECH SPECIALIST V	SR26C	13	P	1.00	A	\$ 27,750		N	Y	N
AGS-131	3/1/2011	22012	COMPUTER OPERATIONS SUPVR II	SR23A	84	P	1.00	A	\$ 71,112	\$ 48,048	N	Y	N
AGS-131	3/1/2011	22020	COMPUTER OPERATOR II	SR15A	03	P	1.00	A	\$ 37,968	\$ 37,968	N	Y	N
AGS-131	11/1/2009	22024	COMPUTER OPERATIONS SCHED	SR22C	13	P	1.00	A	\$ 53,352	\$ 53,352	N	Y	N
AGS-131	7/1/2011	92001M	COMPUTER OPERATOR II	SR15A	03	P	1.00	A	\$ 16,878		N	Y	N
AGS-131	7/1/2011	92002M	COMPUTER OPERATOR II	SR15A	03	P	1.00	A	\$ 16,878		N	Y	N
AGS-131	7/1/2011	92003M	COMPUTER OPERATOR III	SR17A	03	P	1.00	A	\$ 18,258		N	Y	N
AGS-131	7/1/2011	92004M	COMPUTER OPERATOR III	SR17A	03	P	1.00	A	\$ 18,258		N	Y	N
AGS-131	7/1/2011	92005M	COMPUTER OPERATIONS SUPVR I	SR19A	04	P	1.00	A	\$ 19,740		N	Y	N
AGS-131	7/1/2011	92006M	DATA PROCESSING CONTROL CLK I	SR12A	03	P	1.00	A	\$ 15,018		N	Y	N
AGS-131	7/1/2011	92007M	DATA PROCESSING CONTROL CLK I	SR12A	03	P	1.00	A	\$ 15,018		N	Y	N
AGS-131	7/1/2011	92008M	DATA PROCESSING CONTROL CLK I	SR12A	03	P	1.00	A	\$ 15,018		N	Y	N
AGS-131	7/1/2011	92009M	DATA PROCESSING CONTROL CLK I	SR12A	03	P	1.00	A	\$ 15,018		N	Y	N
AGS-131	7/1/2011	92010M	COMPUTER OPERATIONS SCHED	SR22C	13	P	1.00	A	\$ 22,788		N	Y	N
AGS-131	7/1/2011	92011M	INFORMATION TECH SPECIALIST V	SR24C	13	P	1.00	A	\$ 27,656		N	Y	N
AGS-131	12/31/2010	11343	INFORMATION TECH SPECIALIST VI	SR26C	23	P	1.00	A	\$ 82,128	\$ 82,128	N	Y	N
AGS-131	7/1/2011	92013M	INFORMATION TECH SPECIALIST IV	SR22C	13	P	1.00	A	\$ 22,788		N	Y	N
AGS-131	4/30/2011	34128	TELECOMMUNICATIONS PLANNER	SR24C	13	P	1.00	A	\$ 53,352	\$ 53,352	N	Y	N
AGS-131	11/1/2010	39816	INFORMATION TECH SPECIALIST V	SR24C	13	P	1.00	A	\$ 62,424	\$ 62,424	N	Y	N
AGS-131	7/1/2011	92014M	INFORMATION TECH SPECIALIST V	SR24C	13	P	1.00	A	\$ 25,656		N	Y	N
AGS-881	1/4/2010	16047	SECRETARY II	SR14A	63	P	0.50	B	\$ 17,532	\$ 17,532	N	Y	N
AGS-881	6/1/2010	26529	ARTS PROGRAM SPECIALIST III	SR20C	13	P	1.00	B	\$ 43,824	\$ 43,824	N	Y	N
AGS-881	8/19/2009	27869	ARTS PROGRAM SPECIALIST IV	SR22C	13	P	1.00	B	\$ 45,576	\$ 45,576	N	Y	N
AGS-881	1/4/2010	31184	ACCOUNTANT IV	SR22C	13	P	0.50	B	\$ 27,750	\$ 27,750	N	Y	N
AGS-881	1/4/2010	45697	INFORMATION SPECIALIST III	SR20C	13	P	0.50	B	\$ 24,666	\$ 24,666	N	Y	N
AGS-881	6/1/2011	52289	ARTS PROGRAM SPECIALIST III	SR20C	13	T	1.00	B	\$ 42,132	\$ 42,132	N	Y	N
AGS-889	7/26/2011	27942	ASST STADIUM AUTH EVENTS MGR	SR24D	23	P	1.00	B	\$ 53,352	\$ 50,688	N	Y	N
AGS-889	1/4/2010	27943	SCOREBOARD SUPERVISOR	SR17A	04	P	0.50	B	\$ 18,258	\$ 18,258	N	Y	N
AGS-889	10/27/2010	27944	ENGINEER VI	SR28C	13	P	1.00	B	\$ 62,424	\$ 82,128	N	Y	N

Department of Accounting and General Services
 Position Vacant as of November 30

Table 11

<u>Prog ID</u>	<u>Date of Vacancy</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>Temp Perm (T/P)</u>	<u>FTE</u>	<u>MOF</u>	<u>Budgeted Amount</u>	<u>Actual Salary Last Paid</u>	<u>Exempt (Y/N)</u>	<u>Authority to Hire (Y/N)</u>	<u>Occupied by 89 Day Hire (Y/N)</u>
AGS-889	5/1/2011	27950	BLDG CONSTR & MTNCE SUPVR II	F210L1	02	P	1.00	B	\$ 54,840	\$ 54,840	N	Y	N
AGS-889	7/1/2011	27957	WELDER I	BC10A	01	P	1.00	B	\$ 46,236	\$ 46,236	N	Y	N
AGS-889	6/1/2011	27961	CASHIER I	SR10A	03	P	1.00	B	\$ 36,516	\$ 39,480	N	Y	N
AGS-889	10/9/2010	27963	STADIUM TRAF & PRKG CONT SUPVR	SR18A	04	P	1.00	B	\$ 44,412	\$ 44,412	N	Y	Y
AGS-889	7/1/2005	107518	STAD SWAP MEET TRF & PKG COORD	SRNA	04	T	1.00	B	\$ 31,200	\$ 32,760	Y	N	Y

Department of Accounting and General Services
Personnel Separations

Table 12

<u>Prog ID/Org</u>	<u>Separation Date</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>T/P</u>	<u>MOF</u>	<u>Budgeted FTE</u>	<u>Budgeted Salary</u>	<u>Actual FTE</u>	<u>Actual Salary</u>
AGS131EC	9/30/2010	012377	DATA PROCESSNG CNTRL CLK I	SR12	03	P	A	1.00	46,176	1.00	46,176
AGS131EC	9/30/2010	012378	DATA PROCESSNG CNTRL CLK I	SR12	03	P	A	1.00	44,412	1.00	44,412
AGS889MA	10/8/2010	027963	TRAFFIC & PARKING CNTRL SUPV	SR18	04	P	B	1.00	44,412	1.00	44,412
AGS131EC	10/17/2010	010152	COMPUTER OPERATOR II	SR15	03	P	A	1.00	46,176	1.00	46,176
AGS889MA	10/26/2010	027944	ENGINEER VI	SR28	23	P	B	1.00	62,424	1.00	82,128
AGS131EF	10/29/2010	039816	INFO TECHNOLOGY SPEC V	SR24	13	P	A	1.00	62,424	1.00	62,424
AGS131EC	10/30/2010	006508	COMPUTER OPERATOR II	SR15	03	P	A	1.00	48,048	1.00	48,048
AGS131EC	10/31/2010	027570	DATA PROCESSING CNTRL CLK I	SR12	03	P	A	1.00	44,412	1.00	44,412
AGS881LA	11/3/2010	112788	ARTS PROGRAM SPECIALIST II	SR18	13	P	B	1.00	45,576	1.00	45,576
AGS889MA	11/3/2010	048149	ACCOUNTANT III	SR20	13	P	B	1.00	53,352	1.00	53,352
AGS131EC	12/30/2010	011831	COMPUTER OPERATOR II	SR15	03	P	A	1.00	51,936	1.00	51,936
AGS131EC	12/30/2010	012377	DATA PROCESSING CONTROL CLERK I	SR12	03	P	A	1.00	46,176	1.00	14.44/hr
AGS131ED	12/30/2010	011343	INFO TECHNOLOGY SPECIALIST VI	SR26	23	P	A	1.00	82,128	1.00	82,128
AGS131EF	12/30/2010	043026	DATA PROCESSING SYSTEMS MNGR	EM05	35	P	A	1.00	98,196	1.00	99,720
AGS131EB	12/31/2010	039813	INFO TECHNOLOGY SPECIALIST VI	SR26	13	P	A	1.00	73,044	1.00	73,044
AGS818KA	12/31/2010	103501	ARTS PROGRAM SPECIALIST	SRNA	13	T	T	1.00	41,532	1.00	45,576
AGS131EA	1/2/2011	022015	OFFICE ASSISTANT III	SR08	03	P	A	1.00	39,480	1.00	39,480
AGS131EA	1/31/2011	118185	INFO TECHNOLOGY SPECIALIST V	SR24	13	P	A	1.00	47,448	1.00	57,708
AGS131EC	2/25/2011	018970	COMPUTER OPERATOR III	SR-17	63	P	A	1.00	56,172	1.00	17.56/hr
AGS131EC	2/28/2011	022012	COMPUTER OPERATIONS SUPV II	SR-23	84	P	A	1.00	71,112	1.00	48,048
AGS131EC	2/28/2011	022020	COMPUTER OPERATOR II	SR-15	03	P	A	1.00	37,968	1.00	37,968
AGS131EE	3/31/2011	039480	INFO TECHNOLOGY SPECIALIST IV	SR22	13	P	A	1.00	57,708	1.00	57,708
AGS881LA	4/2/2011	112788	ARTS PROGRAM SPECIALIST II	SR18	73	P	B	1.00	45,576	1.00	18.74/hr
AGS131EA	4/17/2011	037859	INFORMATION TECHNOLOGY MNGR	EM-05	35	P	A	1.00	73,344	1.00	74,868
AGS889MA	4/17/2011	027960	ASST STADIUM BOX OFFICE MNGR	SR-21	03	P	B	1.00	46,176	1.00	46,176
AGS889MA	4/29/2011	027950	BLDG. CONSTRUCTION & MAINT SUPV II	F210	02	P	B	1.00	54,840	1.00	54,840
AGS131EF	4/30/2011	034128	TELECOMMUNICATIONS PLANNER	SR-24	13	P	A	1.00	53,352	1.00	53,352
AGS881LA	5/9/2011	112788	ARTS PROGRAM SPECIALIST II	SR-18	73	P	B	1.00	45,576	1.00	18.74/hr
AGS131EC	5/12/2011	011831	COMPUTER OPERATOR II	SR15	63	P	A	1.00	51,936	1.00	16.23/hr
AGS131EC	5/13/2011	006508	COMPUTER OPERATOR II	SR-15	63	P	A	1.00	48,048	1.00	16.23/hr
AGS131EC	5/14/2011	010152	COMPUTER OPERATOR II	SR-15	63	P	A	1.00	46,176	1.00	16.23/hr
AGS889MA	5/31/2011	027952	BLDG CONSTRUCTION & MAINT SUPRV I	F110	02	P	B	1.00	50,520	1.00	50,520

Department of Accounting and General Services
Personnel Separations

Table 12

<u>Prog ID/Org</u>	<u>Separation Date</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>T/P</u>	<u>MOF</u>	<u>Budgeted FTE</u>	<u>Budgeted Salary</u>	<u>Actual FTE</u>	<u>Actual Salary</u>
AGS889MA	5/31/2011	027961	CASHIER I	SR10	03	P	B	1.00	36,516	1.00	39,480
AGS818KA	6/24/2011	103501	ARTS PROGRAM SPECIALIST	SRNA	13	T	T	1.00	41,532	1.00	4,600
AGS889MA	6/29/2011	027957	WELDER I	BC-10	01	P	B	1.00	46,236	1.00	46,236
AGS881LA	6/30/2011	052289	ARTS PROGRAM SPECIALIST III	SR-20	13	T	B	1.00	42,132	1.00	42,132
AGS889MA	6/30/2011	107519	SALES & MARKETING SPECIALIST	SRNA	13	T	B	1.00	54,084	1.00	54,084
AGS818KA	7/23/2011	106914	CLERK TYPIST II	SRNA	63	T	T			0.50	14.25/hr
AGS889MA	7/25/2011	027942	ASSISTANT STADIUM EVENTSMANAGER	SR-24	23	P	B	1.00	53,352	1.00	50,688
AGS131EA	8/12/2011	003275	ADMINISTRATIVE SERVICES ASSISTANT	SR-22	13	P	A	1.00	51,312	1.00	43,296
AGS131EA	8/22/2011	022015	OFFICE ASSISTANT III	SR-08	03	P	A	1.00	39,480	1.00	32,064

Department of Department of Accounting and General Services
New Hires

Table 13

<u>Prog ID/Org</u>	<u>New Hire Effective Date</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>T/P</u>	<u>MOF</u>	<u>Budgeted FTE</u>	<u>Budgeted Salary</u>	<u>Actual FTE</u>	<u>Actual Salary</u>
AGS131EC	10/18/2010	012259	COMPUTER OPERATIONS SUPV I	SR19	04	P	A	1.00	54,012	1.00	51,936
AGS889MA	10/22/2010	027933	ADMINISTRATION SVCS OFFCR I	EM05	35	P	B	1.00	98,196	1.00	80,352
AGS131EC	11/1/2010	019042	DATA PROCESSING CNTRL CLK II	SR14	03	P	A	1.00	48,048	1.00	48,048
AGS131EC	11/10/2010	012377	DATA PROCESSING CNTRL CLK I	SR12	03	P	A	1.00	46,176	1.00	14.44/hr
AGS131EC	12/1/2010	018970	COMPUTER OPERATOR III	SR17	63	P	A	1.00	56,172	1.00	17.56/hr
AGS131EC	12/1/2010	045428	INFO TECHNOLOGY SPECIALIST III	SR20	13	P	A	1.00	51,312	1.00	43,824
AGS131ED	12/16/2010	039551	INFO TECHNOLOGY SPECIALIST IV	SR22	13	P	A	1.00	75,960	1.00	51,312
AGS131EC	12/27/2010	012378	DATA PROCESSING CNTRL CLK I	SR12	03	P	A	1.00	44,412	1.00	35,064
AGS131EC	1/3/2011	012377	DATA PROCESSING CONTROL CLERK I	SR12	03	P	A	1.00	46,176	1.00	44,412
AGS881LA	1/3/2011	112788	ARTS PROGRAM SPECIALIST II	SR18	73	P	B	1.00	45,576	1.00	18.74/hr
AGS889MA	1/18/2011	048149	ACCOUNTANT III	SR20	13	P	B	1.00	53,352	1.00	42,132
AGS131EB	2/1/2011	039813	INFORMATION TECH SPECIALIST VI	SR26	13	P	A	1.00	73,044	1.00	62,424
AGS131EC	3/1/2011	018970	COMPUTER OPERATOR III	SR17	03	P	A	1.00	56,172	1.00	41,040
AGS131EC	3/3/2011	011831	COMPUTER OPERATOR II	SR15	63	P	A	1.00	51,936	1.00	16.23/hr
AGS131EC	3/14/2011	006508	COMPUTER OPERATOR II	SR15	63	P	A	1.00	48,048	1.00	16.23/hr
AGS131EC	3/14/2011	010152	COMPUTER OPERATOR II	SR15	63	P	A	1.00	46,176	1.00	16.23/hr
AGS818KA	4/1/2011	103501	ARTS PROGRAM SPECIALIST III	SRNA	13	T	T	1.00	41,532	1.00	46,000
AGS881LA	4/8/2011	112788	ARTS PROGRAM SPECIALIST II	SR18	73	P	B	1.00	45,576	1.00	18.74/hr
AGS131EF	4/18/2011	043026	INFORMATION TECHNOLOGY MNGR	EM05	35	P	A	1.00	98,196	1.00	74,868
AGS889MA	4/18/2011	027941	STADIUM EVENTS MANAGER	SR28	23	P	B	1.00	82,128	1.00	62,424
AGS818KA	4/26/2011	106914	CLERK TYPIST II	SRNA	63	T	T			0.50	15.00/hr
AGS131EC	5/2/2011	027570	DATA PROCESSING CNTRL CLRK I	SR12	03	P	A	1.00	44,412	1.00	33,756
AGS131EF	5/2/2011	040128	INFORMATION TECH SPECIALIST V	SR24	13	P	A	1.00	75,960	1.00	64,920
AGS131EA	5/16/2011	022015	OFFICE ASSISTANCE III	SR08	03	P	A	1.00	39,480	1.00	33,756
AGS131EC	5/16/2011	006508	COMPUTER OPERATOR II	SR15	03	P	A	1.00	48,048	1.00	36,516
AGS131EA	5/17/2011	003275	ADMINISTRATIVE SVCS ASST	SR22	73	P	A	1.00	51,312	1.00	21.91/hr
AGS131EC	5/17/2011	010152	COMPUTER OPERATOR II	SR15	03	P	A	1.00	46,176	1.00	35,064
AGS131EC	6/1/2011	011831	COMPUTER OPERATOR II	SR15	03	P	A	1.00	51,936	1.00	36,516
AGS881LA	6/1/2011	112788	ARTS PROGRAM SPECIALIST II	SR18	13	P	B	1.00	45,576	1.00	38,988
AGS889MA	6/1/2011	027960	ASST STADIUM BOX OFFICE MNGR	SR21	03	P	B	1.00	46,176	1.00	44,412
AGS889MA	6/2/2011	027963	STADIUM TRAFFIC & PRKG CNTRL SUPV	SR18	84	P	B	1.00	44,412	1.00	18.25/hr
AGS889MA	6/30/2011	027952	BLDG CONSTR & MAINT SUPV I	F110	02	P	B	1.00	50,520	1.00	50,520
AGS889MA	7/1/2011	107519	SALES & MARKETING SPECIALIST	SRNA	13	T	B	1.00	54,084	1.00	47,500
AGS131EE	9/16/2011	039480	INFORMATION TECHNOLOGY SPECIALIST IV	SR22	13	P	A	1.00	57,708	1.00	46,860

Department of Department of Accounting and General Services
New Hires

Table 13

<u>Prog ID/Org</u>	<u>New Hire Effective Date</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU Code</u>	<u>T/P</u>	<u>MOF</u>	<u>Budgeted FTE</u>	<u>Budgeted Salary</u>	<u>Actual FTE</u>	<u>Actual Salary</u>
AGS131EA	11/16/2011	022015	OFFICE ASSISTANT III	SR08	03	P	A	1.00	39,480	1.00	26,364
AGS818KA	11/21/2011	103501	ARTS PROGRAM SPECIALIST	SRNA	13	P	T	1.00	42,132	1.00	43,700

Department of Accounting and General Services
RIF Related Grievances

Table 14

<u>Prog ID/Org</u>	<u>Position Number</u>	<u>Position Title</u>	<u>SR Level</u>	<u>BU</u>	<u>T/P</u>	<u>MOF</u>	<u>FTE</u>	<u>RIF Date</u>	<u>Grievance Date</u>	<u>Current Status</u>
AGS 131 EC	7907	Computer Operations Supv I	SR-19	04	P	A	1.00	11/20/2009	11/20/2009	Grievance closed by DHRD eff. 12/2/09.
AGS 131 EE	14294	ITS V	SR-24	13	P	A	1.00	1/3/2010 *	12/10/2009	Class grievance filed with DHRD and settled eff. 8/3/10.
AGS 131 EE	37517	ITS IV	SR-22	13	P	A	1.00	1/3/2010 *	1/11/2010	Class grievance settled eff. 8/30/10.
AGS 131 EA	17863	ITS V	SR-24	13	P	A	1.00	1/3/2010 *	1/11/2010	Class grievance settled eff. 8/30/10.
AGS 131 EE	29671	ITS IV	SR-22	13	P	A	1.00	1/3/2010 *	1/11/2010	Class grievance settled eff. 8/30/10.
AGS 131 EC	9724	Office Assistant III	SR-08	03	P	A	1.00	1/3/2010 *	1/11/2010	Class grievance settled eff. 8/30/10.
AGS 131 EE	48161	ITS IV	SR-22	13	P	A	1.00	1/3/2010 *	1/11/2010	Class grievance settled eff. 8/30/10.
AGS 131 EC	9654	Computer Operator II	SR-15	03	P	A	1.00	12/15/2009 **	12/21/2009	Class grievance settled eff. 4/19/11.
AGS 131 EC	9962	Computer Operator II	SR-15	03	P	A	1.00	12/18/2009	12/21/2009	Class grievance settled eff. 4/19/11.
AGS 131 EC	27468	Computer Operator II	SR-15	03	P	A	1.00	1/3/2010 *	12/21/2009	Class grievance settled eff. 4/19/11.
AGS 131 EC	12685	Computer Operator III	SR-17	03	P	A	1.00	12/30/2009 ***	12/21/2009	Class grievance settled eff. 4/19/11.
AGS 131 EC	40587	Computer Operator II	SR-15	03	P	A	1.00	1/2/2010 *	12/21/2009	Class grievance settled eff. 4/19/11.
AGS 131 EC	40590	Computer Operator II	SR-15	03	P	A	1.00	1/2/2010 *	12/21/2009	Class grievance settled eff. 4/19/11.
AGS 131 EC	22023	Computer Operator II	SR-15	03	P	A	1.00	2/31/2009 ***	12/21/2009	Class grievance settled eff. 4/19/11.
* Placed in DAGS										
** Placed in another department										
*** Retired										
**** Resigned										

Department of Accounting and General Services
Expenditures Exceeding Appropriation Ceilings

Table 15

<u>Prog ID</u>	<u>MOF</u>	<u>Date of Increase</u>	<u>Appropriation Ceiling</u>	<u>Amount Exceeding Appropriation</u>	<u>Increase Percent</u>	<u>Reason for Exceeding Ceiling</u>	<u>Recurring (Y/N)</u>	<u>GF Impact (Y/N)</u>
AGS-881	N	11/1/2010	\$ 950,160	\$ 150,000	15.8%	Increase in federal grant	N	N

Department of Accounting and General Services
Federal Funds

Table 16

<u>Prog ID</u>	<u>CFDA No.</u>	<u>Award Description</u>	<u>Awarding Federal Agency</u>	<u>Anticipated or Actual Date of Award</u>	<u>Anticipated or Actual Award Amount</u>	<u>State Fiscal Year</u>	<u>State Matching Requirement or Other Commitment (Describe)</u>	<u>Anticipated Reduction or Discontinuance (Y/N)</u>	<u>Comments</u>
AGS 881 (State Foundation On Culture & the Arts)	45.025	Grant	National Endowment for the Arts	1-Jul-11	\$725,400	FY 2012	1:1	Yes - reduction	9% reduction to original award
AGS 881 (State Foundation On Culture & the Arts)	45.025	Grant	National Endowment for the Arts	1-Jul-12	\$730,000	FY 2013	1:1	Yes - reduction	Reduction of approximately 8% expected per cut to Department of the Interior's appropriations budget

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	Term of Contract		Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How Contract is Monitored	POS Y/N
							From	To					
AGS-131	A	0.00	O	170,650.28	170,650.28	06/20/11	06/01/11	05/31/12	BT Conferencing Video, Inc. fka Wire One Communications	G&S	(ICSD Price Lists) BT Conferencing Maintenance for Equipment	* See footnote below	N
AGS-131	A	32,404.59	A	35,743.20	3,338.61	12/30/09	12/30/10	12/29/11	C&A Generator Services, Inc.	S	(1+4 ext. exp. 12/29/14) Guaranteed maintenance services for emergency motor generators at State telecommunication sites (Mt. Kilohana, Kahua Ranch, Humuula, Mauna Loa and Hilo SOB)	* See footnote below	N
AGS-131	A	232,996.34	A	233,469.00	472.66	03/31/09	03/31/11	03/30/12	CA, Inc. dba CA - IT Management Software	S	(5 years Multi-Term exp. 03/30/14) Provide software license replacement programs and maintenance services	* See footnote below	N
AGS-131	A	12,069.80	A	14,483.91	2,414.11	01/21/10	01/21/11	01/20/12	Cummins West, Inc.	S	(1+4 ext. exp. 01/20/15) Guaranteed maintenance services for emergency motor generators at State telecommunication sites (Round Top & Kokohead)	* See footnote below	N
AGS-131	A	0.00	O	91,300.00	91,300.00	10/31/11	120 days		Eagle Construction Co., Ltd.	G&S	(120 days) For Radio Tower and Antenna System Inspection, Maintenance, Replacement, Installation, and Removal, Statewide for Item No. 1	* See footnote below	N
AGS-131	A	0.00	O	71,700.00	71,700.00	10/31/11	120 days		Eagle Construction Co., Ltd.	G&S	(120 days) For Radio Tower and Antenna System Inspection, Maintenance, Replacement, Installation, and Removal, Statewide for Item No. 2, 4, 7 & 9	* See footnote below	N

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How Contract is Monitored	POS Y/N
AGS-131	A		Q	85,000.00	85,000.00	07/01/11	07/01/11	09/30/11	International Business Machines Corporation	S	Price List (3 yrs + 2 ext. - exp. 06/30/16) Maintenance of IBM Mainframe and Related Equipment - Statewide	* See footnote below	N
AGS-131	A		A	9,564.00	9,564.00	01/12/09	01/12/11	01/11/12	JECO Air Conditioning Inc.	S	Guaranteed comprehensive routine and emergency maint on Lanai telecomm site	* See footnote below	N
AGS-131	A	0.00	O	48,000.00	48,000.00				Maximus Consulting Services, Inc.	S	(FY 2012 & FY 2013) Statewide Cost Allocation Plan		
AGS-131	A	35,721.72	A	47,628.96	11,907.24	01/27/09	01/27/11	01/26/12	Oahu Air Conditioning Service, Inc.	S	(1+4 exp. 01/26/14) Guaranteed comprehensive routine & emergency maint on the islands of Kauai, Oahu, Molokai & Hawaii telecomm sites	* See footnote below	N
AGS-131	A	0.00	O	38,792.00	38,792.00	09/01/11	180 days		O'ahu Air Conditioning Service, Inc.	G & S	(180 Calendar days) All Work and Deliverables to Furnish and Insall Telecommunications Grade Wall Mounted Air Conditioner at ICSD Haleakala Radio Facility & Annual Cost of Monthly Maintenance of New Air Conditioner at ICSD Haleakala Radio Facility (12 times monthly price of \$361.20)	* See footnote below	N
AGS-131	A	0.00	O	4,334.40	4,334.40	09/01/11	180 days		O'ahu Air Conditioning Service, Inc.	G & S	maintenance of the above	* See footnote below	N
AGS-131	A	113,775.18	A	193,325.99	79,550.81	04/01/11	04/01/11	03/03/12	Pacific Wireless Communications, LLC	S	(1+4 exp. 03/13/16) Comprehensive maint and continuous monitoring of Hawaiian Statewide Microwave Radio Comm Sys and its equip	* See footnote below	N

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How Contract is Monitored	POS Y/N
AGS-131	A	0.00	O	9,500.00	9,500.00	09/01/11	120 days		Pacific Wireless Communications, LLC	G	(120 Calendar days) To Furnish and Replace Aviation Warning Lamps on and Inspect the ICSD Tower at Puu Kilea (Item 10)	* See footnote below	N
AGS-131	A	4,261.80	M	10,228.31	5,966.51	on going	07/01/11	06/30/12	IBM	G	Software license and maintenance for PL/1 and TSO PCF	*See footnote below	N
AGS-131	A	174,452.10	A	361,262.16	186,810.06	07/01/08	07/01/11	06/30/12	Sirius Computer Solutions, Inc. assigned to IBM Corporation	E	(1+4 exp. 08/28/13) Furnish deliver & replace a Leased IBM mainframe computer and storage server for the SOH (H/W)	* See footnote below	N
AGS-131	A	147,187.41	A	424,090.44	276,903.03	07/01/08	07/01/11	06/30/12	Sirius Computer Solutions, Inc. assigned to IBM Corporation	E	(1+4 exp. 08/28/13)Furnish deliver & replace a Leased IBM mainframe computer and storage server for the SOH (S/W)	* See footnote below	N
AGS-131	A	0.00	A	151,300.68	151,300.68	12/01/10	12/01/11	11/30/12	Sirius Computer Solutions, Inc. assigned to IBM Corporation	G	(7 years - exp. 11/30/17 - Multi-Term) Furnish, Deliver, Install Configure Migrate, and Provide Maintenance for a Virtual Tape System	* See footnote below	N
AGS-131	A	0.00	A	123,952.56	123,952.56	11/01/04	11/01/11	04/28/12	Xerox Corporation	E	(7 yr lease + 180 days - exp. 04/28/12) Furnish, deliver & install laser printing system to replace or upgrade two Laser Xerox 4635 MA Laser Printers	* See footnote below	N
AGS-131	A	460.55	M	27,615.00	18,410.00	03/22/10	3/22/10	3/22/15	Xerox Corp.	E	COLORQUBE 9201 60 Months Lease (Admin)	* See footnote below	N
AGS-131	A	428.00	M	25,691.00	8,135.00	06/30/08	6/30/08	6/30/13	Xerox Corp.	E	W7655P 60 Months Lease (PSB)	* See footnote below	N

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How Contract is Monitored	POS Y/N
AGS-131	A	301.00	M	18,033.00	4,809.00	03/31/08	3/31/08	3/31/13	Xerox Corp.	E	WC7345P 60 Months Lease (CSB I)	* See footnote below	N
AGS-131	A	301.00	M	18,033.00	4,809.00	03/31/08	3/31/08	3/31/13	Xerox Corp.	E	WC7345P 60 Months Lease (CSB II)	* See footnote below	N
AGS-131	A	301.00	M	18,033.00	4,809.00	03/31/08	3/31/08	3/31/13	Xerox Corp.	E	WC7345P 60 Months Lease (TSSB-Kmoku)	* See footnote below	N
AGS-131	A	301.00	M	18,033.00	4,809.00	03/28/08	3/28/08	3/28/13	Xerox Corp.	E	WC7345P 60 Months Lease (TSB)	* See footnote below	N
AGS-131	A	301.00	M	18,033.00	4,809.00	03/20/08	3/20/08	3/20/13	Xerox Corp.	E	WC7345P 60 Months Lease (TSSB -OIMT)	* See footnote below	N
AGS-131	A	0.00	A	27,459.67	27,459.67	10/20/11	10/20/11	10/19/12	Unisys Corporation	G	1 yr ACT Data Capture and Retrieval Software License for ICSD Data Entry system.	* See footnote below	N
AGS-131	A	11,532.01	M	19,220.02	7,688.01	09/01/11	09/01/11	08/31/12	Security Armored Car & Courier Services Hawaii	S	1 yr Courier services to Transport Various Reports and Tapes to and from Keoni Ana Bldg and Archives respectively. Maintenance for ICSD Data Entry system servers.	* See footnote below	N
Division/Office/Attached Agency: Information and Communication Services Division, AGS-131													
Contact Person: Sharon Wong/Dennis Uyesugi													
Phone No.: 586-1910 / 586-1855 x702													
*Pursuant to HRS Section 103-10, payment shall be made no later than 30 calendar days following the date of receipt of the invoice or after the satisfactory delivery of the goods or performance of the services, whichever is later. The vendor/contractor is owned interest if they cannot be paid within this time period.													
Pursuant to HRS 40-56, the person directly responsible for purchase order/contract signs a certification validating that goods and services have been received in good order and condition on the invoice.													

Department of Accounting and General Services
Active Contracts

Table 19

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							From	To				Contract is Monitored	POS Y/N
AGS-881	A	\$ 725	O	\$ 6,154	\$ 2,550	1/26/2011	1/26/11	7/31/11	Wong, Norma	S	Assessment of SFCA's strategic plan	* See footnote below	N
AGS-881	A	\$ 14,133	O	\$ 42,400	\$ 6,520	9/14/2011	9/14/11	9/13/12	Honolulu Theatre for Youth	S	Grant assistance in support of SFCA project-ARTS FIRST Professional Development/Collaborative residency	**See footnote below	N
AGS-881	N	\$ 5,800	O	\$ 17,400	\$ 17,400	9/14/2011	9/14/11	9/13/12	Honolulu Theatre for Youth	S	Grant assistance in support of SFCA project-ARTS FIRST Professional Development/Collaborative residency	**See footnote below	N
AGS-881	A	\$ 83,610	O	\$ 250,829	\$ 250,829	9/26/2011	9/26/11	12/1/12	Hawaii Alliance for Arts Ed	S	Grant assistance in support of SFCA project-ARTS FIRST and Artists in the Schools project	**See footnote below	N
AGS-881	N	\$ 12,508	O	\$ 37,525	\$ 37,525	9/26/2011	9/26/11	12/1/12	Hawaii Alliance for Arts Ed	S	Grant assistance in support of SFCA project-ARTS FIRST and Artists in the Schools project	**See footnote below	N
AGS-881	A	\$ 13,333	O	\$ 40,000	\$ 40,000	11/1/2011	11/1/11	10/31/12	University of Hawaii	S	Grant assistance in support of SFCA project-SCEP Presenting & Touring Outreach project	**See footnote below	N
AGS-881	N	\$ 13,333	O	\$ 40,000	\$ 40,000	11/1/2011	11/1/11	10/31/12	University of Hawaii	S	Grant assistance in support of SFCA project-SCEP Presenting & Touring Outreach project	**See footnote below	N
AGS-881	N	\$ 4,167	O	\$ 12,500	\$ 10,000	8/24/2011	9/1/11	6/30/12	Naalehu Theatre	S	Grant assistance in support of SFCA project-Hawaiian Arts Youth Outreach	**See footnote below	N
AGS-881	N	\$ 6,667	O	\$ 20,000	\$ 8,000	9/6/2011	9/6/11	5/31/12	Honolulu Theatre for Youth	S	Grant assistance in support of SFCA project-Poetry Out Loud-Hawaii	**See footnote below	N
AGS-881	N	\$ 6,250	O	\$ 12,500	\$ 10,000	9/14/2011	9/14/11	9/13/12	HI Youth Symphony Assn	S	Grant assistance in support of SFCA project-Music in the Clubhouse	**See footnote below	N
AGS-881	B	\$ 100,000	O	\$ 700,000	\$ 504,000	6/18/2009	6/18/09	6/30/12	Paley Studios	S	Creation/installation of an exterior sculpture for the UH, Hilo campus	* See footnote below	N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 14,800	7/1/2009	7/1/09	12/31/12	Zebda, Wayne	S	Creation/installation of an exterior work of art for the Mililani 'Ike Elem. School	* See footnote below	N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 60,000	7/1/2009	7/1/09	12/31/12	Tolutau, Viliani	S	Creation/installation of an exterior sculpture for the Nanaikapono Elem. School	* See footnote below	N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 60,000	7/1/2009	7/1/09	12/31/12	Sabado, Philip	S	Creation/installation of an exterior work of art for the Pomaika'i Elem. School	* See footnote below	N

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How	
												Contract is Monitored	POS Y/N
AGS-881	B	\$ 2,900	M	\$ 72,450	\$ 12,761	1/20/2011	2/1/11	1/31/12	Alii Security Systems	S	Security services for the Hawaii State Art Museum	* See footnote below	N
AGS-881	B	\$ 22,667	O	\$ 68,000	\$ 13,600	8/10/2010	8/1/10	12/31/11	Freedman, James	S	Creation/installation of an exterior sculpture for the Kea'au High School	* See footnote below	N
AGS-881	B	\$ 40,000	O	\$ 200,000	\$ 10,000	10/20/2010	10/20/10	12/31/11	Bennett, Carol	S	Creation/installation of 16 photovoltaic glass panels for the No. 1 Capitol District building	* See footnote below	N
AGS-881	B	\$ 40,000	O	\$ 200,000	\$ 10,000	10/20/2010	10/20/10	12/31/11	Young, Doug	S	Creation/installation of a glass floor mural for the No. 1 Capitol District building	* See footnote below	N
AGS-881	B	\$ 16,667	O	\$ 100,000	\$ 100,000	10/20/2010	10/20/10	12/31/13	Shiroma, Randall	S	Creation/installation of an exterior work of art for Ka'u High School & Pahala Elem. School	* See footnote below	N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 71,500	10/20/2010	10/20/10	12/31/13	Spindt, Allan	S	Creation/installation of an exterior work of art for the Mokapu Elem. School	* See footnote below	N
AGS-881	B	\$ 25,000	O	\$ 125,000	\$ 6,250	10/20/2010	10/20/10	12/31/11	Abe, Saturo	S	Creation/installation of ten 3/16" copper panels for the No. 1 Capitol District building	* See footnote below	N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 75,000	10/20/2010	10/20/10	12/31/13	Flint, Robert	S	Creation/installation of an exterior work of art for the Maui Waena Intermediate School	* See footnote below	N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 75,000	10/26/2010	10/26/10	12/31/13	O'Neill, Calley	S	Creation/installation of an exterior work of art for the Kipapa Elem. School	* See footnote below	N
AGS-881	B	\$ 1,625	O	\$ 4,875	\$ 1,500	3/1/2011	4/1/11	9/30/11	Koh, Annette Songhee	S	To coordinate IT work and design online grant application forms and provide assistance in grants administration	* See footnote below	N
AGS-881	B	\$ 4,855	O	\$ 20,947	\$ 6,377	3/16/2011	3/16/11	12/30/11	Jones, Michael	S	Provide conservation maintenance care for bronze/copper medium artworks	* See footnote below	N
AGS-881	B	\$ 66,667	O	\$ 200,000	\$ 20,000	8/24/2011	8/24/11	6/30/12	Hawaii Alliance for Arts Ed	S	Grant assistance in support of SFCA project-HISAM student program and Neighbor Island travel	**See footnote below	N
AGS-881	B	\$ 50,000	O	\$ 250,000	\$ 237,500	7/14/2011	7/14/11	12/31/13	Bennett, Carol	S	Creation/delivery of an interior work of art for the UH-West Oahu Library Tower	* See footnote below	N

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How		POS Y/N
												Contract is Monitored		
AGS-881	B	\$ 30,000	O	\$ 150,000	\$ 150,000	8/9/2011	8/9/11	6/30/14	Mills Studio, Inc.	S	Creation/installation of an interior glass sculpture for the Manoa Public Library	* See footnote below		N
AGS-881	B	\$ 42,984	O	\$ 128,951	\$ 19,343	7/21/2011	7/21/11	6/30/12	Department of Education	S	Provide services to implement a visual arts education and exhibition program for the Art in Public Places project	* See footnote below		N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 75,000	10/26/2011	10/31/11	12/31/14	Ching, Patrick	S	Creation/installation of an exterior work of art for the Lehua Elementary School	* See footnote below		N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 75,000	10/31/2011	10/31/11	12/31/14	Duffet, Kim	S	Creation/installation of an exterior work of art for the Holomua Elementary School	* See footnote below		N
AGS-881	B	\$ 12,500	O	\$ 75,000	\$ 75,000	9/6/2011	9/6/11	12/31/14	Brown, Sean	S	Creation/installation of an exterior work of art for the Kohala Elementary School	* See footnote below		N
Division/Office/Attached Agency: State Foundation on Culture and the Arts														
Contact Person: Susan Naanos														
Phone No.: 586-0773														
*Pursuant to HRS Section 103-10, payment shall be made no later than 30 calendar days following the date of receipt of the invoice or after the satisfactory delivery of the goods or performance of the services, whichever is later. The vendor/contractor is owned interest if they cannot be paid within this time period.														
Pursuant to HRS 40-56, the person directly responsible for purchase order/contract signs a certification validating that goods and services have been received in good order and condition on the invoice.														
**Contract is monitored in accordance with Chapter 9, HRS (State Foundation on Culture and the Arts)														

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	Term of Contract		Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How Contract is Monitored	POS Y/N
							From	To					
AGS-889	B	\$ 15,304	O	\$ 81,823	\$ 66,519	12/7/2010	12/1/10	11/30/11	All Weather Surfaces-Hawaii	G	Paint & Supplies	* See footnote below	N
AGS-889	B	Year 1: \$24,465 Year 2: \$24,465	A	\$ 24,464	\$ 24,464	8/1/2008	7/1/08	6/30/12	University of Hawaii Athletics		Memorandum of Understanding with University of Hawaii Access Management subscription fee and credit card processing fee PO balance represents amount due for FYE 6/30/2011	* See footnote below	N
AGS-889	B	Year 1: \$1,605	M	\$ 4,814	\$ 3,209	4/20/2011	6/1/11	5/31/16	Xerox	E	Monthly lease for copier/scanner/printer equipment	* See footnote below	N
AGS-889	B	Original: \$25,926 Year 1: \$22,097 Year 2: \$1,855	M	Year 1: \$41,265 Year 2: \$41,265	Year 1: \$19,168 Year 2: \$39,409	10/16/2009	11/1/09	10/31/12	Oahu Air Conditioning Service, Inc.	S	Monthly air conditioning maintenance and extra work beyond regular monthly service 11/01/2009 through 10/31/2010 with the option to extend two additional twelve-month periods	* See footnote below	N
AGS-889	B	Year 1: \$3,096 Year 2: \$3,096 Year 3: \$2,580	M	\$ 3,096	\$ 516	1/30/2008	2/1/09	1/31/12	United Courier Svcs. Inc. dba United Armored Car Svcs.	S	Armored car services: pick up and delivery of deposits/cash	* See footnote below	N

Department of Accounting and General Services
Active Contracts

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					Balance as of 12/12/11							Contract is Monitored	POS Y/N
AGS-889	B	Original: \$25,500 Year 1: \$23,250 Year 2: \$2,250	M	\$ 29,400	\$ 27,150	11/1/2009	11/1/09	10/31/12	Otis Elevator Company	S	Monthly elevator & escalator maintenance, standby service for major events, and extra work beyond regular monthly service 11/01/2009 through 10/31/2010 with the option to extend three additional twelve-month periods	* See footnote below	N
AGS-889	B	Year 1 (Aug 2009- Jul 2010): \$384,876 Year 2 (Aug 2010 - July 2011): \$397,926 Year 3 (Aug 2011 -): \$142,625	O	\$ 417,524	\$ 274,899	7/22/2009	8/1/09	7/31/12	G4S Secure Solution (USA) Inc.	S	24-hour security guard services 08/31/2009 through 07/31/2012 with the option to extend two additional twelve-month periods	* See footnote below	N
AGS-889	B	Year 1: \$900	M	\$ 3,599	\$ 2,699	7/18/2011	7/1/11	6/30/16	Pitney Bowes	E	Postage meter machine lease PO balance represents amount for FYE 2012	* See footnote below	N
AGS-889	B	\$ 1,590	O	\$ 18,846	\$ 17,256	8/16/2011	8/1/11	7/31/12	East Bay Tire Co.	G	Tires for forklift, backhoe, golf cart, and sweeper	* See footnote below	N
AGS-889	B	\$ 4,799	O	\$ 21,593	\$ 16,794	8/23/2011	9/1/11	1/31/12	GP Roadway Solutions	G	Variable message signs, sign stands, and delineators for events	* See footnote below	N

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How	
					Balance as of 12/12/11							Contract is Monitored	POS Y/N
AGS-889	B	Original: \$134,978 Year 1: \$130,410 Year 2: \$134,978 Year 3 (as of Nov 2011): \$108,331	M	N/A	Paid through November 2011	1/8/2008	3/1/08	2/29/12	Rolloffs Hawaii, LLC	S	Refuse collection 03/01/2008 thru 02/28/2009 with the option to extend three additional twelve-month periods	* See footnote below	N
AGS-889	B	1. FY 2010 \$80,000 2. FY 2011 \$74,524	O	\$80,000 each fiscal year	\$5,476 as of 12/16/2011 for FY 2011	8/27/2009	FY 2010	FY 2012	State of Hawaii, Office of the Auditor	S	Audit and agreed upon procedures performed by Kobayashi, Kanetoku, Doi, Lum, & Yasuda's CPAs LLC	* See footnote below	N
AGS-889	B	\$ 1,564	O	\$ 7,067	\$ 5,503	8/5/2011	6/27/11	6/27/12	Air Gas West	G	Hand soap supplies	* See footnote below	N
AGS-889	B	\$ 13,140	O	\$ 18,872	\$ 5,732	8/9/2011	8/1/11	6/26/12	Ryan's Graphics Corporation	G	Printing and typesetting services	* See footnote below	N
AGS-889	B	-	O	\$ 272	\$ 272	8/1/2011	7/31/11	9/7/11	G & R Service	G	Lawn mower tires	* See footnote below	N
AGS-889	B		M	\$60,000 each year		9/1/2009	9/1/09	8/31/12	William D. Golz dba DG Productions	S	Scoreboard management & production/programming of advertising material	* See footnote below	N
AGS-889	B		O			1/1/2009	1/11/09	6/30/14	**CBS Collegiate Sports Properties	S	Advertising program	** See footnote below	

Department of Accounting and General Services
Active Contracts

Table 19

Prog ID	MOF	Payment Amount	Frequency (M/A/O)	Max Value (Original)	PO/Contract Balance as of 12/12/11	Date Executed	From	To	Organization (Vendor, Contractor, Lessor)	Category G/S/E/L	Description	Explanation of How	
												Contract is Monitored	POS Y/N
AGS-889	B		M			9/1/2009	9/1/09	8/31/12	**Volume Services, Inc.	S	Market, coordinate, and manage the swap meet	** See footnote below	N
AGS-889	B		M			12/22/2000	1/6/01	1/5/12	**Volume Services, Inc.	S	Provide food and beverage, catering, and novelty sales at all Stadium events	** See footnote below	N
Stadium Authority/Aloha Stadium													
Contact Person: Russell Uchida													
Phone No.: 483-2753													
*Pursuant to HRS Section 103-10, payment shall be made no later than 30 calendar days following the date of receipt of the invoice or after the satisfactory delivery of the goods or performance of the services, whichever is later. The vendor/contractor is owned interest if they cannot be paid within this time period.													
Pursuant to HRS 40-56, the person directly responsible for purchase order/contract signs a certification validating that goods and services have been received in good order and condition on the invoice.													
**Contract executed under HRS Chapter 102 - Concessions on Public Property. Stadium Authority is compensated by the Concessionaire based on the terms and conditions of the Concessionaire's bid. As such, no purchase order has been issued for these contracts.													

Department of Accounting and General Services
 Interdepartmental Transfer of Funds

Table 18

<u>Date of Transfer</u>	<u>MOF</u>	<u>Amount Transferred</u>	<u>From Prog ID</u>	<u>Percent of Imparting Program ID Appropriation</u>	<u>To Prog ID</u>	<u>Percent of Receiving Program ID Appropriation</u>	<u>Transfer Category LS/PR/O</u>	<u>Reason for Transfer (O - Other)</u>	<u>Recurring (Y/N)</u>
11/23/2011	A	\$ 289,488	AGS-131	2.3%			LS		N
		\$ 289,488			BUF-761	?	LS		N

Department of Accounting and General Services
CIP Summary

Table 20

<u>Priority</u>	<u>Project Title</u>	<u>FY13 \$\$\$</u>	<u>MOF</u>
4	Statewide Financial System Enterprise Reengineering (ERP)	\$ 15,000,000.00	C

TABLE R (5/97)

CAPITAL PROJECT INFORMATION AND JUSTIFICATION SHEET

EXPENDING AGENCY:		
USER PROGRAM ID		CAPITAL PROJECT
DEPT	NUMBER	NUMBER
AGS	131	U101

ISLAND
0

SEN DIST
0

REP DIST
0

PRIORITY NO.
4

PREV PRIO NO.
N/A

PROJ. SCOPE
N

SCOPE CODES
 N - NEW
 I - RENOVATION
 A - ADDITION
 R - REPLACEMENT
 O - ONGOING

DATE
12/5/2011

PROJECT TITLE: STATEWIDE FINANCIAL SYSTEM ENTERPRISE REENGINEERING (ERP)

PROJECT DESCRIPTION: Plans, design, construction, and equipment for development and implementation of an integrated financial management system for the State of Hawaii.

TOTAL ESTIMATED PROJECT COST (In Thousands of Dollars)

COST ELEMENT	PRIOR APPROPRIATIONS (Including MOF)												APPROPRIATIONS (Incl MOF)			TOTAL PROJECT COST				
	ACT	YR	ITEM	ACT	YR	ITEM	ACT	YR	ITEM	ACT	YR	ITEM	ACT	YR	ITEM		FY 2012	FY 2013	FUTURE YEARS	
PLANS																		14,997		14,997
LAND																				0
DESIGN																		1	1,500	1,501
CONSTRUCT																		1	30,000	30,001
EQUIPMENT																		1	13,500	13,501
TOTALS		0			0			0			0			0		0	0 (C)	15,000 (C)	45,000 (C)	60,000

PROJECT INFORMATION AND JUSTIFICATION (use back if necessary):

a. Total Scope of Project.

(See attached.)

b. Identification of Need and Evaluation of Existing Situation.

(See attached.)

c. Alternatives Considered and Impact if Project is Deferred.

(See attached.)

d. Discuss What Improvements Will Take Place When Project Completed (Including benefits to be derived and/or deficiencies this project intends to correct).

(See attached.)

e. Impact Upon Future Operating Requirements (show initial and ongoing funding requirements by cost element, including position count, means of financing, fiscal year).

(See attached.)

f. Additional Information:

(See attached.)

U101 – STATEWIDE FINANCIAL SYSTEM REENGINEERING (ERP)

Project Information and Justification

a. **Total Scope of Project:**

This request is to reengineer and transform the statewide financial management processes; identify all business requirements associated with a new integrated system to support the financial management activities within the State; and finally develop and execute the procurement actions (i.e., Request for Information, Request for Proposal and Quotation, and High-Level Project Plan for System Implementation) for an integrated financial management system for the State of Hawaii.

This project will:

- Perform business process reengineering activities in order to define and improve current processes within the Department of Accounting and General Services (DAGS), specifically Accounting and all related functions (e.g., payroll, central warrant writing, warrant reconciliation, and time and attendance) and Procurement, as appropriate; Budget and Finance (B&F); Department of Taxation (DOTAX); and to the extent appropriate the related processes within Department of Human Resources (DHRD);
- Apply a business process reengineering process that will provide near-term cost savings and will educate/train individuals within DAGS, B&F, DOTAX, and DHRD how to apply the business process reengineering methodology going forward;
- Identify all business requirements associated with a new integrated system to support the financial management activities within the State;
- Identify any necessary legislation to address the process requirements;
- Translate the business requirements into a systems requirements document (SRD) and ensures traceability to defined processes within each Department;
- Evaluate the utilization of integrated financial management systems within other States to understand lessons learned;
- Prepare and issue a Request for Information /Demonstration (RFI/D) of integrated financial management systems;
- Prepare the FY 2014 Biennial Budget Request for the purchase and a phased, statewide implementation of an integrated financial management system;
- Prepare and issue a Request for Proposal and Quotation (RFPQ) for a statewide integrated financial management system;
- Create a high-level project plan/approach for system implementation statewide including the initial steps for:
 - deploying the system in a modular manner within DAGS, B&F, DOTAX, and DHRD;
 - addressing cultural change management;
 - providing training plans for all Departments;
 - providing a communications plan; and,
 - supporting the transition from existing systems to the new integrated one.

b. **Identification of Need and Evaluation of Existing Situation:**

In general, the reason for this request includes the need for better decision making through the use of better information resources; IT modernization to replace obsolete legacy systems; and enabling the State to significantly improve constituent services through faster processes and more accurate and complete information.

Specifically, based on the recent assessment of *State Services and Creation of the Information Technology Baseline Report*, prepared by SAIC, a number of issues and cost savings/avoidance opportunities were identified regarding the status of financial management activities across the State. Using this documented assessment and the input of the Departmental leadership statewide, the following provides the key reasons for this request:

- Current processes are paper-based and are people intensive at a time where staff reductions are negatively impacting the performance of these processes within the State;
- The State is not maximizing receipt of revenues due to process inefficiencies
- Current financial reports (e.g., monthly and year-to-date expenditures) lag behind actual expenditures for the Departments due to current processes and financial management system;
- The required level of analytical analysis to support projections and other financial management activities is not possible given the current financial management process and system;
- Numerous Departments have “procured” and implemented financial management packages in an effort to meet management and reporting needs (especially Federal grant reporting requirements);
- Other Departments are planning on implementing a financial management package in an effort to meet management and reporting needs;
- Inaccurate and non-timely entry of time and accounting information increases the State’s payroll expenditures;
- Most Departments acknowledged that they were performing financial management with a variety of point solutions, custom systems, and hybrid spreadsheets and databases to pull and push information to/from the State’s financial system;
- The current financial management/tracking system (FAMIS) is a 25+-year old system design that is COBOL/mainframe-based and does not facilitate information integration or manipulation or necessary analytics;
- Support for the current financial management systems hardware (an IBM mainframe) will not be available indefinitely from the manufacturer and it will continue to be costly, and further, individuals with the requisite COBOL skills will continue to be a staffing challenge;
- The three Departments that manage the State’s financial position, DOTAX, B&F, and DAGS, operate in a non-integrated environment; and,
- Accrual-based accounting required for financial reporting (i.e., the Comprehensive Annual Financial Report) is manual intensive and cannot be produced within a reasonable (3-6 months after the close of the State’s fiscal year).

c. **Alternative Considered and Impact If Project Is Denied:**

The alternative is for the Statewide financial system to continue to operate now, which is paper-based, people intensive, costly and ineffective to meet the current and growing needs of the State.

d. **Discuss What Improvements Will Take Place When Project Is Completed (including benefits to be derived and/or deficiencies this project will correct):**

This request aligns to the Governor’s information technology transformation initiative. Additionally, this project will comply with the defined enterprise architecture and tactical plans that will be identified in the IT Strategic Plan, which will be delivered by the Chief Information Officer in July 2012.

- e. **Impact Upon Future Operating Requirements (show initial and ongoing funding requirements by cost element, including position count, means of financing, fiscal year):**

As a measure of effectiveness, the system requirements resulting from the business process reengineering will be fully aligned with the IT Strategic Plan that will be completed by Hawai'i's Chief Information Officer (CIO) by July 2012. In addition, it will also comply with the defined enterprise architecture and tactical plans defined by the CIO.

- f. **Additional Information:**

None.

Department of Accounting and General Services
Division Resources

Table 21

<u>Division</u>	<u>Associated Program IDs</u>					
Information & Communication Services Division	AGS-131					
<u>Administratively Attached Agencies</u>						
King Kamehameha Celebration Commission	AGS-818					
State Foundation on Culture and the Arts	AGS-881					
Stadium Authority	AGS-889					

Department of Accounting and General Services
Organization Changes

Table 22

<u>Year of Change</u> FY12/FY13	<u>Page Number</u>	<u>Description of Change</u>
FY13		Pending Organization of this office - Establishment of the Office of Information Management and Technology (Chief Information Officer Program) pursuant to Act 84, SLH 2011.
FY13		Pending Organization of this committee - Establishment of the Information Technology Steering Committee (Chief Information Officer Program) pursuant to Act 84, SLH 2011.

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES



FY 2010-2011 ORGANIZATION AND POSITION ORGANIZATION CHARTS BY BRANCH LEVEL AND ABOVE

ORGANIZATION AND POSITION ORGANIZATION CHARTS

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STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

ORGANIZATION CHART

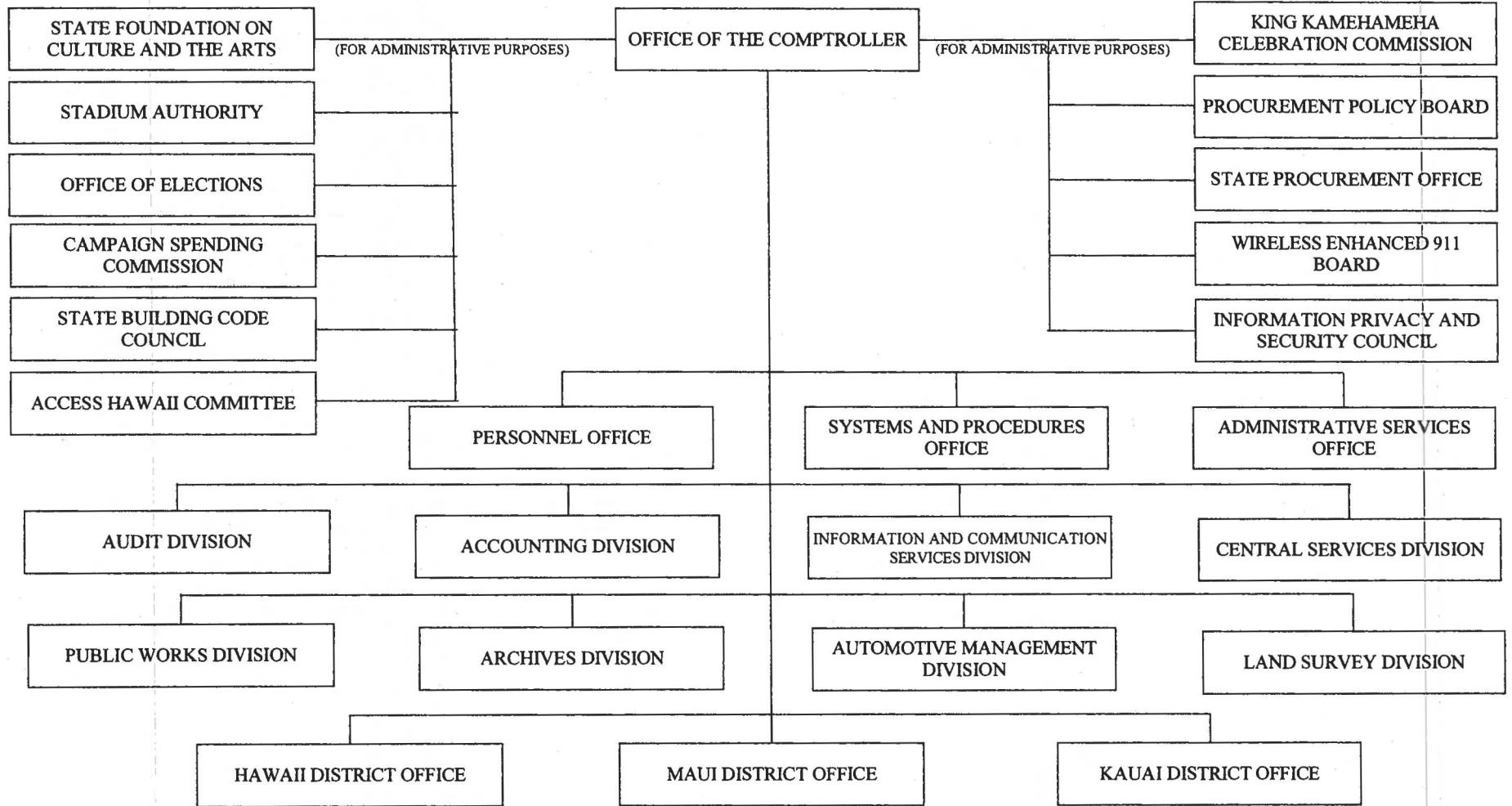
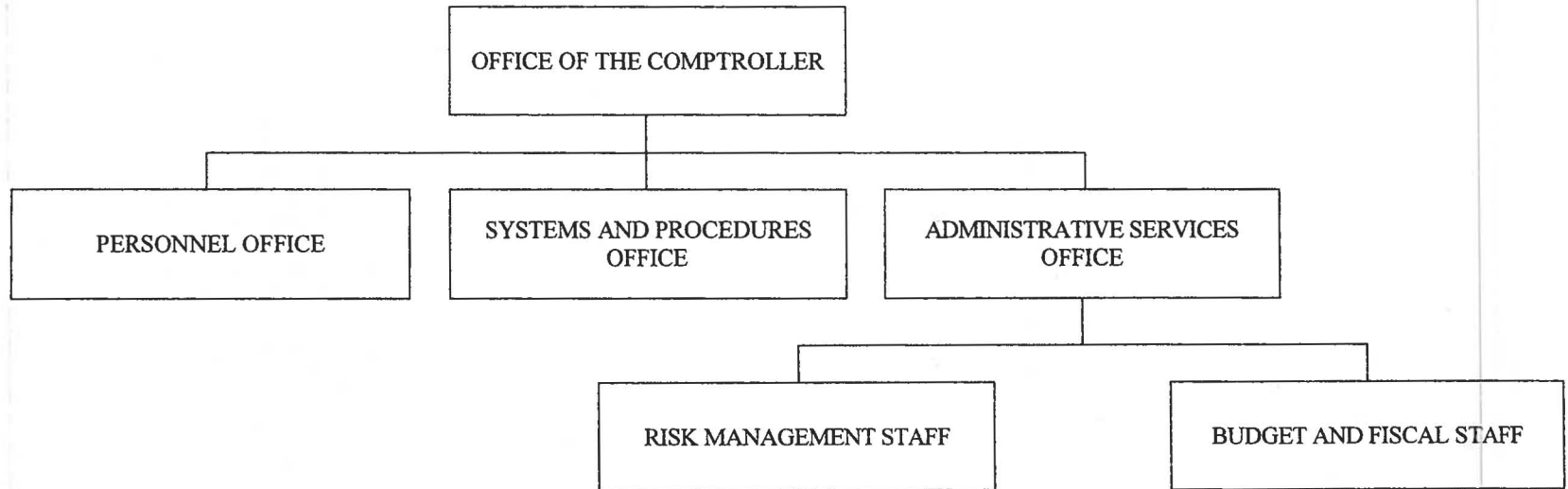


CHART I

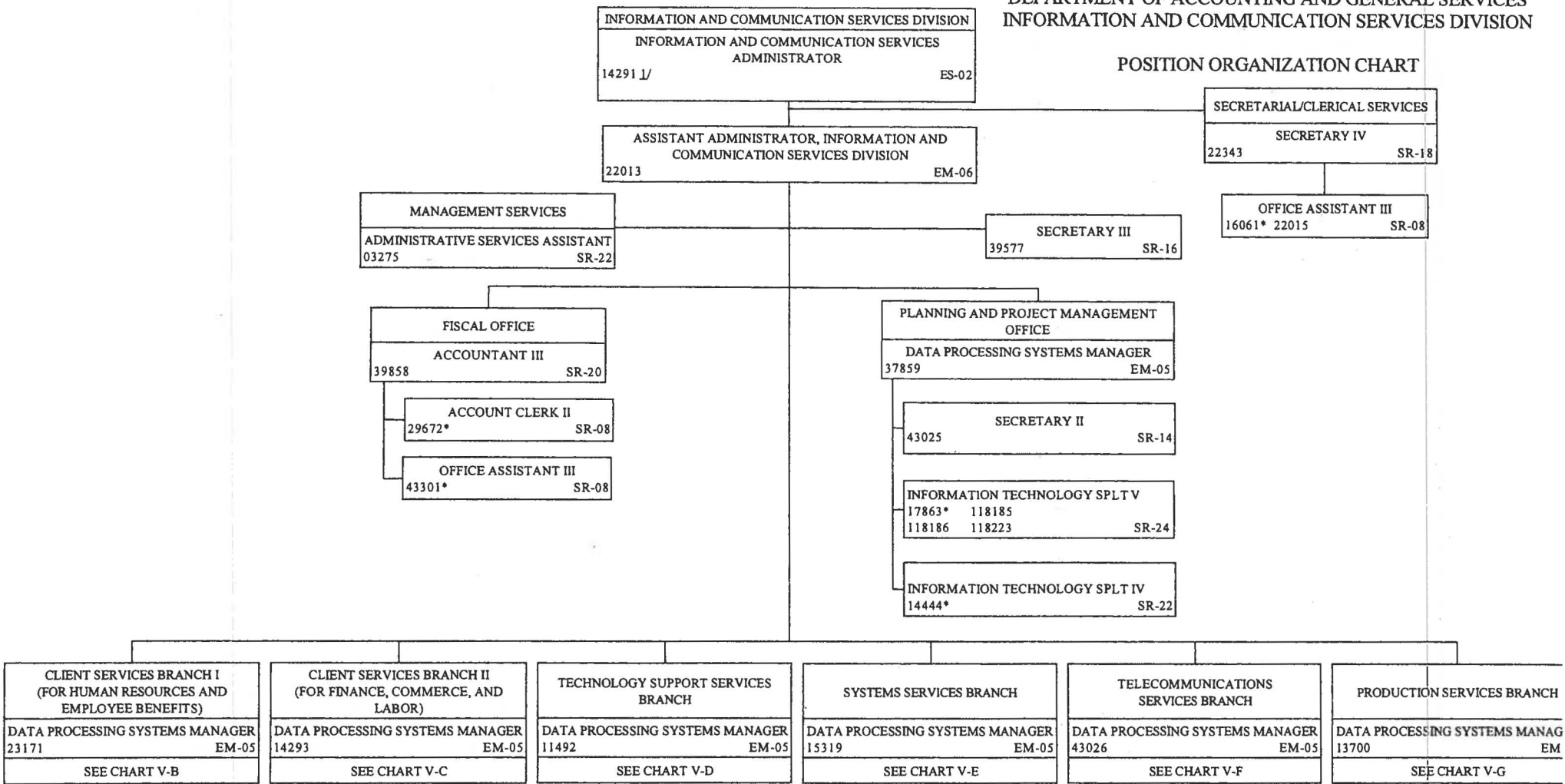
STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DEPARTMENT ADMINISTRATION

ORGANIZATION CHART



STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 INFORMATION AND COMMUNICATION SERVICES DIVISION

POSITION ORGANIZATION CHART



1/ CURRENTLY FILLED AT EM-08 LEVEL

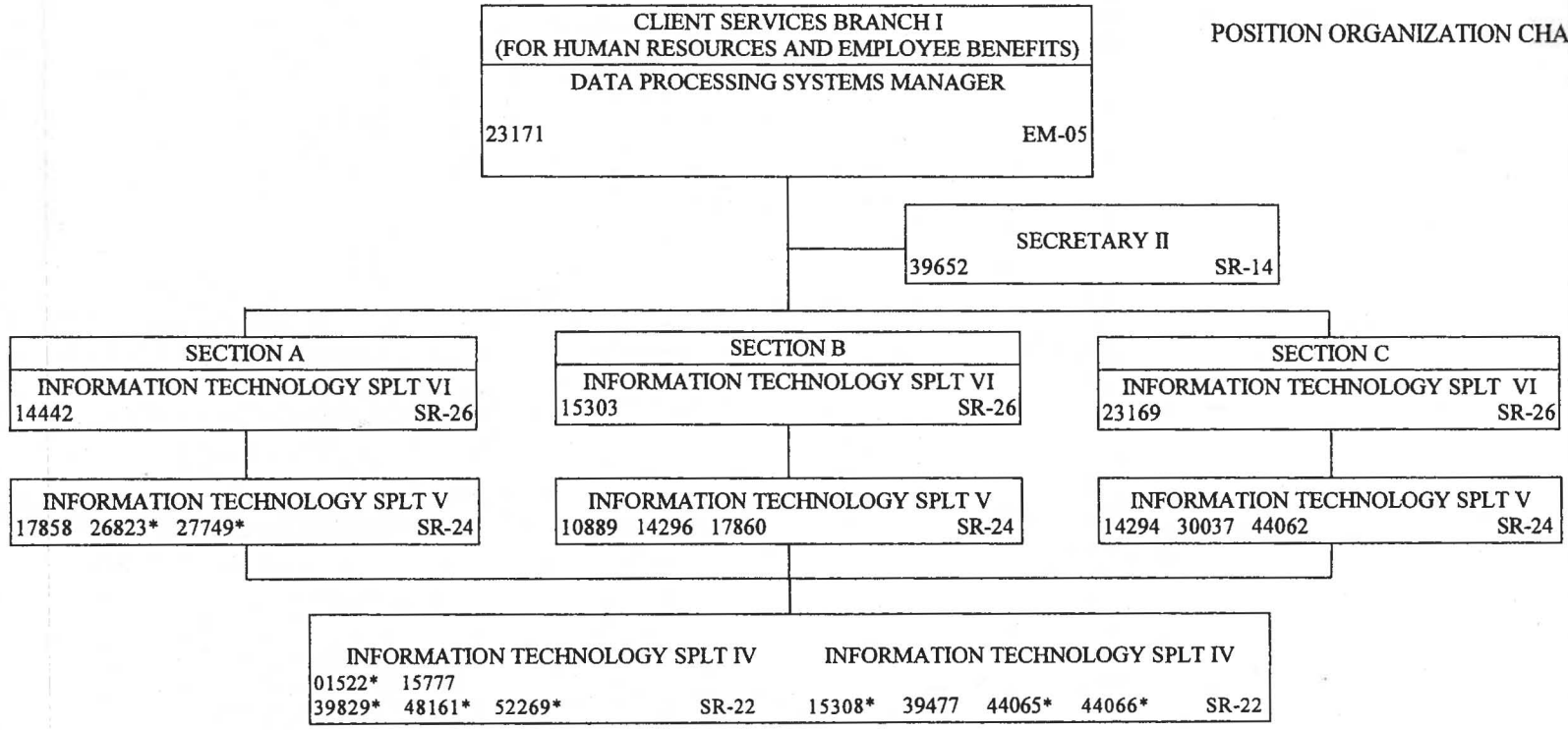
* POSITION NOS. 14444, 16061, 17863, 29672, AND 43301 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

06/30/11

CHART V-A

STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 INFORMATION AND COMMUNICATION SERVICES DIVISION
 CLIENT SERVICES BRANCH I
 (FOR HUMAN RESOURCES AND EMPLOYEE BENEFITS)

POSITION ORGANIZATION CHART



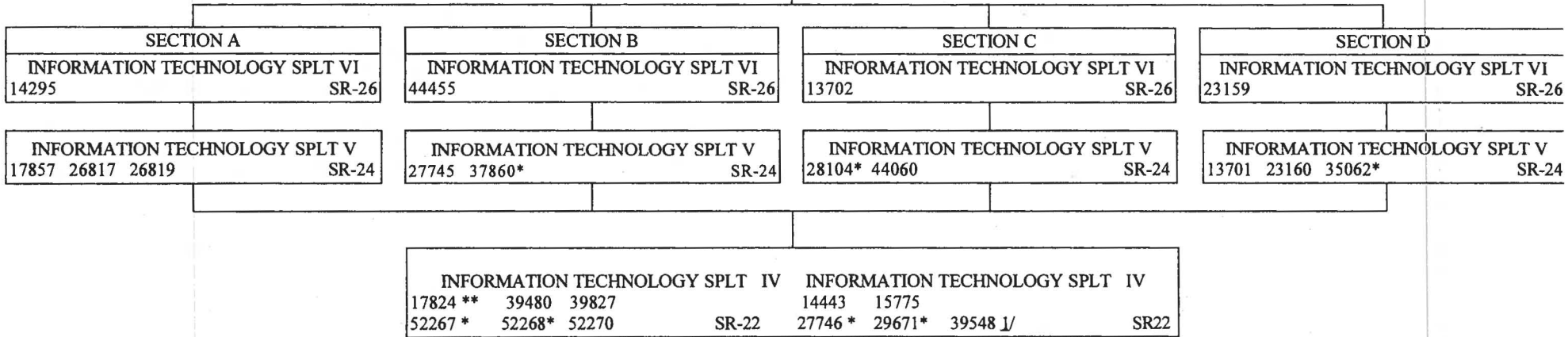
* POSITION NOS. 01522, 15308, 26823, 27749, 39829, 44065, 44066, 48161 AND 52269 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 INFORMATION AND COMMUNICATION SERVICES DIVISION
 CLIENT SERVICES BRANCH II
 (FOR FINANCE, COMMERCE, AND LABOR)

POSITION ORGANIZATION CHART

CLIENT SERVICES BRANCH II (FOR FINANCE, COMMERCE, AND LABOR)	
DATA PROCESSING SYSTEMS MANAGER	
14293	EM-05

SECRETARY II	
14297	SR-14



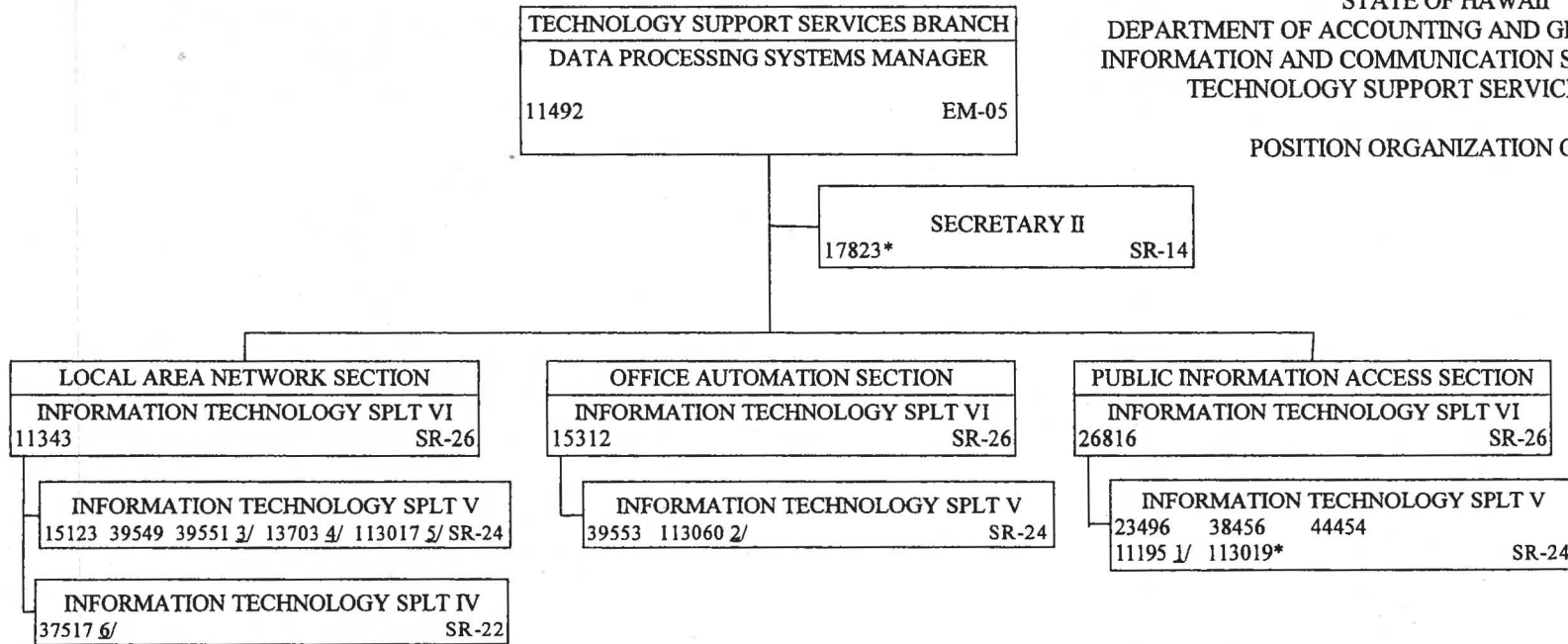
1/ POSITION NO. 39548 TRANSFERRED FROM TECHNOLOGY SUPPORT SERVICES BRANCH ON 10/22/10, EFFECTIVE 11/01/10.

* POSITION NOS. 27746, 28104, 29671, 35062, 37860, 52267, AND 52268 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

** POSITION NO. 17824 RESTORED WITH NO FUNDING EFFECTIVE 07/01/10, PURSUANT TO ACT 180/SLH 2010. POSITION IS FUNDED EFFECTIVE 07/01/11, PURSUANT TO ACT 164/SLH 2011.

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
INFORMATION AND COMMUNICATION SERVICES DIVISION
TECHNOLOGY SUPPORT SERVICES BRANCH

POSITION ORGANIZATION CHART

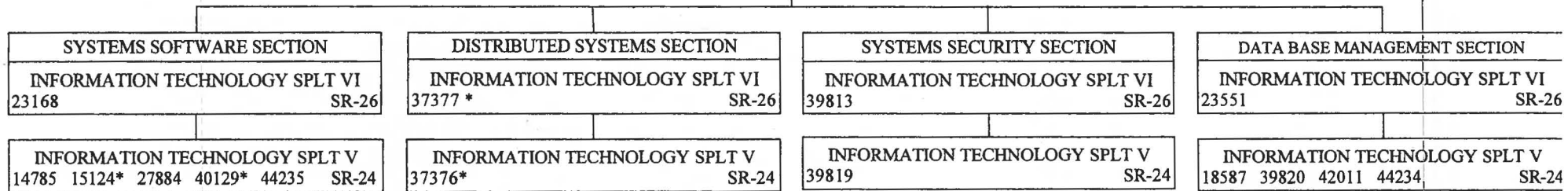


- 1/ POSITION NO. 11195 REALLOCATED TO INFORMATION TECHNOLOGY SPECIALIST IV, SR-22, ON 10/08/08 EFFECTIVE 10/16/08.
- 2/ POSITION NO. 113060 REALLOCATED TO INFORMATION TECHNOLOGY SPECIALIST III, SR-20, ON 09/17/08 EFFECTIVE 09/18/08.
- 3/ POSITION NO. 39551 REALLOCATED TO INFORMATION TECHNOLOGY SPECIALIST IV, SR-22, ON 12/02/10, EFFECTIVE 12/03/10.
- 4/ POSITION NO. 13703 TRANSFERRED FROM OFFICE AUTOMATION SECTION TO LOCAL AREA NETWORK SECTION ON 02/25/11.
- 5/ POSITION NO. 113017 TRANSFERRED FROM PUBLIC INFORMATION ACCESS SECTION TO LOCAL AREA NETWORK SECTION ON 02/25/11.
- 6/ POSITION NO. 37517 TRANSFERRED FROM CLIENT SERVICES BRANCH II ON 02/24/11, EFFECTIVE 03/01/11.
- * POSITION NOS. 17823 AND 113019 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 INFORMATION AND COMMUNICATION SERVICES DIVISION
 SYSTEMS SERVICES BRANCH

POSITION ORGANIZATION CHART

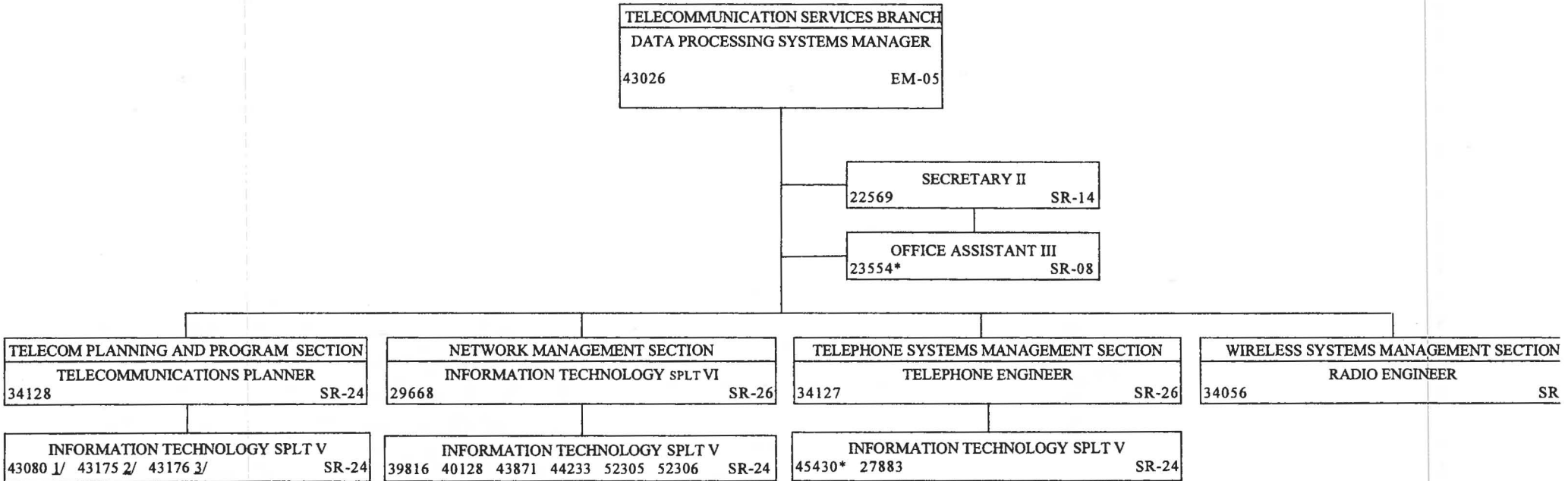
SYSTEM SERVICES BRANCH	
DATA PROCESSING SYSTEMS MANAGER	
15319	EM-05



* POSITION NOS. 15124, 37376, 37377, AND 40129 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 INFORMATION AND COMMUNICATION SERVICES DIVISION
 TELECOMMUNICATION SERVICES BRANCH

POSITION ORGANIZATION CHART



1/ POSITION LOCATED ON KAUAI.

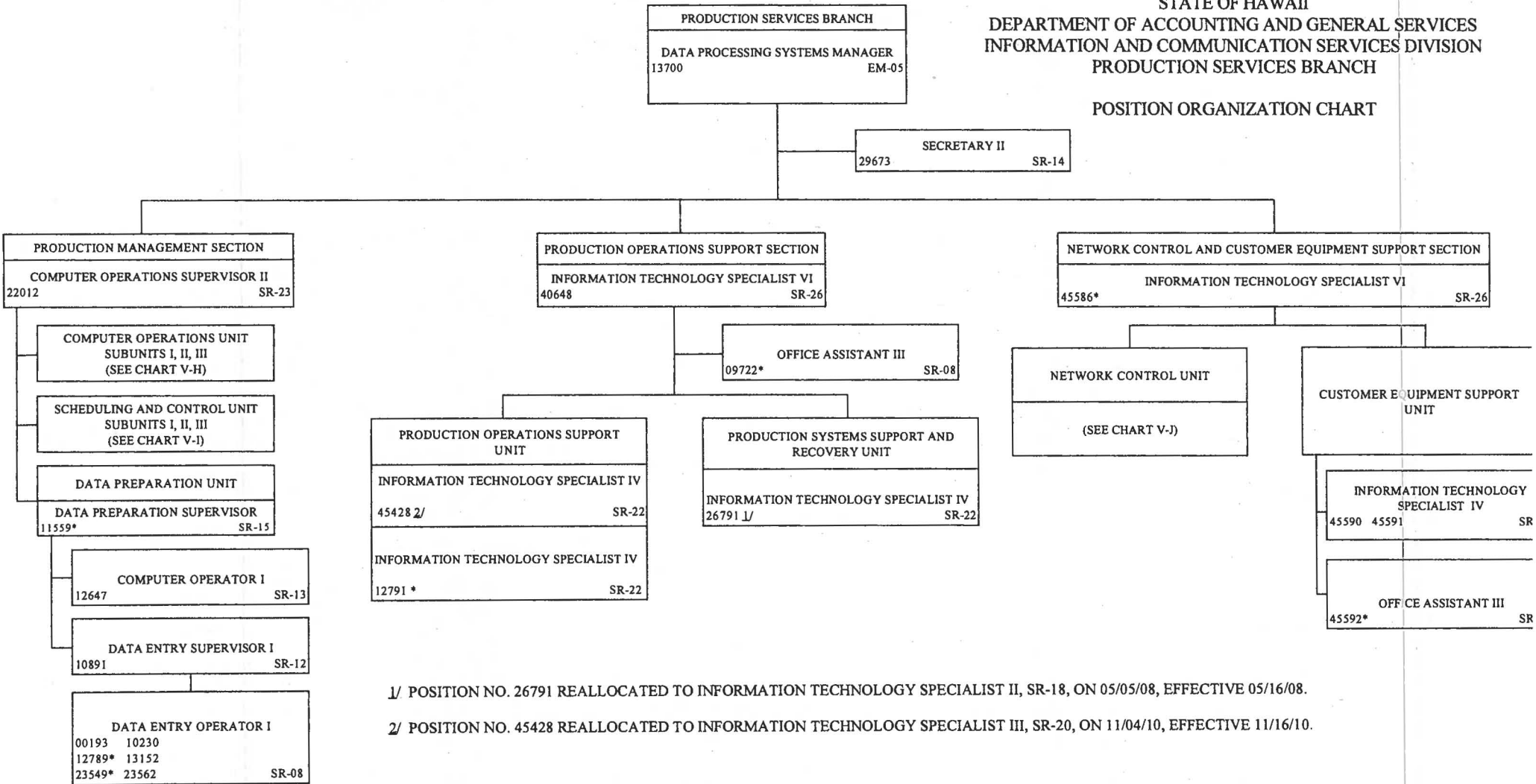
2/ POSITION LOCATED ON MAUI.

3/ POSITION LOCATED ON HAWAII.

* POSITION NOS. 23554 AND 45430 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 INFORMATION AND COMMUNICATION SERVICES DIVISION
 PRODUCTION SERVICES BRANCH

POSITION ORGANIZATION CHART



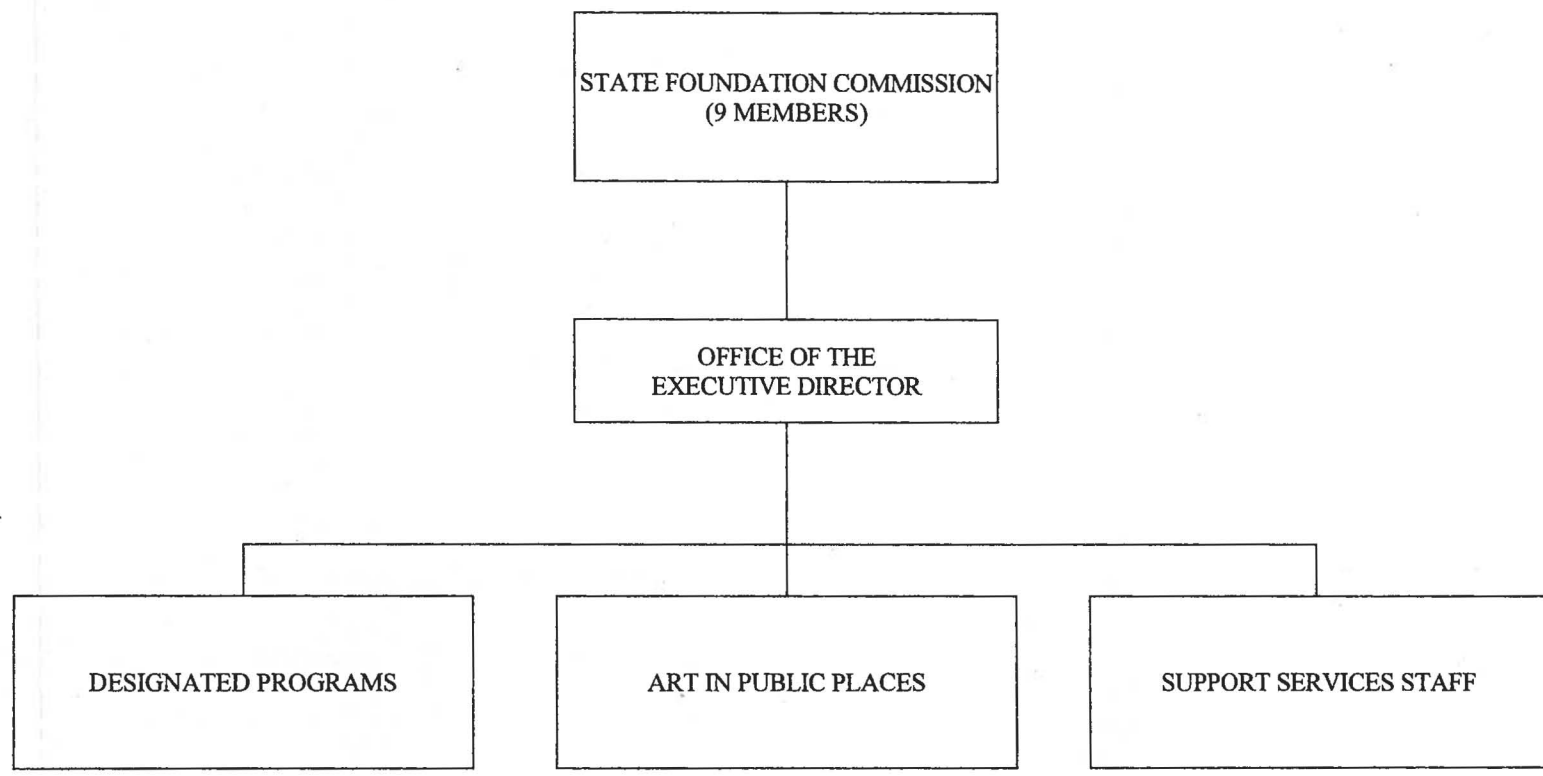
1/ POSITION NO. 26791 REALLOCATED TO INFORMATION TECHNOLOGY SPECIALIST II, SR-18, ON 05/05/08, EFFECTIVE 05/16/08.

2/ POSITION NO. 45428 REALLOCATED TO INFORMATION TECHNOLOGY SPECIALIST III, SR-20, ON 11/04/10, EFFECTIVE 11/16/10.

* POSITION NOS. 9722, 11559, 12789, 12791, 23549, 45586, AND 45592 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

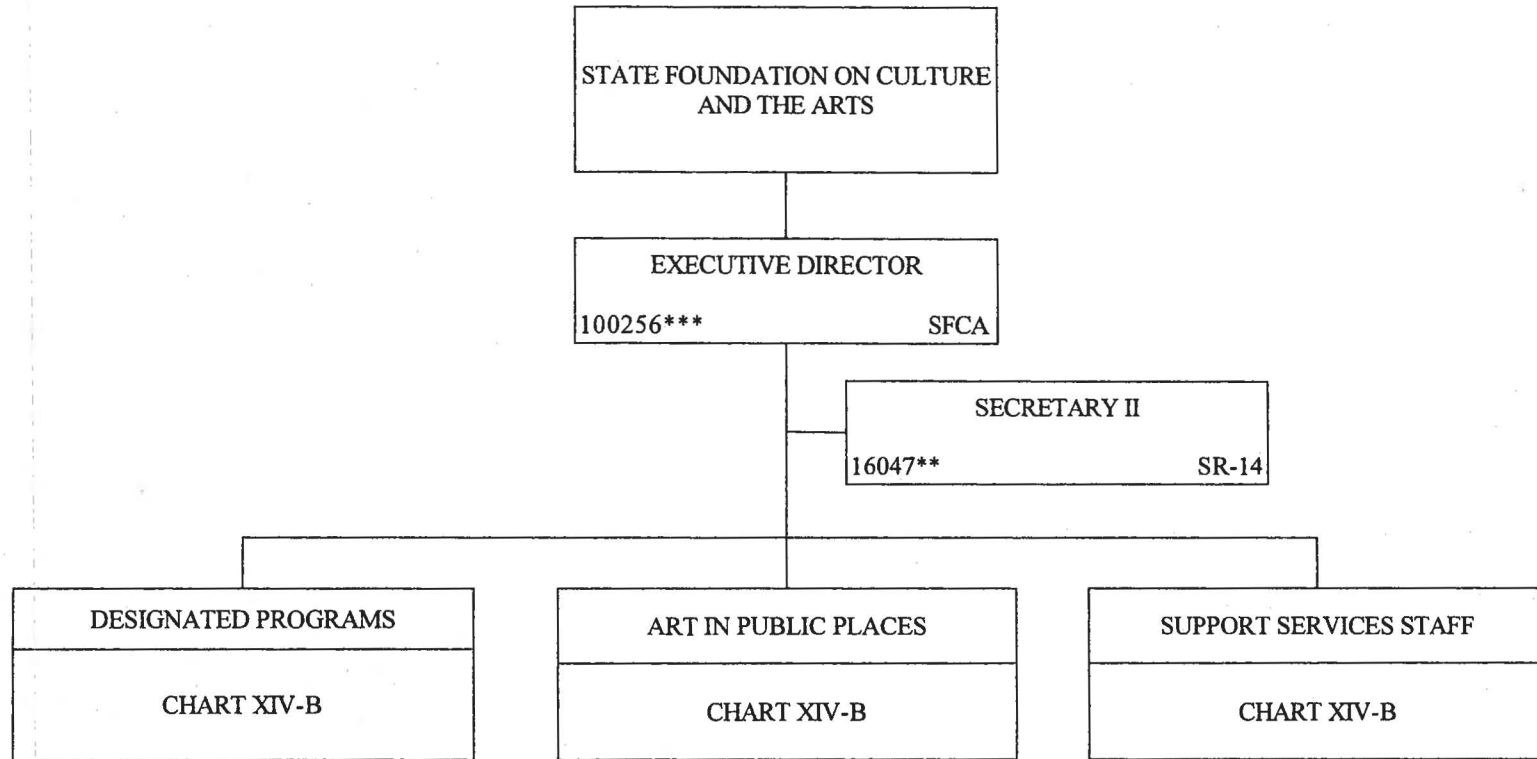
STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE FOUNDATION ON CULTURE AND THE ARTS

ORGANIZATION CHART



STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 STATE FOUNDATION ON CULTURE AND THE ARTS

POSITION ORGANIZATION CHART



** POSITION NO. 16047 .50 GENERAL FUND POSITION COUNT WAS ABOLISHED AND .50 SPECIAL FUND POSITION COUNT RESTORED WITH NO FUNDING EFFECTIVE 07/01/10, PURSUANT TO ACT 180/SLH 2010.

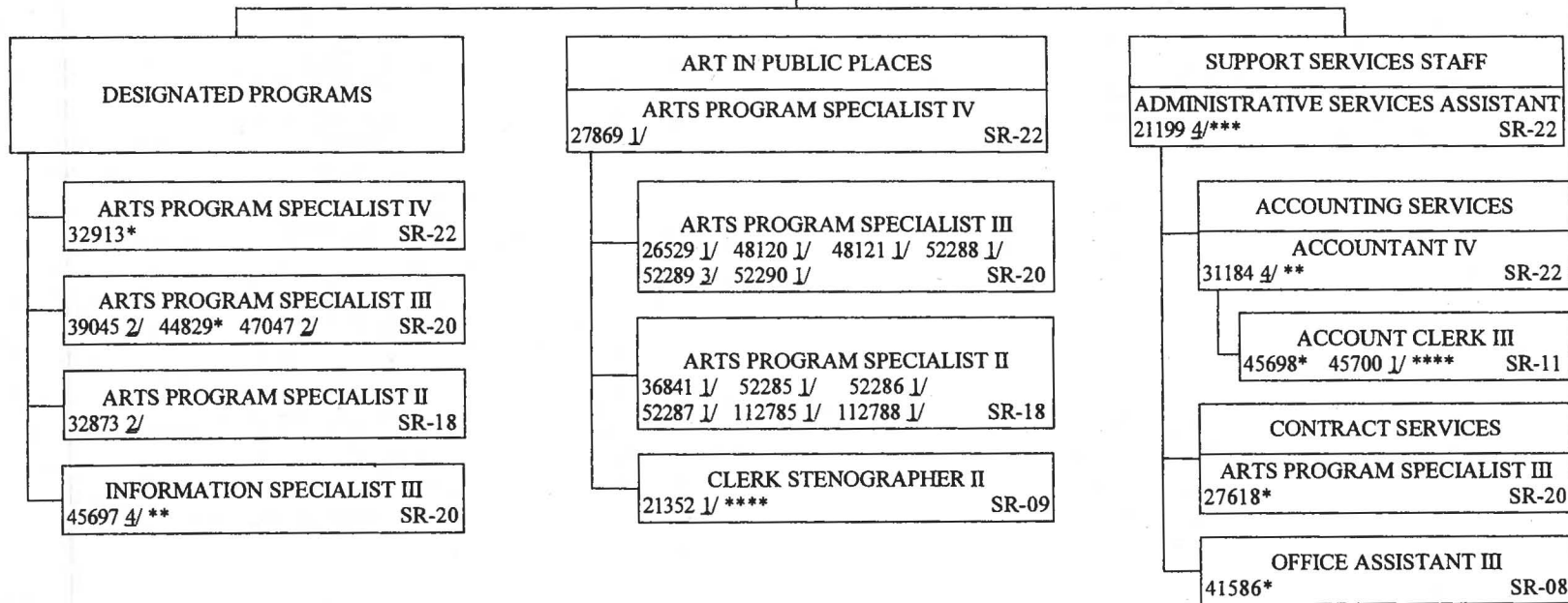
*** POSITION NO. 100256 WAS CONVERTED FROM 50% GENERAL FUND AND 50% SPECIAL FUND TO 50% SPECIAL FUND AND 50% FEDERAL FUND EFFECTIVE 07/01/10, PURSUANT TO ACT 180/SLH 2010.

STATE FOUNDATION ON
CULTURE AND THE ARTS
EXECUTIVE DIRECTOR
100256 4/*** SFCA

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE FOUNDATION ON CULTURE AND THE ARTS
DESIGNATED PROGRAMS, ART IN PUBLIC PLACES,
AND SUPPORT SERVICES STAFF

SECRETARY II
16047 4/ ** SR-14

POSITION ORGANIZATION CHART



1/ SPECIAL FUNDED POSITION (SF).

2/ FEDERAL FUNDED POSITION (FF).

3/ TEMPORARY (SPECIAL FUNDED) POSITION.

4/ 50% GENERAL FUNDED (GF) AND 50% SPECIAL FUNDED POSITION. REFER TO ** AND ***, .50 GF TO BE ABOLISHED.

* POSITION NOS. 27618, 32913, 41586, 44829, AND 45698 WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

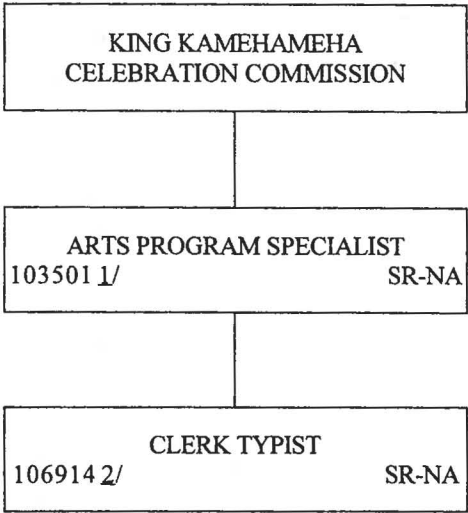
** POSITION NOS. 16047, 31184, AND 45697 .50 SF POSITION COUNT RESTORED WITH NO FUNDING AND .50 GF POSITION COUNT WERE ABOLISHED ON 07/01/10 PURSUANT TO ACT 180/SLH 2010.

*** POSITION NOS. 100256 AND 21199 WERE CONVERTED FROM 50% GF AND 50% SF TO 50% SF AND 50% FF ON 07/01/10, PURSUANT TO ACT 180/SLH 2010.

**** POSITION NOS. 21352 AND 45700 WERE CONVERTED FROM 100% SF TO 50% SF AND 50% FF ON 07/01/10, PURSUANT TO ACT 180/SLH 2010.

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
KING KAMEHAMEHA CELEBRATION COMMISSION

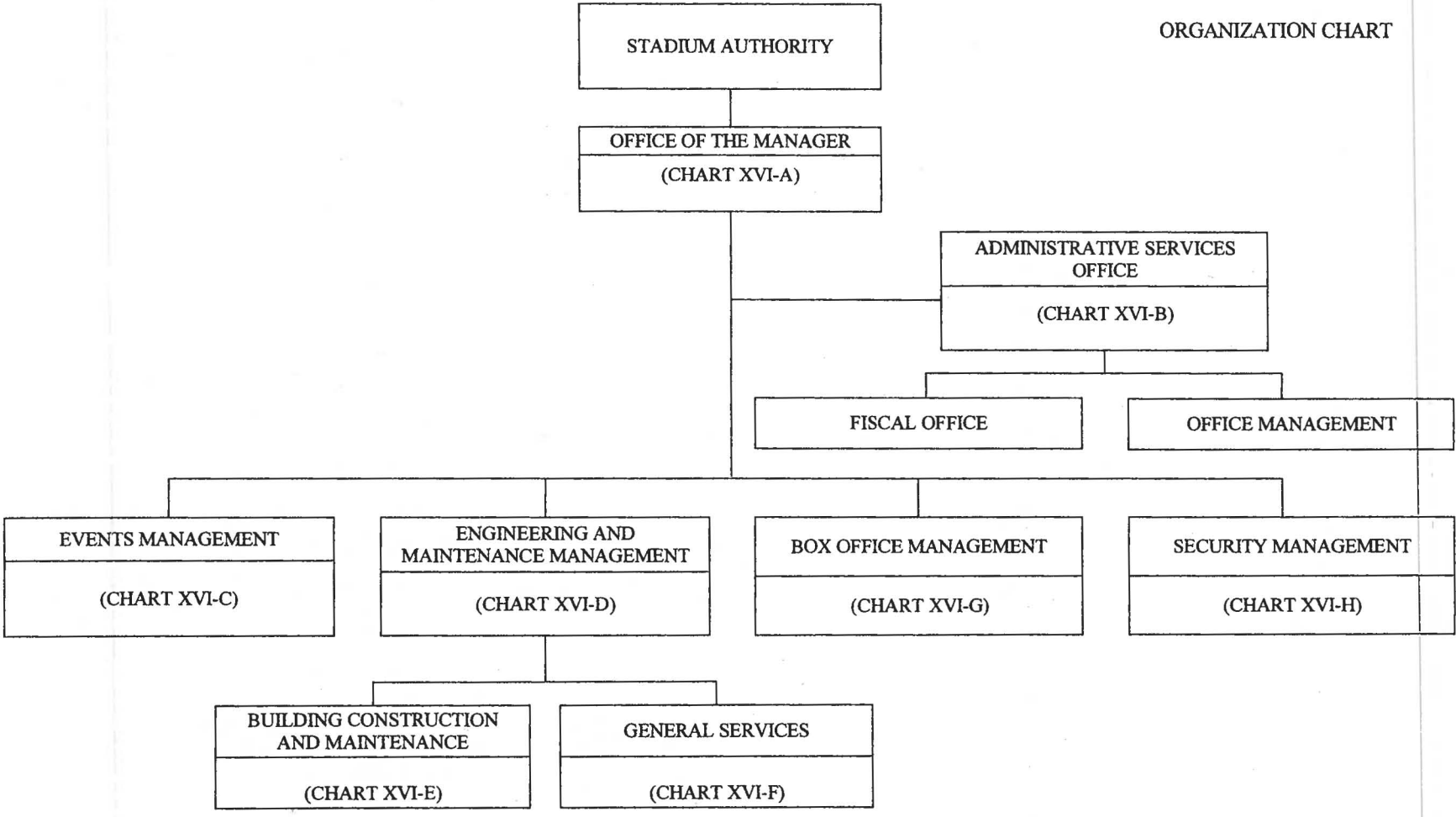
POSITION ORGANIZATION CHART



1/ EXEMPT TEMPORARY TRUST FUNDED POSITION.

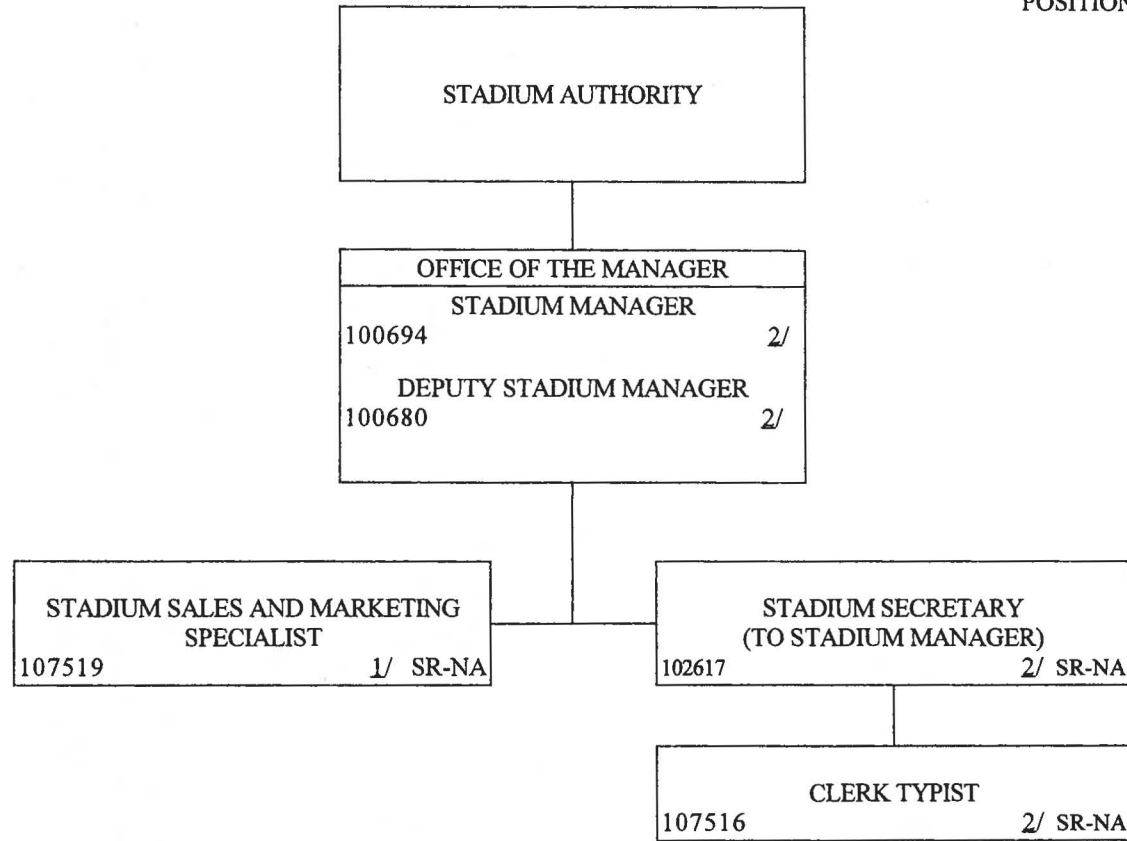
2/ PURSUANT TO SECTION 8-5, HRS, EXEMPT TEMPORARY TRUST FUNDED HALF-TIME POSITION.

STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 STADIUM AUTHORITY
 ORGANIZATION CHART



STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 STADIUM AUTHORITY
 OFFICE OF THE MANAGER

POSITION ORGANIZATION CHART

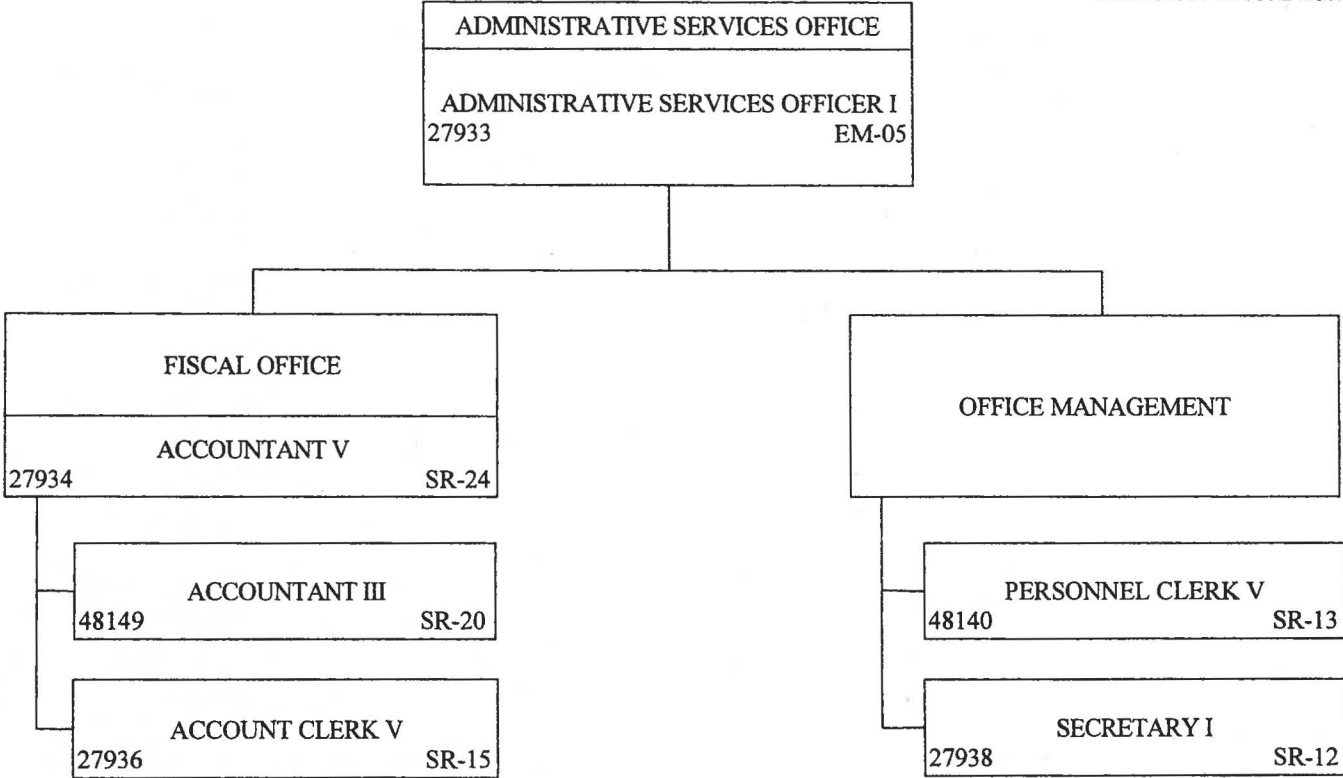


1/ TEMPORARY EXEMPT POSITION.

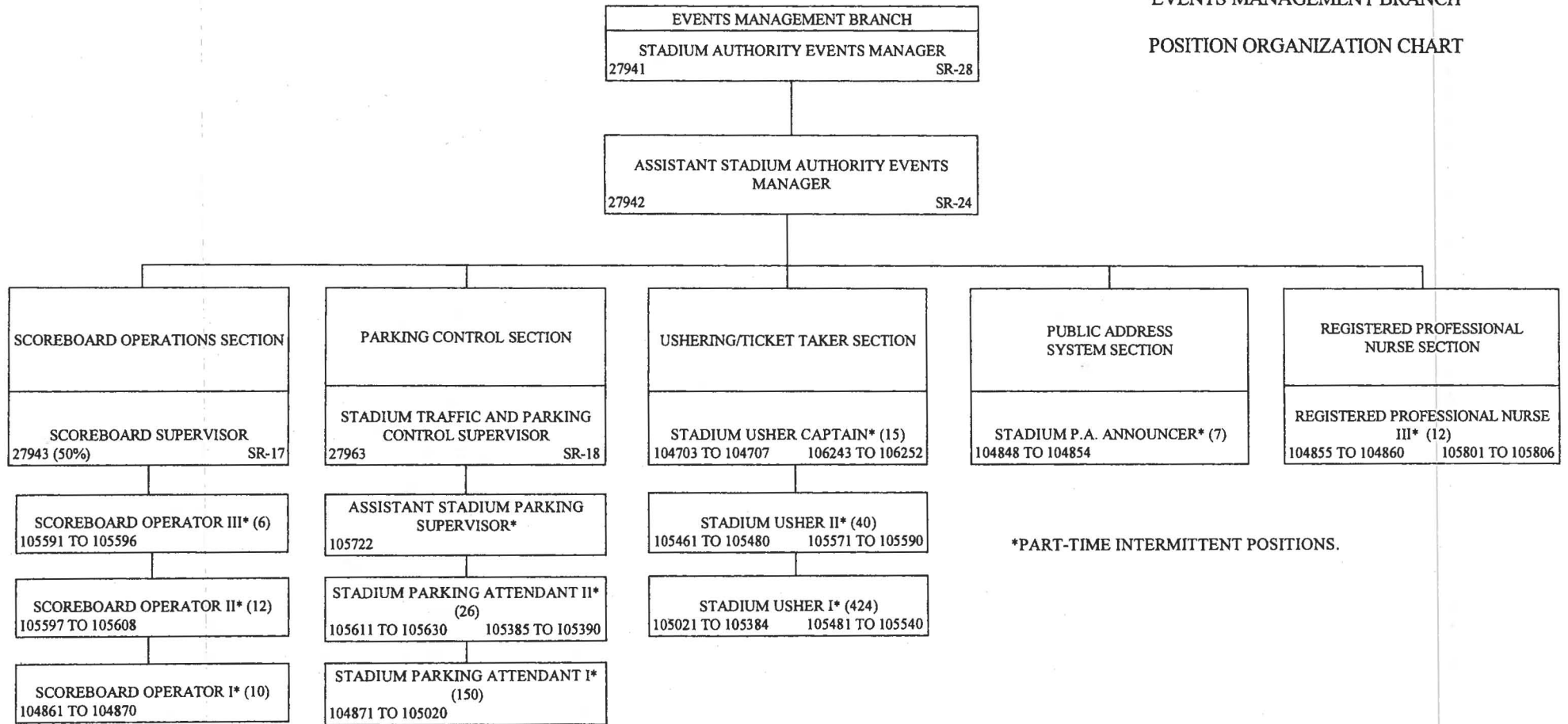
2/ EXEMPT POSITION.

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STADIUM AUTHORITY
ADMINISTRATIVE SERVICES OFFICE

POSITION ORGANIZATION CHART



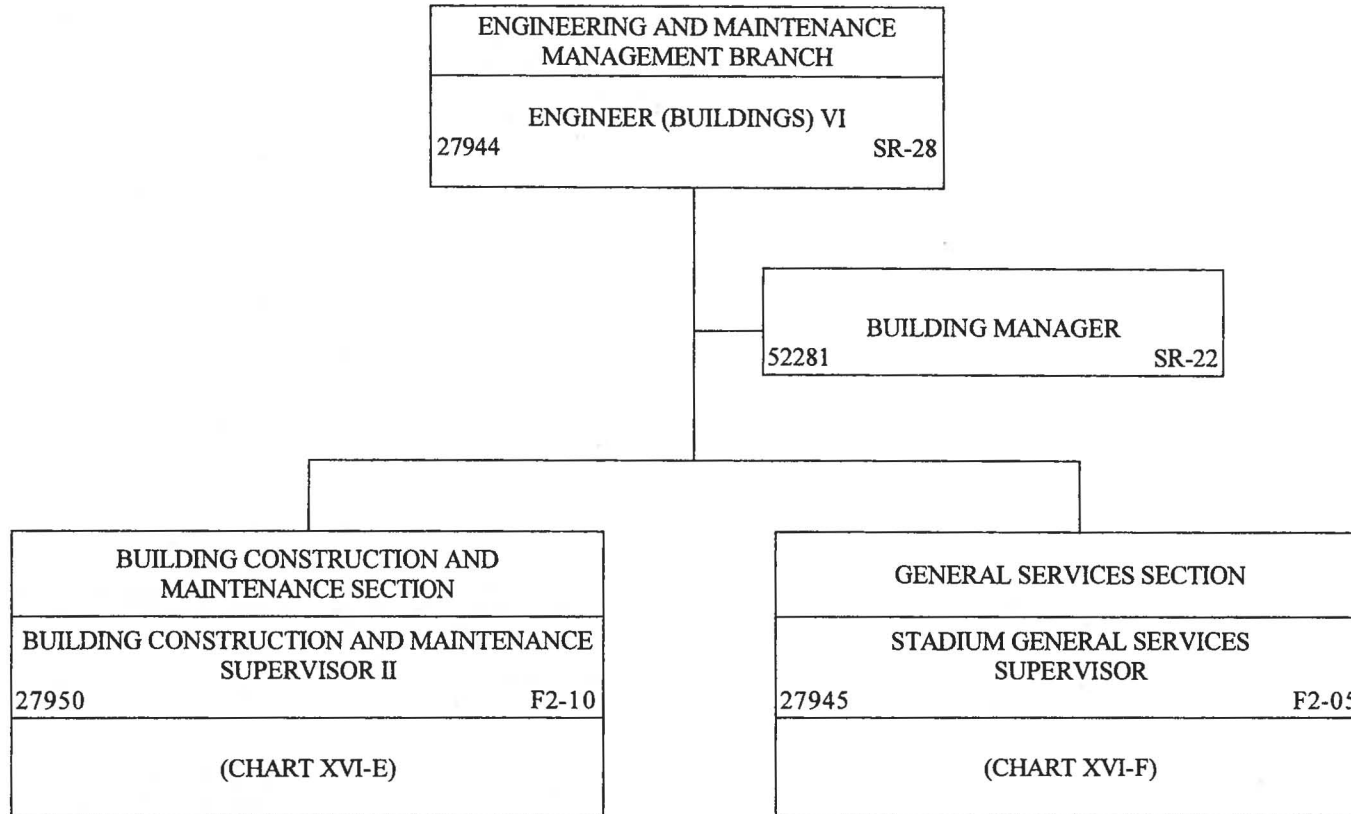
STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 STADIUM AUTHORITY
 EVENTS MANAGEMENT BRANCH
 POSITION ORGANIZATION CHART



*PART-TIME INTERMITTENT POSITIONS.

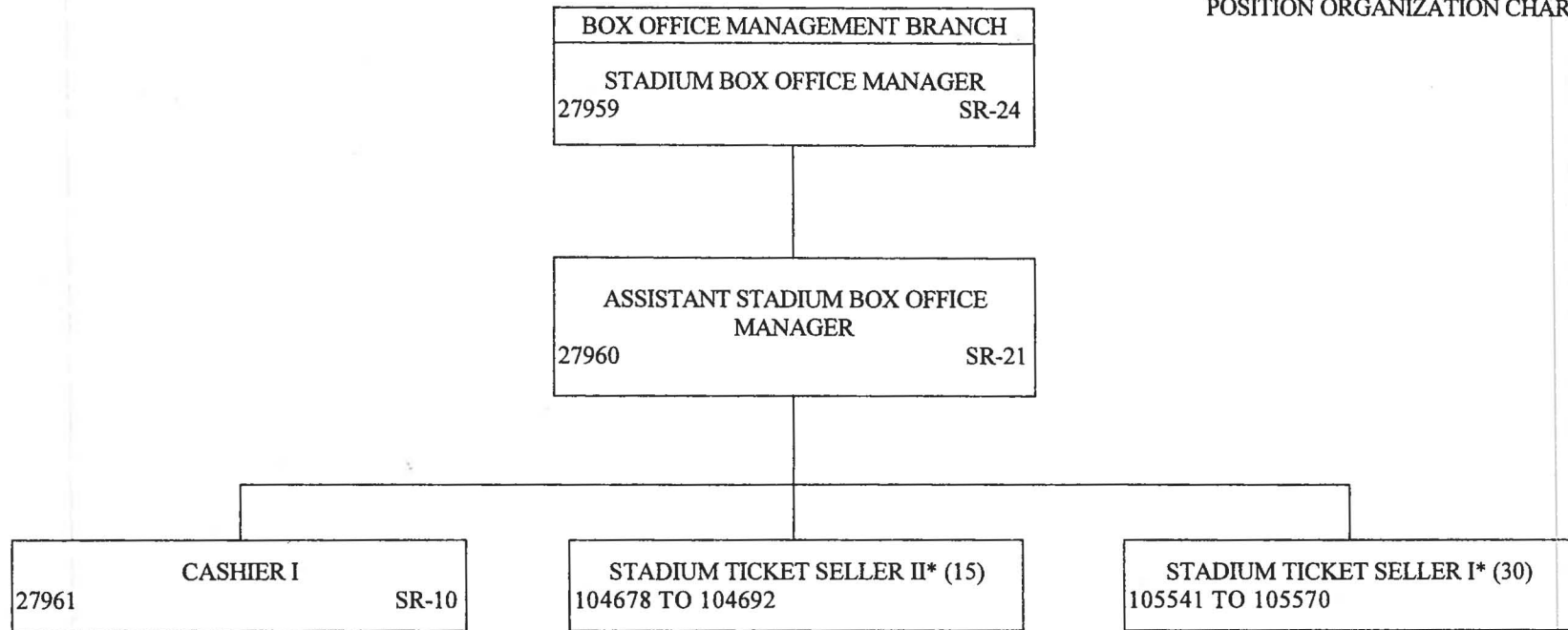
STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 STADIUM AUTHORITY
 ENGINEERING AND MAINTENANCE BRANCH

POSITION ORGANIZATION CHART



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STADIUM AUTHORITY
BOX OFFICE MANAGEMENT BRANCH

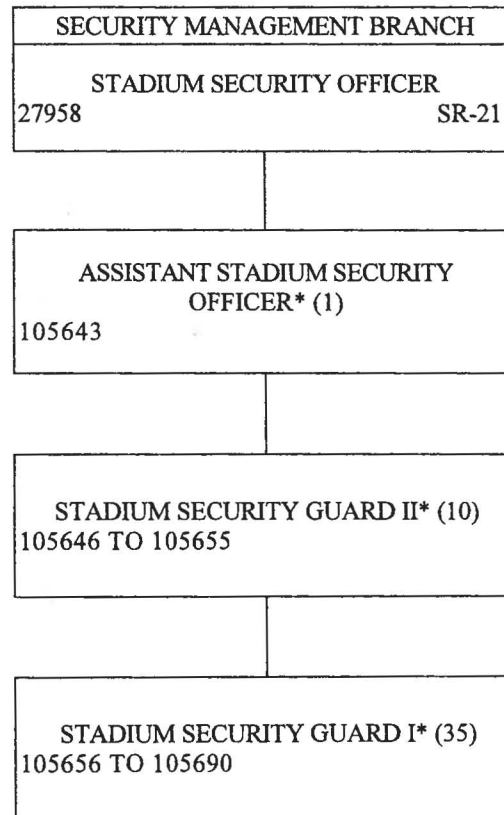
POSITION ORGANIZATION CHART



*PART-TIME INTERMITTENT POSITIONS.

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STADIUM AUTHORITY
SECURITY MANAGEMENT BRANCH

POSITION ORGANIZATION CHART



*PART-TIME INTERMITTENT POSITIONS.



MI 12.0011

EXECUTIVE CHAMBERS
HONOLULU

NEIL ABERCROMBIE
GOVERNOR

January 12, 2012

The Honorable Shan Tsutsui, President
and Members of the Senate
Twenty-Sixth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Calvin Say, Speaker
and Members of the House
Twenty-Sixth State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Tsutsui, Speaker Say, and Members of the Legislature:

For your information and consideration, the Information Privacy and Security Council, which is assigned to the Department of Accounting and General Services and chaired by the Comptroller, respectfully submits two (2) copies of the report to comply with the following provisions of Act 10, SLH 2008.

- The designation, by September 1, 2009, by each government agency of an agency employee to have policy and oversight responsibilities for the protection of personal information. As of this date, all entities have submitted the names of their designees except agencies noted as being non-compliant (Attachment A). We will continue to verify compliance until all agencies have named a designee.
- Certification in writing by entities (Attachment B) that they comply with Part VII, Section 11, of Act 10. As of this date, entities indicated in the attachment have submitted compliance notices to the members of the Council, who have verified each submitted report.

I am also informing you that the report may be viewed electronically at <http://ipsc.hawaii.gov/reports>.

Sincerely,

NEIL ABERCROMBIE
Governor, State of Hawaii

October 31, 2011

The Honorable Shan Tsutsui, President
and Members of the Senate
Twenty-Sixth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

Dear Mr. President and Members of the Senate:

For your information and consideration, I am transmitting herewith two (2) copies of the Comprehensive Annual Financial Report of the State of Hawaii for the fiscal year ended June 30, 2010, prepared by the Comptroller, pursuant to Section 40-5, Hawaii Revised Statutes. I am also informing you that the report will be available for viewing electronically at <http://hawaii.gov/dags/accounting/division/Annual%20Financial%20Report>

Sincerely,

/s/

NEIL ABERCROMBIE

Enclosures

bc: Lieutenant Governor's Office
Legislative Reference Bureau
Legislative Auditor
Department of Budget and Finance
State Library

Attachment A



State of Hawai'i

Information Privacy and Security Council

Agency Privacy Designee Compliance Listing

Updated October 05, 2011

Department/Division/Board/Commission/Office	Br/Dept/ County	
Legislative Branch		
The Senate	LEG	Compliant
The House of Representatives	LEG	Compliant
Apportionment Advisory Councils	LEG	Compliant
Legislative Service Agencies		
Office of the Auditor	AUD	Compliant
Hawai'i State Ethics Commission	AUD	Compliant
Legislative Reference Bureau	LEG	Compliant
Ombudsman	LEG	Compliant
Executive Branch		
Office of the Governor	Gov	Compliant
Office of the Lieutenant Governor	Lt. Gov	Compliant
Department of Accounting and General Services	DAGS	Compliant
Department of Agriculture	DOA	Compliant
Department of the Attorney General	AG	Compliant
Department of Budget and Finance	B&F	Compliant
Department of Business, Economic Development and Tourism	DBEDT	Compliant
Department of Commerce and Consumer Affairs	DCCA	Compliant
Department of Defense	DOD	Compliant
Department of Education	DOE	Compliant
Charter School Administrative Office	DOE*	Compliant
Hawaii Teacher Standards Board	DOE	Compliant
Department of Hawaiian Homelands	DHHL	Compliant
Department of Health	DOH	Compliant
Department of Human Resources Development	DHRD	Compliant
Department of Human Services	DHS	Compliant
Department of Labor and Industrial Relations	DLIR	Compliant
Department of Land and Natural Resources	DLNR	Compliant
Department of Public Safety	PSD	Compliant
Department of Taxation	TAX	Compliant
Department of Transportation	DOT	Compliant
Oahu Metropolitan Planning Organization	OMPO	Compliant
University of Hawai'i	UH	Compliant
Judiciary		Compliant
Office of Hawaiian Affairs		Compliant
Other State Commissions		
Hawai'i Council for the Humanities*		Not Compliant

Source: Guide to Government in Hawai'i, 13th Ed. Honolulu: Legislative Reference Bureau, 2007.

*Source: Board and Commissions Directory. Honolulu: Office of the Governor, 2008.



State of Hawai'i

Information Privacy and Security Council

Agency Privacy Designee Compliance Listing

Updated January 05, 2011

Department/Division/Board/Commission/Office	Br/Dept/ County	
City & County of Honolulu		
Department of the Prosecuting Attorney	CC HON	Compliant
Legislative Branch		
City Council	CC HON	Compliant
City Clerk	CC HON	Compliant
Office of Council Services	CC HON	Compliant
Office of the City Auditor	CC HON	Compliant
Executive Branch		
Mayor	CC HON	Compliant
Board of Water Supply	CC HON	Compliant
Department of the Corporation Counsel	CC HON	Compliant
Department of Budget and Fiscal Services	CC HON	Compliant
Liquor Commission	CC HON	Compliant
Department of Community Services	CC HON	Compliant
Department of Customer Services	CC HON	Compliant
Department of Design and Construction	CC HON	Compliant
Department of Emergency Management	CC HON	Compliant
Honolulu Emergency Services Department	CC HON	Compliant
Department of Enterprise Services	CC HON	Compliant
Department of Environmental Services	CC HON	Compliant
Ethics Coimmission	CC HON	Compliant
Department of Facility Maintenance	CC HON	Compliant
Honolulu Fire Department	CC HON	Compliant
Department of Human Resources	CC HON	Compliant
Department of Information Technology	CC HON	Compliant
Department of the Medical Examiner	CC HON	Compliant
Department of Parks and Recreation	CC HON	Compliant
Department of Planning and Permitting	CC HON	Compliant



State of Hawai'i
Information Privacy and Security Council
Agency Privacy Designee Compliance Listing

Updated January 05, 2011

Department/Division/Board/Commission/Office		Br/Dept/ County	
City & County of Honolulu			
Honolulu Police Department		CC HON	Compliant
Department of Transportation Services		CC HON	Compliant
Royal Hawaiian Band		CC HON	Compliant



State of Hawai'i

Information Privacy and Security Council

Agency Privacy Designee Compliance Listing

Updated November 17, 2011

Department/Division/Board/Commission/Office	Br/Dept/ County	
County of Hawai'i		
County of Hawai'i Charter Commission	Hawai'i	Compliant
Prosecuting Attorney	Hawai'i	Compliant
Legislative Branch		
Hawaii County Council	Hawai'i	Compliant
Office of the County Clerk	Hawai'i	Compliant
County of Hawaii Charter Commission	Hawai'i	Compliant
2011 County of Hawaii Redistricting Commission	Hawai'i	Compliant
Office of the Legislative Auditor	Hawai'i	Compliant
Executive Branch		
Office of the Mayor/Managing Director	Hawai'i	Compliant
Committee on the Status of Women	Hawai'i	Compliant
Office of Aging	Hawai'i	Compliant
Committee on People with Disabilities	Hawai'i	Compliant
Committee on Aging	Hawai'i	Compliant
Civil Defense Agency	Hawai'i	Compliant
Office of Corporation Counsel	Hawai'i	Compliant
Board of Ethics	Hawai'i	Compliant
Cost of Government Commission	Hawai'i	Compliant
Department of Environmental Management	Hawai'i	Compliant
Environmental Management Commission	Hawai'i	Compliant
Department of Finance	Hawai'i	Compliant
Standardization Committee	Hawai'i	Compliant
Real Property Tax Board of Review	Hawai'i	Compliant
Pension Board	Hawai'i	Compliant
Public Access, Open Space and Natural Resources Preservation Commission	Hawai'i	Compliant
Fire Department	Hawai'i	Compliant
Fire Commission	Hawai'i	Compliant
Office of Housing & Community Development	Hawai'i	Compliant
Hawaii County Housing Agency	Hawai'i	Compliant
Workforce Investment Board	Hawai'i	Compliant
Department of Human Resources	Hawai'i	Compliant
Merit Appeals Board	Hawai'i	Compliant
Salary Commission	Hawai'i	Compliant
Department of Information Technology	Hawai'i	Compliant
Department of Liquor Control	Hawai'i	Compliant
Liquor Commission	Hawai'i	Compliant
Liquor Control Adjudication Board	Hawai'i	Compliant
Mass Transit Agency	Hawai'i	Compliant
Transportation Commission	Hawai'i	Compliant
Department of Parks and Recreation	Hawai'i	Compliant
Veterans Advisory Committee	Hawai'i	Compliant
Department of Planning	Hawai'i	Compliant
Planning Commission	Hawai'i	Compliant
Board of Appeals	Hawai'i	Compliant
Kailua Village Design Commission	Hawai'i	Compliant
Police Department	Hawai'i	Compliant
Police Commission	Hawai'i	Compliant



State of Hawai'i
Information Privacy and Security Council
Agency Privacy Designee Compliance Listing

Updated November 17, 2011

Department/Division/Board/Commission/Office		Br/Dept/ County	
County of Hawai'i			
Office of the Prosecuting Attorney	Hawai'i	Compliant	
Department of Public Works	Hawai'i	Compliant	
Department of Research and Development	Hawai'i	Compliant	
Agriculture Commission	Hawai'i	Compliant	
Energy Commission	Hawai'i	Compliant	
Department of Water Supply	Hawai'i	Compliant	
Water Board	Hawai'i	Compliant	
Arborist Advisory Committee	Hawai'i	INACTIVE	
Bicycle/Pedestrian Safety Committee	Hawai'i	INACTIVE	



State of Hawai'i
Information Privacy and Security Council
Agency Privacy Designee Compliance Listing

Updated January 05, 2011

Department/Division/Board/Commission/Office	Br/Dept/ County	
County of Kaua'i		Kaua'i
County Council	Kaua'i	Compliant
County Clerk	Kaua'i	Compliant
Executive Branch		
Mayor	Kaua'i	Compliant
Office of Boards & Commissions	Kaua'i	Compliant
Board of Ethics	Kaua'i	Compliant
Charter Commission	Kaua'i	Compliant
Cost Control Commission	Kaua'i	Compliant
Fire Commission	Kaua'i	Compliant
Police Commission	Kaua'i	Compliant
Salary Commission	Kaua'i	Compliant
Agency on Elderly Affairs	Kaua'i	Compliant
Agency on Housing	Kaua'i	Compliant
Agency on Transportation	Kaua'i	Compliant
ADA Coordinator	Kaua'i	Compliant
Civil Defense Agency	Kaua'i	Compliant
Office of Economic Development	Kaua'i	Compliant
County Attorney	Kaua'i	Compliant
Department of Finance	Kaua'i	Compliant
Department of Liquor Control	Kaua'i	Compliant
Liquor Control Commission	Kaua'i	Compliant
Department of Parks and Recreation	Kaua'i	Compliant
Department of Personnel Services	Kaua'i	Compliant
Civil Service Commission/Merit Appeals Board	Kaua'i	Compliant
Police Department	Kaua'i	Compliant
Department of the Prosecuting Attorney	Kaua'i	Compliant
Department of Public Works	Kaua'i	Compliant
Department of Water	Kaua'i	Compliant
Board of Water Supply	Kaua'i	Compliant
Fire Department	Kaua'i	Compliant
Planning Department	Kaua'i	Compliant
Planning Commission	Kaua'i	Compliant
Kaua'i Historic Preservation Review Commission	Kaua'i	Compliant
Public Access, Open Space & Natural Resources Preservation Fund Commission	Kaua'i	Compliant



State of Hawai'i

Information Privacy and Security Council

Agency Privacy Designee Compliance Listing

Updated January 05, 2011

Department/Division/Board/Commission/Office	Br/Dept/ County	
County of Maui		
Legislative Branch		
County Council	Maui	Compliant
Office of the County Clerk	Maui	Compliant
Office of Council Services	Maui	Compliant
Executive Branch		
Mayor's Office		
Committee on the Status of Women	Maui	Compliant
Cost of Government Commission	Maui	Compliant
Kula Agricultural Park Committee	Maui	Compliant
Salary Commission	Maui	Compliant
Civil Defense Agency	Maui	Compliant
Department of Management/Managing Director	Maui	Compliant
Department of the Corporation Counsel	Maui	Compliant
Board of Ethics	Maui	Compliant
Charter Commission	Maui	Compliant
Department of Finance	Maui	Compliant
Real Property Ta270- Review Board	Maui	Compliant
Department of Public Works	Maui	Compliant
Board of Code Appeals	Maui	Compliant
Commission on Naming Streets, Parks, & Facilities	Maui	Compliant
Maui County Outdoor Lighting Standards Committee	Maui	Compliant
Subdivision Engineering Standards Committee	Maui	Compliant
Traffic Safety Council	Maui	Compliant
Department of Parks and Recreation	Maui	Compliant
Maui County Arborist Committee	Maui	Compliant
Department of Fire and Public Safety	Maui	Compliant
Fire & Public Safety Commission	Maui	Compliant
Department of Planning	Maui	Compliant
Board of Variances and Appeals	Maui	Compliant
Cultural Resources Commission	Maui	Compliant
Hana Advisory Committee to Maui Planning Commission	Maui	Compliant
Maui Redevelopment Agency	Maui	Compliant
Maui Planning Commission	Maui	Compliant
Lanai Planning Commission	Maui	Compliant
Molokai Planning Commission	Maui	Compliant
Urban Design Review Board	Maui	Compliant
Department of Personnel Services	Maui	Compliant
Affirmative Action Advisory Council	Maui	Compliant
Civil Service Commission	Maui	Compliant
Department of Housing and Human Concerns	Maui	Compliant
Animal Control Board	Maui	Compliant
Commission on Children & Youth	Maui	Compliant
Commission on Culture and the Arts	Maui	Compliant
Commission on Persons with Disabilities	Maui	Compliant
Council on Aging	Maui	Compliant
Grants Review Committee	Maui	Compliant
Department of Water Supply	Maui	Compliant
Board of Water Supply	Maui	Compliant



State of Hawai'i
Information Privacy and Security Council
Agency Privacy Designee Compliance Listing

Updated January 05, 2011

	Department/Division/Board/Commission/Office	Br/Dept/ County	
County of Maui			
	Department of Police	Maui	Compliant
	Police Commission	Maui	Compliant
	Department of Liquor Control	Maui	Compliant
	Liquor Control Adjudication Board	Maui	Compliant
	Liquor Control Commission	Maui	Compliant
	Department of the Prosecuting Attorney	Maui	Compliant
	Department of Transportation	Maui	Compliant
	Department of Environmental Management	Maui	Compliant
	Solid Waste Research & Advisory Committee	Maui	Compliant

Attachment B

State of Hawai'i
Information Privacy & Security Council
Personal Information (PI) System Report Log 2011 - HRS § 487N-7

Agency		Submitted Confirmation to IPSC that Agency Does Maintain PI System(s)	Submitted Confirmation to IPSC that Agency Does not Maintain PI System(s)	Did Not Submit PI Report Confirmation to IPSC
Legislative Branch	The Senate	X		
	The House of Representatives	X		
	Apportionment Advisory Councils			
	Office of the Auditor	X		
	Hawai'i State Ethics Commission (Report under DAGS)	X		
	Legislative Reference Bureau	X		
	Ombudsman	X		
Executive Branch	Office of the Governor	X		
	Office of the Lieutenant Governor	X		
	Department of Accounting and General Services	X		
	Department of Agriculture	X		
	Department of the Attorney General	X		
	Department of Budget and Finance	X		
	Department of Business, Economic Development and Tourism	X		
	Department of Commerce and Consumer Affairs	X		
	Department of Defense			X
	Department of Education	X		
	Hawaii State Board of Education	X		
	Charter School Administrative Office			X
	Hawaii Teacher Standards Board (Independent of DOE)		X	
	Department of Hawaiian Homelands			X
	Department of Health	X		
	Department of Human Resources Development	X		
	Department of Human Services	X		
	Department of Labor and Industrial Relations			X
	Department of Land and Natural Resources	X		
	Department of Public Safety			X
Department of Taxation	X			
Department of Transportation			X	
Oahu Metropolitan Planning Organization			X	
University of Hawai'i	X			
Hawai'i Council for the Humanities*				X
Judicial Branch		X		
Office of Hawaiian Affairs				X

State of Hawai'i
Information Privacy & Security Council
Personal Information (PI) System Report Log 2011 - HRS § 487N-7

Agency	Submitted Confirmation to IPSC that Agency Does Maintain PI System(s)	Submitted Confirmation to IPSC that Agency Does not Maintain PI System(s)	Did Not Submit PI Report Confirmation to IPSC
Charter Commission			X
Legislative Branch			
County Council			X
Office of the County Clerk			X
Office of Council Services			X
Executive Branch			
Mayor			X
Committee on the Status of Women			X
Cost of Government Commission			X
Kula Agricultural Park Committee			X
Salary Commission			X
Civil Defense Agency			X
Department of Management/Managing Director			X
Affirmative Action Advisory Council			X
Department of the Corporation Counsel			X
Board of Ethics			X
Charter Commission			X
Department of Finance			X
Real Property Tax Review Board			X
Department of Public Works			X
Board of Code Appeals			X
Commission on Naming Streets, Parks, & Facilities			X
Maui County Outdoor Lighting Standards Committee			X
Subdivision Engineering Standards Committee			X
Traffic Safety Council			X
Department of Parks and Recreation			X
Maui County Arborist Committee			X
Department of Fire and Public Safety			X
Fire & Public Safety Commission			X
County of Maui Department of Planning			X
Board of Variances and Appeals			X
Cultural Resources Commission			X
Hana Advisory Committee to Maui Planning Commission			X
Maui Redevelopment Agency			X
Maui Planning Commission			X
Lanai Planning Commission			X
Molokai Planning Commission			X
Urban Design Review Board			X
Department of Personnel Services			X
Civil Service Commission			X
Department of Housing and Human Concerns			X
Animal Control Board			X
Commission on Children & Youth			X
Commission on Culture and the Arts			X
Commission Persons with Disabilities			X
Council on Aging			X
Grants Review Committee			X
Department of Water Supply			X
Board of Water Supply			X
Department of Police			X
Police Commission			X
Department of Liquor Control			X
Liquor Control Adjudication Board			X

State of Hawai'i
Information Privacy & Security Council
Personal Information (PI) System Report Log 2011 - HRS § 487N-7

Agency	Submitted Confirmation to IPSC that Agency Does Maintain PI System(s)	Submitted Confirmation to IPSC that Agency Does not Maintain PI System(s)	Did Not Submit PI Report Confirmation to IPSC
Liquor Control Commission			X
Department of the Prosecuting Attorney			X
Department of Transportation			X
Department of Environmental Management			X
Solid Waste Research & Advisory Committee			X

State of Hawai'i
Information Privacy & Security Council
Personal Information (PI) System Report Log 2011 - HRS § 487N-7

Agency	Submitted Confirmation to IPSC that Agency Does Maintain PI System(s)	Submitted Confirmation to IPSC that Agency Does not Maintain PI System(s)	Did Not Submit PI Report Confirmation to IPSC
Legislative Branch			
County Council		X	
County Clerk	X		
Executive Branch			
Mayor			
Office of Boards & Commissions		X	
Board of Ethics		X	
Charter Commission		X	
Cost Control Commission		X	
Fire Commission		X	
Police Commission		X	
Salary Commission		X	
Agency on Elderly Affairs	X		
Agency on Housing	X		
Agency on Transportation	X		
Civil Defense Agency	X		
County of Kaua'i Office of Economic Development	X		
County Attorney	X		
Department of Finance	X		
Department of Liquor Control	X		
Department of Parks and Recreation	X		
Department of Personnel Services	X		
Police Department	X		
Department of Public Works	X		
Department of Water	X		
Board of Water Supply		X	
Fire Department	X		
Planning Department	X		
Planning Commission		X	
Kaua'i Historic Preservation Review Commission		X	
Public Access, Open Space & Natural Resources Preservation Fund Commission		X	
Prosecuting Attorney			X

State of Hawai'i
Information Privacy & Security Council
Personal Information (PI) System Report Log 2011 - HRS § 487N-7

Agency	Submitted Confirmation to IPSC that Agency Does Maintain PI System(s)	Submitted Confirmation to IPSC that Agency Does not Maintain PI System(s)	Did Not Submit PI Report Confirmation to IPSC
County of Hawai'i Charter Commission		X	
Prosecuting Attorney	X		
Legislative Branch			
County Council	X		
County Clerk	X		
Legislative Audit	X		
Executive Branch			
Mayor	X		
Managing Director	X		
Office of Corporation Counsel	X		
Board of Ethics		X	
Department of Finance	X		
Standardization Committee		X	
Real Property Tax Board of Review		X	
Pension Board		X	
Public Access, Open Space and Natural Resources Preservation Commission		X	
Planning Department	X		
Planning Commission		X	
Board of Appeals		X	
Department of Research and Development	X		
Department of Public Works	X		
Department of Parks and Recreation	X		
County Bands			X
Department of Information Technology	X		
Department of Environmental Management	X		
Environmental Management Commission		X	
Mass Transit Agency	X		
Transportation Commission		X	
Civil Defense Agency	X		
Office of Aging	X		
Office of Housing & Development	X		
Department of Human Resources	X		
Merit Appeals Board		X	
Salary Commission		X	
Division of Health & Safety	X		
Fire Department	X		
Fire Commission		X	
Department of Liquor Control	X		
Liquor Commission		X	
Liquor Control Adjudication Board		X	
Director of the Department of Liquor Control	X		
Police Department	X		
Police Commission		X	
Department of Water Supply	X		
Water Board	X		
Kailua Village Design Commission		X	
Workforce Investment Board		X	
Committee on Aging		X	
Arborist Advisory Committee			INACTIVE
Committee on People with Disabilities		X	
Veterans Advisory Committee		X	
Committee on the Status of Women		X	
Bicycle/Pedestrian Safety Committee			INACTIVE

County of Hawai'i

State of Hawai'i
Information Privacy & Security Council
Personal Information (PI) System Report Log 2011 - HRS § 487N-7

Agency	Submitted Confirmation to IPSC that Agency Does Maintain PI System(s)	Submitted Confirmation to IPSC that Agency Does not Maintain PI System(s)	Did Not Submit PI Report Confirmation to IPSC
City & County of Honolulu Charter Commission**		X	
Department of the Prosecuting Attorney	X		
Legislative Branch			
City Council		X	
City Clerk	X		
Office of Council Services		X	
Office of the City Auditor		X	
Executive Branch			
Mayor		X	
Board of Water Supply	X		
Department of the Corporation Counsel	X		
Ethics Commission		X	
Office of the Managing Director		X	
Office of Culture and the Arts		X	
Commission on Culture and the Arts		X	
Department of Budget and Fiscal Services	X		
Liquor Commission	X		
Department of Community Services	X		
Honolulu Committee on the Aging		X	
Honolulu County Committee on the Status of Women		X	
Mayor's Committee for People with Disabilities		X	
Department of Customer Services	X		
Department of Design and Construction	X		
Department of Emergency Management	X		
Honolulu Emergency Services Department	X		
Mayor's Emergency Medical Services Advisory		X	
Department of Enterprise Services	X		
Department of Environmental Services	X		
Department of Facility Maintenance	X		
Honolulu Fire Department	X		
Department of Human Resources	X		
Department of Information Technology		X	
Department of the Medical Examiner	X		
Department of Parks and Recreation	X		
Honolulu County Arborist Advisory Committee		X	
Mayor's Beautification Advisory Committee		X	
Department of Planning and Permitting		X	
Design Advisory Committee		X	
Honolulu Police Department		X	
Department of Transportation Services	X		
Mayor's Advisory Committee on Bicycling		X	
Transportation Commission		X	
Neighborhood Commission		X	
Royal Hawaiian Band		X	

The background of the entire page is a dark, marbled paper with intricate, swirling patterns in shades of blue, green, and gold. Overlaid on this are the dark, silhouetted shadows of palm fronds, which create a rhythmic, geometric pattern across the page. The text is centered in the upper half of the image.

HAWAII
STATE FOUNDATION ON CULTURE
AND THE ARTS

PAAUILO
STORE
BEER & WINE



3.75

HAWAII

STATE FOUNDATION ON CULTURE AND THE ARTS

Annual Report | Fiscal Year 2009-2010

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COVER ART: Light, texture, color and movement resonate in Doug Young's, *Water Series: Lanikuhonua/Anianiku*, commissioned for the Ronald T. Y. Moon Judiciary Complex and shown in detail (front cover) and as an architectural element (back cover). The *Water Series* depicts the healing waters of Anianiku, a protected reflecting cove in the Honouliuli *ahupua'a* (land division) of West O'ahu. The work was completed in FY 2009 and dedicated in FY 2010. Photos: Doug Young
LEFT: Part of the enduring landscape of rural Hawai'i are the country stores alongside two-lane highways. Kirk Kurokawa captures this ambience in his painting, *Paauilo Store*. Photo: Paul Kodama



EXECUTIVE DIRECTOR'S MESSAGE

Aloha mai kakou.

Fiscal year 2010 was hard on all of us, and especially hard on our agency. We lost eight positions. Combined with the three vacant positions that were abolished at the end of the previous year, the position cuts amounted to 37%, or 11 of 31 staff. Justifications used to support the cuts include that the arts should be supported by the private sector, federal funds, or individual donations. While there is truth in these arguments, they fail to acknowledge that with few exceptions, the arts cannot be supported exclusively by any one source.

Government's role in supporting the arts makes a world of difference from the standpoint of developing progressive perspectives in education and community building, ultimately contributing to quality in the lives of individuals and the social fabric of our communities. The State Plan of Hawai'i acknowledges these facts, validating government's

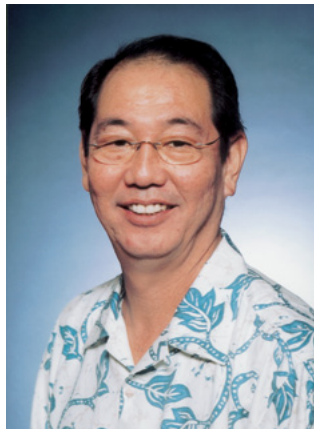


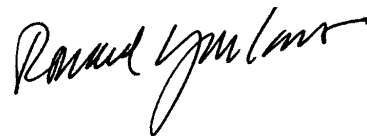
Photo: Ray Tanaka

role in supporting culture and the arts as essential—not expendable.

That being said, I am grateful to our Commission and staff who worked hard to maintain and complete projects and provide services despite the devastating cuts in staffing and operational funds. These tasks were not easy. We were challenged with morale and communication issues, in addition to having to weather our financial difficulties. We completed arduous work to enable us to work together more cohesively.

In desperate times, we all search our souls for what is right, what the Hawaiians call “pono,” to build on that which is essential. The Hawai'i State Foundation on Culture and the Arts did just that and we persevered.

We thank communities throughout the state for their belief in our purpose and our friends who stand by us still. We are grateful for strong support from our legislators and our colleagues here and nationally. To all who share in a commitment to the arts and the value of creativity and innovation, I extend our sincere aloha and an invitation to join with us in keeping the flame of Hawaii's heritage and future bright.



Ronald K. Yamakawa
Executive Director

THE HSFCA COMMISSION

Nine Commissioners, appointed to four-year terms by the Governor of the State of Hawai'i and confirmed by the Hawai'i State Senate, bring diverse and informed perspective to the Hawai'i State Foundation on Culture and the Arts.

Commission members serve without pay and work many hours to serve the people of Hawai'i in the interest of

strengthening arts and cultural programming throughout the state. Members are selected with regard to geographic and ethnic representation, as well as their demonstrated interest and knowledge of the HSFCA and its public mission.

The Commission sets policy for the agency in accordance with State legislation, Chapter 9-3, Hawai'i Revised Statutes.



Lori Thomas, Chairperson, O'ahu



Sandra Albano, O'ahu



Mary Begier, Hawai'i



Leonard Chow, O'ahu



Sandra Fong, O'ahu



Teri Freitas Gorman, Maui



James Jennings, Kaua'i



Peter Rosegg, O'ahu



Sheryl Seaman, O'ahu

MISSION / STRATEGIC PRIORITIES



The mission of the Hawai'i State Foundation on Culture and the Arts is to promote, perpetuate, preserve and encourage culture and the arts, history and the humanities as central to the quality of life of the people of Hawai'i.

Our current strategic plan identifies five agency priorities:

-  1. To develop and provide resources, leadership, advocacy and awareness in support of culture and the arts in Hawai'i
-  2. To increase access to culture and the arts, especially to Neighbor Island and underserved communities
-  3. To focus on encouraging and enhancing Native Hawaiian culture and arts, artists and practitioners
-  4. To increase opportunities for arts education and experiences, especially for pre-K-12 grade level students
-  5. To develop the Hawai'i State Art Museum as "the people's museum" and fulfill its potential in furtherance of HSFCA's mission and priorities

Established in 1965 as the official arts agency of the State of Hawai'i, the Hawai'i State Foundation on Culture and the Arts (HSFCA) stimulates, guides, and perpetuates culture, the arts, history and the humanities throughout the state.

The HSFCA is attached to the Department of Accounting and General Services for administrative purposes. Statutory provisions for the HSFCA are defined in Chapter 9, Hawai'i Revised Statutes. The enabling legislation for the Art in Public Places Program is Chapter 103, Section 8.5, Hawai'i Revised Statutes.

Funding for the agency and its programs is provided by appropriations from the Hawai'i State Legislature, federal grants from the National Endowment for the Arts, and the Department of Human Services, and contributions from private sources.



BIENNIUM GRANTS PROGRAM

The HSFCA Biennium Grants Program is the largest source of public funding for the arts in Hawai'i. This fact remains constant, despite the continual and severe decline in State funding over the years. The program provides support for projects that further culture, the arts, history and the

humanities in the lives of the people of Hawai'i. Funding for these grants is made possible through appropriations from the State Legislature, Hawaii's state partnership grant from the National Endowment for the Arts, and funds from the Department of Human Services. In FY 2010, 112 Biennium Grants were awarded statewide in the amount of \$1,286,082.

ARTS EDUCATION GRANTS

Organization	Project Title	Amount
Alliance for Drama Education	ADE BASIC	\$19,464
Bare & Core Expression	Basic Arts for All Program	\$5,418
Big Island Dance Council	Basic Big Island Dance Education Project	\$5,776
Chamber Music Hawaii	Student Lectures and Demonstrations	\$12,961
Children's Literature Hawai'i	Conf. on Literature & Hawaii's Children	\$8,598
Contemporary Museum, The	Art Off the Wall	\$6,156
Hawai'i Youth Opera Chorus	Basic—Hawai'i Youth Opera Chorus	\$11,826
Hawaii Orff Schulwerk Association	Basic Music and Movement Education	\$3,769
Hawaii Theatre Center	HTC Educational Programming	\$10,152
Hawaii Youth Symphony Association	Symphony Program: Music Education	\$25,615
Holualoa Foundation for Arts and Culture	Art Experiences	\$4,123
Honolulu Academy of Arts	Art for Schools	\$8,618
Honolulu Symphony Society	Youth Music Education Program	\$19,966
Honolulu Theatre for Youth	Statewide Theatre for Youth	\$40,160
Hui No'eau Visual Arts Center	Children & Youth Arts Education Programs	\$14,617
Kaua'i Academy of Creative Arts	Basic Young People's Summer Arts Program	\$17,815
Maui Academy of Performing Arts	School Partnership Programs	\$18,646
Maui Arts & Cultural Center	Partnering for Arts & Education	\$20,959
Maui Dance Council	Chance To Dance	\$28,876
Society for Kona's Education & Arts	Art of Learning	\$12,350
University of Hawai'i, Museum Studies	Tom Klobe Exhibition Design Lecture Series	\$1,291
Total		\$297,156

COMMUNITY ARTS GRANTS

Organization	Project Title	Amount
East Hawaii Cultural Council	East Hawaii Community Arts Support Basic	\$19,428
Garden Island Arts Council	Kaua'i Community Arts Basic Development	\$20,725
Hale'iwa Arts Festival	Hale'iwa Arts Festival 2010 Basic	\$5,083
Hawaii Handweavers' Hui	Textile Techniques in Metal	\$1,292
Hawai'i Literary Arts Council	Literature for All Hawaii's People	\$7,333
Honolulu Academy of Arts	Art To Go	\$12,167
Hui No'eau Visual Arts Center	Adult Arts Education Program	\$13,947
Ka'u Concert Society	ARTS EDUCATION FOR KA'U	\$7,167
Kalihi-Palama Culture and Arts Society, Inc.	Kalihi-Palama Basic Community Arts Project	\$15,350
Lahaina Arts Association/LAA	LAA/LAS Basic Art Outreach	\$5,833
Lahaina Arts Association/LAA	LAA/LAS Family Strengthening Art Project FY2010	\$8,175
Lana'i Art and Culture Center	Lana'i Art Center Community Arts Grant	\$12,059
Na'alehu Theatre	Basic Theatre Arts in Ka'u	\$4,333
Society for Kona's Education & Arts	Basic Art of Community	\$20,258
Sounding Joy Music Therapy, Inc.	Music for People with Special Needs	\$11,777
Storybook Theatre of Hawaii, The	Basic Community Cultural & Arts Initiative	\$11,475
Volcano Art Center	ARTS IN ACTION: At The Crater's Edge	\$10,983
Total		\$187,385

HERITAGE AND PRESERVATION GRANTS

Organization	Project Title	Amount
E kupaku ka aina	He Pili Wehena 'Ole O Na Kalo: Kalo in Hawai'i—an unseverable relationship	\$14,709
East Hawaii Cultural Council	Slack Key Guitar—Hawaii's Own	\$10,773
Friends of Waipahu Cultural Garden Park	Basic—Sharing the Plantation Heritage	\$19,417
Friends of Waipahu Cultural Garden Park	Relive the Plantation Days	\$16,833
Hawaii Council on Portuguese Heritage	Basic Portuguese Ethnic Heritage Project	\$9,220
Hawaii United Okinawa Association	Warabi Ashibi—Okinawan Cultural Day Camp for Children	\$13,980
Hawaiian Mission Children's Society/Mission Houses Museum	History in Our Everyday Lives	\$3,333
Hawaiian Scottish Association	Basic Proposal: 29th Annual Hawaiian Scottish Festival & Highland Games	\$5,500

Organization	Project Title	Amount
Hula Preservation Society	Our Last Living Link (Basic Proposal)	\$19,500
Jimpu Kai USA	Book: Ryukyu Geino 1	\$2,541
Kauai Historical Society	Kauai Basic History Program	\$22,500
Kona Historical Society	Historic Site Interpretation	\$21,167
Kona Historical Society	Providing Access to KHS Collections	\$16,917
Kualoa-Heeia Ecumenical Youth Project	Hui Lulima	\$20,333
Lyman Museum	Howard Pierce Photograph Collection Preservation and Access	\$23,220
Moanalua Gardens Foundation	32nd Annual Prince Lot Hula Festival	\$5,833
Volcano Art Center	NA MEA HAWAII	\$11,350
Total		\$237,126

PRESENTATION GRANTS

Organization	Project Title	Amount
Bamboo Ridge Press	Bamboo Ridge Press Basic	\$8,476
Contemporary Museum, The	Allyn Bromley Retrospective	\$7,306
Hawaii Craftsmen	Hawaii Craftsmen Basic Programs	\$9,709
Hawaii Quilt Guild	Hawaii Quilt Guild Annual Quilt Show—2010	\$1,303
Honolulu Printmakers	Visiting Artist/Annual Exhibition	\$2,226
Kauai Society of Artists	KSA Basic Visual Arts Program	\$4,783
University of Hawai'i—Art Gallery (Dept. of Art & Art History)	Special Exhibitions Program	\$4,520
University of Hawai'i—English Dept.	MANOA: A Pacific Journal of International Writing	\$5,747
University of Hawai'i—Art Dept.—Intersections	Intersections	\$2,581
Total		\$46,651

PRESENTATION—PERFORMING ARTS GRANTS

Organization	Project Title	Amount
Aloha Performing Arts Company	Basic Project Year 1	\$11,004
Bare & Core Expression	BACE Annual Season	\$2,600
Chamber Music Hawaii	Public Concerts	\$19,498

Organization	Project Title	Amount
Dance Pioneers	From the Horse's Mouth Hawaii	\$6,800
Diamond Head Theatre	Drowsy Chaperone	\$4,850
Ebb and Flow Arts, Inc.	BASIC	\$5,410
Ebb and Flow Arts, Inc.	Three Island Tours	\$2,770
Friends of the Ballet/Ballet Hawaii	Ballet Hawaii Full Length Ballets	\$16,189
Friends of the Ballet/Ballet Hawaii	Ballet Hawaii Presents the Washington Ballet	\$17,400
Hawai'i Youth Opera Chorus	Hawai'i Youth Opera Chorus	\$12,859
Hawaii Association of Music Societies	Support for Touring Ensembles	\$4,317
Hawai'i Concert Society	Hawai'i Concert Society Season	\$3,500
Hawaii Opera Theatre	Hawaii Opera Theatre—Arts Education FY10	\$29,104
Hawaii Performing Arts Company d.b.a. Manoa Valley Theatre	2009-2010 Play Production Program	\$5,374
Hawaii Performing Arts Festival	Hawaii Performing Arts Festival 5th Season	\$5,000
Hawaii Youth Symphony Association	Youth Symphony Community Outreach Concerts	\$22,306
Honolulu Chorale, The	Honolulu Chorale Basic	\$2,398
Honolulu Community Concert Band	Basic Operation of Community Band	\$1,400
Honolulu Symphony Society	Honolulu Symphony Main Concert Season	\$48,000
Honolulu Theatre for Youth	Developing New Work for Theatre	\$24,900
Jimpu Kai USA	Basic 2009 workshops	\$3,100
Ka'u Concert Society	BASIC PERFORMING ARTS PLAN FOR KA'U	\$3,400
Kahilu Theatre Foundation	Kids at Kahilu	\$17,100
Kahilu Theatre Foundation	Kahilu Theatre's 29th Season	\$13,600
Kauai Chorale, The	Basic: The Kauai Chorale Annual Concert Series	\$1,150
Kauai Music Festival, The	2009 Kauai Music Festival Basic	\$16,912
Kumu Kahua Theatre	Kumu Kahua Theatre Basic Season	\$20,366
Kumu Kahua Theatre	Kumu Kahua Heritage and Preservation for Two New Plays	\$6,800
Maui Academy of Performing Arts	Broadway Maui Style	\$25,200
Maui Arts & Cultural Center	Any Kine Performances & Residency	\$29,000
Maui Choral Arts Association	2009 Season	\$1,200
Maui Community Theatre	Maui Community Theater Basic	\$7,620
Monkey Waterfall	Monkey Waterfall—Basic '09	\$4,675
Moving World Foundation	The Basic Force Behind Dance	\$1,796
Nova Arts Foundation, Inc	IONA New Work	\$14,220

Organization	Project Title	Amount
Nova Arts Foundation, Inc.	IONA Repertory Work	\$10,220
Oahu Choral Society	Oahu Choral Society	\$9,300
Oahu Choral Society	Honolulu Chamber Choir	\$5,400
Performing Arts Presenters of Hawaii	Statewide Touring Arts	\$11,000
Performing Arts Presenters of Hawaii	Statewide Dance Touring	\$11,000
Tau Dance Theater	Ho'oulu/Ho'one'e	\$5,582
Tau Dance Theater	Basic Operating	\$8,994
University of Hawai'i, Department of Theatre and Dance	Jingju (Beijing Opera) Residency 2009-10	\$15,621
University of Hawai'i, Department of Theatre and Dance	Bertolt Brecht's 'The Judith of Shimoda'	\$6,596
University of Hawai'i, Outreach College	World Performance Series	\$7,700
University of Hawai'i—Leeward CC Theatre	Arts Aloha 2010	\$10,018
West Hawaii Dance Theatre	West Hawaii Dance Theatre Basic Program	\$3,315
Windward Arts Council	Music Education in the Community: Chamber Music, Windward, Oahu	\$1,200
Total		\$517,764

HSFCA GRANTS PANELISTS FISCAL BIENNIUM 2010-2011

Knowledgeable and experienced individuals are appointed by the HSFCA Commission to review and evaluate grant proposals. The following advisory panelists met in April 2009 to review proposals for the 2010 and 2011 fiscal years.

Arts Education	Community Arts	Heritage and Preservation	Presentation	Presentation—Performing Arts
Marcia Morse	Chantal Chung	Maja Clark	Neida Bangerter	Maggie Costigan
Amy Schiffner	Selena Ching	Deborah Dunn	Carol Khewhok	Chizuko Endo
Inger Tully	Deena Dray	Mike Fayé	Susan Killeen	Bill Lewis
Cary Valentine	Phyllis Look	Hokulani Holt Padilla	Victoria Kneubuhl	Frank Stewart
Barbara Woerner	Piilani Smith	Toni Han Palermo	Eva Lee	Wendy Valentine
Marcia Sakamoto Wong	Todd Yamashita	Kim Schauman	Ronald Michioka	
Paul Wood			Tomoe Nimori	

AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) Federal Stimulus Grants



At a time when funding was particularly stressed, federal stimulus grants were especially timely for Hawaii's arts community. The National Endowment for the Arts awarded the HSFCA

At a time when funding was particularly stressed, federal stimulus grants were especially timely for Hawaii's arts community. The National Endowment for the Arts awarded the HSFCA



\$292,900 in stimulus funds specifically for job preservation in the nonprofit arts sector. The HSFCA retained \$42,900 to administer the program and assist with implementing core agency grants programs. ARRA grants to the following organizations were awarded:

Organization	Island	Award
Alliance for Drama Education	O'ahu	\$12,007
Bamboo Ridge Press	O'ahu	\$7,500
Chamber Music Hawaii	O'ahu	\$7,500
The Contemporary Museum	O'ahu	\$8,083
East Hawaii Cultural Council	Hawai'i	\$10,250
Hawaii Theatre Center	O'ahu	\$25,000
Hawaii Youth Opera Chorus	O'ahu	\$10,000
Hawaii Youth Symphony Association	O'ahu	\$7,500
Hawaiian Mission Children's Society	O'ahu	\$11,250
Honolulu Academy of Arts	O'ahu	\$7,500
Honolulu Theatre for Youth	O'ahu	\$10,500

Organization	Island	Award
Hui No'eau Visual Arts Center	Maui	\$7,500
Hula Preservation Society	O'ahu	\$23,400
Kahilu Theatre Foundation	Hawai'i	\$7,750
Kauai Historical Society	Kaua'i	\$7,500
Kona Historical Society	Hawai'i	\$15,760
Kumu Kahua Theatre	O'ahu	\$15,760
Lyman House Memorial Museum	Hawai'i	\$25,000
Maui Arts and Cultural Center	Maui	\$7,500
Naalehu Theatre	Hawai'i	\$7,500
Society for Kona's Education & Arts	Hawai'i	\$7,500
Sounding Joy Music Therapy, Inc.	O'ahu	\$7,500

TOTAL **\$250,000**

ARRA REVIEW PANEL

A special panel was appointed to review ARRA applications and recommend funding to the HSFCA Commission. The HSFCA is grateful for the services rendered by these articulate, generous and knowledgeable individuals.

Mike Fayé, Kaua'i

Bill Lewis, Maui

Marcia Morse, O'ahu

Toni Han Palermo, O'ahu

Gae Bergquist Trommald, O'ahu

Paul Wood, O'ahu



For more than three decades, the HSFCFA has initiated, supported, and collaborated with the arts and cultural community to further arts programming, cultural preservation, and educational initiatives throughout Hawai'i. Legislatively mandated programs in six key areas were administered through December 2009:

- Folk & Traditional Arts
- History and Humanities
- Arts Education
- Community Arts

- Individual Artist Awards & Fellowships
- Public Information

In January 2010, staffing was cut for Public Information and programs in History and Humanities and Individual Artist Awards & Fellowships. Due to the State's reduction in force process, the three remaining programs were subject to staffing changes. The HSFCFA acknowledges the great effort displaced and current staff members have made in maintaining the quality, vitality, and consistency of the following programs.

FOLK & TRADITIONAL ARTS APPRENTICESHIP GRANTS PROGRAM

Since 1985, 255 apprenticeship grants have been funded to assist with cultural preservation. Three dozen different cultural arts or practices from eleven different cultural communities in Hawai'i have received support. In 2010, eight apprenticeship projects were implemented.



Slack key guitar master Ledward Kaapana up close during a work session with his apprentice, Doug Fitch.

Photo: J. W. Junker

Teaching Artist	Apprentice	Apprenticeship Grant Project Title	Grant Amount
Kenny Endo	Kirstin Pauka	Edo Bayashi & Hogaku Hayashi Drumming (Japanese Taiko)	\$5,000
Chin Lee	Doris Cheng	Cantonese Opera	\$5,000
Ledward Kaapana	Doug Fitch	Ki Ho Alu—Kalapana Style (Slack Key Guitar)	\$5,000
H. Wayne Mendoza	Michael Javines	Folk Dance of the Philippines & Native Percussions	\$5,000
Cheryl Nakasone	Charlene Gima	Okinawan Dance & Kumi Udui (Dance Drama)	\$5,000
Cyril Pahinui	Peter Moon, Jr.	Slack Key in the Pahinui Tunings and Style	\$5,000
Frank Sinenci	Apprentice group	Hale Kahiko (Hawaiian Indigenous Architecture)	\$5,000
Dalani Tanahy	Cheryl Pukahi	Hawaiian Kapa Making	\$5,000
TOTAL			\$40,000

ARTS EDUCATION PROGRAM

The HSFCA Arts Education Program goals are consistent with, not only the HSFCA Strategic Plan, but also with the Hawaii ARTS FIRST Partners (AFP) Strategic Plan and the goals of the National Endowment for the Arts. Since its inception in 2001, the ARTS FIRST Partnership has worked to provide access to high quality arts education for all students in Hawai'i. The HSFCA Arts Education Program has been key to the Partnership's success in this endeavor. There are three major strands to the Arts Education Program: 1) professional development for classroom teachers, 2) the Artistic Teaching Partners, and 3) Artists in the Schools residency grants. Within these strands are multiple HSFCA-initiated projects that are collaborations with other ARTS FIRST Partners. HSFCA could not implement these programs without our partners. Together, we achieve more than we could individually. The many accomplishments of all the ARTS FIRST Partners are listed on pages 26-33.



Photos: Hawaii Arts Alliance



Classroom teachers and teaching artists learning together at the O'ahu Summer Institute.

ARTISTS IN THE SCHOOLS (AITS) PROGRAM GRANTS

The AITS Program administers funding from the State Legislature based on the recommendations of a grants panel, with approval of the HSFCA Commission. This is the second year that the Hawaii Community Foundation contributed matching funds for the program, thereby doubling the funds available for school grants.

Public schools, including charter schools, may apply annually to the HSFCA for grants of up to \$6000 per school

for residencies in visual arts, dance, drama, music and literary arts. A residency engages students in eight or more sessions with a teaching artist from the HSFCA's Artistic Teaching Partners Roster. The purpose is to spark students' awareness of and interest in the arts and also to develop students' knowledge and skills in the arts. The emphasis is on students *doing art*.

In 2009-2010, \$442,457 was granted to 83 schools, reaching more than 11,000 students.

LIST OF AITS GRANTS FOR ARTS RESIDENCIES

School	Project title	Teaching Artist	Grant \$
Aiea Elementary	Playful Percussions and Movement!	Michael Wall	\$6,000
Aiea Intermediate	Learning Through Engagement: Drama in the Language Arts and Social Studies Classes	Honolulu Theatre for Youth	\$5,000
Aikahi Elementary	Learning Through Engagement: Drama in Lanugage Arts, Social Studies and Health Classes	Honolulu Theatre for Youth	\$6,000
Ala Wai Elementary	Visual Art and Math Meet the Shape Shifters – "Creating Geometric Solids"	Kathleen Kam	\$4,318
Aliamanu Elementary	Kevin Henkes Production	Alliance for Drama Education	\$5,090
Barbers Point Elementary	Jets with the Beat	Michael Wall	\$6,000
Haiku Elementary	Making Math Move	Maui Dance Council	\$5,730
Haleiwa Elementary	Going Green	Alliance for Drama Education	\$3,545
Hana High and Elementary	Making Math Move	Maui Dance Council	\$5,450
Hawaii Academy of Arts & Sciences PCS	Introducing the Visual Arts, and Dance with Science and the Language Arts – "Exploring Imagery of the Kumulipo"	Lasensua Osborne, Kathleen Kam	\$6,000
Hilo Union Elementary	Exploring Ocean Environments Through Movement	Vicky Robbins	\$5,700
Hokulani Elementary	Sustaining the Arts – One Keiki at a Time	Mimi E. Wisnosky, Mimi N. Wisnosky, M.O.A. Flower Circles for Children, James McCarthy, Hester Kamin	\$6,000
Honaunau Elementary	Learning Through Engagement: Drama in the Language Arts Class	Honolulu Theatre for Youth	\$4,954
Honokaa High & Intermediate	Learning Through Engagement: Drama in the ELL Class	Honolulu Theatre for Youth	\$3,818
Hookena Elementary	Arts Fostering Learning	Society for Kona's Education & Art (SKEA)	\$4,090

School	Project title	Teaching Artist	Grant \$
Jefferson Elementary	Getting Dramatic	Alliance for Drama Education	\$6,000
Ka 'Umeke Kaeo PCS	The Kumulipo-A Discovery of Hawaiian Genesis through the Visual Arts, Science and the Language Arts	Kathleen Kam	\$5,918
Kaahumanu Elementary	Dramatic Plants and Animals	The Drama Crew (Michael Cowell)	\$5,613
Kahala Elementary	Bringing Stories to Life: Deepening Comprehension Through Drama Strategies	James McCarthy	\$5,477
Kahului Elementary	Making Math Move	Maui Dance Council	\$6,000
Kailua Elementary	Create, Perform, and Respond: Integrating Drama and Core Standards, K-6	The Drama Crew (Michael Cowell)	\$6,000
Kainalu Elementary	Me in 20 Years – The Magazine Computer Art Project	Kristi Petosa-Sigel	\$4,036
Kalaheo Elementary	Visual Art and Math Meet Global Communities – Exploring Mask Making	Kathleen Kam	\$5,318
Kaleiopuu Elementary	"POSitive" (K-"Play On, w/Dr. Seuss" & Gr. 6-"Part of the Solution")	Alliance for Drama Education	\$6,000
Kalihi-waena Elementary	Music and Celebrations – We Walk to Different Drums	Michael Wall	\$6,000
Kanoelani Elementary	Kids for Character	Alliance for Drama Education	\$5,227
Kapiolani Elementary	Environment and the Arts	Society for Kona's Education & Art (SKEA)	\$6,000
Kapolei Middle	Drumming Up Discipline	Michael Wall	\$6,000
Kapunahala Elementary	Coral Reef: Exploring Hawaii Ecosystems Through Drama	Ohia Productions	\$6,000
Kaumana Elementary	Puppets and Bookmaking Meet Science – Water Beneath Our Feet	Kathleen Kam	\$4,436
Kaunakakai Elementary	Poetry in Motion	Maui Dance Council	\$6,000
Ke Kula O Samuel M. Kamakau Lab PCS	Learning Through Engagement: Drama in the Science Class	Honolulu Theatre for Youth	\$4,545
Keaau High	Wall of Respect for Youth – Mural Making "Hooks Up" with History, Social Studies and Math	Kathleen Kam	\$4,018
Kealakehe Elementary	Learning Through Engagement: Drama in the English Language Learning Class	Honolulu Theatre for Youth	\$6,000
Kihei Elementary	Nature's Cycles in Motion	Lasensua Osborne	\$5,255
Kihei PCS	Under Pressure: Using Drama to Rehearse Life Skills	Maui Academy of Performing Arts	\$5,910
Kilauea Elementary	Fundamentals of Music, Using Song and Percussion and Dancing the Story	Lotus Arts Foundation (Valentines), Maui Ola Cook	\$5,973
Kilohana Elementary	Making Math Move	Maui Dance Council	\$5,350

School	Project title	Teaching Artist	Grant \$
Kipapa Elementary	How Dramatic! Unifying Principles of Literature and Life on Earth	James McCarthy	\$5,659
Koko Head Elementary	Visual Arts and Language Cross Paths with Science—Drawing Upon the Kumulipo	Kathleen Kam	\$4,636
Konawaena Elementary	Weaving the Arts into the Curriculum	Society for Kona's Education & Art (SKEA)	\$4,864
Konawaena High	HSFCA AITS Program 2009-2010	Society for Kona's Education & Art (SKEA)	\$6,000
Kua O Ka La PCS	Nature's Cycles in Motion	Lasensua Osborne	\$2,145
Lanai High & Elementary	Poetry in Motion	Maui Dance Council	\$6,000
Lanikai Elementary PCS	Learning Through Engagement: Drama in the Language Arts Class	Honolulu Theatre for Youth	\$4,000
Laupahoehoe High & Elementary	Artists in the Schools	Angel Prince, Lisa Louise Adams, Sandra MacLees	\$5,691
Liholiho Elementary	Wellness and the Arts!	Elizabeth Train	\$6,000
Makakilo Elementary	Beyond the Books—A Musical Transmission of Culture	Michael Wall	\$6,000
Makalapa Elementary	Going Green	Alliance for Drama Education	\$5,455
Manoa Elementary	Forward to the Past	Jacqueline Rush Lee	\$6,000
Maui Waena Intermediate	Hawaiian Archipelago: Using Aqua Media to Depict Hawaiian Ocean Life	Connie Adams	\$5,000
Maunaloa Elementary	Poetry in Motion	Maui Dance Council	\$4,500
Mililani Mauka Elementary	Telling Stories with Music and Art	The Drama Crew (Michael Cowell)	\$6,000
Mililani Middle	Learning Through Engagement: Drama in the Social Studies Class	Honolulu Theatre for Youth	\$6,000
Moanalua Middle	Shakespeare is the Standard	The Drama Crew (Michael Cowell)	\$6,000
Mokapu Elementary	Character Development Through the Arts	Alliance for Drama Education	\$5,455
Mt. View Elementary	Moving Math and Reading Rhythmically	Lasensua Osborne	\$2,709
Nahienaena Elementary	Nature's Cycles in Motion	Lasensua Osborne	\$5,891
Niu Valley Middle	The Drums Tell a Story	Michael Wall	\$5,900
Noelani Elementary	MARTH—Exploring Math Through Art: Tidepool Collages	Marcia Pasqua	\$5,455
Nu'uanu Elementary	Dynamic, Dramatic Standards: Grades K, 1, 2, 4	The Drama Crew (Michael Cowell)	\$6,000
Olomana School	Drumming for Success	Michael Wall	\$5,455
Paia Elementary	Making Math Move	Maui Dance Council	\$5,300
Palolo Elementary	Learning With Friends	Alliance for Drama Education	\$6,000

School	Project title	Teaching Artist	Grant \$
Pauoa Elementary	Learning Through Engagement: Drama in the Social Studies Class	Honolulu Theatre for Youth	\$6,000
Pearl Harbor Kai Elementary	Native Rhythmic Vibrations	Michael Wall	\$6,000
Pomaikai Elementary	Playback Theatre: From the Stage to the Page	Maui Academy of Performing Arts	\$6,000
Pukalani Elementary	Using the Arts to Integrate the GLOs	Marguerite Heart, Paul Wood	\$5,545
Red Hill Elementary	Learning Through Engagement: Drama in the Science Class	Honolulu Theatre for Youth	\$6,000
Roosevelt High	Learning Through Engagement: Writing in Dramatic Form	Honolulu Theatre for Youth	\$4,000
Salt Lake Elementary	Poetry From the Insides	Kealoha	\$3,073
Voyager PCS	Drama and Language Arts–Developing Story	Honolulu Theatre for Youth	\$5,236
Waiakeawaena Elementary	Visual Arts and Puppets Meet Science–Water World Revisited–Malama o Ke Kai	Kathleen Kam	\$2,690
Waialua Elementary	Art: Instrument for Learning	Kristi Petosa-Sigel, Badenyaa African Diaspora Dance Theatre	\$4,181
Waiuu Elementary	The Visual Arts Meet Science and the Language Arts–Drawing Upon Images of Nani Ke Ao Nei Mural	Kathleen Kam	\$5,664
Waihee Elementary	Under Pressure: Using Drama to Rehearse Life Skills	Maui Academy of Performing Arts	\$6,000
Waikele Elementary	Supporting Diverse Learners Through Opera	Hawaii Opera Theatre	\$6,000
Waikiki Elementary	Learning Through Engagement: Drama and Literacy	Honolulu Theatre for Youth	\$6,000
Wailuku Elementary	Poetry in Motion	Maui Dance Council	\$6,000
Waimalu Elementary	Learning Through Engagement: Drama in the Social Studies Class	Honolulu Theatre for Youth	\$6,000
Waimea Middle PCCS	Poetry Alive!	Kealoha	\$6,000
Washington Middle	Tell Me About It	James McCarthy	\$3,182
Wilson Elementary	From Concord to Kealakekua: Walking in the Steps of Early Colonists and Ancient Hawaiians–Fifth and Fourth Graders Travel Through Time Via Drama	James McCarthy	\$6,000

AITS FINANCIAL SUMMARY

State General Funds	\$215,284
Hawaii Community Foundation Funds	\$227,173
TOTAL	\$442,457



Taiko residency at Waiiau Elementary School.



Greywolf presents lecture on Mongolian culture at the Kane'ohē Public Library.

DESIGNATED PROGRAMS FINANCIAL SUMMARY

Fiscal Year ended June 30, 2010

REVENUES

State of Hawai'i.....	\$406,384.00
National Endowment for the Arts Partnership.....	\$261,453.00
Works of Art Special Fund.....	\$25,000.00
TOTAL.....	\$692,837.00

EXPENDITURES & ENCUMBRANCES

Program Operations.....	\$5,169.78
Arts Education.....	\$380,284.00
ARTS FIRST Professional Development for Teaching Artists.....	\$55,000.00
ARTS FIRST Professional Development for Classroom Teachers.....	\$55,000.00
ARTS FIRST Summer Institutes.....	\$10,000.00
ARTS FIRST Administrative Cost.....	\$25,000.00
Artists in the Schools*.....	\$215,284.00
Poetry Out Loud.....	\$20,000.00
Folk & Traditional Arts Infrastructure.....	\$100,000.00
Apprenticeship Program.....	\$50,000.00
Hawaii Masterpieces/Hula-Kapa Documentary.....	\$50,000.00
Community Arts /Statewide Presenting and Touring Outreach.....	\$136,200.00
Public Information.....	\$20,606.49
TOTAL.....	\$642,260.27

* Matching funds from the Hawaii Community Foundation in support of the Artists in the Schools Program are not administered through the State

ART IN PUBLIC PLACES PROGRAM

Established in 1967, Hawaii’s Art in Public Places Program is the oldest such state program in the nation. Its objectives are to enhance the environmental quality of public spaces and buildings; to cultivate public awareness of the visual arts; to contribute

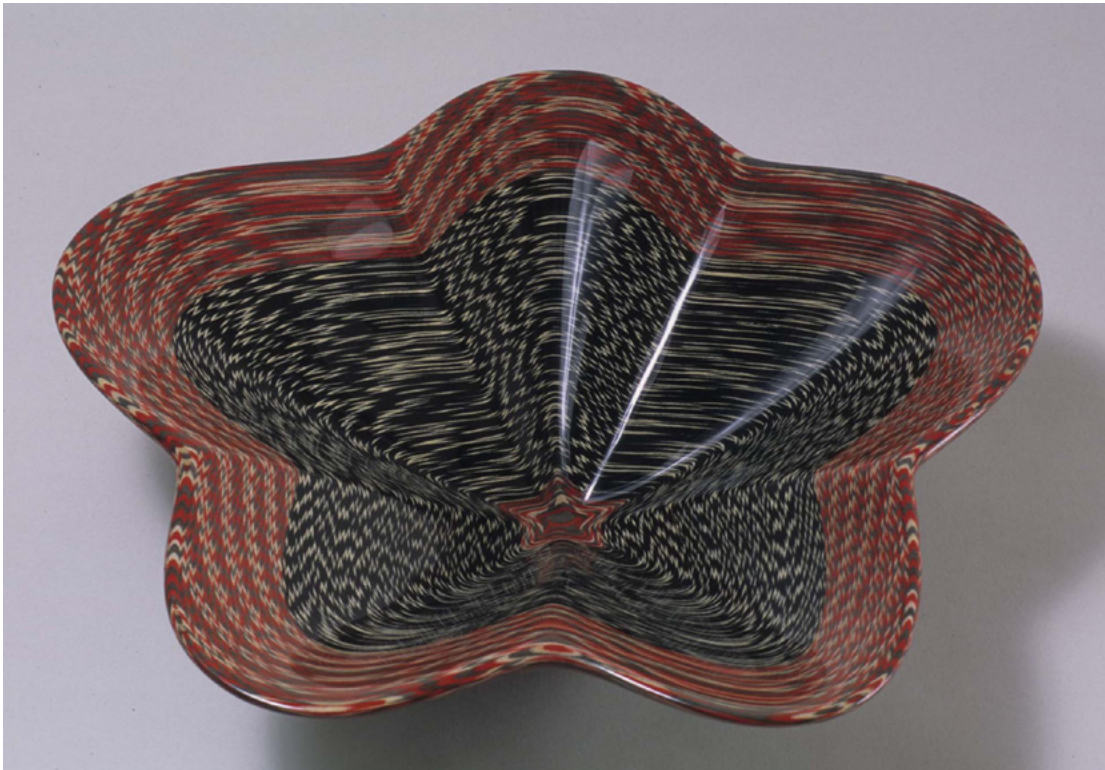
to the development and recognition of a professional arts community; and to acquire, interpret, preserve and display works of art expressive of the Hawaiian islands, the multicultural heritage of its people and the creative and interpretive vitality of its artists.

APP COMPLETED COMMISSIONS

Artist	Title	Medium	Price
Abe, Satoru	A Path Through the Trees	bronze sculpture	\$385,000.00
Number of Artworks	1	Total:	\$385,000.00



Hawaii’s living treasure, Satoru Abe, created *A Path Through the Trees*, for the Maui Community College campus. The work depicts the sculptor’s trademark elements, trees within a circle, as a symbol for life.



Star Bowl by Rock Cross

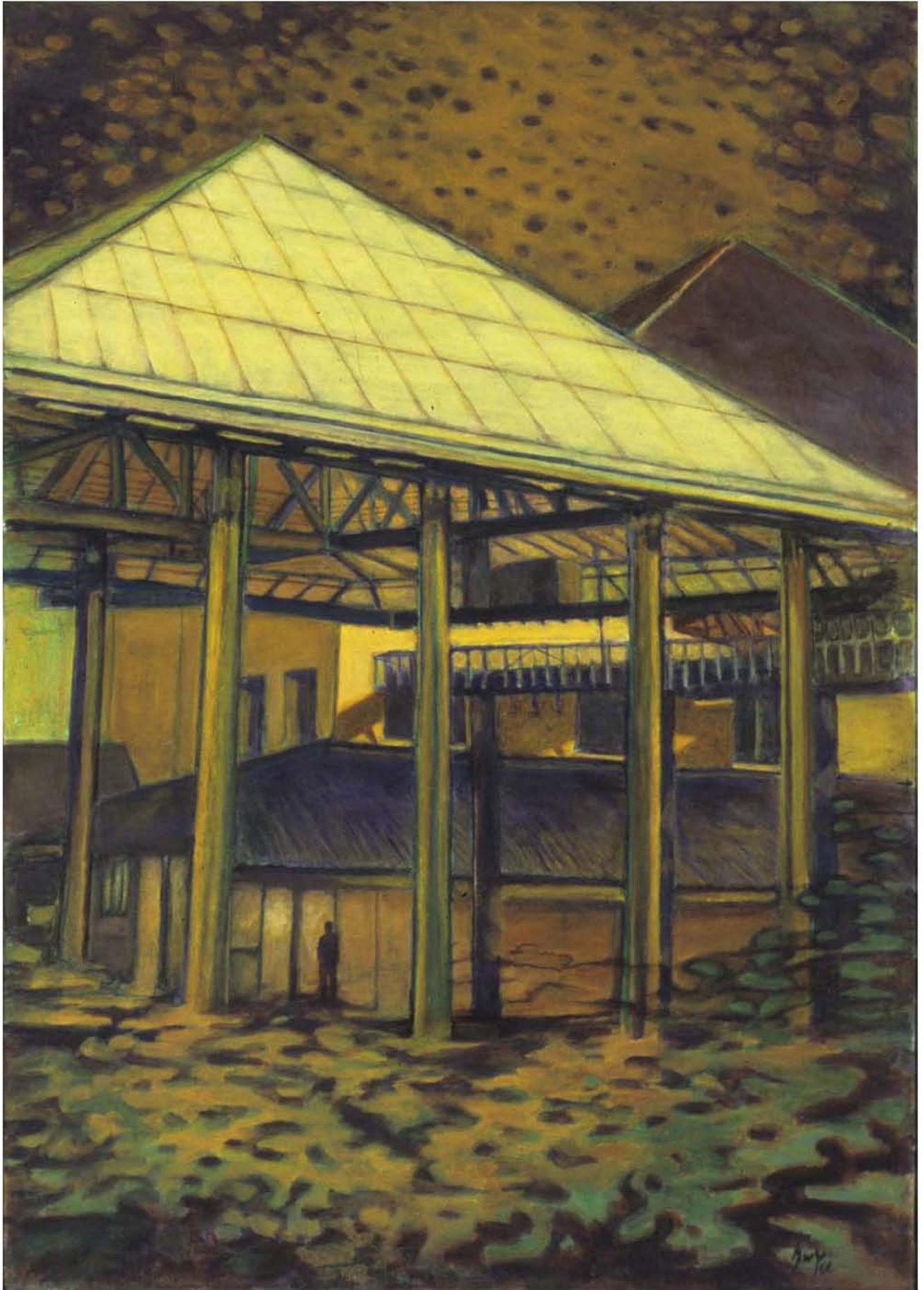
APP RELOCATABLE WORKS OF ART PURCHASES "Museum Without Walls"

Artist	Title	Medium	Price
Alm, Harriet	<i>Golden Lily Kiss</i>	quilt	\$937.50
Amemiya, Clayton	<i>Pi'ihonua Stream II</i>	clay	\$4,000.00
Babcock, Mary	<i>Untitled</i>	vintage fishing line	\$1,200.00
Baranyk, Crystal	<i>Roots</i>	scratchboard	\$3,645.84
Bilodeau, Fanny S.	<i>Farmer's Market Beets</i>	oil on board	\$6,000.00
Binkley, Andrew	<i>Just Being</i>	Alms archival inkjet photograph	\$2,717.38
Bisgard, Judy D.	<i>Black Dog</i>	woodblock print (oil)	\$2,031.26
Britt, Doug	<i>Atlas Lines</i>	mixed media	\$2,600.00
Camarillo II, Ramon	<i>Crack Up</i>	raku	\$2,200.00
Chai, Mark A.	<i>Hi'iaka's Skirt Becomes a Surfboard for Lohi'au</i>	recycled green plastic, reclaimed wood	\$1,458.32
Cross, Rock	<i>Star Bowl</i>	wood	\$2,900.00
Diminyatz, Kevin	<i>Moco</i>	oil encaustic	\$800.00
French, Sally	<i>Fumiko: Keeper of the Meek</i>	digital photography	\$2,500.00

Artist	Title	Medium	Price
Ginther, Curt	<i>Carlos at Kaimana XI</i>	acrylic on canvas	\$4,000.00
Goodrich, Mary	<i>Devastation Trail</i>	digital photograph	\$275.00
Hess, Lynda	<i>Inner Child</i>	oil on canvas	\$1,900.00
Hevner, Richard	<i>Harvest Costume</i>	pastel, charcoal on paper	\$6,093.77
Higa, Ryan	<i>Yesterday Ain't Over Yet</i>	acrylic on wood	\$700.00
Hoff, Gary	<i>FIGHT ON THE LAVA</i>	watercolor, colored pencil, pens	\$3,000.00
Kikuyama, Ben	<i>Oduuseia</i>	oil, acrylic, found objects on	\$5,729.19
Kim, Jeeun	<i>Mending</i>	Korean mulberry paper, cotton thread	\$3,000.00
Kramer, Pat	<i>Ebony Drift</i>	wood, turned and carved	\$6,000.00
Kurokawa, Kirk	<i>Café</i>	oil	\$5,104.18
	<i>Paauilo Store</i>	oil on board	\$5,520.85
Lang, Stephen	<i>Challenge</i>	wood	\$5,400.00
Lum, Rochelle	<i>Plop!</i>	raku	\$1,000.00
Maielua, Pualani Lincoln	<i>Puhenehene</i>	kapa from wild wauke of Kalopa, natural dyes	\$1,562.49
Malanaphy, Brian	<i>Manana Street Triptych</i>	photograph	\$6,277.48
Marzan, Marques	<i>Wahine'oma'o</i>	na'au pua'a (pig gut)	\$1,562.49

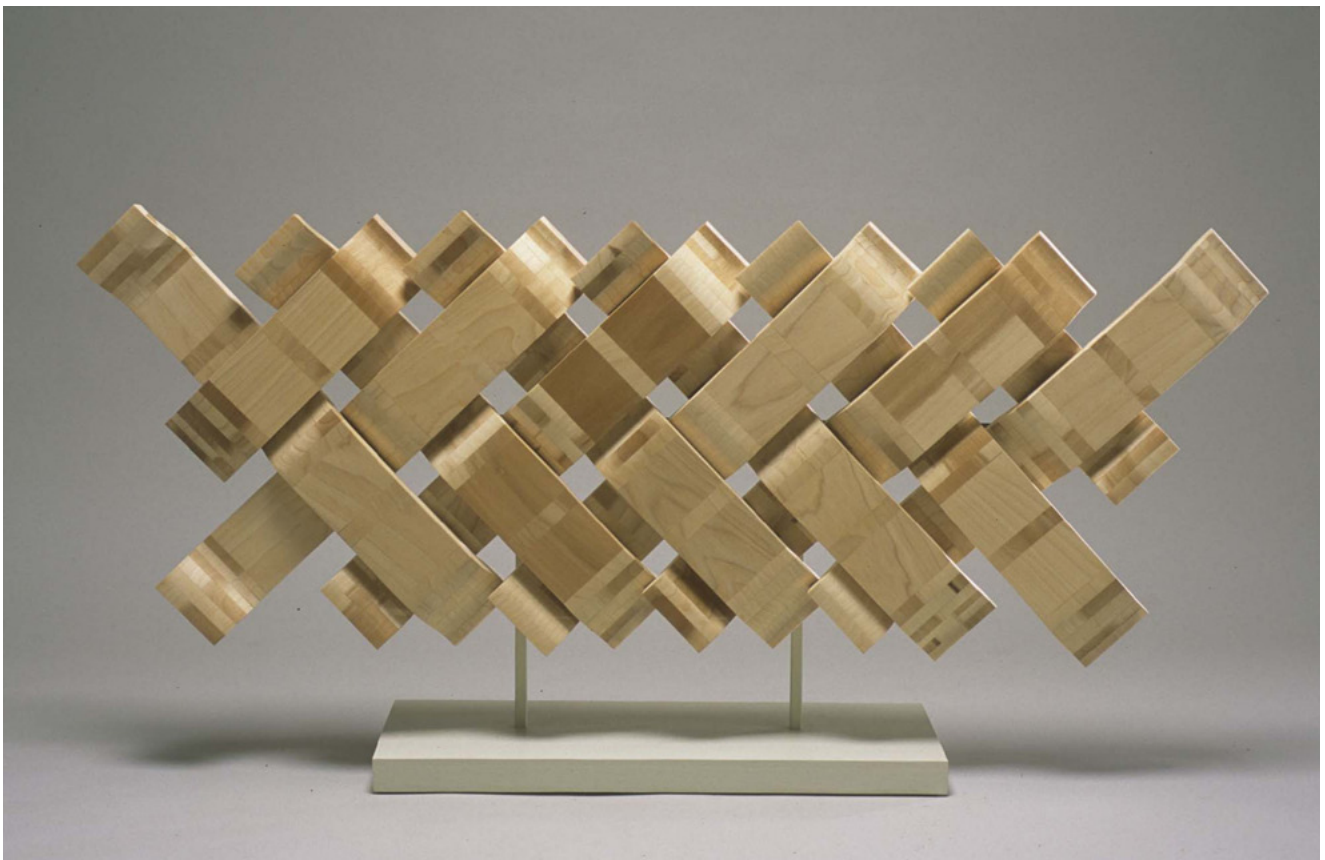


Puhenehene by Pualani Lincoln Maielua

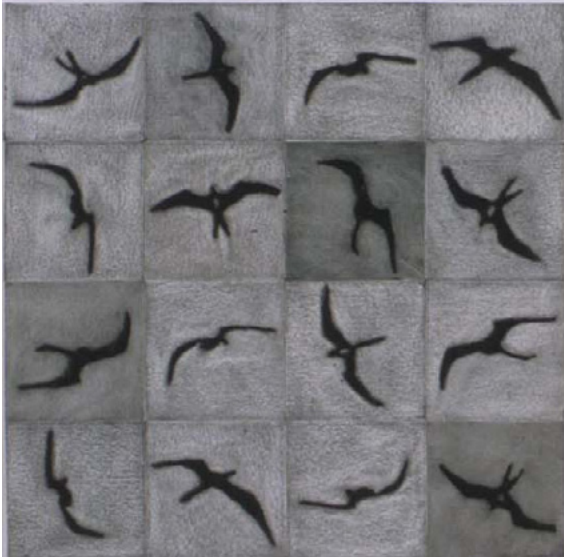


Pundy's Vision by Sidney Yee

Artist	Title	Medium	Price
Miyata, Wayne	<i>Dot Series II</i>	stainless steel, clay	\$3,800.00
Mydock, John	<i>Transfiguration</i>	wood, Norfolk pine	\$2,500.00
Okamoto, Barbara	<i>Ties Don't Bind 3</i>	monotype, colored pencil	\$1,200.00
Padilla, Aaron	<i>Herring</i>	poplar wood	\$2,500.00
	<i>Watermark</i>	acrylic on wood	\$5,000.00
Pao, Carl Franklin Ka'aiala'au	<i>Pa</i>	acrylic and pencil	\$1,666.66
Ray, Margo	<i>Containment Landscape #6</i>	aquatint, digital print, chine	\$700.00
Romanchak, Abigail	<i>He 'Iwa Ke Aloha E Ho'omao A'e</i>	etching ink, paper, carborundum	\$3,749.98
Rowley, Johannette	<i>Earth Angel</i>	porcelain, fish skin, waxed linen	\$2,000.00
Sartoris, Georgia	<i>Hue Wai Pawehe</i>	dyed gourd	\$1,200.00
Shoemaker, John	<i>Desert Catenary</i>	encaustic, oil	\$3,750.01
Stillwell, Jefferson	<i>Totem Poles of Toon Town</i>	enamel paint on ripped rags	\$3,275.01
Szegedy, Esther	<i>The Best Duck in the Whole Wide World</i>	pastel, crayon	\$300.00
Uyehara, Lori	<i>Aqua Flora</i>	mixed media fiber	\$300.00



Herring by Aaron Padilla



He 'Iwa Ke Aloha E Ho'omao A'e by Abigail Romanchak

Artist	Title	Medium	Price
Vilhauer, Nancy	<i>hala 'ole</i>	etching, aquatint	\$340.00
Wee, Russell	<i>Kasai</i>	raku	\$2,000.00
	<i>Mauna</i>	raku	\$2,000.00
Worcester, William	<i>Ipu Wai</i>	hand blown and sandblasted	\$3,645.85
Yamada, Shige	<i>Night Burning of Cane Fields</i>	watercolor	\$8,000.00
Yee, Sidney T.K.	<i>Pundy's Vision</i>	acrylic	\$5,208.35
	<i>What is Next to TURNIP</i>	acrylic on wood	\$3,958.35
	<i>Why Worship the Turnip? Because: I CAN</i>	mixed media	\$4,375.01
Number of Purchases	51	Total:	\$151,584.97

APP RELOCATABLE WORKS OF ART— GIFTS TO THE COLLECTION

Artist	Title	Medium	Price (Appraised Value)
Hitchcock, D.	<i>Waimea Canyon, Kauai</i>	oil on canvas	\$95,000.00
Little, Stephen	<i>4.21.09 (April 21, 2009)</i>	acrylic on canvas	\$628.00
Twiggs-Smith, Willi	<i>Mokapu Peninsula, Kané'ohé,</i>	oil on canvas	\$75,000.00
Wisnosky, John	<i>Untitled</i>	acrylic watercolor on paper	\$4,000.00
Number of Gifts	4	Total:	\$174,628.00

HAWAI'I STATE ART MUSEUM (HiSAM)



The Hawai'i State Art Museum opened in November 2002 and has become one of the state's most important cultural attractions. Nearly 200,000 people have visited the museum to date.

In FY 2010, the following exhibitions were on display: *Ho'oulu: The Inspiration of Hula*; *Where We Live: Visions and Portraits of Hawai'i*; the *47th Annual Hawai'i Region of the Scholastic Art Awards 2010*; *I Love Art Gallery*; *Hi'ikaikapoliopele: Visual Stories by Contemporary Native Hawaiian Artists*; and *Fragments: Representing the Human Body*.

HiSAM provided 19 schools and 17 community groups with gallery tours during the year. Other monthly programming included Live from the Lawn, a series of free performances on the front lawn of the museum for First Friday events, Second Saturdays, featuring hands-on family oriented art activities and Art Lunch, HiSAM's noontime lecture series.

ARTBento@ HiSAM is a multidisciplinary museum education program that uses the museum as a learning laboratory for kindergarten through Grade 6 school students. To date, the program has reached more than 3,500 students and 160 teachers.

APP FINANCIAL SUMMARY

Fiscal Year Ended June 30, 2010

REVENUES

Works of Art Special Fund Allotment.....	\$4,199,871.00
TOTAL.....	\$4,199,871.00

EXPENDITURES & ENCUMBRANCES

Commissioned Works of Art.....	\$2,351,420.49
Relocatable Works of Art.....	\$222,673.54
Acquisitions.....	\$151,584.97
Acquisition Award Selection Committees.....	\$3,684.31
Exhibition Services.....	\$67,404.26
Conservation Services.....	\$72,840.82
Commissions.....	\$50,026.82
Relocatable Works of Art.....	\$22,814.00
Registration.....	\$19,618.67
Art in Public Places Administration.....	\$1,242,398.68
Personnel.....	\$927,873.50
Operating.....	\$314,525.18
Gallery Operations.....	\$224,381.32
TOTAL.....	\$4,133,333.52



Wa'a Kaula/Huaka'i (Voyaging Canoe Journey) is an arrangement of polished basalt boulders representing the male form and depicting origin and voyage. *Kanawai/Punawai (Law/Spring)* depicts water metaphors and the female form. Both stone sculptures by Leland Miyano front the Ronald T. Y. Moon Judiciary Complex in Kapolei.



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ARTS FIRST PARTNERS Strategic Plan

FY2010 REPORT

(for the period July 1, 2009 through June 30, 2010)

The Hawai'i State Legislature enacted ACT 80 in 1999 which called for Hawaii's major stakeholders in arts education to revise the State's Fine Arts standards and develop a Strategic Plan. In 2001, ACT 306/01 passed into law formally naming the ARTS FIRST Partners and mandating the implementation of the Strategic Plan.

THE PARTNERS

The ARTS FIRST Partners, also known as the Hawai'i Arts Education Partners, are as follows: Hawai'i Department of Education (DOE); Hawai'i Association of Independent Schools; College of Arts and Humanities, University of Hawai'i Manoa (UHM); College of Education (COE), University of Hawai'i Manoa; Hawai'i State Foundation on Culture and the Arts (HSFCA); and Hawai'i Arts Alliance (Alliance). By their respective legal mandates, the constituencies of the ARTS FIRST Partners collectively represent the people of Hawai'i. Affiliate partners are the Hawai'i State PTSA, Honolulu Theatre for Youth (HTY), and Maui Arts & Cultural Center (MACC). Representatives from the ARTS FIRST institutions meet quarterly to discuss and plan activities in alignment with the strategic plan. A meeting is held annually to update the leadership of the ARTS FIRST institutions about current issues and new collaborations. The Hawai'i State Foundation on Culture and the Arts is responsible for convening meetings and annual reporting.

THE STRATEGIC PLAN

The goals of ARTS FIRST *Hawai'i Strategic Plan for Arts Education 2006-2010* are twofold:

1. To guarantee a comprehensive arts education based on the Hawai'i Content and Performance Standards for every elementary student in the State; and
2. To enable every high school student to achieve the standards in one or more of the arts disciplines by grade 12.

The plan builds upon four objectives **Advocacy, Research, Teaching, Standards**. The ARTS FIRST Partnership was purposefully designed to strengthen the capacity of each partner through collaboration. ARTS FIRST Partners implement the ARTS FIRST Strategic Plan Action Steps within their own institutions and in collaboration with one another for statewide impact, and leverage funds and other resources. The Partners continue to address, with great success, the four objectives outlined in the Strategic Plan.

The ARTS FIRST Strategic Plan can be downloaded from the Hawai'i State Foundation on Culture and the Arts website under the Arts Education Program (www.hawaii.gov/sfca).

From 2002 through 2010, over \$15,000,000 was spent in direct services for arts education in Hawai'i at an average of over \$1,600,000 each year with approximately \$8 invested per student. State funds account for 25%, leveraged three-fold by federal and private funds over this period of time.

STRATEGIC PLAN ACCOMPLISHMENTS



ARTS MARKETING

● Awards & Recognition

- ▶ **School Arts Excellence Awards** recognized 8 elementary schools – 4 public schools [Pomaika'i (Maui), Wilson (O'ahu), Kalaheo (Kaua'i), Haiku (Maui)], 1 charter school [Innovations Public Charter (Hawai'i)], and 3 independent schools [Hanahau'oli School (O'ahu), Hawai'i Preparatory School (Hawai'i), Kaua'i Pacific Academy (Kaua'i)] for school-wide arts education excellence.
- ▶ **Honoring Teachers.** 71 O'ahu teachers recognized at the **ARTS FIRST Honors Educators** on May 15, 2010 at Tenney Theatre, each of whom completed 32 hours or more of professional development in arts education during 2008-09 and 2009-10. 41 Maui teachers received Certificate of Study Awards at the **Teacher Awards Dinner** on May 22, 2010 at the MACC for completing 32 to 600 hours of professional development.

● News & Information

- ▶ **News articles.** Series of articles in *Maui News* brought attention to MACC's 250,000th student participating in arts education programs on March 2, 2010, including an editorial on "Art Skills are Life Skills."

ARTS SUPPORT TO SCHOOLS

● Student Art Exhibitions

- ▶ **47th Annual Hawai'i Regional Scholastic Art Awards**

Program. 30 art teachers gathered to conduct the statewide adjudication and 15 professional artist judges volunteered to review over 1248 student works to select 224 for the Hawai'i State Art Museum (HiSAM) exhibit, February 5 through April 3, 2010. Images of the 171 gold key awarded works were electronically sent to the Alliance for Young Artists and Writers, Inc. to be re-adjudicated at the national level. 18 students, whose artworks were chosen for national recognition, were invited to a week-long celebration in New York City in June.

- ▶ **Hawai'i Convention Center Student Art Exhibit** of 96 elementary student artists (May 2010). Over 500 parents, students and community members attended the awards event.
- ▶ **Youth Art Month** (spring 2010) featured a State Capitol student artworks exhibit from all islands, and highlighted winners for the Congressional Arts Program. Selected artworks displayed at the National Art Education Association's (NAEA) Baltimore convention in April 2010 inaugurated Hawaii's presence. The Youth Art Month's Flag Contest, a new addition, was won by a Keaau High School student whose flag represented Hawai'i in the convention's Avenue of Flags.
- ▶ **Elementary and secondary student artworks** continue to be displayed in the Board of Education and the Superintendent's offices.
- ▶ **Celebrating the Artist in Us** for grades K-8, April 10-25, 2010 with 600 students' artworks exhibited at the MACC.

● **Performing Arts for schools**

- ▶ **9 Performing Arts Learning Centers (PALC)** serving over 5,000 students received \$5000 challenge awards funded by a private donor. 7 PALCs successfully raised their matches and were given a second \$5,000 award. The PALCs are: O'ahu Alliance for Drama Education's T-Shirt Theatre (Farrington High School), Castle Performing Arts Center, Kaimuki High School Performing Arts Center, Performing Arts Center of Kapolei, Central Theatre Arts Academy (Mililani High School), Nanakuli High and Intermediate Performing Arts Center; Maui Baldwin Performing Arts Center; Hawai'i Hilo High School Performing Arts Center; Kaua'i Kaua'i High School Performing Arts Learning Center.
- ▶ **At secondary level schools.** (1) The Thelonious Monk Jazz Ensemble (consisting of talented high school students from nationally recognized performing arts academies) toured to 4 O'ahu high schools. (2) Middle and high school ballet courses were developed and approved for schools to offer in school year 2011-2012.

- ▶ **Secondary School Spring Band Concert Series** (March-May 2010) with 8 schools and 750 students at MACC.
- ▶ 2,557 students attended 3 **professional touring companies' performances** American Bluegrass (music), Black Grace (modern dance), Kenny Endo (taiko) at MACC.
- ▶ **Artists Connecting to Communities.** Visiting artists provided in-school performances and/or lecture-demonstrations for 6,586 students & adults on Maui.
- ▶ **Poetry Out Loud-Hawai'i** at Tenney Theatre (February 28, 2010). A national poetry recitation open to all high school students statewide. Approximately 2,000 students participated in the competition which culminated with 13 finalists. The Hawai'i state winner went to the national competition in Washington DC.

● **UHM Theatre & Dance Department and Kennedy Theatre**

- ▶ Fall 2009 **theatre production for elementary grades** (over 1,000 students), *When the Cassowary Pooped* directed by and based on the children's book by Tamara Montgomery.
- ▶ 5th year of **Page to Stage** linking theatrical productions to classes, departments, campuses and communities throughout O'ahu. Integrated and multi-disciplinary exploration of dramatic literature delivered to college and secondary level classrooms. "The Homecoming" by Harold Pinter and "The Judith of Shimoda" by Bertolt Brecht offered free pre-show chats, in-school workshops, open rehearsal for high school groups, and/or on-line educational materials.
- ▶ 136 high school students attended the **annual High School Calabash** (February 13, 2010). The Dance Program invited local high school students to participate in the **BFA dance degree audition** (April 29).

● **Music education for the schools**

- ▶ UHM and the Collegiate Music Educators National Conference (CMENC), Hawaii's student chapter, offered a **Furlough Friday music program** after DOE classes were canceled in Fall 2009. Parents and students (elementary & secondary grades) took music lessons from UHM music students. CMENC, chapter 418 was awarded a MENC Collegiate Chapter of Excellence for service.
- ▶ **46 UHM music education and elementary education students** in MUS 353 Integrating Music in the Elementary Schools, MUS 354 Elementary Music Methods and MUS 454 Music in Special Education, **observed and taught at** Anuenue and Lili'uokalani Elementary schools. The PTSA purchased musical instruments for the program.

- **UHM Center on Disability Studies trainings for teens.**
 - ▶ Career and Technical Education Pathways, October 2009 May 2010. Arts instruction for 12th grade and recent high school graduates with disabilities.
 - ▶ Summer Playwrights Discovery Festival, May & June 2010. Theatre industry professional training for 10th to 12th grade youth with and without disabilities.
 - ▶ Lauhala weaving apprenticeship, March 25-28, 2010. For 12th grade and recent high school graduates to learn the values and skills from Native Hawaiian cultural practitioners.
- **Other support to schools**
 - ▶ **HSFCA Biennium Grants** totaling \$297,156 to 21 arts organizations supported arts education projects which served 155,765 students K-12.
 - ▶ 5,518 students attended the art immersion field trip, **CanDo! Days**, at Maui Arts & Cultural Center; 400 of these students were serviced in Hana and on Moloka'i and Lana'i.

ARTS RESOURCES

- **Website Resources**
 - ▶ **Hawai'i arts education** information is posted about professional development opportunities for teaching artists and teachers, Artists-in-the-Schools grants, and arts education programs for students. Hawai'i Arts Alliance (<http://www.hawaiiartsalliance.org/index.php/ecenter>): video content illustrating the *Arts as Tools* section of the *ARTS FIRST Toolkit* was published on the ecenter. Hawai'i State Foundation on Culture and the Arts (<http://hawaii.gov/sfca/>). Honolulu Theatre for Youth (<http://www.htyweb.org/education.htm>). Maui Arts & Cultural Center (<http://www.mauiarts.org/kids.html>).
 - ▶ **UHM ArtsBridge America website** nearing completion to include standards-based dance and theatre instructional units and best practices, and testimonials from pre-service teachers, in-service teachers and students.
 - ▶ **Alliance of Active Music Making** (<http://www.allianceamm.org/>) includes information and videos about active music-making approaches by Carl Orff, Zoltan Kodály, Emile Jaques-Dalcroze and Edwin Gordon to strengthen general music teacher preparation.
- **Arts Alliance Action Network (AAAN)** communicates to over 3,100 constituents in the state about arts legislation, arts education and community arts news via email.



RESEARCH IMPLEMENTATION

- **Arts & Literacy for All (ALA) Research Project**, funded by the U.S. DOE, completed its 4th and final year of program services. Project examined the effect of drama and dance strategies on students' reading performance and engagement in learning along with teaching practices. 4 elementary schools participated (Helemano, Pearl City Highlands, Kuhio, Kamiloiki). Over 70 teachers received professional development training in the use of dance and drama strategies to impact 1,600 students.
- MACC and DOE Maui District conducted the **3rd year of research** at Pomaika'i School, the state's only fully arts-integrated public school. Research, supported by a Kennedy Center grant, focused on the impact of arts integrated instruction on oral communication skills, and on teacher and teaching artist collaboration. Arts integration best practices developed at Pomaika'i School for statewide dissemination was guided by Kennedy Center consultant Deborah Brzoska. (Full report is available upon request.)
- **UHM College of Education faculty research** presented examples of work created by teacher candidates from an integrated learning trip to Lyon Arboretum—Using Digital Photography to Create Nature Inspired Poetry and Art, National Council for Teachers of English, Annual Conference, in Philadelphia, PA, November 2009.
- **ArtsBridge America**, UHM Theatre and Dance Dept. Nationally recognized program to provide field experience for pre-service teachers in the arts for high quality arts education for all K-12 students. UHM students participated in teaching internships in schools where their experiences and student outcomes were documented and assessed, a critical research component of this 2-year grant project supported by the Dana Foundation. Results of the internships on Moloka'i and Lana'i were presented at the National ArtsBridge America Conference at the University of California, Irvine via Skype on May 1, 2010.



PRE-SERVICE TEACHER TRAINING

- **UHM College of Education courses and enrollment.**

- ▶ 156 Fall 2009 Elementary Education students admitted (including dual prep programs).
- ▶ 81 Spring 2010 Elementary graduates.
- ▶ 7 Fall 2009 Secondary Art Education candidates admitted.
- ▶ 4 Spring 2010 Secondary Art Education candidates graduated.
- ▶ 51 Fall 2009 entered and 37 Spring 2010 graduated for the combined Masters of Education in Curriculum Studies and Masters of Education in Early Childhood Education.
- ▶ 123 Fall 2009 and 109 Spring 2010 Elementary Education students in ITE 326 (Visual Arts) and ITE 329 (Performing Arts).
- ▶ An integrated model of program delivery (a visual arts course and a performing arts course delivered over 3 semesters to promote integrated approach to teaching and learning across the curriculum) was offered to one cohort of 20 teacher candidates enrolled in the Elementary and Early Childhood Education Program in all content areas.
- ▶ Elementary Education Bachelor Degree Program combines online teaching and learning with face-to-face instruction at UHM. A new cohort of students (on Kaua'i, O'ahu, Moloka'i, Lana'i, Hawai'i) begins each year in May. All teacher candidates enrolled in this program (59 currently) are required to take courses in the visual and performing arts.
- ▶ EDCS 640M, Interdisciplinary Studies (An Interdisciplinary Approach to Integrating the Arts Across the Curriculum, PK-12) taught online during Summer and Fall 2009 to 15 Kaua'i public school teachers in the graduate program.
- ▶ AMST/EDCS 685, Museums and Communities provides graduate students pursuing careers in both the museum and education fields with educational teaching/learning theory and evaluation using local museums as authentic learning laboratories.
- **UHM Theatre & Dance Dept Coursework.** Served 64 students majoring in elementary education, dance, or theatre.
 - ▶ Fall 2009 Creative Dance for Children DNCE 490.
 - ▶ Fall 2009 Seminar in Teaching Dance and Theatre DNCE/THEA 691.
 - ▶ Spring 2010 Creative Drama for Children THEA 470.
 - ▶ Spring 2010 ArtsBridge America –Teaching Internship DNCE/THEA 693.
 - ▶ Summer 2010 Creative Dance for Children DNCE 490.

- **UHM Music Dept Coursework.** 50 music education undergraduate majors and a growing number of students who minor in music (Arts Minor in Music Education). The 15-credit academic minor provides basic training in music reading, classroom music materials and techniques, and personal musicianship. It is designed for elementary education and early childhood majors to gain more skill and knowledge in music, and increase their musicianship.

PROFESSIONAL DEVELOPMENT FOR TEACHERS

- The Art in Public Places, **Artists in Residence Program** worked with 156 teachers, 3 principals, and 4 vice principals at 4 public elementary schools in day-long, hands-on, artist-led workshops that relate to the commissioned work of art to be installed at the schools. Artists work with the school over 3 years and the teachers learn how to integrate this work into their curriculum.
- **ARTS FIRST Summer Institutes 2010.** 57 teachers, 14 teaching artists, 1 principal and 3 administrators participated in the **ARTS FIRST Institute 2010 on O'ahu.** Held at Keone'ula Elementary School (June 1-4, 2010), travel scholarships enabled 8 teachers and 6 teaching artists from Hawai'i and Maui to attend. Using the *ARTS FIRST Essential Arts Toolkit for the K-5 Classroom Teacher, 2nd Edition*, teachers learned to implement arts strategies in the classroom. 48 teachers and 6 teaching artists participated in **Creative Connections on Maui** (June 21-24, 2010) presented by Sean and Melanie Layne at MACC.
- 10 schools (full faculty) with the **ArtBento @ HiSAM** program received 2 hours each of professional development provided by Teaching Artists (7).
- **DOE professional development (PD) courses**, teacher enrollment via DOE's PDE 3 website:
 - ▶ 171 teachers completed portfolios and earned professional development credits. Presented by HTY.
 - Exploring Literature Through Creative Movement.
 - Integrating Visual Arts into the Curriculum: Collage and Language Arts.
 - Naturally Dramatic: Developing Creative Expression and Scientific Inquiry.
 - Writing without Pencils: Deep Writing Skills for the Youngest Students.
 - Drama with English Language Learners.
 - ▶ Using the Performing Arts to Enhance Learning. Presented by Orff Shulwerk Association. 3 teachers enrolled and 1 completed.
 - ▶ Bridging the Curriculum through Visual Arts. Presented by DOE Fine Arts Office. 25 teachers enrolled.

- **Professional development for teachers on Maui** through the Kennedy Center, open to all public and independent school teachers. 52 teachers completed portfolios and earned professional development credits (September 2009 to March 2010).

- ▶ Connecting Cultural Stories to Images, Neida Bangerter. 54 teachers.
- ▶ Soaring through Science, Cycling through Life, Mauiola Cook/Mardi Swatek. 25 teachers.
- ▶ Writing without Pencils, Paul Wood. 34 teachers.
- ▶ Effective Design for Presentations, Neida Bangerter. 50 teachers.
- ▶ Arts Integration: What, How and Why?, Deb Brzoska. 27 teachers.
- ▶ Drawing with Children, Debi Tisdell. 50 teachers.
- ▶ Printmaking in the Classroom, Michael Takemoto. 61 teachers.
- ▶ Percussion in the Classroom, Margie Heart. 21 teachers.
- ▶ Helping Students Develop & Tell their Stories, Judy Thibault Klevins. 23 teachers.

- Workshops as Part of Research at Pomaika'i School:

- ▶ The Quest for Quality – School-Wide Arts Integration, Deb Brzoska, September 2009. 48 teachers.
- ▶ Keeping the Spirit Alive – Professional Learning Communities @ Pomaika'i, Deb Brzoska, December 2009. 45 teachers.

- Workshops for Teacher Institute Day, October 15, 2009, Maui:

- ▶ Connecting Visual Literacy to Curriculum, Neida Bangerter. 150 teachers.
- ▶ Putting Imagination into Basic Writing Instruction, Paul Wood. 60 teachers
- ▶ Connecting Movement and Poetry, Maggie Costigan & Mardi Swatek. 25 teachers.

- **Music professional development**

- ▶ **Hawai'i Music Educators In-Service Conference**, February 26-27, 2010. 10 mainland clinicians and 7 Hawai'i clinicians presented at the conference to approximately 140 teachers and students.
- ▶ **CMENC chapter workshops** at the UHM campus:
 - How Jazz Musicians Listen to Jazz by Byron Yasui & Benny Chong, October 27, 2010.
 - What every aspiring choir director should know by Nola Nahulu, March 17, 2010.

- Past the Pentatonic Scale by Nick Gertsson, April 14, 2010.
- Envisioning your future in education by Jeffery Moniz, April 20, 2010.

- ▶ **Music early education workshops.**

- Integrating music with weather in early childhood setting, Kaua'i Early Educator Institute Day, February 12, 2010
- Music in Early Childhood: Inspirations from Books, Stories & Recorded Music, Hawai'i Association for the Education of Young Children, October 10, 2009.
- The Early Childhood Repertoire: Inherently Musical/Positively Enchanting, 2009 Hawai'i Baptist Early Education Association Conference, September 19, 2009.
- Multicultural Music: Bringing Asian Pacific music into the early childhood classrooms, Hawai'i (Big Island) Chapter Early Childhood Association, November 21, 2009.
- Multicultural Music: Bringing Asian Pacific music into early childhood classrooms, Hawai'i Association for the Education of Young Children, October 10, 2009.

PROFESSIONAL DEVELOPMENT FOR TEACHING ARTISTS

Professional development (PD) workshops for teaching artists further enrich their understanding of core elements of effective lessons for children, challenge their consideration of what constitutes arts integration, help them to examine and explore the principles of backward lesson design which include standards, benchmarks, essential questions, enduring understandings, assessment, learning procedures and instructional scaffolding.

- Teaching artists in the **ArtBento @ HiSAM Program**, through expanded professional opportunities and training, learned to link their own art discipline to the visual arts.
- 5 workshops served 118 teaching artists.
 - ▶ Finding the Elegant Fit: Planning Effective Arts Integration with our Colleagues in the Classroom presented by Deb Brzoska.
 - ▶ Together Through Art: Professional Development in Universal Design for Learning and Disability Awareness (in collaboration with VSA Hawai'i) presented by Katie Blair.
 - ▶ Lesson Planning by Backward Design: Starting with the End in Mind, Part I (Lesson Planning Goals), Part II (Assessment) & Part III (Learning Strategies) presented by Jamie Simpson Steele, Ph.D.
- Collaboration teams of 8 teachers and 7 teaching artists attended workshops:

- ▶ What is Collaboration? presented by Sean and Melanie Layne.
- ▶ Questioning: the Fine Art of Provoking Reflective Thought presented by Jamie Simpson Steele, Ph.D.
- Questions, Questioning and Reflective Practice (2-day workshop) presented by Jamie Simpson Steele, Ph.D.
- Foundations of Arts-Integrated Residencies (4-hour workshop) presented by Daniel A. Kelin II at 4 locations (Kona, Hilo, Honolulu, Kahului) for a total of 46 teaching artists.
- Artistic Perspectives: Building Reflection Skills in Students (2-day intensive) presented by Jamie Simpson Steele, Ph.D. for 12 teaching artists involved in the Collaborative Residencies Project.



STANDARDS IMPLEMENTATION PLAN

The **Hawai'i Content and Performance Standards (HCPS) III** describe educational targets in all nine content areas for all students in grades K-5. All ARTS FIRST professional development for teaching artists and teachers are aligned with HCPS III. ARTS FIRST arts residencies in schools are designed around HCPS III.

● Residencies

- ▶ **Artists-in-the-Schools Program** reached 75 public, 8 charter, 69 elementary, 14 middle and high schools statewide and were provided by 31 roster Teaching Artists (individuals and organizations) to serve approximately 6,000 students. State funds (\$215,284) were matched with private funds (\$227,173) from the Hawai'i Community Foundation to support all 83 applicants.
- ▶ Art in Public Places, **Artists in Residence Program** served 522 students at 4 public elementary schools, in grades 1, 4, 5, and 6. Artists who work on these commissions at schools are paired with teachers in subjects such as art, science, and social studies.
- ▶ **Art Bento @ HiSAM**, a free multi-disciplinary museum education program, provided in-school *Toolkit*-based lessons (2 hours) by Teaching Artists (ATP); 2 hours of ATP-delivered professional development sessions for teachers; plus a one-half day visit to the museum. Ten schools (2500 students and 123 teachers) were serviced by 7 ATPs.
- ▶ 8-week **arts integration collaboration residencies** at Pomaika'i Elementary (grades K-1, 3-4) and Kalama Inter-

mediate School (grade 7) during August 2009 and March 2010 with 544 students, 18 teachers, 2 teaching artists.

- ▶ **Artistic Perspectives: Collaborative Residencies** involved 10 teaching artists and 14 classroom teachers to co-plan arts integrated residencies at schools (O'ahu, Hawai'i, Maui). The teams attended the ARTS FIRST Summer Institute on O'ahu to prepare for their residencies.
- At UHM and in the classroom
 - ▶ All **UHM music methods syllabus outcomes** focus on Hawai'i Teacher Standards; HCPS III, National Standards of Music Education (MENC); Praxis Standards and INTASC Standards.
 - ▶ **UHM Theatre and Dance students** (Spring 2010) designed and implemented standards-based arts-integrated creative dance and drama lessons at Kipapa, Lana'i and Honaunau Elementary Schools and Moloka'i High School.
 - ▶ 64 students majoring in elementary education, dance, or theatre took **UHM Theatre and Dance courses** [DNCE 490 Creative Dance for Children and DNCE/THEA 691 Seminar in Teaching Dance and Theatre in Fall 2009. THEA 470 Creative Drama for Children and DNCE/THEA 693 ArtsBridge America – Teaching Internship in Spring 2010. DNCE 490 Creative Dance for Children in Summer 2010.]
 - ▶ **Pomaika'i School** is the laboratory for new arts integrated curriculum which is assessed and revised to develop the most effective instruction.
 - ▶ **Learning results portfolios** that teachers complete as an outcome of their professional development work results in new arts integrated units. (Maui 52 and O'ahu 57 for a total of 109).

TOOLKIT IMPLEMENTATION

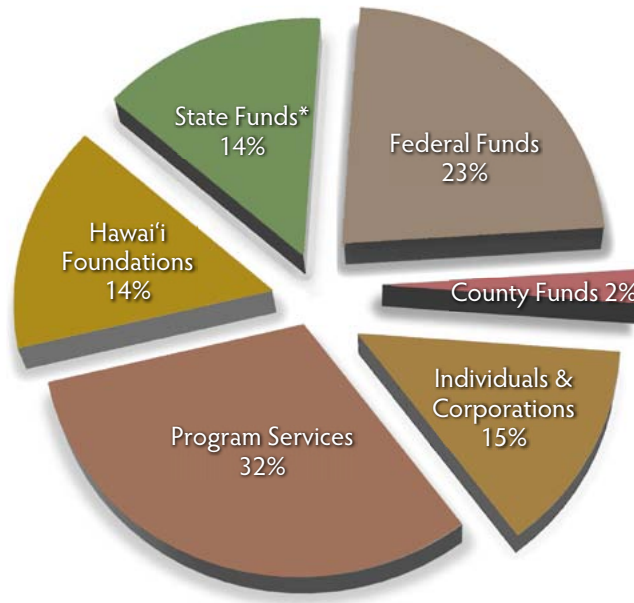
- The **ARTS FIRST Essential Arts Toolkit for the K-5 Classroom Teacher, 2nd Edition** is a grade level guide designed for use by elementary classroom teachers and teaching artists. The *Toolkit* is given to teachers in professional development workshops and institutes, and is available as a pdf download at <http://www.hawaiiartsalliance.org/index.php/center/toolkit/>. The *Toolkit* is a resource for developing unit and lesson plans that integrate the arts in other subjects and to teach the fine arts as disciplines. Teachers are required to use the lesson and unit plan templates when completing a Learning Results Portfolio for DOE continuing education credits. They use the rubrics for assessment and the questions for reflection.

- ▶ ArtBento @ HiSAM residency Teaching Artists gave teachers copies of their *Toolkit* -formatted lesson plans and modeled their implementation in the classroom and at the museum.
- ▶ 64 UHM-Theatre and Dance students were introduced to the *Toolkit* and used it to teach *Toolkit* lessons. The

Toolkit also served as an example for students to design their own arts integrated lessons and develop standards based assessments.

- ▶ A *Toolkit* workshop was presented at Pomaika'i School (Maui), September 2009 for new teachers.

ARTS FIRST FUNDING SOURCES



Ratio of state funds to all funds approximately 1:6

	AMOUNT	%	TOTALS
PUBLIC FUNDING			
State Funds *	\$585,206	14%	
Federal Funds	\$936,263	23%	
County Funds	\$88,934	2%	
Subtotal Public Funding		39%	\$1,610,403
PRIVATE FUNDING			
Hawai'i Foundations	\$550,583	14%	
Program Services	\$1,278,915	32%	
Individuals & Corporations	\$613,679	15%	
Subtotal Private Funding		61%	\$2,443,177
TOTAL		100%	\$4,053,580

Note: *State funds include General Fund & Works of Art Special Fund

HSFCA FINANCIAL SUMMARY

Department of Accounting & General Services, State of Hawai'i
for the fiscal year ended June 30, 2010

REVENUES

STATE

Executive Allotment.....	\$1,116,938.00
Foundation Grants.....	\$795,772.00
Personnel.....	\$222,553.00
Operations.....	\$98,613.00
Works of Art Special Fund.....	\$4,199,871.00
Works of Art Capital Improvement Project Fund.....	\$33,566.28
Subtotal	\$5,350,375.28

FEDERAL

National Endowment for the Arts.....	\$916,055.00
NEA-American Recovery & Reinvestment Act.....	\$292,900.00
Department of Human Services–TANF.....	\$638,000.00
Subtotal	\$1,846,955.00

PRIVATE CONTRIBUTIONS

Carryover from previous year.....	\$174,472.12
Musics of Hawai'i.....	\$53.15
Hawai'i State Art Museum Facility Rental.....	\$19,794.12
Tadashi Sato & Keiko Sato Scholarship Fund.....	\$2,000.00
Donation from Yokouchi Foundation.....	\$1,000.00
Donations from Individuals.....	\$285.00
Subtotal	\$197,604.39
TOTAL REVENUES	\$7,394,934.67

EXPENSES

HSFCA ADMINISTRATION	\$546,396.20
Personnel.....	\$414,540.73
Operating.....	\$131,855.47
GRANTS PROGRAM	\$2,161,422.00
State.....	\$795,772.00
Federal – National Endowment for the Arts.....	\$520,701.00
Basic State Plan.....	\$243,587.00
Challenge America.....	\$109,014.00
Arts in Education Grant.....	\$55,000.00
Underserved Communities.....	\$68,100.00
Poetry Out Loud.....	\$20,000.00
Folk Arts Infrastructure.....	\$25,000.00
NEA-American Recovery & Reinvestment Act.....	\$250,000.00
Department of Human Services–TANF.....	\$594,949.00
ART IN PUBLIC PLACES PROGRAM (See page 24)	\$4,133,333.52
DESIGNATED PROGRAMS	\$24,176.27
History & Humanities.....	\$5,169.78
Public Information.....	\$19,006.49
PRIVATE CONTRIBUTIONS	\$10,528.14
Hawai'i State Art Museum Facility Maintenance.....	\$8,528.14
Tadashi Sato & Keiko Sato Scholarship Award.....	\$2,000.00
TOTAL EXPENSES	\$6,875,856.13

EXCESS OF REVENUE OVER EXPENSES

STATE

General Fund Lapsed.....	\$27,452.70
Works of Art Special Fund Reversion.....	\$66,537.48
Works of Art Capital Improvement Project Fund.....	\$33,566.28
(carryover from previous year, fund established prior to Works of Art Special Fund)	

FEDERAL

National Endowment for the Arts Reversion.....	\$132,541.94
NEA-American Recovery & Reinvestment Act.....	\$28,852.89
Department of Human Services–TANF.....	\$43,051.00

PRIVATE CONTRIBUTIONS.....

Carryover from previous year.....	\$174,472.12
Musics of Hawai'i.....	\$53.15
Hawai'i State Art Museum Facility Rental.....	\$11,265.98
Donation from Yokouchi Foundation.....	\$1,000.00
Donations from Individuals.....	\$285.00

TOTAL REVENUES OVER EXPENSES..... **\$519,078.54**

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Executive Director

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HSFCA FY 2010 Annual Report

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The Statewide Cultural Extension Program (SCEP) uses State and federal funds to tour local artists to underserved communities in Hawai'i. RIGHT: Kenny Endo and his taiko troupe perform for the Lana'i community in the Koele Lodge. Administered through the University of Hawaii's Outreach College at Manoa, SCEP is made possible through a longtime collaboration between artists, the university as presenter, and the NEA and HSFCA as advocates for cultural outreach. *Photo: Statewide Cultural Extension Program*





HAWAII

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STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

ANNUAL REPORT OF
STADIUM AUTHORITY
STADIUM SPECIAL FUND

STATEMENT OF RECEIPTS, EXPENDITURES AND TRANSFERS
FOR THE FISCAL YEAR ENDED JUNE 30, 2011
PURSUANT TO SECTION 109-3, HAWAII REVISED STATUTES

SUBMITTED TO
THE TWENTY-SIXTH STATE LEGISLATURE

Stadium Authority
Stadium Special Fund
Statement of Receipts, Expenditures, and Transfers
For the Fiscal Year Ended June 30, 2011

Beginning fund balance, July 1, 2010		\$ 7,719,687.77
Receipts		
Swap Meet	\$ 4,548,742.96	
Food and Beverage	1,141,007.70	
Parking	673,710.39	
Advertising	234,415.11	
Interest	126,123.77	
Rent	85,658.60	
Miscellaneous	222,469.46	7,032,127.99
Expenditures		
Personnel Services	(3,736,112.40)	
Utilities	(1,159,406.28)	
Services on a Fee Basis	(549,444.00)	
Central Services Assessment	(472,077.00)	
Supplies	(263,292.79)	
Repairs and Maintenance	(180,217.04)	
Miscellaneous	(101,263.96)	
Machinery and Equipment	(99,368.19)	
Workers' Compensation	(96,099.66)	
Insurance	(47,682.00)	
Unemployment	(25,401.01)	(6,730,364.33)
Transfer to general fund		(2,500,000.00)
Transfer to stadium manager's discretionary fund		(1,608.69)
Transfer from Public Works		
Return unused cash from CIP projects		16,322.47
Ending fund balance, June 30, 2011		\$ <u><u>5,536,165.21</u></u>

Stadium Authority
Stadium Special Fund
Discussion on the Statement of Receipts, Expenditures, and Transfers
For the Fiscal Year Ended June 30, 2011

The balance in the stadium special fund (Fund) at June 30, 2011 was \$5,536,165.21. The operating results were comprised of the following significant components.

REVENUES

The Stadium's major sources of income are the swap meet and food and beverage concessions, which account for sixty-five percent and sixteen percent of the total operating revenue respectively. Revenue earned from the swap meet and the food and beverage concessions was \$5.7 million in fiscal year 2011. Total revenue for the period was \$7,032,127.99.

EXPENDITURES

The Stadium's major expenditures were \$3.7 million in payroll costs and \$1.2 million in utility costs (telephone, electricity, water, sewer, and refuse). Payroll costs represented fifty-six percent and utility costs represented seventeen percent of total expenditures. The total operating expenditure for the period was \$6,730,364.33.

To extend the useful life of Aloha Stadium, a multi-year health and safety capital improvement project (CIP) commenced in 2007. Aloha Stadium had the following CIP projects during the fiscal year: replacing the roof, final phase; installing hand rails; removing and installing a new artificial playing surface; reinforcing the structural steel members of the stadium; and waterproofing the north plaza. The next phase of the health safety CIP addresses: 1) electrical and plumbing issues and 2) removing and installing railings on the upper and lower outer concourse.

TRANSFERS

During the fiscal year, \$2.5 million was transferred to the general fund. \$2 million pursuant to Act 192, SLH 2010 and \$500,000 pursuant to Act 124, SLH 2011.

Pursuant to Act 162, SLH 2009, \$2,500 was transferred from the Fund to the Stadium Manager's Discretionary Fund. \$891.31 in unused cash from the Stadium Manager's Discretionary Fund for fiscal year end 2010 was transferred to the Fund.

Unused cash from the design phase of the field upgrade and replacement project was transferred from DAGS-Public Works to the fund.



Benchmarking Final Report

Under Contract Number Z991503, Deliverables a.6.3, a.6.4, and a.6.5

September 28, 2011



Prepared by:

SAIC[®]

151 Lafayette Drive
Oak Ridge, TN 37830

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EXECUTIVE SYNOPSIS OF THE REPORT

SAIC conducted research to benchmark key attributes of IT service provisioning, governance and management, and technologies across the industry in general and focused upon state governments specifically. The benchmarking exercise provided insight into how other states and industry as a whole are performing IT – delivering services, charging for services, and measuring outcomes, and creates an external measurement basis for service delivery within the State of Hawai‘i.

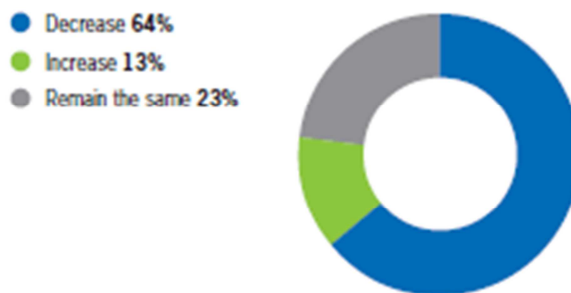
Like Federal, local and private sectors, state government organizations continue to experience fiscal pressure from the lingering recession. The May 2011 National Association of State Budget Officers (NASBO) fiscal survey of state governments found that state general fund expenditures remain below pre-recession levels and the Center on Budget and Policy Priorities reported that states’ overall budget shortfall for 2011 may be as high as \$119 billion.^{i ii}

Since, forty-nine of the fifty state constitutions require a balanced budget and the recession has exacerbated states’ ability to accurately predict revenues at the beginning of each fiscal year, 23 states have had to implement mid-year budget cuts during 2011 and six states enacted mid-year tax and fee increases.^{iii iv} In spite of budget cuts, the fallout from the recession has tended to *increase* the state workload as more citizens seek aid from state agencies. Additionally, the federal Patient Protection and Affordable Care Act (PPACA) has put additional pressure on states, expanding the user base of the Medicaid program managed by states (with no accompanying federal aid to support additional administration costs) and requiring the launch of state-based Health Insurance Exchanges by January 1, 2014.^v

In the state IT space specifically, the National Association of State Chief Information Officers’ (NASCIO) 2010 survey revealed that state leaders expect two-thirds of state IT budgets to be reduced during the 2011-2013 period.^{vi} Nearly two-thirds of CIOs anticipate having to reduce IT staff in the future.^{vii} Due to this fiscal pressure, state IT organizations must justify costs and, now more than ever, position themselves as key business partners and creators of business value rather than as expensive overhead cost centers.

Figure 1: Predicted IT Budget Changes

CIOs’ predictions on IT budget changes for 2011-2013



Some view this fiscal pressure as a positive force that can drive needed but sometimes painful performance improvements. The NASCIO believes the “new fiscal pressure is actually working to

help break down historical barriers to inter-agency¹ collaboration and partnering, sharing services, and pooling of resources.”^{viii}

In alignment with these pressures, consolidation/optimization was identified by state CIOs as the highest priority management focus area among state government technology organizations in 2011.^{ix} All twenty of the states analyzed in this benchmark exercise have implemented or are engaged in implementing some level of consolidation/integration/optimization. Additionally, 50% of the states analyzed have completed or are planning a data center consolidation project. And 50% of the states analyzed have adopted the NASCIO recommended National Information Exchange Model (NIEM) data standard. These efforts have resulted in cost savings as high as \$14 million annually.

One CIO, in response to NASCIO's 2010 annual survey stated that “The size of the IT portfolio increases, but the budget decreases; this has not been easy at all. The budget situation has provided us with a crisis, but because of that we are breaking through barriers that we would have never even been able to approach. We're doing amazing stuff, and some of our crossboundary stuff is really fantastic.” Another indicated that, “We are making better decisions by looking at total cost of ownership. We are now looking at having agencies share applications across boundaries, instead of building them multiple times.”

The majority of states analyzed which successfully completed consolidation efforts found that executive or legislative mandates, direct communication channels, governing committees representative of all stakeholders and specific agreements with each agency upon which subsequent reporting was based were vital to prevent ‘cyclical’ consolidation efforts (i.e., the CIO’s organization consolidating servers and agencies coming right behind and re-installing agency-based servers). Forty-five percent of states analyzed have established a formal Customer Relation Manager (CRM) role in their central IT organization tasked specifically with serving as the interface point between agency leadership and the IT organization. To further support customer focus, 60% of the states analyzed have selected IT Infrastructure Library (ITIL) as the framework of choice for structuring their service management model. Since the response of states to fiscal and other pressures centers on collaboration and consolidation initiatives, it comes as no surprise that the IT management strategy with the highest adoption rate among IT organizations as reported by Computer Economics is the establishment of an IT Steering Committee.

In the midst of these consolidation efforts, a couple of new trends have emerged in state IT funding and purchasing. Several states are pursuing alternative funding sources for IT projects (e.g., self-funded web portals, etc.) and states are also finding ways to leverage the power of collaborative purchasing.

‘Nuts and bolts’ technology projects are also focused on consolidation/optimization. Virtualization and cloud computing lead as the top technology focus areas among state IT organizations. Seventeen of the twenty states analyzed (85%) have implemented or are pursuing the implementation of server and/or desktop virtualization, many as a best practice first step toward provisioning a cloud solution. Thirteen of the twenty states (65%) are actively pursuing a cloud solution. Thirteen percent of states responding to the annual 2010 NASCIO survey reported that

¹ Agency is synonymous with Department for the State of Hawai'i.

that they were undertaking a cloud computing pilot.^x Cloud computing is not without its challenges. Based on two studies completed in 2010 and 2011 by the Ponemon Institute, the majority of cloud providers who participated see security as their customers' responsibility and most did not have dedicated security personnel on staff.^{xi} Aware of some of these pitfalls, states analyzed in this benchmarking effort prefer a hybrid solution versus a strict private or public environment. Other emerging technology areas include the use of social media and mobile computing. The emergence of social media (e.g., YouTube, Twitter, Facebook) as viable communication tools in the state environment has leapt ahead of most states' ability to develop sound usage policies. Ninety-five percent of the twenty states analyzed in this study use social media tools. Approximately one half of state CIO organizations and about 67% of other state agencies reported actively using social media tools in NASCIO's 2010 survey. As of 2010, only about one fourth of states had developed a statewide policy to govern social media use and some state attorney generals have prohibited the use of certain types of social media based on legal concerns.^{xii} Mobile computing is another technology area growing almost faster than state policy and support frameworks can accommodate. Eighty-five percent of the states analyzed have implemented mobile applications; the most frequent mobile solutions provide access to the state web site; motor vehicle applications are the second most frequent.

In addition to fiscal pressure, the "graying" of the state IT workforce looms large on the 3-8 year horizon for most states. Approximately one fourth of state CIOs predict that up to 30% of state IT employees are approaching retirement within the next five years.^{xiii} This represents an inherent drain of institutional knowledge particularly of antiquated systems and applications and poses a significant risk to the ability to maintain legacy systems. While states have been given a temporary reprieve due to some employees choosing to work beyond retirement age because of the recession, this is only a temporary fix. As a result, some states are including application portfolio management and modernization as a core focus of their consolidation/centralization initiatives and utilizing multiple technology strategies to update these systems including Enterprise Architecture Integration (EAI), Service Oriented Architecture (SOA), data conversion, virtualization, COTS replacement and application wrapping.^{xiv}

1.0 INTRODUCTION

The purpose of the Benchmarking Final Report is to describe the results of the benchmarking research conducted in accordance with the *Benchmarking Strategy and Plan* delivered August 10, 2011. This document fulfills the project deliverables: a.6.3., a.6.4., and a.6.5.. (Note: State of Hawai`i of comparisons to benchmark data were captured in the *Final Report –Baseline of Information Management and Technology and Comprehensive View of State Services.*)

SAIC researched benchmark data from the twenty state organizations identified in Table 1 below.

Table 1: States Benchmarked

Benchmark State Organizations					
<i>Hawai`i</i> : population = 1,360,301; square miles = 10,931					
State	Population	Square miles	State	Population	Square miles
Alabama	4,779,736	52,419.02	Montana	989,415	147,042.40
Arizona	6,392,017	113998.3	North Carolina	9,535,483	53,818.51
Arkansas	2,915,918	53,178.62	North Dakota	672,591	70,699.79
Colorado	5,029,196	104093.57	Oregon	3,831,074	98,386
Florida	18,801,310	65,754.59	South Dakota	814,180	77,116.49
Indiana	6,483,802	36,417.73	Utah	2,763,885	84,898.83
Kentucky	4,339,367	40,409.02	Virginia	800,1024	42,774.20
Maine	1,328,361	35,384.65	Washington	6,724,540	71299.64
Michigan	9,883,640	96,716.11	West Virginia	1,852,994	24,229.76
Missouri	5,988,927	69704.31	Wisconsin	5,686,986	65,497.82

In addition to these state organizations, SAIC researched benchmarks and best practices from other environments (e.g., industry (as applicable); Gartner; Corporate Executive Board (CEB); Grant Thornton; Weill & Broadbent, National Association of State Chief Information Officers (NASCIO), etc.) with specific focus on state government management and functionality.

2.0 DETAILED BENCHMARKING RESULTS

Benchmark results are categorized as follows: IT governance/management benchmarks and technology benchmarks. Some of the benchmark results highlight or illustrate best practices or processes that have the potential to be ‘quick wins’ for State of Hawai`i. These findings are specifically designated with the following notations:

BP = best practice

QW = potential for a quick win in State of Hawai`i

2.1 IT Governance and Management Benchmarks

SAIC researched several components of IT governance and management best practices including areas of priority focus, consolidation trends among state government IT organizations, management organizational structures, funding/budget levels, staffing ratios, customer management processes, technology standardization, and implementation of process frameworks (e.g., ITIL).

2.1.1 Priorities

Finding 1: Consolidation/optimization heads the list as the top management priority for state CIOs.

NASCIO annually surveys state IT leaders to identify top management and technology areas of focus. See the table below for the top ten *management* focus areas for 2011. (See Section 3.3.1 for the top ten *technology* focus areas.)^{xv}

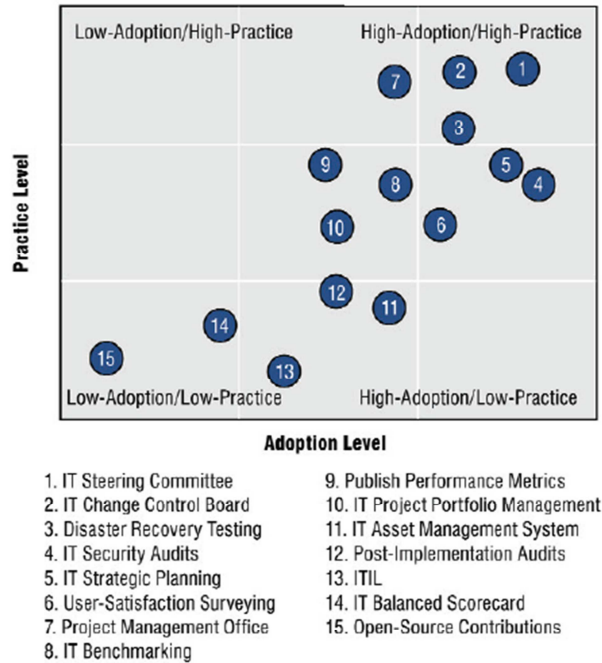
Table 2: Top Management Priorities for 2011

State CIO Top Ten Management Focus Areas for 2011 (NASCIO)
1. Consolidation/Optimization
2. Budget and Cost Control
3. Health Care
4. Cloud Computing
5. Shared Services
6. Governance
7. Security
8. Broadband and Connectivity
9. Legacy modernization
10. Data and Information Management

Finding 2: Steering and change control head the list as the most mature management practices.

Computer Economics’ 2010-2011 annual survey of 200 IT organizations identifies the adoption level of 14 key IT management processes across the industry. See the figure below.^{xvi}

**Figure 2: Mature IT Management Processes
IT Management Best Practices Maturity Analysis**



Source: Computer Economics, 2011

Figure 1

2.1.2 Consolidation Trends

Finding 3: Consolidation/integration/standardization are being considered or implemented by all states analyzed to achieve cost savings and improve performance.

- Four of the twenty (20%) states analyzed have all IT staff and services consolidated under the leadership of a state CIO.
- The remaining sixteen (80%) have some services managed by the ‘central’ IT organization (typically shared services or enterprise-wide services) and some services (typically application development) managed within each agency.

In 2010 the CIO of Iowa conducted a survey of other states’ consolidation efforts identifying the areas of most frequent focus.^{xvii} The results are presented in the figure below. In alignment with the findings among the twenty states analyzed in this study, Iowa’s survey results highlight the fact that enterprise infrastructure services (e.g., email, hosting, network, etc.) are the service areas most organizations tap first for consolidation/ centralization.

Figure 3: Areas of Consolidation in the States

Consolidation Initiatives	Percentage of states that have or are consolidating	Number of states that have or are consolidating	Percentage of states that have not consolidated	Number of states that have not consolidated
Mainframes	82%	27	18%	6
E-mail/Messaging	76%	25	24%	8
Data Centers	70%	23	30%	10
IT Contracting	70%	23	30%	10
Servers	67%	22	33%	11
Cell/PDA Wireless	64%	21	36%	12
Networks (Both LAN/WAN)	58%	19	42%	14
Infrastructure Help Desks	58%	19	42%	14
Print Shops	48%	16	52%	17
Data Storage Retrieval and Backup	42%	17	58%	16
Application Integration	39%	13	61%	20
Desktop, Laptops, Thin Clients	36%	12	64%	21
Document Management	33%	11	67%	22

Source: State of Iowa National Consolidation Survey 2010

Finding 4: *BP* Enterprise-wide technology consolidation initiatives (e.g., email transitions, etc.) are more successful when the following best practice management processes are adhered to: 1) initiate via executive order or legislative mandate, 2) establish a steering committee comprised of representatives from across the enterprise, 3) develop and document the business case, 4) establish written agreements with each participating agency (customer) defining their specific requirements and tie performance metrics to these requirements, 5) publish and report on a schedule of transition, 6) meet weekly with agencies in transition, 7) centralize staff in phases (i.e., one agency or one function at a time), and 8) standardize and assess before consolidation.

Alabama: Alabama’s email consolidation project was initiated by executive order in 2005. Fifty plus unique systems were to be centralized into one system within 18 months. As of May 2011, 45 of the 50+ systems were consolidated. Among others, the Alabama Department of Transportation ‘won the battle’ to retain their own system. Alabama’s Information Systems Division (ISD) also found that during other server/system consolidation efforts, agencies came behind and began deploying their own servers which ISD is now working to consolidate.^{xviii}

“CIOs should conduct assessments so they can show that better service can be provided at a lower cost [the business case]. ‘It’s one thing to sit and argue from an emotional standpoint, but when you have the facts in front of you, it’s somewhat difficult to argue with that.’”
George White, State of Pennsylvania CIO

Michigan: By centralizing IT staff prior to standardization (DIT went back during the first year post centralization and focused on process re-engineering), Michigan's Department of Information Technology (DIT) created unnecessary obstacles that had to be overcome down the road including:

- “Informal processes -- ... we had very informal operating processes. Not much written down, no data on service levels Server folks in Human Services, didn't know how to work with server folks at State Police. They never had to do that before. And now we were asking them to work together for a consistent level of service, but we had nothing to hand them, to tell them how to do this. Even today I have people who are doing the same job, but they are at different levels depending on what agency they worked for, and how literal or how strict those personnel policies were. And that is a huge source of dissatisfaction.”
- "Underestimated employee and agency and legislative resistance -- We underestimated employee resistance. We did a lot of talking about getting to cross-training, you'll have a career path between agencies, but we underestimated the amount of communication we needed to do. And we underestimated the agency resistance. I have agencies today that are working the Legislature about what's wrong with what I'm doing. So we ended up having to go back in and get the leadership to agree that this was a good idea. We did not put the kind of lobbying in place that we needed to.”
- “We proceeded without an adequate funding model – It had a lot of holes in it ... we spent [the] first year, sorting the mechanisms so agencies could see what they were getting for their money. People say ‘I’m paying this bill each month, what am I getting for it?’ They didn’t know how much they were paying before, but when it came to paying that to another agency, it was a totally different dynamic.”
- “We centralized our technical staff too quickly – That was very true of the desktop staff that service outside the Lansing area. We had a wide variety of technical platforms. You can imagine that when a tech goes out in the field, doesn’t necessarily know what the technical environment is in the State Prison, they are not going to give service so quickly so it causes service level problems.”
- “We had an inexperienced executive team -- Because of the personnel rating system, we had individuals who went from having 10 people to having 80 people. And there was really no mechanism to teach them how to deal with that broader team. Many of those folks were technical people who had risen through the ranks. They never really wanted to manage people in the first place. It was a way to advance their careers. And now had to manage 80 people through a very difficult time.”^{xix}

Achieving state enterprise-wide IT management typically includes five steps:

- Legislation
- Strategic Plan/Mission
- Standards and Enterprise Architecture
- Implementation (services/data center one of the first areas)
- Performance review

(<http://www.statetechmag.com/issues/summer-2005/legislating-it-consolidation.html>)

Colorado: Colorado's consolidation effort focused on people, processes and technology. To align the people component, they conducted an assessment of IT staff (skills assessment),

allowing them to “functionally align the staff” to support both agency lines of business and enterprise service requirements.^{xx}

Detailed overviews of consolidation/centralization initiatives within Indiana, West Virginia, Michigan and Utah are provided in [Appendix A](#).

Finding 5: ^{BP} Ten of the twenty states analyzed (50%) have or are planning/implementing a data center consolidation solution.

Per the NASCIO 2010 State CIO Survey, 27% of state CIO’s anticipated building new data centers within three years and 16% anticipated down-sizing state data centers (many due to consolidation initiatives.)^{xxi}

Michigan: Since 2004, Michigan’s Department of Technology, Management & Budget (DTMB) has migrated 36 computer rooms into three data centers. This effort improved the security, reliability, manageability and availability of critical systems, saved the state \$19+ million and freed up office space (30,000 square feet).^{xxii} Michigan is currently assessing the viability of a public-private partnership to replace two of the existing three data centers. This partnership would engage the private sector, local governments and higher education institutions in a joint solution and take advantage of an emerging trend among state government IT organizations to ‘look beyond their borders’ for opportunities to collaborate for greater efficiencies and buying power.

“Agencies have ‘closet data’ centers and are concerned about losing resources and control. To get the agencies to come out of their boxes, we are planning communities of interest around data center virtualization. There would be communities of interest for public safety, economic, commerce, etc. and we would group agencies into communities of interest that deal with similar information. We can do this at the network, security and server administration level, but not yet at the application development level.” *CIO participant in the NASCIO 2010 State CIO Survey*

Florida: Currently Florida operates three disparate primary data centers (each of which operates based upon a unique service offering and rate structure) and multiple agency data centers. The legislature has mandated that the Agency for Enterprise Information Technology (AEIT) identify two agency center consolidation candidates per year for the Governor and legislature.^{xxiii} Florida’s AEIT Advisory Committee was established to focus specifically on a Statewide Email and Data Center Consolidation initiative. This committee reports to the CIO Council. As part of this initiative, an inventory template was created and distributed to each agency for completion. Agencies were also tasked with developing and submitting a transition plan for relocating computing services to a data center. To help facilitate these agency tasks, a representative from AEIT met weekly with each agency.^{xxiv} For more information about this effort and for copies of agency transition plans visit <https://aeit.myflorida.com/datacenterconsolidation>.

2.1.3 Funding/Budget

Tracking total, state-wide technology expenditures remains very difficult as most states do not yet track IT spend as a distinct line item within the normal state budget process. Some states (Wyoming, North Carolina) are creating IT expenditure reports (typically from within the CIO office) to provide a state-wide picture of IT spend. As states consolidate, centralize and standardize

IT services, tracking state-wide IT expenditures will become easier allowing for greater comparison. The following findings were based on the limited data available from the states analyzed at this time and from industry norms. (Note: Benchmarks were pulled from states in which total IT spend was readily available. To obtain adequate data for these benchmarks, Georgia and Wyoming were included in the list of states assessed for this section only.)

Finding 6: IT operational spend per employee per year averaged approximately \$8,400.

Finding 7: IT spend (managed by the state's IT organization) totaled an average of .5% of total state spend.

Finding 8: IT spend (total state-wide spend) averaged 2.75-3.0% of total state spend.²

Finding 9: IT staff (total state-wide) to end user ratios averaged 25-30:1.

Finding 10: Several states have implemented or are planning to implement some level of portfolio management process.

IT portfolio management is becoming more prevalent within state government organizations. Six of the twenty states (30%) apply some level of portfolio management to IT decisions and six of the twenty states (30%) have an online portfolio management tool. Nationwide, 50% of state CIO's indicated in the NASCIO 2010 State CIO Survey that they use a formal IT portfolio management process. While most states' IT management processes appear to designate IT projects as 'operational' or 'capital' projects, it is not clear that these designations equate to the federal 'steady state' and 'development, modernization and enhancement' categorizations used in the more mature federal IT portfolio management framework. ^{xxv}

"Agencies actually will stop projects when they are forced to put them on the portfolio and they are vetted through the leadership. ...With visibility and clear expectations, the system becomes self-policing." *CIO Respondent to the 2010 State CIO Survey*

Finding 11: At least sixteen of the twenty states (80%) analyzed have established charge back/cost recovery for shared services.

West Virginia: During West Virginia's consolidations and centralization initiative, the Office of Technology (OT) established a shared services billing process. OT's billing methodology for core, non-optional services is based on the number of units deployed (total cost divided by total number of units) by an agency. Optional services are billed based on utilization. It is of note that OT found some agencies' total costs *increased* despite a state-wide IT cost *decrease*; this increase was due to the shared services billing process resulting in a more equitable distribution of service charges/costs to each agency.

Finding 12: ^{QW} States are achieving significant cost savings via IT procurement. States are also finding that giving non-state entities (local governments, educational institutions) and peer states, access to state government purchasing contracts greatly increases state buying power.

Florida: In FY 2010-2011, Florida's Agency for Enterprise Information Technology (AEIT) began moving toward enterprise IT procurement via analysis of existing contracts and

² For 2010, a 6.5% government IT spend to total government expenditures (not limited to State government) was reported by one surveyor.

identification of areas where potential economies of scale could be achieved. Also, AET provided Florida's Department of Management Services (DMS) with contract language compliant with state technology standards which allows non-state government entities to purchase technology resources using Florida's existing contracts.^{xxvi}

Montana: The State Information Technology Services Division (SITSD) renegotiated state-wide cell phone contracts in November 2010 for a savings of \$250K annually.^{xxvii}

Indiana: The Indiana Office of Technology (IOT) approves all technology purchases. Savings have been achieved via consolidating multiple contracts into enterprise-wide agreements and re-negotiating contracts based on new standards, larger quantities, etc. One example, IOT negotiated a state-wide cell phone plan into an agreement that mimics the popular, private 'family plans'; this new arrangement saved the state \$1 million.^{xxviii}

West Virginia: The Office of Technology began rebidding statewide IT contracts to leverage volume pricing in 2006. West Virginia's first enterprise personal computer contract reduced the average cost of a PC 47%; the statewide cell phone contract reduced charges by 19%; and the statewide telecommunication data circuit contract reduced the average cost of a MB by 65% over five years.^{xxix}

Multi-state alliances: The Multi-State Information Sharing and Analysis Center (MS-ISAC) is working with state and local governments to research how to easily leverage the collective buying power of multi-state procurements. In 2011, Florida's AET provided MS-ISAC with recommended contract language and statutory language that would make this process easier.^{xxx}

The Western States Contracting Alliance (WSCA), another multi-state cooperative of which the State of Hawai'i is a member, has allowed member states to leverage collaborative buying power in the technology sector as well. Aware that state government organizations have access to GIS services via the Federal General Services Administration (GSA) Schedule 70 contract, that cloud services would be added the Schedule 70 at some undetermined date, and that each state's discount via the Schedule 70 was based solely on the volume purchased by that state rather than the combined volume of all states^{xxxi}, Montana, Oregon, Utah and Colorado joined together to jointly solicit information about public, cloud-based GIS solutions. The WSCA formally released the RFI for this consortium.^{xxxii}

Non-state alliances: Ancillary to consolidation of state resources is the emerging trend among state government organizations to 'look beyond their borders' for opportunities to collaborate and partner with private sector organizations, local governments and higher education institutions to achieve greater efficiencies and purchasing power. ^{BP} Indiana's Office of Technology (IOT) extended the right to use state contracts to local governments and schools achieving a stronger bulk purchasing position for all participants. Approximately two-thirds of the personal computers purchased on IOT's contract with Dell are made by local governments.)^{xxxiii}

The figure below provides state CIO responses regarding organizations willing to participate in shared service initiatives. These responses were provided as part of NASCIO's 2010 State CIO Survey.

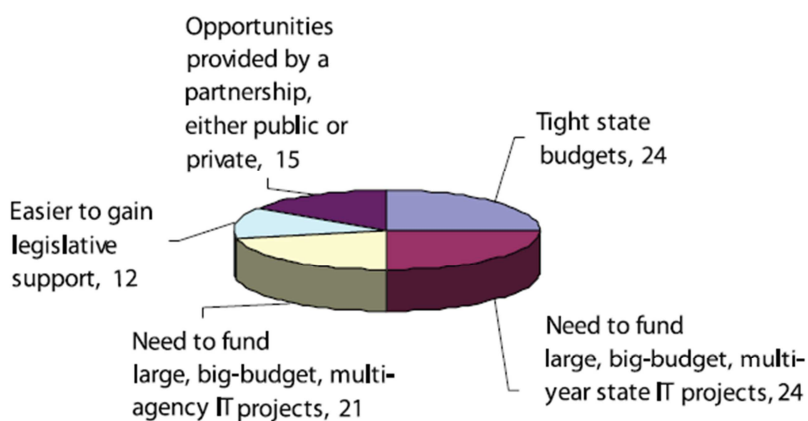
Figure 4: Organizations Willing to Participate in Collaboration Initiatives

Organization	Percentage
Other state executive branch agencies	84
K-12 schools and school districts	66
Community colleges	53
State colleges and universities	53
Special districts	37
Other state judicial branch agencies	34
Other state legislative branch agencies	32
Counties	8
Other	5

Finding 13: Many states are pursuing alternative funding options to mitigate reductions in general fund appropriations.

In response to fiscal pressure, states are pursuing alternative funding sources for IT projects. The figure below defines the primary reasons states chose to pursue innovative funding sources. These responses were provided as part of NASCIO’s 2008 survey of innovative funding for state IT.^{xxxiv}

Figure 5: Primary State Motivations for Pursuing Innovative Funding Sources



The implementation of self-funded state government portals began in the 1990’s; with the increased fiscal pressure due to the recession, this trend has grown over the past decade. Currently, at least twenty states, including Hawai’i, have implemented the self-funded web-portal model, delivering efficient services without expending appropriated funds. In addition to user-fee revenue, other alternative IT funding strategies pursued by states include grant funding (private and public grants), retaining technology funds that remain unspent at the end of a given fiscal year, reallocating project savings to fund upcoming projects, issuing project bonds through the state’s bonding authority, benefits funding (i.e., fund the project

through additional revenues generated by the project upon implementation), selling bulk data to private entities, public-private partnerships and public-public partnerships.^{xxxv}

2.1.4 Organizational Structure/Approach

Finding 14: In at least seven of the twenty (35%) states analyzed, the CIO reports directly to the Governor.

While establishment of a state-level CIO position has been designated in most states, only about 35% have been given the authority to approve IT agency budgets, effectively limiting their true power to that of a ‘paper tiger’.^{xxxvi} Currently, many CIO’s rely on personal relationships with agency leaders to achieve mandated objectives. To be effective, NASCIO recommends that governors and legislatures vest CIOs with authority to participate in the agency-IT budget process, review all state-funded IT purchases, and oversee a state-wide portfolio management process.^{xxxvii} Several states are moving toward centralizing technology authority. Utah found this level of executive power to be paramount to successful consolidation and centralization efforts.^{xxxviii}

Finding 15: *BP* Eighteen of the twenty states analyzed (90%) have established an oversight/governance committee to support the CIO.

This finding is alignment with an industry wide finding by Computer Economics that establishment of an IT Steering Committee is one of the most widely adopted IT management practices.^{xxxix} At least twelve of the twenty (60%) states analyzed have tasked their oversight committee(s) with development of an enterprise architecture. Several states have also established additional advisory committees/ workgroups which report to the CIO and/or an overarching council; these additional workgroups typically have a focused scope (e.g., researching, planning and managing an email consolidation initiative, etc.)

Utah: *BP* The DTS Transition Advisory Council (DTAC), comprised of senior managers and several agency IT Service Directors, works with agencies to ensure business needs are met and present/review optimization opportunities via the established IT investment review process. A Technology Advisory Board, comprised of private sector, educational and government members also provides guidance.

Finding 16: IT organizations in the midst of centralization/consolidation have found a variety of ways to address staffing challenges.

Both unionized and non-union states have pursued consolidation/centralization initiatives. In 2010 the CIO of Iowa conducted a survey of other states’ consolidation efforts. Specific to HR, survey results revealed that fifty percent of respondents involved in consolidation dealt with collective bargaining issues. “Most states with unions did not report an issue with consolidation of human resources. One state related that an agency used union-like protection to avoid consolidation - specifically, employees could petition a board if they were terminated from their positions. Most states did move some personnel out of the agency and into the centralized structure. However, some people remained in the agencies to support geographical areas or specific applications. During consolidations, agency IT personnel interviewed for jobs in the consolidated IT model. Few states utilized a formal skills

assessment as an approach to consolidating human resources. Funding and location were not typically discussed as most IT funding remained with the agency and a charge back model was used to account for central IT employee salaries. ... 75% of states with collective bargaining indicated they had no union issues but did standardize job classifications to create parity with others performing the same duties and skills as a result of the consolidation. 25% of states with collective bargaining worked with union leaders to insure the member status would not change as long as the union members remained with the state. One respondent did note that his state allowed certain job classifications to be used only by the central IT organization and not by other state agencies as a result of the consolidation. ... 12.7% of states plan on using an IT skill assessment but have not identified an assessment tool. 25% of states used an interview process to fill positions as a result of consolidation.”^{xi} Several organizations have met resistance when centralizing IT staff. To address this resistance, one organization offered two weeks of training in the technology area each staff person was most interested in.^{xii} Utah’s Department of Technology Services (DTS) offered employees an incentivized option to voluntarily transition from “merit” status to “at will” status; 91% took the option.^{xiii}

Finding 17: The cloud skill set is expected to be primarily managerial.

“We call the shift the movement from blue-collar IT to white-collar IT. The cloud is accelerating that movement of technology into the business, with business-process-level expertise becoming more important than ever.” *Ted Schadler, Forrester*

As state government organizations transition to cloud-based solutions, the IT staff landscape is expected to change as well. Based on research conducted by Computer Economics, the manager-to-staff ratio within IT organizations is typically around 11%; industry experts expect that to increase as cloud and increased automation

initiate the transition of IT staff from staff managers to resource managers, from technical management to business management.

Gartner expects two cloud management roles to emerge:

- cloud leads/cloud czars – responsible for strategically merging the cloud to business needs
- cloud administrators – former network/storage administrators responsible for managing the relationships with providers

“You are going to have to configure the network firewall and determine how much storage you will need and communicate with the vendor, but that will be the same guy. No more separation to roles by IT function.” *Drue Reeves, Gartner*

Along these lines, Gartner also expects the responsibilities of traditional operations staff to evolve from technical specialist to “jack of all trades”.^{xiiii}

Finding 18: The Project Management Office (PMO) is becoming a key tool for implementing enterprise-wide policies within new projects.

Some states are using the PMO to ensure large projects are addressed from an enterprise-wide perspective. One CIO participant in NASCIO’s 2010 State CIO Survey indicated that “We don’t do large projects unless we have dedicated project management offices (PMOs). Our PMO brings three components together: people (training, skill sets), processes (how they used to work, how they work today) and technology. For large projects, we ask for a

fully dedicated senior person to own the people side --- if we don't get this, we don't do the project.”^{xliv}

2.1.5 Customer Focus

Finding 19: Seven of the twenty states (35%) clearly indicated that they proactively measure customer satisfaction.

West Virginia: Two years into an enterprise-wide consolidation and centralization effort, West Virginia’s OT began surveying customers. Currently 49% of employees who generate a support ticket are surveyed. Less than positive responses are reviewed to inform continuous improvement efforts.

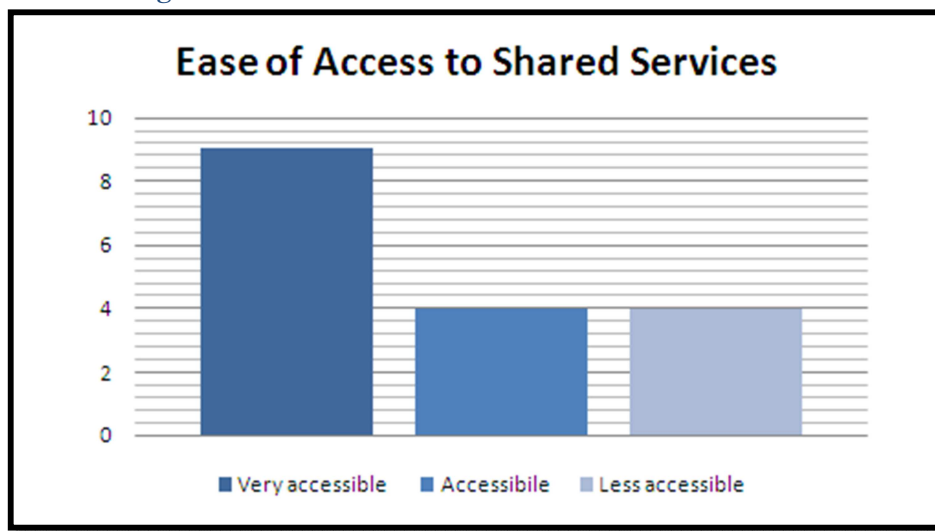
Finding 20: Eight of the twenty states analyzed (90%) have a published Service Catalog.

Service catalogs that present services from a business perspective typically provide the most customer focused format. States have used several techniques to achieve this business perspective including ‘bundling’ services by business need rather than simply listing services a la carte, clearly delineating prerequisites for specific deployments, etc. The Indiana Office of Technology’s [Service Catalog](#) includes a “Basic SEAT Bundled Services” offering. This rate includes all the standard services needed to provision basic computing including hardware, software, support, printing, network access, email, file storage and security services. These are the services most frequently purchased; by bundling, agencies are able to order the complete suite of services required to get a typical Indiana employee connected and functioning without having to place and track multiple orders.

Finding 21: Access to shared services in nine of the twenty states analyzed (45%) was judged as ‘very accessible’ based on ease of access to the Service Catalog, thoroughness and clarity of the service descriptions, etc.

The figure below provides an overview of the assessment of the accessibility of shared services in benchmarked states.

Figure 6: Ease of Access to Shared Services in the States



Finding 22: *BP* At least nine of the twenty states analyzed (45%) have established a formal account manager/Customer Relationship Manager (CRM) role within the central IT organization to interface between the IT organization and agencies across the state.

West Virginia: Office of Technology Relationship Managers are designated as the single point of contact for agency staff at the executive and cabinet levels. They are responsible for understanding customer needs and keeping customers up to date on changes to OT services. Relationship managers meet monthly with various agency leadership to discuss service performance and upcoming changes.

Finding 23: Twelve of the twenty states analyzed (60%) have implemented or are implementing the ITIL ITSM framework.

A few states (Virginia, Oregon, Utah, and North Carolina) have implemented at least seven ITIL management functions.

Finding 24: Ten of the twenty states analyzed (50%) have developed service level agreements (SLAs).

Establishment of service level agreements between central IT service organizations and state agency customers is vital to the success of consolidation/optimization initiatives. SLA’s help mitigate the belief among agency customers that consolidation/centralization initiatives equate to a loss of control by setting mutually agreed up on performance expectations that both meet customer needs and are realistically achievable by IT organizations. Nationwide, the NASCIO 2010 State CIO Survey indicated that only 24% of CIOs manage to performance levels defined in SLAs. While this is low, many indicated that performance management is now being mandated by state legislatures. SLAs can be based on cost, availability and other performance measures. The figure below provides state CIO responses regarding types of measures typically included in a SLA. These responses were provided as part of NASCIO’s 2010 State CIO Survey.

Figure 7: SLA Measurement Types

Performance measure	Percentage
Performance attaining service-level targets	71
Customer satisfaction	59
Cost	56
Benchmark comparisons	38
No metrics used to measure and manage service levels	15
Reliability and availability	3
Do not know	3

2.1.6 Security and Privacy

Finding 25: Security and privacy management is becoming more important as states use web interfaces to provide services to citizens.

States capture and maintain a wealth of personally identifiable information (PII) and other sensitive data. With more state government-to-citizen services being offered online and more states embracing social media communication tools, security risks for state governments are growing exponentially.

To address these risks many states (92%) have designated an Enterprise Chief Information Security Officer (CISO) tasked with developing security standards, providing security training, and offering other governance guidance. Eighteen percent have designated a Chief Privacy Officer (CPO) responsible for assessing the management of privacy data across the state enterprise (executive branch). Fifty-five percent of states have documented and approved information security strategies; the majority (90%) prefers the National Institute of Standards and Technology (NIST) framework. Ninety-two percent of states have laws in place guiding the definition and use of sensitive information. Most states (80%) have fully deployed antivirus, firewall, IDS/IPS solutions.

“A scan of public data loss notification websites indicates that more than one-fifth of reported data breaches in 2009 occurred in the state and local government sectors.” *NASCIO 2010 Cybersecurity Survey*

While these initiatives represent a vast improvement over state security management maturity levels of just a few years ago, only 45% of states are ‘somewhat confident’ of their ability to protect assets from external attack.^{xiv} Additionally, only 43% of state CISO’s have jurisdiction over information security budgets and most state security budgets are limited, ranging from 1-3% of the total technology budget. States also lack a nation-wide governing body (such as FISMA) and most CISO’s report performance to the CIO rather than to both the CIO and the legislature, governor or state attorney general. This limits adherence to security policies.^{xvi}

2.2 Technology Benchmarks

SAIC’s technology benchmark research focused on enterprise approaches to several key technologies.

2.2.1 Priorities

Finding 26: Virtualization and cloud computing top the list as technology priorities among state government IT organizations.

NASCIO annually surveys state IT leaders to identify top management and technology areas of focus. See the table below for the top ten *technology* focus areas for 2011. (See Section 3.1.1 for the top ten *management* focus areas.)

Table 3: Top Technology Focus Areas for 2011

State CIO Top Ten Technology Focus Areas for 2011 (NASCIO)	
1.	Virtualization
2.	Cloud computing
3.	Networking
4.	Legacy application modernization / renovation
5.	Identity and access management
6.	Document/Content/Records/E-mail management
7.	Security enhancement tools
8.	Business Intelligence (BI) and analytics applications
9.	Enterprise Resource Planning (ERP)
10.	Social media and networking

2.2.2 Enterprise Hosting and Infrastructure (Cloud Computing)

Finding 27: Virtualization of current assets has allowed states to reduce costs while meeting increasing demands and is a best practice first step to prepare for transitioning to a cloud computing environment.

Michigan: Michigan’s Unemployment Agency began server virtualization in 2005, consolidating 23 physical servers onto 6 virtualized hosts. Based on best practice research (Gartner and Forrester), the agency selected VMware ESX as the enterprise standard. As other agencies joined the trend, multiple hardware/software versions were introduced. The lack of governance, technical standards, and trained support staff limited Michigan’s ability to easily implement virtualization across the entire state enterprise. As a result, virtualization was limited to test and development initially and in 2007 Michigan’s Division of Information Technology (MDIT) began efforts to standardize virtualization services; the Virtual Center of Excellence (VCoE) was established to develop and manage a state-wide server virtualization solution. To meet this demand, a cross functional team was tasked with

developing necessary collateral including a virtualization candidate assessment tool, virtualization infrastructure gap analysis and recommendation, detailed design and migration plan, support documents (processes, etc.), service rate (including infrastructure, training, enterprise license agreement, etc.), a pilot implementation plan, a strategy for future migrations, an assessment of project future demand, and a plan to ensure capacity stayed ahead of demand. Costs were minimized by shared core infrastructure, enterprise license agreement for health checks, licenses that could be used as needed and a matrixed support team from across MDIT. The VCoE found that the utilization of templates enabled the creation of virtual resources quickly. Michigan’s ‘virtual first’ policy which requires the use of virtual servers where feasible and multiple informational meetings including a symposium for MDIT customers, accelerated the adoption of virtualization across the enterprise. The result is a virtualization platform that maximizes capacity, accelerates the implementation process, and monitors the ratio of physical to virtual. Today the VCoE:

- currently serves as a private cloud for virtualized systems in Michigan
- shortened the provisioning process by 69% (14 days instead of 45 days)
- provides Disaster Recovery via redundant data centers
- creates positive momentum for other goals and leads the way for best practices in managing other enterprise wide shared service initiatives such as document management, externally connected users, etc.
- limits server sprawl as applications are transitioned from mainframe to the client server environment
- significant cost savings (as of 2009 the first 160 virtual servers resulted in \$22,400 month in savings; that figure was expected to double over the following six month period due to new requests).

The table below was developed by MDIT to illustrate the significant cost difference between virtualization and physical server technologies. Since virtualization is an ‘economies of scale’ technology, increased utilization typically decreases virtualization costs.^{xlvii}

Table 4: Costs of Physical versus Virtual Servers

	Physical	Virtual
Technical Support	\$475	\$390
Hardware (Upfront \ Capital Expense)	\$115 (48 month dep)	N/A
Network Connection (3 x \$40)	\$120	N/A
Housing Expenses (2U)	\$30	N/A
SAN Ports (2 x \$75)	\$150	N/A
VM Infrastructure Rate*	N/A	\$280
Monitoring	\$130	\$130
20 GB system disk	N/A	\$80
Total Monthly per server	\$1,020	\$880
Total Monthly (125 servers)	\$127,500	\$110,000

MDIT calculated that by using virtual servers, charges to state agencies were reduced 16%, representing a \$140 savings per month when compared to a physical server, and a \$6,720 savings to the agency over the life of the server. When extrapolated out, an agency with 50 servers would save \$336,000 over four years.

Finding 28: Seventeen of the twenty states analyzed (85%) are actively pursuing or have implemented some level of virtual services.

Within the virtualization space, states are achieving economies of scale (and associated cost savings) in both server and desktop virtualization.

Server virtualization: Due to the historically soloed structure of IT management within state governments, most states ended up with a significant state-wide investment in server hardware/software and a myriad of underutilized agency application servers. Server virtualization provides significant cost savings (both direct savings and cost avoidance) while allowing data owners some degree of privacy and customization of the virtual server space they utilize. While the greatest economies of scale are obviously achieved when server virtualization is managed by a central technology organization (i.e., state-wide data center), savings have also been realized by the implementation of virtualization within specific state agency environments.

Indiana: Indiana designated approximately 45% (669) of its installed server base as appropriate for consolidation and virtualization onto the Intel PowerEdge R900. This resulted in an 89% consolidation ratio and a savings of \$4 million (hardware, cooling, network/storage equipment) over three years.^{xlviii}

Desktop virtualization: While the majority of the states included in this study that are implementing virtualization are pursuing server virtualization, some states have also reaped similar benefits via desktop virtualization including reduced seat costs, efficient control of a centralized desktop infrastructure with simplified software deployment radically reducing rollout/upgrade costs, desktops personalized to the end user, full hardware utilization, longer equipment lifetimes, reduced power consumption, increased availability, increased flexibility, and license costs based on actual need. As noted below, Arizona has established a desktop virtualization center of excellence. Other states pursuing desktop virtualization include Michigan, which is planning to implement by 2014, and Montana, which has implemented 36 virtualized desktops in at least one agency primarily for telecommuters.

Finding 29: Establishing a center of excellence has helped states structure their virtualization implementation and gain buy-in across the enterprise.

As noted above, the center of excellence model was a core part of Michigan's virtualization and cloud solution. Arizona has also found this model effective.

Arizona: To socialize the benefits of desktop virtualization among state government agencies, Arizona's Department of Administration (DOA) partnered with industry leaders (Citrix, HP, Microsoft, Dell, IBM, Cisco, Intel, Qwest, Lenovo, AZNet, Avaya, Blackberry, Arizona State University) to establish the Virtual Government Technology Center (VGTC). Over twenty, no-cost-to-Arizona 'loaner' virtualized workstations (hardware and software including servers and switches) and support services such as architecture, design, deployment, and migration guidance were provided by industry partners. Arizona DOA provides office space, rack space, wiring, power and staff to lead tours. The VGTC serves as a lab providing a 'real live' demonstration of the Arizona desktop virtualization solution. Virtual workstations are set up representing a variety of Arizona state employee work environments (e.g., mobile, telecommute, task [customer service center]) and information regarding the

architecture and migration processes is provided. Arizona currently has approximately 9000 desktop virtualization licenses.

Finding 30: Thirteen of the twenty states studied (65%) are pursuing a cloud solution.

The benefits of cloud computing are myriad: advanced functionality, increased capacity, improved accessibility, standardized computing access between ‘rich’ and ‘poor’ agencies, and cost savings. But selecting a cloud solution is complex. Best practice cloud computing implementations tailor the solution (public vs. private, IaaS vs. SaaS) to the state’s specific need.

“The biggest issue is making sure that a state has a cloud computing strategy and framework. You don’t want to open a cloud to the world without a framework.” *CIO participant in the NASCIO 2010 State CIO Survey*

Public vs. Private: Of the thirteen states identified that are actively pursuing cloud computing, the leading preference is for some form of a hybrid cloud environment that would allow the state to benefit from the scalability and low cost of public solutions for non-sensitive data/application needs and the security provided by a private cloud environment for hosting sensitive state data. This strategy aligns with industry-wide perspectives; in a survey of 100 businesses with a total of 347,448 users worldwide, the Radicati Group found that (at least in regards to email and collaboration services), most organizations lean toward a private (on-premises) hosting/cloud solution.^{xlix}

A few state approaches to note:

- *Montana* – planning a private cloud with access to a public cloud for just-in-time delivery expansion capability during high load times.
- *Montana, Oregon, Utah and Colorado* – teamed up to release a single RFI soliciting information about public, cloud-based GIS solutions.
- *Colorado:* Consolidation began in 2008. Existing assets included 40 data centers with 1,800 servers (including 122 email servers hosting three types of email systems). The Office of Information Technology envisioned gaining the ability to share resources between seventeen state agencies and also with local jurisdictions and schools across the State. To accomplish this, Colorado decided to implement a hybrid cloud solution with three elements: a private cloud for line-of-business/highly secure data and systems, a virtual private cloud for archival storage/disaster recovery, and a public cloud for e-mail office productivity applications and websites. To quickly establish the private cloud, Colorado will overhaul an existing data center with server virtualization. Colorado’s public cloud access was piloted in three agencies with access to Google Apps for e-mail and office productivity tools. Based on pilot results and final cost-benefit analysis, all 27,600 Executive Branch employees will be transitioned. (Early cost benefit analysis indicated the potential for \$8 million in annual savings plus an additional \$20 million in cost avoidance over three years.)¹
- *Kentucky* – Department of Education switched 700,000 PK-12 users to Microsoft’s Live@edu cloud service for email, communications, and collaboration for an expected savings of \$6.3 million over the course of four years. The major

“It (Microsoft’s Live@edu cloud offering) allows us to do sophisticated things that our peers across the U.S. cannot do.”
David Couch, CIO - Kentucky Department of Education

transition (500,000 users) occurred over one weekend.ⁱⁱ

- *Virginia*: In the 2009 the Virginia Information Technologies Agency (VITA) received requests to build and host new systems that were cost prohibitive. Instead, VITA implemented a virtualized software development platform. In addition to development, VITA now uses this cloud solution to scale the production up as needed and to capture disaster recovery backups. Time to stand up a new development environment went from months to less than two hours. VITA is also evaluating the potential of a cloud solution at the agency level.ⁱⁱⁱ
- *Michigan*: Michigan’s “MiCloud” initiative is seeking methods of provisioning services at a lower cost. Michigan already has a strategic investment in storage virtualization technologies which went live in 2010. Currently, Michigan is piloting MiCloud “Storage for Users” and “Storage for Servers” at a projected cost 90% lower than low-cost storage tier rates. Consumption expectations are 250+ terabytes in the first year. The MiCloud solution allows automated delivery within 10 minutes of online request submission. Michigan has also engaged in a proof-of-concept for the MiCloud “Hosting for Development” and “Process Orchestrator” functions is also looking at a hybrid solution to deliver Application Platform as a Service (APaaS).ⁱⁱⁱⁱ
- *Utah*: Utah decided to pursue a hybrid cloud solution as well. Utah has given access to these services to local governments across the state. Many services provided to the local sector are offered free of charge but Utah is also able to charge for other services (e.g., Force.com for Customer Relationship Management, Google Earth Professional for shared Geographic Information System (GIS) planning, and Wikispaces). Utah is developing a private cloud through server virtualization and eventually plans to extend virtualization to desktops across the state.^{liv}

IaaS vs SaaS vs PaaS: Most of the states analyzed are pursuing IaaS or SaaS initially. Nine of the states offer or use SaaS.

- *Michigan* – Michigan began offering cloud-based storage and hosting services in April 2011. MDIT expects to deliver 80+ servers in the first year with automated, 30-minute-after-request delivery of virtual servers. MDIT also expects to implement Computing-as-a-Service during 2011 for private VM servers.

2.2.3 Enterprise Collaboration and Messaging (Broadcast, User Messaging, Social Media, Collaborative Workspaces)

Finding 31: Nineteen of the twenty states (95%) have implemented centralized or shared email services.

Oregon: Oregon is currently moving from 55 email systems to a centralized solution.

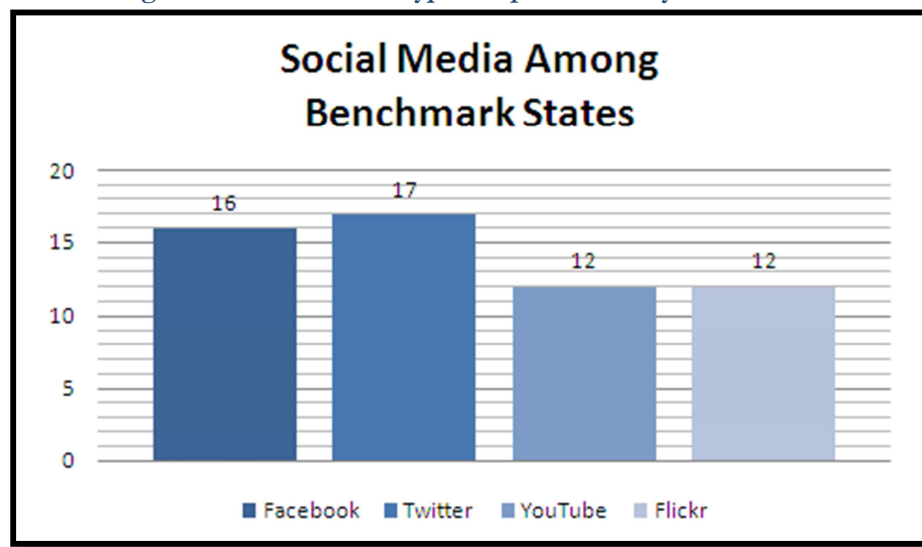
Florida: The Agency for Enterprise Information Technology (AEIT) is facilitating the transition to a new enterprise, outsourced email service in FY 2010-2011; tentative date for beginning of transition is October 2011 with expected completion December 2012. Expected savings for FY 2011-2012 are \$735K and over the life of the seven year contract, \$15 million. Input was solicited from agencies regarding draft standard for state email addresses (final rulemaking August – September 2011).^{lv}

Alabama: In 2005, Alabama’s new governor tried to send an email to all state employees and could not due to the lack of a centralized email service. At the time, Alabama utilized over 50 unique email systems. Some agencies had multiple email servers installed. The governor issued an executive order and Alabama’s IT organization was given 18 months to consolidate email services; as of May 2011, 45 of the 50+ email systems have been consolidated.^{lvi}

Finding 32: Nineteen of the twenty states (95%) are using social media to enhance communications with state staff and citizens.

See the figure below for some social media tools implemented among the states analyzed.

Figure 8: Social Media Types Implemented by States



NASCIO found during a 2010 survey focused specifically on social media use among state governments that citizen engagement is the primary reason states use social media. Public information/outreach/awareness objectives and open government objectives are the next most prevalent reasons.^{lvii} Approximately one half of state CIO organizations and about 67% of other state agencies reported actively using social media tools in NASCIO’s 2010 general survey of state CIOs. This survey also revealed that only about one fourth of states had developed a statewide policy to govern social media use and some state attorney generals have prohibited the use of certain types of social media based on legal concerns.^{lviii} The table below provides sources of existing policy models within the states.^{lix}

Figure 9: Links to State Social Media Policies and Standards

California	http://www.cio.ca.gov/Government/IT_Policy/ITPL.html	Policy
	http://www.cio.ca.gov/Government/IT_Policy/pdf/simm_66b.pdf	Standard
Delaware	http://dti.delaware.gov/pdfs/pp/SocialMediaPolicy.pdf	Policy
Indiana	http://www.in.gov/ai/appfiles/requests/doc/social%20media.pdf	Policy
	http://www.in.gov/inwp/2460.htm	Request form
Maine	http://www.maine.gov/oit/policies/socialmediapolicyfinal.htm	Policy
Maryland	http://doit.maryland.gov/WebCom/Pages/smtemplate.aspx	
Massachusetts	http://www.mass.gov/?pageID=afsubtopic&L=6&L0=Home&L1=Research+%26+Technology&L2=Information+Technology+Services+%26+Support&L3=Application+Services&L4=Mass.Gov&L5=Social+Media+Guidance+%26+Best+Practices&sid=foaf	Guidance and Best Practice
New York	http://www.empire-20.ny.gov	Guidance and Best Practice
North Carolina	http://www.records.ncdcr.gov/guides/best_practices_socialmedia_usage_20091217.pdf	Policy ⁷
Oklahoma	http://www.ok.gov/QSF/Information_Services/Social_Media/	Policy
Texas	http://www.texas.gov/en/about/Pages/social-media-policy.aspx	Policy
Utah	http://www.utahta.wikispaces.net/file/view/State%20of%20Utah%20Social%20Media%20Guidelines%209.22.09.pdf	Guideline

Finding 33: Nine of the twenty states (45%) analyzed provide enterprise level collaboration tools.

Collaboration suites such as SharePoint have become popular management tools within IT organizations. The user-friendly format of these applications make them effective among non-technical business users managing projects and/or organizations. In a survey of 100 businesses with a total of 347,448 users worldwide, the Radicati Group found that 36% of organizations surveyed currently deploy SharePoint and that 23% of the remaining respondents planned to deploy SharePoint within the year. The Radicati Group also found that organizations that use SharePoint do so for many reasons but document management and collaboration are the most prevalent uses.^{ix} To prevent a myriad of distributed SharePoint implementations cropping up across the state, several state IT organizations offer enterprise SharePoint as a service.

2.2.4 Enterprise Information Management (Analytics, Geospatial, Graphics, Imaging, and Healthcare)

Finding 34: Twelve of the twenty states (60%) analyzed have implemented or are implementing business intelligence systems.

Indiana: The Indiana Office of Technology (IOT) is implementing Oracle’s OBIEE tool. OBIEE was selected by IOT partially based upon its ability to integrate with PeopleSoft, the HR and Financial Management tool suite selected by Indiana as the state-wide standard.

Finding 35: Fourteen of the twenty states (70%) analyzed provide enterprise GIS systems.

Colorado: Several Colorado agencies have a GIS system; Colorado is also planning to implement an enterprise GIS with two components: public-facing services and state government services.^{ixi}

Montana: Montana’s state library manages the web portal that provides front end access to state GIS data. Montana’s GIS solution supports 14 million Internet requests and almost

500G of data coming into and out of the network each month with requests for Web mapping services and cadastral information being the most frequent.^{lxii}

Oregon: Oregon's Geospatial Enterprise Office manages a geospatial data clearinghouse and spatial data library. GEO manages 4 terabytes of geospatial data for Oregon's GIS community. That number is expected to grow to nearly 15 terabytes of stored geospatial data in the next few years.^{lxiii}

Utah: Utah's Automated Geographic Reference Center (part of the state's Department of Administrative Services [DOA]), manages the State Geographic Information Database.^{lxiv}

Indiana: Indiana's first strategic GIS plan was developed in 2008. Subsequently, data sharing agreements were negotiated with county government organizations, and hardware/software investments were consolidated to reduce costs. Eventually, at least thirteen separate entities collaborated to support Indiana's enterprise GIS system. These entities ranged from the United States Geological Survey (USGS) to the Indiana Department of Transportation to the State GIS Center of Excellence (CoE) to the State Library.^{lxv}

Finding 36: States are implementing electronic payment tools to cut costs and expedite state payments.

One organization found that “on average, governments spend \$2 per check in printing and mailing costs.... The state of North Carolina saved \$4 million by delivering unemployment benefits via EPC [Electronic Payment Cards] in its first year. More than 20 other states are saving millions by adopting EPC [electronic payment cards] for a variety of programs.”^{lxvi}

Finding 37: States vary in their response to the mandates of the Patient Protection and Affordable Care Act.^{lxvii}

- **As of May 2011 six states have enacted health insurance exchanges (two of these six systems pre-date the mandate).**
- **Several states are launching their compliance initiatives via establishment of committees tasked with researching requirements and presenting recommendations.**
- **At least 41 states have opposed at least some part of the mandate or suggested alternative means of fulfillment.**
- **Three states to date have passed legislation to support the PPACA requirements: California, West Virginia and Maryland.**

California: California was the first state to pass legislation defining the state's approach to the PPACA. Governance of the California exchange will be managed by a five person, independent board appointed by the Governor and legislature. Board members will be required to have demonstrated expertise and will be subject to conflicts of interest rules. Each member will serve one year on a volunteer (unpaid) basis only.^{lxviii}

Massachusetts: As one of the few states with an exchange already implemented, Massachusetts' “Connector” exchange provides a good example of costs for other states. “Connector”

exchange costs total approximately 4% of average premiums with around 187,000 citizens enrolled.^{lxix}

Finding 38: Fulfilling PPACA requirements may entail both new technology investments and process re-engineering.^{lxx}

The core requirements of the PPACA are easily attainable by most states:

- Provide plan information (e.g., plan pricing, quality ratings, benefits) via a web portal
- Establish and operate a toll-free hotline

In addition to these core requirements, PPACA will require that real-time eligibility decisions be presented online for enrollees including those in unique and fluid situations (e.g., families relocating, families with fluctuating annual incomes, etc.) Eligibility determinations must take into account Medicaid, CHIP and exchange requirements as well as basic identification information such as citizenship and income levels. Current state healthcare eligibility platforms are typically county-based rather than state-wide and tied to tedious welfare-eligibility processes. To meet the required mandates, integration between multiple data systems (including modernization of legacy applications) may be required and new state-wide eligibility parameters may have to be implemented.

Finding 39: HIPAA and NIEM standards provide a platform for more easily integrating required systems.

The U.S. Department of Health and Human Services Secretary has recommended the implementation of NIEM guidelines “to develop, disseminate and support standards and processes that enable the consistent, efficient and transparent exchange of data elements between programs and States.” HHS also encourages states to “express business rules using a consistent, technology-neutral standard format, congruent with the core data elements identified through the NIEM process.” And to use “existing Health Insurance Portability and Accountability Act (HIPAA) adopted transaction standards...to facilitate transfer of consumer eligibility, enrollment, and disenrollment information between Affordable Care Act health insurance coverage options (including Medicaid and CHIP), public/private health plans and other health and human service programs.”^{lxxi} Ten of the twenty states analyzed in this study have adopted the NIEM standard, paving the way for meeting PPACA standards. (See Finding 40 below.)

Finding 40: PPACA requirements are a prime opportunity to drive multi-state collaboration.^{lxxii}

Since states are required to cover operational costs via enrollee fees, some states which anticipate lower enrollment numbers may consider collaborating with other states in developing regional exchanges. The adoption of NIEM data standards within many states will greatly enhance states’ abilities to collaborate across state lines.

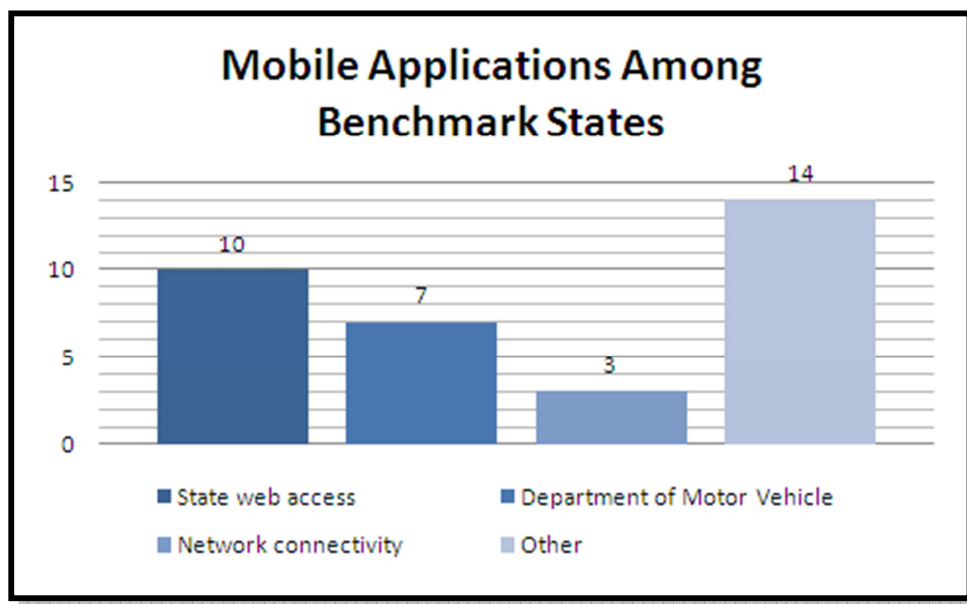
Note: See *The Patient Protection and Affordable Care Act: Current Status and Implications for the State of Hawai‘i* report delivered July 22, 2011 for more information about the PPACA.

2.2.4 Enterprise Application Environments (Enterprise Application, Enterprise Application Interaction & Integration, Mobile Applications)

Finding 41: Seventeen of the twenty states (85%) analyzed have implemented mobile applications.

States have found that creating mobile applications is a relatively quick method of enhancing state employee and citizen access to key state data. The figure below provides an overview of the most frequently occurring types of mobile applications within the benchmarked states.

Figure 10: Mobile Application Types Implemented Among Benchmark States



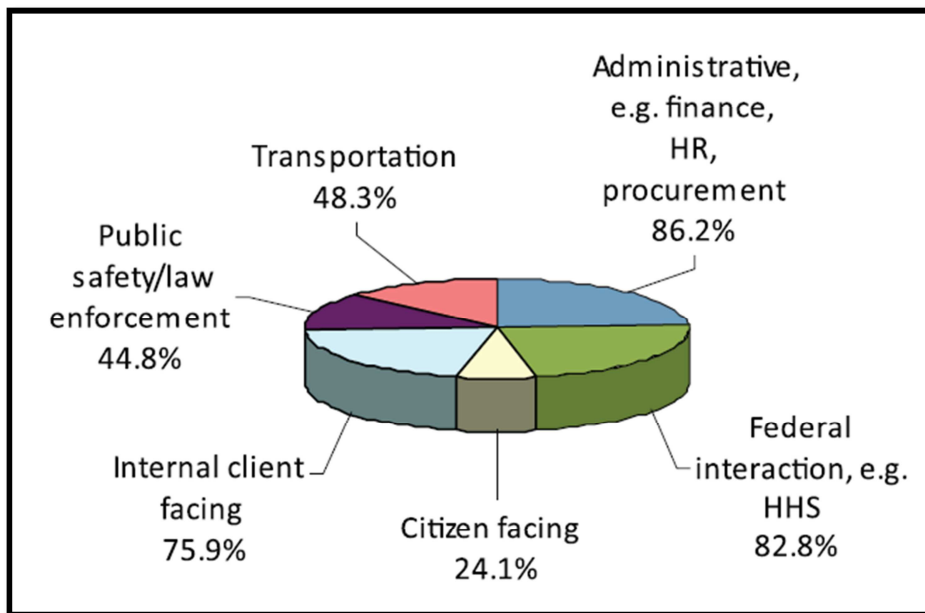
Finding 42: States have found that syncing multiple types of mobile devices (e.g., Blackberry’s , etc.) with the state email system can be a challenge.

Montana: The State Information Technology Services Division (SITSD) implemented “ActiveSync” to allow all mobile devices to send/receive state email.

Finding 43: As states consider consolidation and centralization of services, legacy system modernization has emerged as potential area of cost saving and increasingly a key risk mitigator.

State legacy systems have come to represent an area of significant risk. A 2008 NASCIO survey of state CIO’s revealed that most states classify 50% of state systems as legacy systems and 50% of legacy systems as supporting critical lines of business. Those identified as presenting the greatest challenges were ERP systems and siloed systems used to manage federal programs. The figure below illustrates the lines of business in which most state legacy systems are located. These responses were provided as part of NASCIO’s 2008 National Survey on Legacy Systems and Modernization in the States.^{lxxiii}

Figure 11: Business Areas and Legacy Systems Locations



The “graying” of the state IT workforce looms large on the 3-8 year horizon as a specific risk given the high number of legacy applications. Approximately one fourth of state CIO’s predict that up to 30% of state IT employees are approaching retirement within the next five years. The greatest risk this poses is in the inherit drain of institutional knowledge particularly of antiquated systems and applications. While states have been given a temporary reprieve due to 52.4% of state employees choosing to work beyond retirement age because of the recession, this is only a temporary fix.

“[We use] IT enterprise portfolio management to look at all IT investments, whereas IT application portfolio management looks only at IT applications and what dollars are being spent modernizing systems or supporting systems. Our biggest opportunity is supporting both. Enterprise portfolio management looks at where dollars are spent, but the largest opportunity is from IT application portfolio management. Typically, when states have budget cuts they kill the new stuff, but investment management tries to reverse this and asks if we can achieve overall higher cost savings if we stop enhancing legacy systems and instead modernize. For example, we had a \$1 million eligibility project. When we first looked at it, the effort had 47 projects that would require enhancing legacy systems. We asked, instead of enhancing them, what would the costs and benefits be of modernizing these legacy systems? We knocked out 43 of 47 projects after we decided to modernize versus enhance.” *CIO Respondent to the 2010 State CIO Survey*

Additionally, many technologies used in legacy systems are no longer supported by vendors.^{lxxiv}

States are using various methods to address these risks. For short-term fixes, some states are contracting with former state employees to perform specific tasks based on their knowledge of legacy systems.^{lxxv} Application portfolio management processes are helping inform longer-term decisions by helping states inventory legacy systems and define end-of-life plans.

North Carolina: North Carolina implemented an applications portfolio management tool which allows them to maintain an accurate inventory of applications, analyze each application within the context of the entire portfolio considering such criteria as cost, performance, risk, etc., and develop end-of-life planning scenarios.^{lxxvi}

Working with vendors for ‘no cost’ proofs of concept has also helped inform the modernization decision process. Once it is determined that a new solution must be defined for a legacy system, states are taking multiple approaches to address this issue. The figure below lists some of these approaches.

Figure 12: State Approaches to Modernizing Legacy Systems

Modernization Methods	Timing – Used in the Past/Currently Using	Experience – Used/ Using Successfully
Data conversion	90.9% (N = 22)	100.0% (N = 19)
Extension	90.5% (N = 21)	100.0% (N = 17)
Virtualization/ Emulation	82.6% (N = 23)	94.1% (N = 17)
Re-engineer or replace with a COTS software	82.1% (N = 28)	91.3% (N = 23)
Applications wrapping	81.8% (N = 22)	70.0% (N = 20)
Re-hosting/ Re-platforming	80.0% (N = 25)	89.5% (N = 19)
Automated migration	73.3% (N = 15)	81.8% (N = 11)
Renovation/ Re-architecting	72.0% (N = 25)	87.5% (N = 16)
* Utilize EAI to encapsulate and link legacy applications	57.9% (N = 19)	90.9% (N = 11)
* SOA integration	46.1% (N = 26)	84.6% (N = 13)

Source: NASCIO’s 2008 National Survey on Legacy Systems and Modernization in the States

* = Highest percentage reported of planning to use in the future: (1) SOA integration, 53.8% (N=26); (2) Utilize EAI to encapsulate and link legacy applications, 42.1% (N=19).

Colorado: Legacy system modernization is considered one of the most (if not the most) critical IT issues in the State of Colorado. The Colorado Office of Information Technology (OIT) assessed several legacy systems across multiple executive agencies in 2009 and ascertained that due to budget constraints limiting system modernization efforts the average age of legacy systems was ten years. Overall, 58% were at least seven years old, seventy-seven were 15+ years old, and one system was over 40 years old. Only 9% were less than seven years old. With almost forty percent of Colorado’s workforce due to retire by 2016 (representing a major drain of institutional knowledge) and vendor technical support no longer available for legacy system software, these legacy apps present a significant risk. Colorado has made modernization of thirty-four of these systems a key component of their enterprise-wide transformation initiative.

West Virginia: West Virginia’s application development, maintenance, and support activities are highly distributed. Currently there are over 500 legacy applications utilizing over 70 languages and 40 unique database tools, costing the state over \$35 million annually and being supported by more than 300 FTE’s and 60 contractors in 31 agencies. Several of these applications are 15+ years old; vendor technical support is no longer available for the obsolete technologies. This fragmentation has resulted in limited standards and weak continuity of operation and disaster recovery strategies. As result, enhancing the enterprise applications development environment is one of the four key focus areas for West Virginia OT during the 2010-2013 period. West Virginia’s ERP implementation will replace approximately 100 of these systems.

Kentucky: Every two years, each agency is required to submit end-of-life replacement plans for legacy systems and designate the basis for the plan (i.e., prohibitive maintenance costs, etc.)

Indiana: An annual evaluation of risk is performed including an analysis of legacy applications; results are reported to the legislature.

Virginia: Virginia developed public-private partnerships to reduce initial costs and mitigate the top obstacle states face in regards to modernization efforts: funding. Virginia also established an enterprise application program office focused on modernizing legacy applications. Virginia has also considered SaaS solutions to mitigate the requirement of a large modernization investment.

Montana: Montana has adopted the federal Methodology for Business Transformation (MDT) toolkit.

Finding 44: Nine of the twenty states (45%) analyzed have implemented service oriented architecture (SOA).

Along with Enterprise Application Integration (EAI) and Virtualization, SOA is the leading solution states planned to use to modernize legacy systems in the future.^{lxxvii}

Finding 45: Fourteen of the twenty states (70%) benchmarked in this study have implemented some level of disaster recovery plan.

Disaster recovery plans vary greatly by state; the degree of enterprise-wide disaster planning is linked to the level of consolidation and centralization within the enterprise. For example, Montana’s state agencies have ranked the criticality of applications; only 28% of those ranked as “critical” have a DR plan. As data center consolidation, virtualization and cloud computing become prevalent, disaster recovery planning efforts will continue to grow.

West Virginia: Construction of a second data center was planned to provide a hot or cold site for disaster recovery.

Finding 46: Ten of the twenty states analyzed (50%) share data (or are actively planning to) via enterprise systems (e.g., ERP, etc.).

West Virginia: During 2010, West Virginia began the initial stages of an Enterprise Resource Planning (ERP) implementation. It is anticipated that this initiative, more than any other, will transform the state's business processes, replacing approximately 100 of the state's existing legacy applications either completely or partially.

Finding 47: A few states are taking a broader approach to information sharing.

Overall: Ten of the twenty states (50%) analyzed have adopted the NASCIO recommended National Information Exchange Model (NIEM) data standard to support data integration and standardization across the state enterprise and between state and federal organizations.

Colorado: The Government Data Advisory Board (GDAB), one of very few Boards in any state in the country to provide a central governing structure for enterprise data sharing initiatives, was seated in August 2009 and is chaired by the State Chief Data Officer.

3.0 CONCLUSION

The majority of state government organizations are pursuing technology consolidation and centralization as a solution to the fiscal pressures imposed by the recession. While funding reductions are motivating these changes, many states expect to achieve significant performance improvements as well.

With so many consolidation efforts across the nation well underway or completed and the cloud environment becoming more mature, State of Hawai`i is in an excellent position to benefit from lessons learned by other state government IT organizations and thereby to avoid common pitfalls. State of Hawai`i is also well positioned to capitalize on low-entry-cost technologies such as cloud computing to achieve significant cost savings and performance standardization and improvement.

APPENDIX A: STATE CONSOLIDATION/CENTRALIZATION APPROACHES OF NOTE

Indiana	
Directive	Executive order. ^{lxxviii}
Centralized staff	Yes. Enterprise staff only; application development staff report to agency CIO's.
Phased centralization	Yes. The CIO located the strongest agency-based IT organization in the state, built on their strengths and then began the centralization by transitioning several 'key' staff from this and other agencies to IOT to manage the consolidated infrastructure services IOT would offer. He also recruited staff from the private sector.
Phases	<ul style="list-style-type: none"> • IT Consolidation Agency Executive Summary • Technical Kickoff Meeting • Phase 1 - Agency IT Assessment, Technical Assessment Review, Project Assessment Review, Deliverables • Phase 2 - Consolidation Implementation • Phase 3 - Consolidation Review^{lxxix}
Length of effort	N/A
Savings/ benefits	The creation of IOT resulted in core IT services for all 70 agencies (28,000 end users) being centrally managed for a savings of \$14 million annually. In addition to \$14 million in annual savings, Indiana's technology consolidation has also funded the replacement of all 28,000 PC's on a four year schedule. IT contract consolidation resulted in \$20+ million in savings. ^{lxxx}
Other	<p>Prior to 2005, IT in Indiana was managed by each agency. The Department of Administration (DOA) provided some centralized IT support but since agencies were not required to use DOA services, only 900 of the 28,000 users within the state were supported by DOA. <i>BP</i> By executive order in 2005, Indiana appointed a CIO, created the Indiana Office of Technology (IOT) and consolidated IT infrastructure (network, email, payroll, help desk, purchasing, human resources, data center maintenance) under this new office. To achieve this consolidated shared services model, the newly appointed CIO pursued the following:</p> <ul style="list-style-type: none"> • transition oversight/management – Indiana established three project teams, one focused on consolidation (project plan, templates, HR, etc.), one focused on service excellence (best practices, security policy, customer satisfaction training, etc.), and one focused on shared services (service/cost definition, vendor contract consolidation.)^{lxxxi} • standardized technology – Standardizing on Microsoft Outlook as the email tool for all 28,000 users was one of the initial technology standardization efforts of IOT. Indiana moved from 107 agency email

	<p>servers to 6 statewide servers. ^{BP} The success of Indiana’s email consolidation process was partially dependant upon the establishment of agreements between IOT and each agency regarding their specific support needs (e.g., the Indiana Bureau of Motor Vehicles was open on Saturday and closed on Monday; the Indiana State Police needed special support that differed from all other agencies, etc.). IOT then tracked email performance against these specific agreements. “We did this (email consolidation) carefully because we knew if we had one failure, people would want to back off. We never did have a failure”, said Gerry Weaver, Indiana CIO and Head of the Indiana Office of Technology.</p> <ul style="list-style-type: none"> • data center consolidation - IOT consolidated Indiana’s five data centers into one reducing Indiana’s 3,000 servers to 2,000 via email consolidation and virtualization. • centralized end user support – The move to a state-wide help desk resulted in lower customer satisfaction scores for a few months; by the end of the first year, customer sat scores were higher than prior to the centralization.^{lxxxii} Additionally, by implementing Intel’s vPro remote-management function on 7000+ PCs, an estimated 80% of desk-side visits were eliminated, saving Indiana an estimated \$170K in the first year of implementation.^{lxxxiii} • energy management – in addition to data center consolidation, IOT deployed Intel’s vPro technology to automatically shut down state PC’s at night saving \$400,000 annually in electric bills. <p>“We’d be glad to share anything with any states that are approaching this regarding the templates we used, the processes we used and the way we set up the billing mechanisms.” <i>Gerry Weaver, Indiana CIO and Head of the Indiana Office of Technology</i></p>
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West Virginia	
Directive	Governor supported effort by CTO to gain buy-in agency by agency. ^{lxxxiv}
Centralized staff	Yes.
Phased centralization	Yes. Centralization began in 2007 with two agencies; all civil service agencies were consolidated by May 2010.
Phases	Agency by agency.
Length of effort	Approximately three years.
Savings/ benefits	Since 2005, IT expenditures (excluding labor) declined by approximately 17%. Staffing levels have declined by over 12%.
Other	<p>Between 2001 and 2005, IT related costs grew 6% annually in West Virginia. Upon appointment in 2005, the new Chief Technology Officer (CTO) and the Office of Technology were tasked with assessing the existing technology environment. The CTO and OT recommended that West Virginia’s entire technical infrastructure and IT-related staff positions be consolidated/ centralized within OT. While supporting the recommendation, in lieu of imposing the change via executive order or legislation, the governor tasked the CTO with gaining buy-in among cabinet secretaries via promoting the benefits of consolidation to each organization specifically. ^{BP} To achieve this buy-in, OT established memorandums of understanding (MOUs) and service level agreements (SLAs) with each agency to govern the relationship between OT and agencies. OT currently offers 30+ services for nearly 20,000 employees at over 1,000 locations. The following were key to the success of West Virginia’s consolidation initiative:</p> <ul style="list-style-type: none"> • managed desktop – all desktops are procured from a single vendor who applies the state’s standard image (or custom upon request). • energy management – OT implemented a power management system to automatically shut down state PC’s at night. Initial implementation resulted in savings of approximately \$250K annually in electric bills. Upon full implementation, savings are expected to be \$500K annually. • centralized support – by forming the centralized service desk from IT support staff formerly located in each agency, the centralized desk immediately inherited a wealth of institutional knowledge regarding each agencies’ needs. • standardized technology – OT implemented a centralized email system in 2007 and transitioned agencies to the new system as they were migrated to the managed, standard desktop environment. Approximately 17,000 of 20,000 were migrated by September 2010. OT also created the WV.gov network domain and migrated 75 unique agency domains to WV.gov. Each migration required OT to map old systems to the new domain. The manual account provisioning process was labor

	<p>intensive; upon completion of the migration, OT anticipated automating the provisioning process.</p> <ul style="list-style-type: none"> • self-funded portal – <i>BP</i> In 2007 OT formed a public-private partnership with a local subsidiary of NIC, Inc., to maintain the state’s web portal including adding interactive online transaction services to the site. NIC invested the initial capital and OT allows NIC to earn a reasonable return through selective transaction fees assessed to users of some online portal services (e.g., NIC serves as the sole point of electronic access to the Division of Motor Vehicles’ [DMV’s] motor vehicle records). NIC has deployed this “self-funded” model in 20 other states (including Hawai`i), delivering efficiencies without expenditure of appropriated funds. WV.GOV has matured into an efficient, effective and user-friendly statewide intranet, internet, and extranet portal.
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Michigan	
Directive	Executive order.
Centralized staff	Yes.
Phased centralization	No. All staff and services moved under authority of CIO on one day. Michigan recommends a phased approach for other states and standardization prior to centralization.
Phases	<ul style="list-style-type: none"> Centralization Data Center Consolidation Standardization and consolidation
Length of effort	Moved 400 people in the first year. ^{lxxxv} Standardization and consolidation still ongoing.
Savings/ benefits	Michigan’s IT workforce shrunk from 2,300 employees/2,300 contractors in 2002 to 1,700 employees/800 contractors in 2011. Information technology is more closely tied to agency needs. Between 2002 and 2008, savings totaled approximately \$100 million (24%). ^{lxxxvi}
Other	<p>The State of Michigan was the first state in the nation to consolidate and centralize technology services. In 2001 the Department of Information Technology (DIT) was formed by executive order. Upon being launched in 2002, DIT consolidated 19 IT organizations and 2,300 employees. Additional activities include:</p> <ul style="list-style-type: none"> central IT platform – Initiated in 2007, the Michigan One initiative was designed to standardize file and print services, desktop installations, and security. All 55,000 desktops and 900 applications were to be transitioned to the new platform by 2010. Server reduction anticipated (2,612 to 670).^{lxxxvii} data center consolidation – Consolidated 36 data centers into 3. technology standardization – Seventy disparate email systems transitioned into two.^{lxxxviii} <p>Due to the success of Michigan’s technology centralization/consolidation effort, DIT is now part of the Department of Technology, Management and Budget and the CIO has been tasked with applying centralization/consolidation principles to other administrative areas of the state (e.g., state facility management, etc.) to achieve savings beyond the technology space.^{lxxxix}</p>

Utah	
Directive	Legislative mandate.
Centralized staff	Yes. 900+ staff from 24 agencies were transitioned into the Department of Technology Services under the purview of the CIO.
Phased centralization	Authorized in March 2006, all IT staff transferred to DTS in July 2006 and DTS began collecting fees from state agencies. Data center consolidation January 2009 – June 2010.
Length of effort	Approximately 3 years.
Savings/ benefits	From FY 2007 to FY 2010 has achieved a cost savings of \$26.55 million. By managing to SLA's, DTS' customer satisfaction ratings in 2010 averaged 4.61 on a scale of 1 to 5. Utah as also the first state in the country to win the Center for Digital Government's Best of the Web award in consecutive eligible years. ^{xc} Since inception, FTE counts have been reduced by 148 (19.3%). Managed attrition has saved DTS \$14.8 million and covered employee compensation increases totaling \$15.9 million for the same period. From FY 2007 to FY 2010 has achieved a cost savings of \$26.55 million. Rural enterprise IT support has reduced travel costs approximately 20% ^{xci} .
Other	<p>Utah's centralization/consolidation effort began with a legislative mandate in 2005. Anticipating full consolidation by mid-2006, the mandate established the Department of Technology Services (DTS) and required the appointment of a CIO.</p> <p>To launch this initiative, DTS began with audit of assets and resources and centralization of staff. Additional activities included:</p> <ul style="list-style-type: none"> • oversight – ^{BP} A DTS Transition Advisory Council (DTAC) was formed comprised of senior department managers and several agency IT Service Directors. DTAC works with each agency to ensure business needs are met and present/review optimization opportunities via the established IT investment review process. The Technology Advisory Board, comprised of private sector, educational and government members also provides guidance. • enterprise planning – In 2006, DTS began developing Strategic and Annual IT Plans. The first IT Strategic Plan was delivered to the legislature in 2006. Plan development involves key stakeholders; business leaders identify and discuss business needs and areas of potential collaboration; DTS reviews, recommends optimizations and estimates costs; business leaders and DTS jointly fund and launch the initiatives. • managed desktop – prior to 2005, Utah had 369 “standard” desktop configurations and 22 versions of word processing software in use. DTS standardized on a state-wide desktop image and saved \$3.5 million annually on desktop purchases by accessing the Western States

	<p>Contracting Alliance (WSCA).</p> <ul style="list-style-type: none"> • data center/server consolidation – DTS consolidated 35 data centers into 2 over eighteen months saving \$4 million annually, reducing servers from 1864 to 591, and providing enhanced security and performance. One example of performance enhancements achieved via consolidation/virtualization is a 60% performance gain on a regular batch job within the Department of Workforce Services. Another: total runtime for state-wide payroll decreased to 3.5 hours from 39 and provided a cost avoidance of \$300K in hardware needs.^{xcii} For more details on this initiative and lessons learned see http://www.cio.gov/documents/Utah-data-consolidation.pdf and http://dts.utah.gov/architecture/datacenterconsolidation/documents/DTSDataCenterConsolFinalReport.pdf • centralized support – DTS consolidated 22 separate agency-based help desks into one centralized support team.^{xciii} • online services – With DTS leadership, the number of online services in Utah grew from 200 in 2004 to over 900 in 2010. Utah.gov receives more visitors per capita than any government website in the U.S. and more unique monthly visits than Colorado, Arizona, Nevada and Idaho combined. • customer focus – Emphasized communications via a formal communications plan including scheduled email newsletter updates. DTS designated 24 Agency IT Service Directors who serve as the liaisons between DTS and the agencies. DTS also created service level agreements and manage performance to these agreements.^{xciv} <p>DTS supports over 22,000 network connected devices, over 1 million emails per business day, 500+ servers, over 20,000 desktops, 890+ business applications, and 14,600 service requests per month.^{xcv} In 2007 and 2008, DTS operated on a net negative income due to start-up costs and unfunded employee compensation. By FY2009, DTS was operating with a net positive income and purposely used extra funds to pay for new projects, investments and to prevent raising service rates.</p> <p>Maturation of the technology environment continues:</p> <ul style="list-style-type: none"> • Email – DTS is currently pursuing a cloud-based email service to replace the existing, end-of-life system. Once a contract is in place, DTS plans to offer use of this system to city and county governments and educational institutions.^{xcvi} • Mainframe – DTS has mandated that legacy applications be retired from the mainframe by 2013. • Desktop virtualization – Planned for 2010-2013. • Enterprise Planning – Four communities of interest have been formed (government operations, social services, public services, regulatory services) and each state agency assigned to at least one. These communities are tasked by the Governor's office with identifying
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	programs and data that can serve multiple agencies. DTS serves as a facilitator and ‘optimization consultant’ to help each community reach its goal. ^{xvii}
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Final Report



Baseline of Information Management and Technology and Comprehensive View of State Services

Under Contract Number Z991503, Deliverables a.8.1 and b.8.1

September 28, 2011



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EXECUTIVE SYNOPSIS OF THE REPORT

In May 2011, Science Applications International Corporation (SAIC) was awarded a contract by the Research Corporation of the University of Hawai'i (RCUH) to perform an Information Technology (IT) assessment on behalf of the Office of Information Management and Technology (OIMT) in preparation for hiring a Chief Information Officer (CIO) and ultimate fulfillment of a key requirement — the creation of an IT Strategic Plan for the State of Hawai'i. This report, the *Final Report – Baseline of Information Management and Technology and Comprehensive View of State Services* (known hereafter as the “*Final Report*”), fulfills Deliverables a.8.1 and b.8.1 as defined by the contract between RCUH and SAIC.

An executive synopsis of the final report is below and provides a high-level overview of the most significant aspects of the SAIC team's findings and observations relative to mission, mission objectives, and services delivered by the State of Hawai'i's Executive Branch and to the IT that supports those missions and services. It also summarizes the team's recommendations relative to the support that IT can provide in relation to transforming government, investing in the people of Hawai'i, and ultimately growing a sustainable economy by identifying seven overarching themes that can serve as the foundation for the development of the State's IT Strategic Plan:

- Leverage Modern Technology's Capacity to Transform and Improve Lives
- Help Establish Open Government and Enhanced Self Governance
- Manage Basic IT Resources as a Reliable, Efficient State Utility
- Facilitate the Collaboration Required for Optimal Solutions and Speedy Outcomes
- Provide Career Development Opportunities for State and State IT Employees
- Manage Information as a State Asset
- Provide an Economic and Sustainable Technology Infrastructure

The IT environment within the State and within various Departments has undergone numerous assessments, audits, and reviews (e.g., *Audit of the State of Hawai'i's IT: Who's in Charge?* #09-06; Charter for Digital Governments, Hawai'i Transitioning to an IT Best Practice State; IT Technical Governance Committee's, *State of Hawai'i IT Transition Document*) performed by internal and external organizations and companies. Each report has put forth various recommendations, but there has been a common theme and similar, if not the same, recommendations. In fact, one common question asked of SAIC was, “How will this study be different?” Our response was that while, in many cases, SAIC's report (while far more extensive relative to each Department's mission, mission objectives, and services and the IT environment that supports them) will echo many of the same recommendations, the difference is the foundation from which the assessment occurred given:

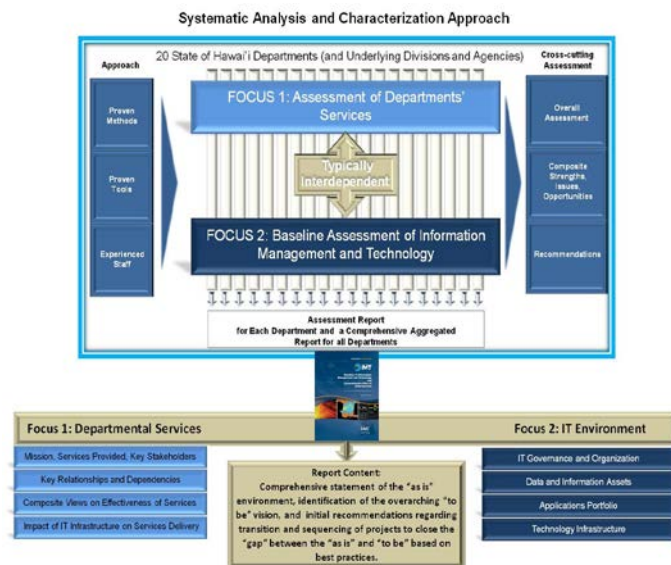
- Strong gubernatorial and Legislative support and critical prioritization with the passage of Act 200 and Act 84 (HRS 27-43)
- Identification and hiring of the State's first CIO
- Establishment of OIMT
- Department and IT leaderships' overwhelming recognition of the need to enhance IT solutions in order to conduct the business of the State and service the citizens more effectively and efficiently
- Creation of an IT Strategic Plan
- Establishment of an IT Steering Committee to support the CIO and IT governance activities

- Mandated annual briefings to the Legislature regarding the status of IT and progress against the IT Strategic Plan

These actions, in totality, provide evidence that the State is now ready to take the next steps in addressing IT needs and opportunities with both commitment and focus.

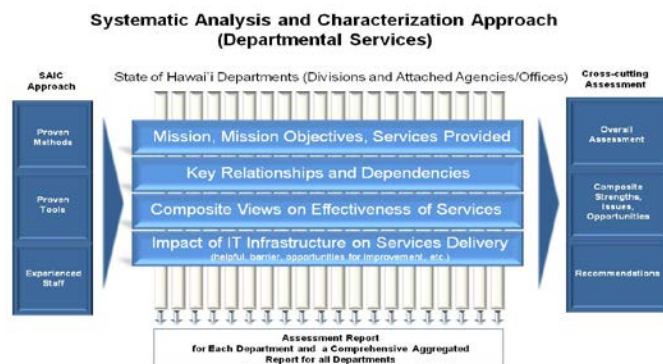
APPROACH TO THE ASSESSMENT

To gather the data that formed the basis of this report, all Executive Branch Departments’ Directors and their IT leadership were interviewed. Many of the Departments’ various Divisions’ and Attached Agencies’ managers were also interviewed. In addition, SAIC met with numerous other organizations (e.g., Hawai`i Information Consortium [HIC], Hawai`i Health Systems Corporation [HHSC]) that support or are involved with the State. In total, more than 200 individuals were involved in assessment activities, and SAIC cataloged more than 1,500 pages of notes and other materials. Using a structured interview process, SAIC gathered information regarding mission, mission objectives, services provided, key stakeholders, key relationships and dependencies, composite views on effectiveness of services, and impact of IT infrastructure on mission and service delivery. SAIC also gathered information regarding the IT environment relative to governance processes and strategy, data and information assets, applications portfolio, and the supporting technology infrastructure.



Overview of Departmental Mission, Mission Objectives, and Services

As part of SAIC’s deliverable regarding the “business” services provided by the Departments, we evaluated and confirmed the mission and services (functions provided to citizens and activities that support internal functions) of each Department. The value of this approach is to establish that there is a clear “line of sight” or traceability between the priorities of the Governor, the Legislature, and each Department’s business priorities (e.g., the current need to implement aspects of the Patient Protection and Affordable Care Act, longitudinal information management, geographic information system solution, education initiatives, workforce development) to investments required to be responsive in implementing new or changing business processes or capabilities.



SAIC found that overall the mission of each Department is clearly defined and that each Department’s leadership and staff are passionate about and focused on ensuring the overarching mission is met even in the face of significant budget and staffing reductions that have occurred over

the past decade. Departmental missions vary in focus from service delivery to constituents to providing support to other Departments.

Since each service line of business is function-based, multiple organizations may be involved in its service delivery; however, the technology and processes that support the lines of business are candidates for consolidation/integration/optimization. For example, the Departments are each supported by an Administrative Services Office (ASO) in role if not in name. Most ASO services are duplicated from Department to Department primarily due to the distributed nature of the

By implementing IT consolidation/ integration measures prior to standardizing processes, Michigan's Department of Information Technology (DIT) created unnecessary obstacles that had to be overcome down the road including, "...we had very informal operating processes...not much was written down, no data on service levels.... And that is a huge source of dissatisfaction." Defining and documenting the processes should have come first. *Teri Takai, former CIO State of Michigan* (<http://www.govtech.com/security/Teri-Takai-Survival-Guide-to-IT.html>)

functional support but are hampered by non-integrated systems (e.g., accounting, procurement, human resources, and IT services). These ASO services/systems are potential candidates for consolidation/ optimization and are identified as cross-cutting opportunities for business process identification and reengineering. The line-of-business structure makes business reference

model analysis a best-practice first step in looking at and stewarding horizontal integration, managing technology investments from an enterprise portfolio perspective, and providing a building block in defining an enterprise architecture.

KEY RELATIONSHIPS AND DEPENDENCIES

SAIC found that most of the Departments deal with one or more of their peer Departments on a frequent and regular basis in order to effectively meet mission objectives and deliver services to constituents. A number of organizations (i.e., Department of Accounting and General Services [DAGS], Department of Budget and Finance [B&F], Department of Human Resources Development [DHRD], Department of Defense [DOD], and Department of the Attorney General [AG]) have key relationships with every Department to some extent.

Departments	GOV/IG	AG	HDOA	B&F	DAGS	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	PSQ	DOT	DOTAX	LH	Federal Agencies	County	City
GOV/IG	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
AG	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
HDOA	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
B&F	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DAGS	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DBEDT	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DCCA	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DOD	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DOE	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DHHL	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DOH	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DHRD	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DHS	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DLIR	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DOLNR	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
PSQ	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DOT	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
DOTAX	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
LH	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

Assessment Legend:

Automated Interface	Green	Custom applications are shared between Departments with little or no need for manual interaction. This does not necessarily exclude some manual interfaces that may occasionally occur.
Manual Interface	Yellow	Interfaces to facilitate services are manual and are accomplished via forms and human intervention to facilitate the interface. Sending files via email does not constitute an automated interface.
Both Automated & Manual Interfaces	Orange	Some-automated interfaces (e.g., a mix of manual and automated) indicated by the use of spreadsheets or other documents to support the interface but not necessarily custom applications.

A quote from a Department Director: "Not only can we not share information across Departments, we struggle to share information within our Department."

and city governments including an indication of whether those interfaces are automated, manual, or both is provided in this report. This information provides insight into the degree to which IT is or is not supporting the services that the Departments must provide and indicates "stove-piping" (or lack of integration) relative to information sharing and the systems that support this sharing.

COMPOSITE VIEW OF EFFECTIVENESS OF SERVICES

SAIC was told by a variety of organizations that a number of services could not be performed or were less timely due to excessive backlogs, a lack of staff, and/or support from other Departments such as DAGS Information and Communications Services Division (ICSD). Examples offered by various Departments of reduced services (or services not being met) include but are not limited to:

- elevator inspections
- Section 508 of the U.S. Rehabilitation Act compliance
- incoming animal and agricultural inspections
- desk top systems and support
- server implementations
- system implementations
- Federal reporting requirements
- controls for Personally Identifiable Information (PII) protection
- cyber security assessments

In addition to these examples, two other notable service delivery challenges were identified:

- *State of Hawai'i's Comprehensive Annual Financial Report*: The impacts of funding and staffing reductions were most evident within DAGS where the State of Hawai'i's Comprehensive Annual Financial Report (CAFR) for FY 2010 still has not been finalized (July 1, 2011, began FY 2012).
- *ICSD Services*: ICSD is the only organization within the State whose stated mission is to “comprehensively manage information processing and telecommunication systems and provide services to all organizations.” While interviewees were quick to say they believed that ICSD’s inability to respond, at least to some extent, was due to severe staff reductions (>60%) within the organization over the past 10-12 years; overwhelmingly, SAIC was told that ICSD was not meeting the advertised mission and/or perceived mission objectives for the State with the possible exception of the networking support team.

IMPACT OF THE IT INFRASTRUCTURE ON SERVICE DELIVERY

The impact of the IT infrastructure on services delivery is significant in some Departments and minimal in others; however, for each organization we spoke with, the need for additional IT infrastructure – in every sense (i.e., governance, organization, data and information assets, applications portfolio, and technology infrastructure) - to support service delivery was unanimous. Every Department recognizes that IT truly does support “doing more with less;” but as staff and budget reductions have occurred, the ability to utilize IT to improve the productivity of the remaining staff has been far too limited. Departmental services and mission objectives are not being delivered as required and in many cases this is due to the fact that IT does not effectively support this delivery. We found that services could be more effective if IT solutions were more accurately tied to current business needs/requirements of the Departments as well as economic and staffing realities within the State. As part of this analysis, it became clear that redefining or reengineering a number of processes would provide the State with opportunities to transform and truly utilize IT to enhance support and help the State’s citizens.

CROSS-CUTTING OR ENTERPRISE SOLUTION OPPORTUNITIES REQUIRING BUSINESS PROCESS REENGINEERING (BPR), PROCESS IDENTIFICATION, AND/OR REQUIREMENTS DEFINITION

As a follow-on to our analysis of IT’s impact on Departmental service delivery, we noted a number of specific areas, activities, or processes that were:

- performed by each or nearly each Department
- required by a number of Departments, but for which inter-departmental requirements were not being coordinated
- paper-driven in many cases
- extraordinarily labor intensive and therefore drove users to create one-off solutions

Candidates for Cross-Cutting Enterprise Solutions	Immediate-Term	Near-Term	Long-Term
Financial Management Initiatives	✓		
Procurement and IT Acquisitions	✓		
Program/Project Management Process Definition	✓		
Time and Attendance Reporting	✓		
Check Printing and Processing	✓		
Legislative Bill Tracking	✓		
Constituent Response Tracking	✓		
Data Entry	✓		
Enterprise Email Solution	✓		
Inventory/Asset Management		✓	
Document Tracking and Records Management		✓	
Neighbor Island Solution		✓	
PPACA Implementation		✓	
Longitudinal Data Enterprise Solution		✓	
Federal Grant Application and Lifecycle Management			✓
GIS Enterprise Solution			✓

In addition, many Departments stated the need for these areas, activities, processes, or supporting tools/IT systems be reviewed at

a statewide or enterprise level. The chart represents the activities that were named most frequently by the Departments or were areas that SAIC recognized as having the most redundancy.

CULTURE

During the assessment, SAIC enjoyed learning about the Hawaiian culture. It is a culture that insists on personal privacy, believes in the power of the story, listens intently, and appreciates being heard and having their opinions valued. They also believe in working together and cooperating, *laulima*. The SAIC team found the Aloha Spirit is real and truly does represent the attitude of friendly acceptance and commitment to resolve any problem and accomplish any goal. This commitment extends to so many of the



State employees we observed who were intent on meeting mission objectives and delivering services to the citizens of Hawai'i, which often translated simply into working longer and harder with or without being paid overtime. Additionally, due to all the budget cuts, the staff has begun to accept the lack of support and tools to perform their jobs more effectively as “just the way it is.” Likewise, while they recognize processes that are inefficient, they seem to have lost the drive to surface these ideas as improvement opportunities, feeling that the answer from process/system owners will be “no money, no resources.”

The Departments’ employees truly are the State’s greatest assets!

Below is a summary of high-level recommendations relative to Departmental missions, mission objectives, and service delivery.

To Be Recommendation 1: Maintain the Business Reference Model

- *Maintain and continue to refine the business reference model as a tool to support statewide stewardship and evaluation of service elements delivered to the citizens of Hawai'i and internal support services; when evaluating processes or implementation ideas, utilize the lines-of-business approach to gather input and promote implementation.*

**To Be Recommendation 2: Address Manual Interfaces**

- *Focus on the elimination/minimization of manual interfaces.*

To Be Recommendation 3: Conduct Risk Assessments

- *Improve the State's ability to provide services by conscientiously identifying and assessing the risk of "not performing" or "partially performing" various functions.*

To Be Recommendation 4: Institute Accurate Performance Measures

- *Review current performance measures, revise as warranted in order to create meaningful performance/service delivery measures for each organization, actively evaluate performance based on these revised measures, and, ensure that service recipients' satisfaction (citizens and internal service recipients) is measured and addressed (beyond the lack of complaints).*

To Be Recommendation 5: Apply Business Process Reengineering

- *Use BPR activities to improve the efficiency and effectiveness of service delivery including:*
 - *Ensuring a line of sight between the Departments' needs for IT as part of effective service delivery and solutions identified for Governance*
 - *Identifying, thoroughly evaluating, and documenting processes for any new service implementation activities and performing BPR by decomposing existing processes and identifying streamlined approaches/opportunities for the most critical activities, especially those that have cross-cutting or statewide implications*
 - *Addressing the top 16 cross-cutting areas or opportunities for an enterprise solution based on the priority assigned by involving appropriate Departmental stakeholders (and bargaining unit representatives as appropriate) using proven BPR and/or requirement analysis techniques to identify enterprise or statewide solutions. (NOTE: The process improvements identified using BPR may or may not require IT solutions, although many will. It is recommended that enterprise business re-engineering be completed prior to implementation of any supporting enterprise IT tools.)*

Overview of Departmental IT Environment

As SAIC evaluated the current Departmental IT environment within the Executive Branch, and as we talked with Departmental leadership, and most importantly the IT leadership, within each Department, there was an overwhelming consensus of need and expectations with regard to the priorities of the newly hired CIO and his organization:

- Provide IT governance – overall direction with collaborative input from stakeholders; investment planning and management; and policies related to security, wireless use, smartphones, iPhones, social media, and web development/content (Focus Area 1: Governance and Organization)
- Create a viable solution for disaster recovery (DR) and business continuity (Focus Area 2: DR and Continuity of Operations Planning)
- Address IT procurement challenges – coordinated IT “buys” (Focus Area 3: IT Procurement)

- Provide direction and solutions relative to security and privacy to protect but not hinder information flow internally or externally (Focus Area 4: Security and Privacy)
- Coordinate information sharing through “open” government, collaboration tools, work flow processes, and social media (Focus Area 5: Open Government and Social Media and Focus Area 6: Collaboration and Workflow)
- Identify application solutions that can be leveraged statewide, for example to improve business management decisions, manage and track costs, record staff members time and attendance, share information, and manage document workflow (Focus Area 7: Enterprise Applications)
- Define and implement an improved, extended, and sustainable infrastructure including, but not limited to, enhancement of the network, a new more extendable email environment, improved video conferencing infrastructure for communications, secure and effective web services, and an increase in available storage for digital data (Focus Area 8: Enterprise Infrastructure)
- Facilitate, improve, and expand wireless and mobile device usage (Focus Area 9: Wireless and Mobile)
- Identify better and more efficient approaches to enhance productivity and improve efficiency across State government (Focus Area 10: Business Process Engineering or Reengineering)

IT Governance and Organization

The goal for IT within the State of Hawai'i should be to enable each Department, and State government as a whole, to effectively serve the citizens and businesses that call Hawai'i home. As SAIC reviewed the As Is environment, we found that the State was not maximizing its use of IT and was not benefitting from IT in terms of productivity improvements, cost savings, effectiveness, or efficiencies to the extent that other State governments, private industry, and the Federal government do.

GOVERNANCE

To assess the State’s effectiveness in terms of governance, SAIC applied the criteria of the 12 key competency areas to the only organization that is recognized as having the mission to provide information processing and telecommunications systems to all Departments — ICSD. (NOTE: Approximately 60-70% of ICSD resources are devoted to providing IT services statewide, while the other 30-40% are devoted to IT operations and maintenance for DAGS Divisions that are the system and data owners (e.g., accounting, payroll, invoice/warrant).



The challenge for standard enterprise solutions and technologies will continue to be the nature of significant portions of funding at the program level. Historically, this has resulted in program point solutions that have also implemented their own supporting infrastructure, both at the application level and at the server level. Both ICSD and the Departments’ IT organizations try to stay ahead of these developments and lobby for standardization but struggle to be effective given the previous lack of a CIO to champion enterprise approaches.

The results specified in this report indicate that overall the State, and specifically ICSD, has the remnants of governance dating back six or seven years. Overall, we assessed effectiveness, in relation to the 12 competency areas, as between recognizing the need for IT governance and implementing

elements of IT governance given the organization’s mission. From our analysis, we recognize that the effectiveness has changed over time due to:

- the organization’s inability to innovatively respond due to budget limitations and staff reductions
- the organizational assignment of ICSD to any existing Department
- the lack of a devoted champion, in the form of a CIO, who would develop, implement, and maintain technology governance in an effective manner in order to maximize its benefits statewide

Mission of ICSD – Serve as the lead agency for information technology in the Executive Branch. It is responsible for comprehensively managing the information processing and telecommunication systems in order to provide services to all Departments of the State of Hawai‘i. The ICSD plans, coordinates, organizes, directs, and administers services to insure the efficient and effective development of systems.

Without a State-level governance approach, many Departments have recognized the need for IT governance components, as IT projects failed at least in part due to:

- the lack of a strategic guidance or framework (e.g., technical architecture, system development standards) for identifying requirements and maintaining traceability
- no independent project status reviews to evaluate progress against defined measurements
- no recommended approach to identify, assess, and effectively mitigate risks
- no direction for setting, validating, and evaluating technical decisions

Overall SAIC would judge most of the “have” Departments (i.e., Departments whose budgets are largely provided from Federal or outside sources) and a few of the “have not’s” have implemented some levels of governance. Regarding the As Is state of governance, it should be noted that the need for governance was one of the Departmental consensus items identified as part of SAIC’s assessment activities. Each Department recognized their abilities as well as their limitations with regard to governance and all recognized the importance of implementing a statewide approach. All Departments volunteered to work collaboratively with the CIO and OIMT to create and implement standards across the core competency areas.

A “true” internal fee-for-service model (where all services are delivered for a defined unit fee that covers overhead, service delivery costs, etc.) does not exist within the State. Most IT service delivery organizations have implemented a charge-back recovery approach. This provides visibility into the actual costs of IT and allows for the appropriate level of scrutiny by Departments buying the services as well as the organization delivering them and promotes more effective financial management. The fee-for-service approach allows for effective alignment of performance levels to cost.

ORGANIZATION

The SAIC team found the Aloha Spirit is real and truly represents the attitude of friendly acceptance and a strong commitment to getting the job done. Hiring the new CIO, performing this comprehensive assessment, and creating an IT strategic plan that will set the course for IT within the State is also indicative of this Spirit.



SAIC noted a number of areas where staff represent “single points of failure” if they were to become ill or retire. This issue is compounded by the lack of training dollars to use in bringing other staff members up to speed or cross-training on a particular technology or tool. Specifically, the State is very vulnerable in the area of radio communications and frequency management and with any Department where only a single full-time (or less) equivalent is providing IT support. SAIC noted that Hawai’i was not immune to challenges facing other states in terms of a workforce that is “graying”/reaching retirement age. Many Departments noted the numbers of their IT staff who possess years of application-specific and “how to” process operations knowledge are at or past retirement age. The fact that “how to” processes in many Departments is not documented is a very large concern.

The “graying” of the State IT workforce looms large on the 3-8 year horizon of most States. Approximately one fourth of State CIOs predict that up to 30% of State IT employees are approaching retirement within the next five years.

During SAIC’s assessment, it was evident that very few Departments identified IT as a separate budget item, so the information below is based in part on estimated numbers provided by each organization and State budget information overall. The following chart provides cost estimates related to IT spending in the State versus the spending benchmarks by other States.

Categories	FY 2012 State of Hawai’i	Benchmarks from Other States
Percentage of central IT ¹ spend to total budget	<.07%	~.5%
Percentage of IT spend to total budget	~1.50-1.90%	~2.75 – 3.0% ²
IT spend per employee per year	~\$2,100	~\$8,400
End user to IT ratio	~100-130:1	~25-30:1



The As Is IT organization is aligned in three obvious levels, which, for purposes of this report, we have identified as the State-Focused Level, Department- and Division-Focused Level, and the Attached Agency-Focused Level. The highest level of the IT organizational structure within the State, after passage of HRS 27-43, consists of the CIO and his organization, OIIMT. This organization is in its infancy and will include seven full-time staff members. Based on the functions identified as needed in this report, OIIMT staff will be challenged to cover all the necessary requirements without additional

support. There is an opportunity for the CIO to leverage existing State employees from other organizations via an internal “detail” assignment and to identify contractor staff that can support the OIIMT team. The remaining elements of the State-focused level are not organizationally assigned to OIIMT but provide IT services to all (or nearly all) of the other Departments within the State. Identified components at this level include ICSD staff that support network infrastructure, telecommunications infrastructure, radio communication, web site development, cyber security, and server hosting and housing for production systems.

¹ Total estimated enterprise IT spend using half ICSD’s budget figures.

² For 2010, a range of 6.5% - 8.6% government IT spend to total government expenditures (not limited to State government) was reported by various (Gartner, Weill & Broadbent) surveyor.

The Department- and Division-Focused second level provides IT support from within a Department to various Divisions and other organizations within the Department. This layer generally comprises areas of infrastructure support for desktop and departmental server environments with pockets of network support for larger agencies (i.e., Department of Education [DOE], DOTAX, Department of Taxation [DOT], and the University of Hawai'i [UH]). This layer includes elements from ICSD who support applications operations and maintenance or development as well as infrastructure support functions for the systems and data owners within DAGS. This layer will often utilize ICSD housing services but will perform some, if not all, of the system administration/management functions themselves.

The Attached Agency-Focused third level includes organizations (the Attached Agencies to the Department) with internal IT support as well as very focused missions and service delivery functions. This organizational element generally provides full-service IT functions with the possible exception of applications development. This layer will sometimes utilize ICSD housing services and will perform some, if not all, of the system administration/management functions themselves. Organizations in this category include Employee Retirement System (ERS), Employee and Union Health Benefits Trust Fund (EUTF), Public Utilities Commission (PUC), and Charter Schools.

Below is a summary of high-level recommendations relative to governance and organization.

To Be Recommendation 6: Implement Governance Strategies

- *Articulate if necessary, in conjunction with the Governor and/or Legislature, the intent of HRS 27-43 regarding the “development, implementation, and management of statewide IT technology governance” to include the responsibility and authority to participate in the agency-IT budget process, review all state-funded IT purchases, oversee IT projects and the application portfolio, and provide technology architecture management.*



✓ **BEST PRACTICE**

States benchmarked as being the most effective have given the CIO the authority to approve (in advance of “legislative approval”) IT Departmental budgets. NASCIO recommends that governors and Legislatures vest CIOs with the authority to participate in the agency-IT budget process, review of all state-funded IT purchases, and oversee IT projects, the applications portfolio, and technology architecture management.

- *Create a governance structure and develop an IT strategic plan that highlights key themes that have been identified as part of the State’s goal to transform government (i.e., New Day Plan) and address recognized deficiencies noted in previous audits, assessments, and reviews.*



- *Evaluate and leverage, as appropriate, governance “building blocks” as implemented within the Departments (i.e., DHRD, DOE, UH, Department of Human Services [DHS], Department of Health [DOH], AG, DOTAX, and Department of Commerce & Consumer Affairs [DCCA]).*

- *Utilize the 12 competency areas to define all governance requirements and ensure that each competency area is addressed with a focused project plan for implementation to maximize organizational effectiveness.*

To Be Recommendation 7: Address Funding For IT

- *Study the implications of implementing the fee-for-service model using the lessons learned by other States that have moved to this funding approach.*

To Be Recommendation 8: Partner with Bargaining Unit Leadership

- *Invite active participation by the bargaining units in IT initiatives and projects that will have staff impacts (e.g., new technology insertion, BPR, training/retraining, IT job family assessment and modification.)*

To Be Recommendation 9: Identify and Track IT Costs

- *Understand the amount of IT that is funded directly by Federal grants as part of larger programs. This information is not always tracked explicitly by the Departments.*

To Be Recommendation 10: Address the Need for IT Skills Development

- *Begin immediately identifying a staff retraining program in cooperation with the bargaining units.*

To Be Recommendation 11: Collaboratively Address Organizational Change

- *Address organizational changes and modifications, in a collaborative and open manner, to exemplify laulima.*
- *Utilize detailees from other Departments (even if only through a part-time commitment) to lead/help accomplish tasks related to establishing governance, creating the IT Strategic Plan, provide insights regarding State government, and share Departmental models for use.*
- *Effectively leverage steering councils and working groups to augment the organization.*
- *Identify and leverage contract³ staff in a targeted manner.*
- *Maintain a lean OIMT leadership structure but augment existing staff (perhaps through detailees at least initially) including:*
 - *Financial and IT Acquisition Manager who can spearhead the reengineering of the IT acquisition process, lead the implementation of a fee-for-service model for enterprise IT services, and support the preparation of all funding requests to the Legislature going forward*
 - *Labor Relations/Human Resources (HR) Manager who can spearhead the development of a collaborative working relationship with the bargaining units, support the development of retraining strategies, and lead the effort to revitalize the project to modify job descriptions, salary bands, and merit compensation approaches for the IT job family*
 - *Customer Relationship Managers (2-3) who can work as liaisons with Departments on a day-to-day basis to ensure that service needs are being met and new projects are being surfaced in a timely manner*
- *Identify a highly skilled detailee, contractor, and/or other team member who can coordinate and work through BPR process mapping and reengineering sessions as existing processes are reviewed and re-defined based on the transitioning and sequencing recommendations.*
- *Make judicious use of the employment exceptions (Chapters 76 and 89) authorized by HRS 27-43 to avoid misconceptions about intent and/or assessment of abilities available within the State and State government environment.*



³ There is no intended implication that this should be SAIC.

- *Ensure the CIO remains independent of the day-to-day management of the “central” IT service delivery functions to allow focus on enterprise governance and policy decisions.*
- *Assess immediate opportunities to provide additional support to the Departments with little or no IT support.*
- *Review the IT Transition Document prepared by the IT Technical Governance Committee (ITGC – Technical), address suggested opportunities for organizational alignment, and make go-forward decisions based on each, specifically, the opportunities identified to plan and integrate technology infrastructure components at a State or enterprise level in order to stabilize, rationalize, and modernize to enhance efficiency and cost-effectiveness.*

To Be Recommendation 12: Determine a Go-Forward Plan for ICSD

- *Thoroughly analyze the number of full-time equivalents (FTEs) within ICSD who are devoted to supporting DAGS-owned systems and processes to determine exactly how many resources are devoted to enterprise services versus DAGS-specific functions and systems in order to truly analyze the costs and resources for both functions. (Note: This effort will require a detailed time reporting function for all ICSD staff for at least a two-three month period by defined tasks. Depending on the granularity of the task elements additional BPR activities may be identified.)*
- *Consider reassigning the ICSD individuals supporting services statewide (State-Level functions) (e.g., networking, web site development and management, cyber security, server management, telecommunications, and hosting/housing functions) to OIMT once the above noted analysis is completed. (Note: When this occurs ensure budget for salaries and accrued leave follows these reassigned individuals.)*

To Be Recommendation 13: Evaluate Attached Agencies’ Models for Use

- *Evaluate and leverage, as appropriate, the Attached Agencies (i.e., ERS, EUTF, Charter Schools) as potential models for the State.*
- *Integrate the Attached Agencies’ requirements into each enterprise solution, as appropriate (e.g., financial management solutions, payroll, check printing, time and attendance).*

Data and Information Assets

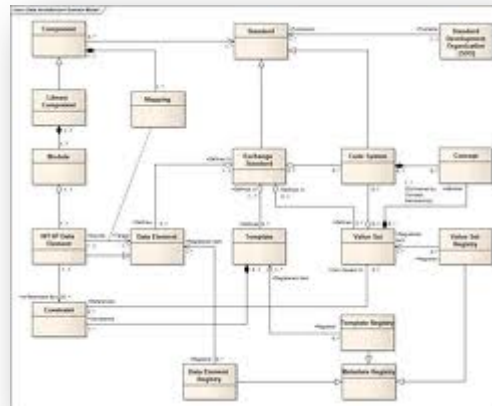
The SAIC team approached the assessment of data and information assets from a typical information management objective: *Enable access to the right information anytime and anywhere to anyone who has an appropriate need for it within a secure and reliable manner.* Our assessment focused on critical information needs and information flows used in conducting the Department’s business and the corresponding critical information sources and databases that supported the Department’s business.



In assessing data sharing across Departments (or across Divisions or Programs within Departments), we found instances of systems dedicated to making critical data available for analysis and decision making, such as the Financial Accounting Management and Information System (FAMIS) data mart, or DOH’s data warehouse. In general, however, we found that across the enterprise, facilitating end user access to data through a data mart/warehouse approach including ad-hoc query and reporting tools was not common. Regarding data sharing across the application portfolio, the State’s current management of data is characterized by complex interdependent data feeds and silos of data and information. This environment is derived from the programs within the Departments adapting to and addressing their own data needs without the benefit of any statewide strategy for managing and sharing data. Many of the existing enterprise or statewide IT solutions (i.e., accounting, payroll, invoice payment or warrant creation, time and attendance) were originally

designed and developed for mainframe environments in the early 1970's, have limited user interfaces, and only provide pre-programmed reports. And in general, solutions for “making information available to a broad user community” were few, indicating that this emphasis area is not strong within the culture.

The To Be design is one where information and data are widely recognized as a statewide asset and are managed and shared effectively among all State organizations. An enterprise-wide data architecture should be established to provide strategic perspective and direction for the transition from silo-based data and information solutions to an environment in which data and information is widely recognized and managed as a state asset and shared appropriately and effectively among all State organizations. A properly managed data environment should emphasize data sharing among State organizations by directing the design and implementation of shared data sources, such as data warehouses and data marts for analytics, as well as directing the creation of documented and accessible web services that can be used to enable data sharing in an operational and/or transactional processing environment. Making use of shared data resources and documented web services to enable interaction among State applications will go a long way in reducing the complex web of data feeds that exists among the State's applications today.



In assessing data analytics capabilities, SAIC found a few instances of systems dedicated to making critical data available for analysis and decision making; specific systems, resources, or capabilities with the intent of supporting data analytics within the State are minimal. We found that across the enterprise, key user communities did not have needed information available to them. Some relevant examples include:

- Department executives largely did not have quality project or operations performance data available to them at a dashboard level to effectively oversee their organizations, programs, and projects. Existing performance management systems were antiquated and irrelevant.
- Workgroups or project teams for the most part did not have collaboration tools to more effectively collaborate on and manage project deliverables.
- Shared data at State- or Department-wide levels was not typically organized for end-user access and reporting.
- A strong emphasis on making information and tools available to the public has been found in a few Departments (e.g., HIC, Department of Hawaiian Home Lands [DHHL], DCCA, Lt. Governor).

In assessing application-level data sharing and integration across Departmental boundaries or across Division or program boundaries within Departments, SAIC found only a few pockets of excellence in current program initiatives.

Again, in general, we found that across the enterprise, enterprise-level policies, approaches, and

✓ HAWAII BEST PRACTICE

It was noted by more than one IT leader within the Departments that pilots that involved information sharing demonstrated the power of the data, once shared, and encouraged the organizational elements to begin sharing even more.

solutions that encourage, facilitate, and enable application data integration do not exist. Even where interfaces exist, the interfaces are often accomplished through printing information from one system and manual re-entry (e.g., fixed asset inventory, personnel benefits, time and attendance) into another. This not only absorbs resources but introduces errors and lag. Within the State, the next level of information-sharing sophistication is file transfer protocols (FTP). There are essentially no shared databases (the Geographic Information System (GIS) database is one of the few exceptions) within most of the Departments or across Departments.

Although the needs definitely exist to cut across Departmental boundaries for data that will enable process streamlining, improve efficiency, and increase visibility and transparency into program performance, the enterprise leadership to bring this about has not been present. Application solutions are primarily driven by program funding from the bottom up, and when standard enterprise-level policies, approaches, solutions, and technologies do not exist, then application implementation projects continue to solve bounded program needs without fitting into and benefitting the whole. These standard enterprise-level capabilities to support application integration need to be established and promoted, and together with the synergy of the enterprise architecture initiative and IT project architectural review and oversight, convergence towards streamlining and efficiency objectives will be achieved.



Below is a summary of high-level recommendations relative to data and information assets.

To Be Recommendation 14: Establish a Data Architecture and Data Governance Approach

- *Establish a data architecture and associated data governance approach as a prerequisite for implementing a properly managed data environment that emphasizes the value of data and information as a critical shared asset. As part of this activity:*
 - *Include data architecture and governance within the enterprise architecture and IT governance competency area program plans.*
 - *Establish a data architecture and governance methodology as part of the overall enterprise architecture approach.*
 - *Establish a data and services governance structure in conjunction with the IT governance competency area.*
 - *Develop an initial data architecture to identify key subject areas for both statewide and Department-wide sharing and accomplish on-going data architecture development through key projects.*
- *Evaluate and leverage, as appropriate, a shared data architecture approach implemented within the Hawai'i Information Justice Information Sharing (HIJIS) initiative within the AG. HIJIS shares criminal justice data throughout the State (e.g., with the Department of Public Safety [PSD]) as well as federally and with the county and city. Most notably, HIJIS is making use of national data standards such as National Information Exchange Model (NIEM) supported by the Federal government in the Justice line of business. NIEM standard data models exist in several lines of business and could*



✓ HAWAII MODEL FOR USE

be leveraged for use in other areas of the State. This is a best practice that serves as a valuable program example.

To Be Recommendation 15: Define Standard Enterprise Solutions for Data Sharing and Collaboration

- *Establish standard enterprise solutions to implement data sharing, analytics, and collaboration. Also:*
 - *Establish standard data sharing and analytics capabilities across the State such as a data mart/warehouse approach to facilitate user data access, querying, and reporting.*
 - *Establish standard collaboration solutions across the State with technical underpinnings for cross-departmental workgroup and project collaboration.*
 - *Establish a standard management-level dashboard reporting solution with supporting data aggregation and summarization.*
 - *Develop policies for use of emerging social media technologies and establish standard enterprise public-facing social media solutions.*
- *Evaluate and leverage, as appropriate, notable implementations of end-user data access systems to make critical data available for analysis and decision making. Specifically:*
 - *DOH Data Warehouse – working towards integration of health-related data sets from various source organizations from disjointed, dissimilar data structures/formats within multiple databases. The Health Information Systems Office (HISO) within DOH attests to the synergy within the user community that continues to grow as more data is integrated into the data warehouse. DOH as a whole is maturing in data standardization processes and best practices and is a model to leverage statewide.*



To Be Recommendation 16: Determine Enterprise Solutions for Application Integration

- *Establish enterprise solutions for application integration.*
- *Establish a standard enterprise solution for web services implementation and use to facilitate application integration.*
- *Evaluate and leverage notable implementations of application data integration through advanced capabilities (e.g., services oriented architecture [SOA]). Specifically:*
 - *DOH Services Implementation – a best practice within the State for establishing application-level services to facilitate data access across other Departmental applications.*
 - *Shared databases and shared code components - leveraged by HIC - to promote effective and efficient use of information across a substantial set of public-facing web applications.*

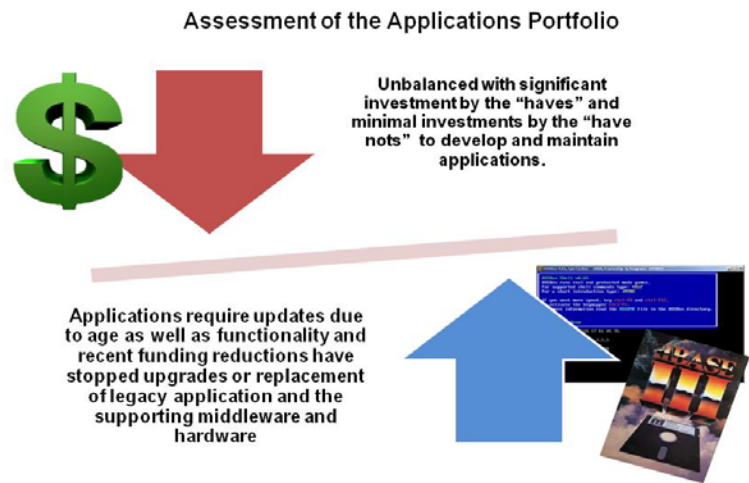


Applications Portfolio

There are over 500 applications in the portfolio – a larger number than expected due to the following various reasons:

- A significant set of older mainframe applications, based on the “batch processing” model, require numerous smaller applications to support data interface feeds and outputs.

- A lack of enterprise-wide data governance and integrated databases results in numerous interfaces to deal with data mapping and translation.
- A lack of effective central systems for many of the shared service areas causes the Departments to develop their own supporting systems to ease their ability to interface with the central system. Examples of this include procurement support systems, time and attendance reporting, and asset/inventory tracking systems.
- Federal program-driven funding pushes application architecture decisions against enterprise application consolidation.
- A lack of budget/funding creates an environment that proliferates single user or small workgroup applications that are easier and less costly to create such as Microsoft Access and Excel applications.



SAIC characterizes the State’s portfolio as unbalanced, reflecting significant investments within the “have” Departments, and minimal funds to develop and maintain applications within the “have not” Departments. Further, a critical characteristic of the existing applications portfolio is the age of the applications. SAIC heard repeatedly within our interviews that during recent budget cuts and funding shortages, many initiatives to upgrade or replace legacy applications and their supporting middleware and hardware infrastructures were postponed. Examples of aging applications include DOS-based and Dbase III applications still running in production.

The lack of funds to support upgrades also results in a broad set of older technologies continuing to be used in the environment, and this causes an increase in incompatibilities between these technologies and others, such as desktops needing to run an older unsupported version of Windows or Internet Explorer. The number of software product incompatibilities makes it almost impossible to plan for enterprise-level upgrades and this mixture of new and old software versions opens the enterprise to increasing levels of vulnerability to malware.

The point-solution approach/situation is proliferated because of the overwhelming need to address cross-cutting or enterprise business processes through BPR to decompose the current workflow, define current interdepartmental information needs, and define tools/applications requirements to ensure application solutions are procured or developed. The goal of BPR is to empower the State by reducing replication of data, duplication of data entry, and increased data sharing. With IT governance, increased integration will be based on appropriate standards that will provide higher degrees of maintainability.



The Departments were essentially unanimous on the priority issues or needs for improving enterprise systems. These are a subset of the cross-cutting initiatives described in the report – the areas with substantial issues with the functioning of the current application systems, thus having high priority:

- Lack of an enterprise-wide time and attendance system
- Challenges of the legacy payroll system, lack of automated interfaces, and electronic funds transfer (EFT)
- Challenges of the legacy FAMIS and the complexities of interfacing to it.
- Overall age of legacy applications and the need for a comprehensive refresh of all underlying software.

Significant issues have developed from not recognizing and supporting a lifecycle perspective for application portfolio investments including upgrades and even replacements.

Regarding alignment among the Departments’ mission objectives and services, the applications that support them, and the effectiveness of the support, there was a general consensus across the Departments’ leadership that IT is essential to their success, but that there is a considerable gap between the level of support they were receiving and the level needed to fulfill their missions. Some relevant examples are:

- Frustration due to the fact that fundamental capabilities expected in the email system were lacking such as a current, automatically maintained, global address list and shared calendaring.
- Paper-based processes were predominant, and there was a general lack of automated document management and workflow.
- “Rolling up” or assembling program-level information regarding project or operational performance into critical management dashboard- level information was minimal.
- Mobile computing as a pervasive emerging technology had limited support. Blackberries were the only supported mobile device for email. Only one mobile application was found within the application portfolio – the Mobile Emergency Response Command Interface (MERCI) application developed by OceanIT for the DOD State Civil Defense.
- Roughly one-third of the application portfolio is characterized as “public-facing” and providing access by the citizenry through the web as compared to the mix of internal support services; the non-public-facing applications are a higher percent.
- Public-facing applications using social media are emerging in several Departments (i.e., DHHL, Department of Land and Natural Resources [DLNR]); however, many more needs were identified.
- Public-facing mobile applications were not found.



Relative to the level of application integration within and across the Departments and with external organizations, SAIC found that instances of using best-practice techniques, such as web services, were limited. There were emerging pockets of excellence with focus on integrated databases and services being architected, implemented, and reused by multiple Departments (e.g., HIJIS and DOH) and the set of applications developed and maintained by HIC.

Considerable customizations have been made to commercial off-the-shelf (COTS) software (e.g., PeopleSoft, ProLaw, and iManage), which make future upgrades with the COTS more complex, time-consuming, and expensive. As a result, several key systems have not been upgraded and kept synchronized with the vendor's support requirements. Additionally, numerous one-off applications that organizations have come to rely upon (e.g., the DCCA Lotus Notes-based Legislation Tracking System) were created based on older versions and their proliferation as pseudo-enterprise systems are now preventing the application of vendor upgrades as well. Finally, the Departments, in general, find it difficult to make business process changes, because they perceive they may be constrained by Legislative statutes in order to effectively use COTS (or government off-the-shelf [GOTS]) software.

This is a long-term strategic area of emphasis for the new CIO to establish standard enterprise-level application platforms, capabilities, and technologies for all Departments to leverage. It is a relatively simple model: Within any solution domain (for example, electronic document management), the technologists within the Departments need to assess, pilot (if necessary), and agree upon the standard recommended product (in this example, assume IBM FileNet). Once agreed upon, all energies and efforts provide synergy in effective use and reuse of shared capabilities with that standard product. And, in a controlled manner, any recommendations for evaluating new emerging technologies are sanctioned, and an overall enterprise discipline for "new product/technology evaluation and insertion" matures. In the long run, the overall cost effectiveness of managing standard technologies and the ability for the enterprise to more effectively leverage technology for enhancing impact in business service delivery are optimized.

Below is a summary of high-level recommendations relative to the applications portfolio.

To Be Recommendation 17: Manage the Applications Portfolio

- *Establish an application portfolio management approach for managing both steady-state applications costs/value and application development, modernization, and enhancement (DME) projects.*
 - *Ensure the CIO begins to immediately institute oversight of all IT projects and applications; develop the emerging picture of enterprise IT standard policies, capabilities, solutions, and technologies related to application investments, and compare and measure the projects against these standards.*
 - *Begin an initiative to assess and stabilize critical applications.*
 - *Address priority areas of need for business mission and services support and general operational efficiencies across the enterprise.*



To Be Recommendation 18: Standardize Application Platforms and Technologies

- *Develop standards and guidance regarding technology decisions, specifically with respect to application architecture, design, and implementation for use and adoption across the Departments, Divisions, and programs.*
 - *Rapidly baseline current assumptions regarding sunset, legacy, preferred, and standard application platforms, architectural stacks, and technologies within the technical architecture.*
 - *Recognize strategic application platforms and technologies for future applications development and establish enterprise capabilities for these including standard development methods, skills development (training) and skills acquisition (contracting), and tools/technologies. Strategic focus areas include:*
 - *Web applications development*
 - *Mobile applications development*

- **Social media development**
 - Develop a “promotion path” strategy for applications developed with “easy to use” tools such as Lotus Notes Designer or Microsoft Access. Encourage individuals and small work groups’ innovations with such tools, but recognize when an application reaches a “critical mass” of importance (business dependence) and take the application through a promotion phase to safeguard application availability, reliability, and security.
- Create a communication plan to “market” the standards and guidance within each Department.
- Evaluate and leverage, as appropriate, the HIC best practices approach to applications management statewide, specifically in relation to:
 - Data sharing and integration approaches such as database replication for internal use.
 - Reuse of considerable portions (services/components) of application code including single sign-on and payment processing with a common reporting capability for auditing.
 - Ability to leverage/reuse applications from other states - ideas, specifications, and some code if on the same target platform.
 - Use of a common application platform and technical infrastructure for all applications.

✓ HAWAII MODEL FOR USE

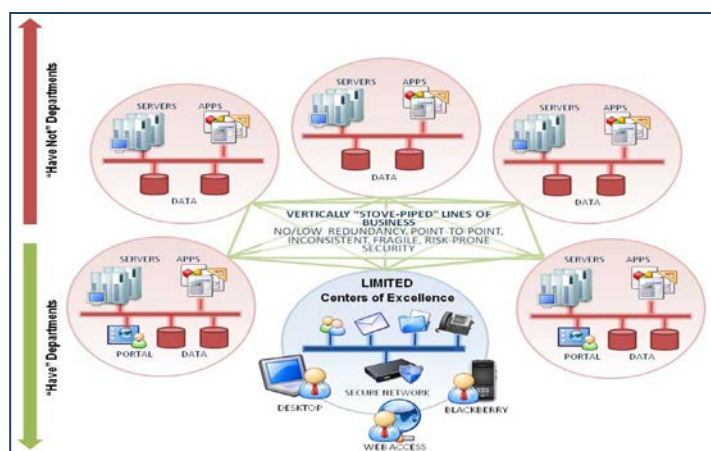


Technology Infrastructure

SAIC evaluated the technology infrastructure of each of the Departments and ICSD against the following:

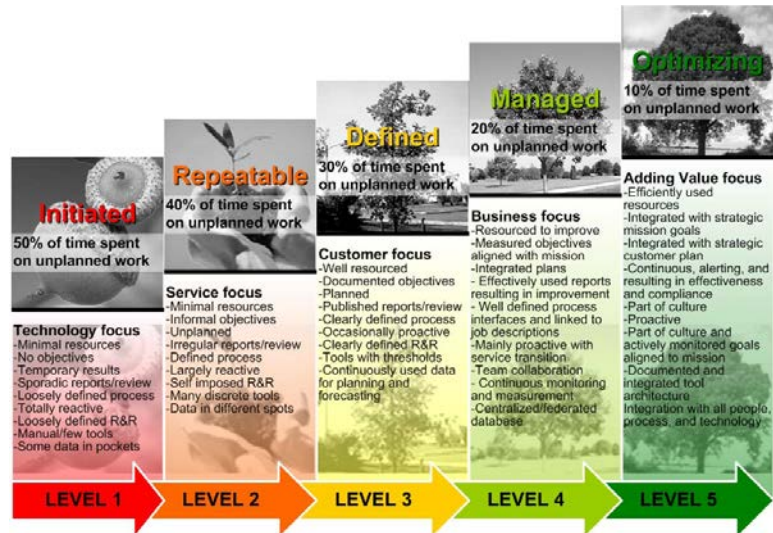
- Identification and location of the data center(s)/closet(s)/corner(s) within the Departments, use of others’ data centers, or the data center managed by ICSD, or some combination
- Primary Departmental computing infrastructure used, i.e., servers and/or mainframe and the average age of the infrastructure devices
- Desktop infrastructure (hardware and software) used, the primary operating system for the desktop environment, and the refresh cycle
- Network architecture and infrastructure – topology, device characterization, and security measures applied

As a result, one of the ten focus areas identified as part of SAIC’s interviews was the need for an enterprise infrastructure solution. Specifically, SAIC repeatedly heard from the Departments about the need to define and implement an improved, extended, and sustainable infrastructure including, but not limited to, the enhancement of the network, a new more extendable email and collaboration environment, improved video conferencing infrastructure for communications, secure and effective web services, and increased available storage for digital data. The needs described by the Departments were validated as part of our Data Center Assessment as well.



There is a lack of integration and alignment that was found to exist within the State relative to the technical infrastructure even though a central organization exists. The layers of the infrastructure architecture include everything from robust commercially available solutions to open source freeware being utilized, which is due to a lack of enterprise governance (e.g., technical architecture, policies, standards). The diversity within the environment is also exacerbated by the fact that procurement specifications have not been able to point toward/mandate compliance with the State’s technical architecture standard or taxonomy. SAIC also found a number of examples where “best of breed” tools had been procured but were not being utilized due to a lack of deployment and/or maintenance ability (e.g., staff knowledge, staff availability, budget for contractor or manufacturer support).

Using the best practice, IT Infrastructure Library (ITIL) model’s components as assessment categories (e.g., service strategy, service design, service transition, and service operations) and the maturity standard of “initiated, repeatable, defined, managed, and optimized,” SAIC rated the State’s enterprise infrastructure and support at a Level 1 where 50% of the time is reactive with time spent on unplanned work that is technology focused. Within various Departments, and specifically the “have” organizations, SAIC found examples of Level 2 (service-focused environments) with definite movement toward Level 3 (customer-focused environments) that were operating proactively.



Using the Federally-defined size standard to define data centers, SAIC found five server closets (<200 square feet); 15 server rooms (<500 square feet); and three dedicated data centers (≥500 square feet). The dedicated centers are managed by ICSD, DOE, and UH. The conditions of many of these centers highlight the opportunity for consolidation through technologies such as virtualization and Cloud computing. The benefits that the State will receive from a consolidation approach include: promote the use of Green IT by reducing the overall energy and real estate footprint of data centers; reduce the cost of data center hardware, software, and operations; increase the overall IT security posture of the State; increase the use of more efficient computing platforms and technologies; enhance reliability; and, standardize processes and tools.

Below is a summary of high-level recommendations relative to technology infrastructure.

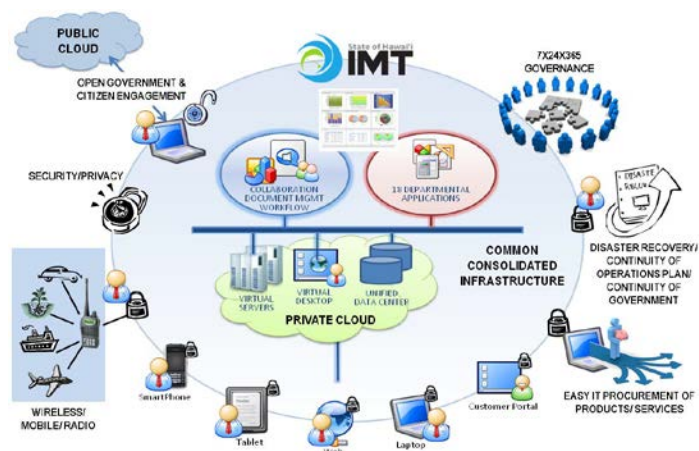
To Be Recommendation 19: Use a Defined Service Management Model

- *Adopt a tailored ITIL-compliant service management model as a best practice for establishing OIMT enterprise-level services.*
- *Plan and implement ITIL using project management best practices and approaches.*



To Be Recommendation 20: Create a Technical Architecture Foundation

- *Identify a new primary data center and a DR strategy*
- *Assess, plan, and consolidate the IT infrastructure beginning with server closets and server rooms*
- *Create and actively implement a virtualization and Cloud strategy*
- *Implement enterprise systems management like Active Directory and secure Domain Name System (DNS)*
- *Establish/enhance enterprise-level network and service monitoring*
- *Address an enterprise solution to email*
- *Create and execute a wireless network deployment strategy*
- *Define and execute an enterprise approach to personal computing*
- *Address and implement a robust information security posture*
- *Evaluate and leverage, as appropriate, existing processes, procedures, and tools relative to the technology infrastructure implemented.*



Applicable Benchmarks

Budget pressures are being viewed by some States as a positive force and an opportunity for improving IT performance. The National Association of State Chief Information Officers (NASCIO) believes the “new fiscal pressure is actually working to help break down historical barriers to inter-agency collaboration and partnering, sharing services, and pooling of resources.” One CIO, in response to NASCIO’s 2011 annual survey of State CIO’s, shared that “The size of the IT portfolio increases, but the budget decreases; this has not been easy at all. The budget situation has provided us with a crisis, but because of that we are breaking through barriers that we would have never even been able to approach. We’re doing amazing stuff, and some of our cross-boundary stuff is really fantastic.” Another indicated that, “We are doing things better, like using shared services, renegotiating contracts and exploiting the State government’s economies of scale when purchasing. We are making better decisions by looking at total cost of ownership. We are now looking at having agencies share applications across boundaries, instead of building them multiple times.” In alignment with these pressures, consolidation/optimization was identified by State CIO’s as the most prevalent management strategy among State government technology organizations in 2011. All twenty of the States analyzed in the benchmark have implemented (or are engaged in implementing) some level of consolidation/integration/optimization. These strategies have resulted in cost savings as high as \$14 million annually.

With so many infrastructure consolidation efforts across the nation underway or completed and the Cloud environment becoming more mature, the State of Hawai’i is in an excellent position to benefit from lessons learned by other State government IT organizations. The State of Hawai’i is also well positioned to capitalize on low-entry-cost technologies, such as Cloud computing, to achieve significant cost savings and performance standardization and improvement. The following chart shows SAIC’s assessment in regard to examples of IT processes and implementations of note within the State as well as mature IT processes and implementations that can be evaluated for use statewide.

		Departments																				
		Blue shading delineates the Department has elements of focus area. Green shading denotes the Department has a level of maturity with the majority of items associated with the focus area.																				
Top Ten Focus Areas		GOV/LG	AG	HDOA	B&F	DAGS/ICSD	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	DLNR	PSD	DOT	DOTAX	UH	Benchmark Related to Other States	
Governance and Organization																					<ul style="list-style-type: none"> IT Steering Committee (90%) Executive or Legislative order directing consolidation/integration (majority) Charge-back/cost recovery (80%) Published service catalog (90%) Service-level agreements (50%) Standardized policies, processes, technical configuration (95%) Enterprise standards/architecture (55%) IT operational spend: \$5-\$13,000/user Central IT staff to end user ratio: 46:1 Portfolio management process (multiple) 	<ul style="list-style-type: none"> CRM role within IT organization (45%) ITIL implementation (60%) CIO's approve IT budgets (35%) State-wide technology asset inventory (20%) CIO reports directly to Governor (35%) All IT staff/services centralized under CIO (20%) Some services managed by a central IT organization/some managed within each agency (80%) CISO's report to CIO (76%)ⁱ
DR & Continuity of Operations																					<ul style="list-style-type: none"> DR plan (70%) 	
IT Procurement																					<ul style="list-style-type: none"> Self-funded web portals (20 States) Technology inventory asset management (20%) 	<ul style="list-style-type: none"> Partnerships with private-sector organizations, local governments, and higher education (growing)

		Departments																				
		Blue shading delineates the Department has elements of focus area. Green shading denotes the Department has a level of maturity with the majority of items associated with the focus area.																				
Top Ten Focus Areas		GOV/LG	AG	HDOA	B&F	DAGS/ICSD	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	DLNR	PSD	DOT	DOTAX	UH	Benchmark Related to Other States	
Security & Privacy																					<ul style="list-style-type: none"> Established Enterprise CISO role (92%)ⁱⁱ CISO's responsible for information security budget (43%)ⁱⁱⁱ Documented/approved information security strategy (55%)^{iv} for sensitive information (92%)^v CPO role (18%) Privacy law in place guiding definition/use 	<ul style="list-style-type: none"> NIST- chosen framework (90%)^{vi} Information security budget 1-3% of total IT budget (50%)^{vii} Internal breaches deemed accidental (55%) Fully deployed antivirus, firewall, IDS/IPS (80%)^{viii} Enterprise privacy program in place (24%)
Open Government & Social Media																					<ul style="list-style-type: none"> Social media tools (95%) Statewide policy governing social media use (25% as of 2010)^{ix} Prohibit use of social media (7%)^x 	<ul style="list-style-type: none"> Social media ... "the biggest business technology story that the IT department is barely involved in"^{xi}
Collaboration & Work Flow																					<ul style="list-style-type: none"> Enterprise-level collaboration tools (45%) 	<ul style="list-style-type: none"> A number of states have deployed collaboration tools (e.g., SharePoint) and some are assessing Google Apps
Enterprise Applications																					<ul style="list-style-type: none"> Enterprise/shared email (95%) Legacy system modernization (growing trend) Business intelligence systems (60%) Enterprise GIS (70%) 	<ul style="list-style-type: none"> States with health insurance exchanges (12%) SOA (45%) Share data (or are actively planning to) via enterprise systems (e.g., ERP) (50%)
Enterprise Infrastructure																					<ul style="list-style-type: none"> Virtualization (85%) Most States prefer a hybrid Cloud environment over a public or private environment Data center consolidation (50%) 	<ul style="list-style-type: none"> States actively pursuing Cloud solution (65%) Adopted NIEM data standard (50%)

		Departments Blue shading delineates the Department has elements of focus area. Green shading denotes the Department has a level of maturity with the majority of items associated with the focus area.																	Benchmark Related to Other States				
Top Ten Focus Areas		GOV/LG	AG	HDOA	B&F	DAGS/ICSD	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	DLNR	PSD	DOT	DOTAX	UH			
Wireless/Mobile																						<ul style="list-style-type: none"> • Mobile applications (85%) 	
Process Engineering																						<ul style="list-style-type: none"> • Consolidation preceded by standardized processes critical 	

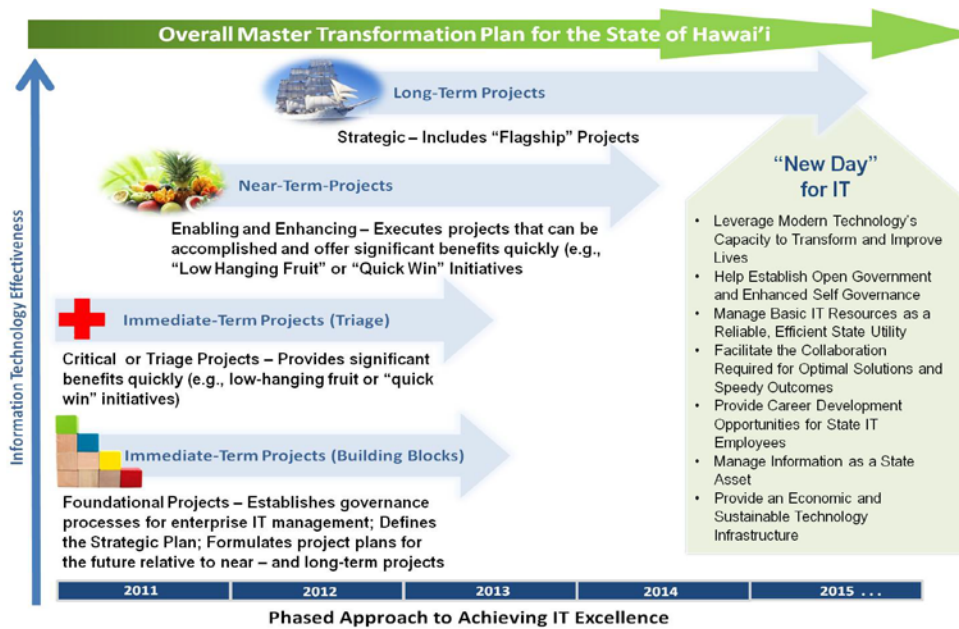
Gap Closure with Transformation and Project Sequence Planning Recommendations

The following provides a roadmap of activities that will close (or begin to close) the gap between the As Is and To Be environments. SAIC has outlined these gap closure actions and project activities in a sequence (Immediate-Term, Near-Term, and Long-Term perspective). General timing for the sequencing terminology is defined as:

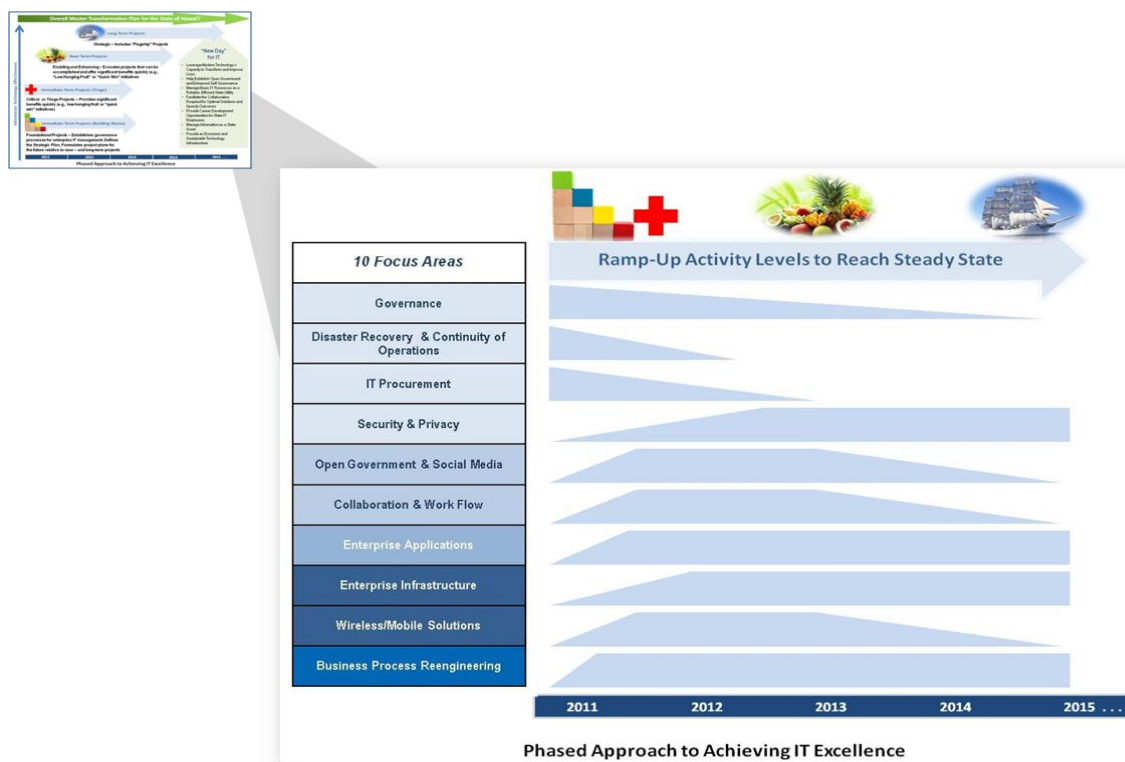
- Immediate-Term – An action that must begin now both to have maximum impact and in order to prepare for future actions of Near- or Long-Term projects. Completion for immediate actions will be determined by the magnitude of the effort; however, it should be shorter in duration than Intermediate- or Longer-Term efforts.
- Near-Term – An action that can begin now, but with somewhat of a lesser urgency than Immediate-term activities. These projects may be completely self-contained without dependencies to Long-Term activities but may also prepare for the initiation of Long-Term initiatives. Completion of Near-Term actions will be determined by the magnitude of the effort and will generally take more time to complete than Immediate-Term projects but less time than Long-Term efforts.
- Long-Term – Those actions that can begin now due to urgency, complexity, and overall length of time to plan and execute. These projects may have key dependencies with associated Immediate- and/or Near-Term activities that must be completed prior to initiation and/or completion of a Long-Term project. Completion of Long-Term activities will be determined by the magnitude the effort takes and must be longer to complete than Immediate- or Near-Term projects.

Transition and Sequencing Activities

The 20 recommendations and actions cited throughout the report have been prioritized and sequenced. The following figure provides an overarching perspective to project sequencing.



In addition, the following figure characterizes the time phasing of the 20 recommendations (cited above) and more than 150 associated actions.



Individual Department Services and Baseline Reports

To gather Department-specific data for this report, SAIC conducted interviews and gathered information from more than 200 individuals from the State of Hawai`i's Executive Branch Departments and agencies supporting the State (e.g., HHSC, Hawai`i Public Housing Authority, Charter Schools). More than 1,500 pages of notes and other materials were cataloged and provided to OIMT as reference as part of SAIC's final project close-out. Highlights from these sessions are provided throughout the Executive Synopsis as well as contained in more detail in the body of this report.

Conclusion

SAIC found there was a fundamental lack of enterprise focus relative to information resource management and IT. This lack of focus had a number of statewide, overarching symptomatic elements: lack of horizontal business process integration (across Departments and across programs within Departments); inefficient manual interfaces; no encouragement for enterprise integration and information sharing; Federal program funding resulting in point solutions; no enterprise focus on enabling mission service delivery through use of IT solutions; conditions of aging legacy systems (20+ years old); proliferation of any and every type of IT product; and, general lack of effectiveness and efficiency that lowered cultural expectations about change.

However, SAIC identified the following root causes for the lack of enterprise focus:

- Deep cuts and lack of State funding over the past decade
- No cross-cutting BPR analysis or success
- **No Champion for Information Resources and Technology Management or a CIO**

SAIC's key recommendation relative to improving services provided by the State to the citizens of Hawai'i was the overwhelming requirement for reengineering of business processes that cut across each Department and the need to take an enterprise (or statewide) approach to providing solutions to these cross-cutting needs. SAIC's recommendations, relative to IT statewide, echoed what we heard from each Department relative to needs and became the focus areas: governance and organization; DR and continuity of operations planning; IT procurement; security and privacy; open government and social media; collaboration and workflow; enterprise applications; enterprise infrastructure; wireless and mobile; and business process reengineering.

The State of Hawai'i has declared its commitment to transform government, invest in the people of Hawai'i, and grow a sustainable economy with words and initial actions (i.e., HRS 27-43, hiring the CIO, defining the baseline for IT via this report). The next challenge related to this commitment involves the Governor's and Legislature's maintaining this commitment by funding and wholeheartedly supporting the required changes. Recognizing the State's constraints regarding funding these initiatives, SAIC has judged the following to be the most important "do first/do now" initiatives:

- Developing, implementing, and managing IT governance – establishing the State's go-forward strategy including policies and standards, architectural requirements, and IT investment oversight statewide
- Identifying and implementing a plan for a new statewide data center and DR solutions
- Performing business process reengineering and then aggressively implementing performance changes (as prioritized)

SAIC believes the State of Hawai'i is poised for success given the State's employees focus on solving every problem and accomplishing every goal. Further, the State is positioned to capitalize on low-entry-cost technologies, such as Cloud computing, to achieve significant cost savings and performance standardization and improvement.

1.0 INTRODUCTION

In May 2011, Science Applications International Corporation (SAIC) was awarded a contract by the Research Corporation of the University of Hawai'i (RCUH) to perform an Information Technology (IT) assessment on behalf of the Office of Information Management and Technology (OIMT) in preparation for hiring a Chief Information Officer (CIO) and ultimate fulfillment of a key requirement — the creation of an IT Strategic Plan for the State of Hawai'i. This report, the *Final Report – Baseline of Information Management and Technology and Comprehensive View of State Services* (known hereafter as the “*Final Report*”), fulfills Deliverables a.8.1 and b.8.1 as defined by the contract between RCUH and SAIC.

PURPOSE

The purpose of this report is to provide critical information relative to the:

- mission, mission objectives, and services (functions provided to citizens and activities that support internal functions) delivered by the State of Hawai'i's Executive Branch
- IT that supports those missions and services

This report provides a baseline of information describing the “As Is” or current environment, outlines a “To Be” vision for the State in terms of IT, and offers recommendations as well as a tentative transition and sequencing plan defining “must-do activities.”

APPROACH

To gather the data that formed the basis of this report, all Executive Branch Departments' Directors and their IT leadership were interviewed. Many of the Departments' various Divisions' and Attached Agencies' managers were also interviewed. In addition, SAIC met with numerous other organizations (e.g., Hawai'i Information Consortium [HIC], Hawai'i Health Systems Corporation [HHSC]) that support or are involved with the State. In total, more than 200 individuals were involved in assessment activities, and SAIC cataloged more than 1,500 pages of notes and other materials. Using a structured interview process, SAIC gathered information regarding mission, mission objectives, services provided, key stakeholders, key relationships and dependencies, composite views on effectiveness of services, and impact of the IT infrastructure on mission and service delivery. SAIC also gathered information regarding the IT environment relative to governance processes and strategy, data and information assets, applications portfolio, and the supporting technology infrastructure. Figure 1 illustrates the approach used by SAIC in its systematic analysis and characterization of mission, mission objectives, and services as well as the baseline of information management and technology.

Department, Division, Office, Branch, and Attached Agency staff were prepared, open, helpful, and comprehensive in their responses to SAIC's questions and inquiries.

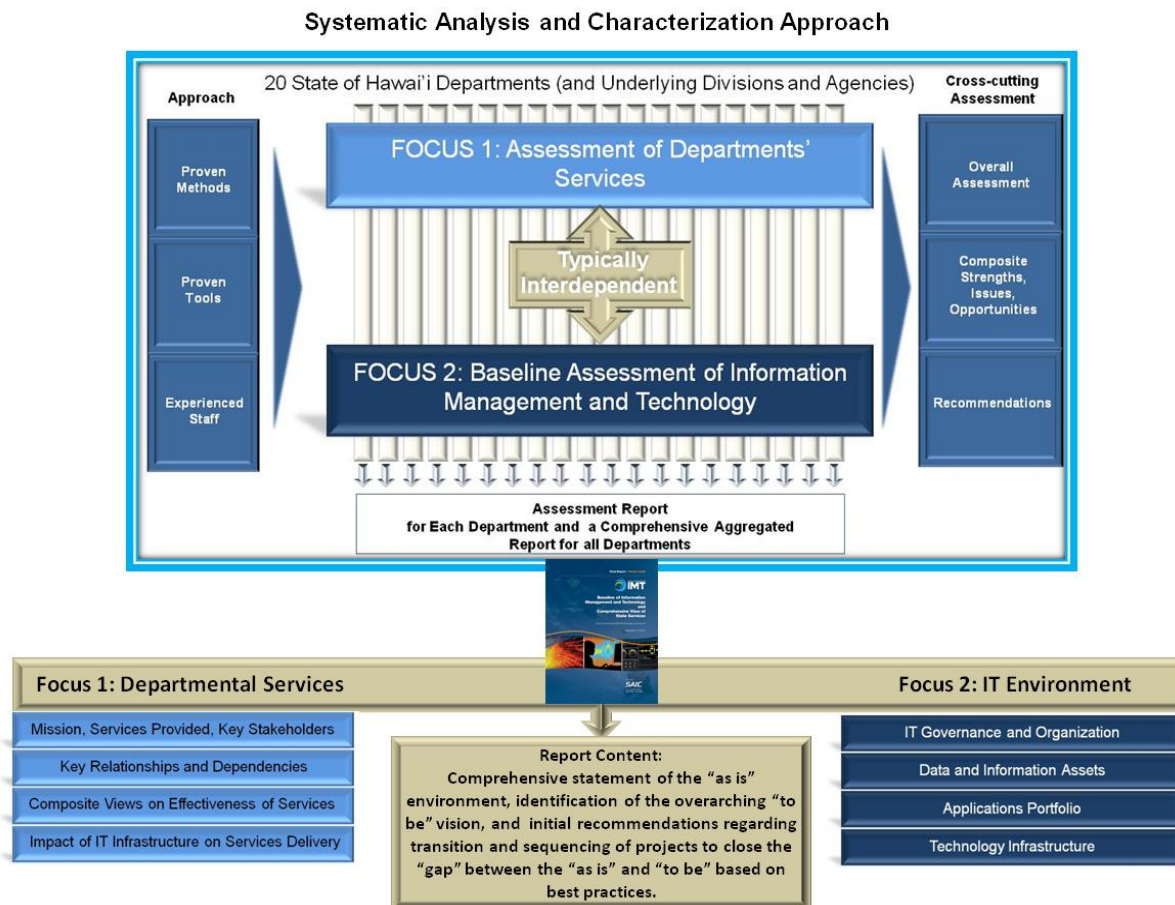


Figure 1: SAIC’s Assessment Approach and Focus Areas

SUPPORTING DELIVERABLES

Three additional deliverables provide supporting/additional information regarding the data referenced in this *Final Report*. Those deliverables are:

- *Data Center Assessment Report*: As part of the statement of the As Is, a data center assessment was conducted to identify IT infrastructure elements and the network topology. While the results of this assessment are referenced throughout this report, more detailed information is provided in the *Data Center Assessment Report*.
- *Benchmarking Report*: To support analysis of As Is and To Be recommendations, a benchmarking study of technology trends and best practices among state government organizations was conducted. The results of this study are also referenced throughout this report, while additional details are provided in the *Benchmarking Final Report*.
- *Enterprise Alignment Database*: To provide greater access to the wealth of critical data captured during this assessment, details of the As Is state have been documented in a web-enabled repository, the Enterprise Alignment Database (EAD). This secure repository, located in the Amazon Cloud, is provided to OIMT as a deliverable and has been tailored to also serve as a resource for tracking IT projects and IT acquisitions going forward. The EAD tool was developed with a code generator, Iron Speed, that allows for the quick addition of new data fields as required (e.g., energy utilization).



The EAD is not intended to take the place of a more robust commercial tool, but to serve as a repository of information gathered during the assessment and as an interim tool for OIMT as they establish their governance oversight processes.

REPORT PRESENTATION

The wealth of content gathered as part of the assessment process to describe the As Is and To Be environments (with recommendations) presents a challenge in terms of providing the reader with an easy-to-follow approach. For this reason, SAIC has placed To Be information and relevant recommendations immediately below As Is descriptions. Several visual icons are used to enhance readability and logical flow from section to section.

- Figure 2 highlights recommendations relative to the To Be state
- Figure 3 identifies benchmark best practices that should be considered as part of planning and implementation activities
- Figure 4 indicates an internal best practice or model for use



Figure 2: To Be Icon



Figure 3: Best Practice Icon



Figure 4: Hawai'i Model for Use Icon

2.0 AGGREGATED SERVICES REPORT (ALL DEPARTMENTS)

The following sections offer an aggregated view of services provided by the State of Hawai'i's Executive Branch Departments. An overview of each Department's service offerings is included in [Section 6.0](#).

2.1 Overview of Departmental Mission, Mission Objectives, and Services

As part of SAIC's deliverable regarding the "business" services provided by the Departments, as a first step, we evaluated and confirmed the mission, mission objectives, and services (functions provided to citizens and activities that support internal functions) of each Department. Figure 5 illustrates our approach and highlights other elements we assessed in relation to mission, mission objectives, and services.

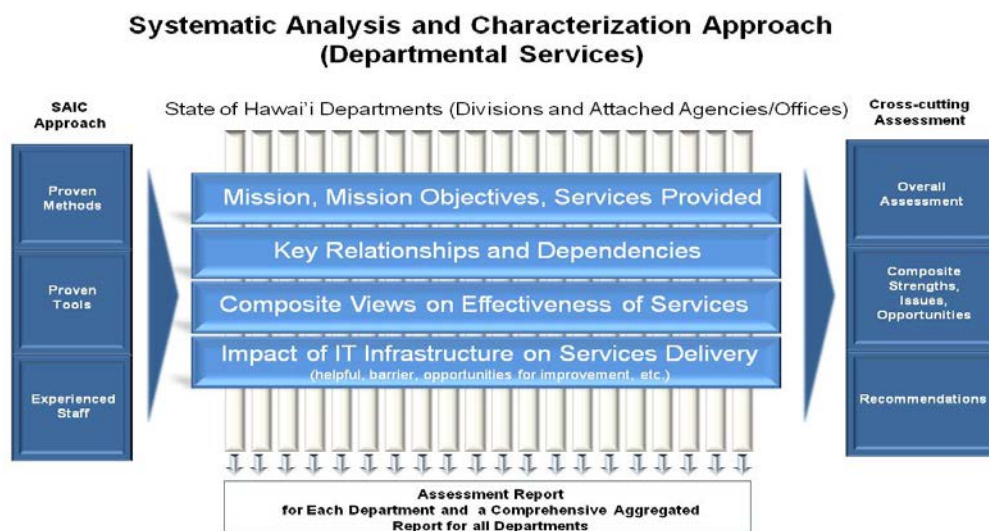


Figure 5: Systematic Analysis and Characterization Approach (Departmental Services)

2.1.1 Mission, Mission Objectives, and Services Provided (Lines of Business)

SAIC was tasked with capturing the current mission, mission objectives, and services delivered by each Department and mapping these items to the IT baseline to provide a complete picture of the services provided by the State and the underlying tools and technologies supporting them. The value of this approach is to establish that there is a clear "line of sight" or traceability between the priorities of the Governor, the Legislature, and each Department's business priorities (e.g., the current need to implement aspects of the Patient Protection and Affordable Care Act, longitudinal information management, geographic information system solution, education initiatives, workforce development) to investments required to be responsive in implementing new or changing business processes or capabilities.

SAIC found that overall the mission of each Department, Division, and Attached Agency is clearly defined. The rationale for (or assignment of) the Attached Agencies to the Departments is not always as clear (i.e., Agencies and Offices attached to the Department of Budget and Finance or the Department of Accounting and General Services). Each Department's leadership and staff are passionate about and focused on ensuring the overarching mission is met even in the face of significant budget and staffing reductions that have occurred over the past decade. Departmental

missions vary in focus from service delivery to constituents to providing support to other Departments.

To further clarify the State of Hawai'i's services or business environment, SAIC applied a best practice Business Reference Model (BRM)⁴ that groups services by function (i.e., "lines of business") versus organization. The BRM places Department services into one of the following two functional categories: 1) "Services for citizens" or public-facing services, keeping the focus on the primary mission of providing services for citizens and ultimately architecting IT systems and infrastructure to support these services (e.g., public use of mobile applications); and 2) "Support services to internal organizations" or back-office services. All support services in the BRM are independent of the organizations delivering them.

✓ **BEST PRACTICE**

Grouping organizations into communities of interest (or lines of business) that deal with similar information and functions allows organizations to address overarching (or cross-cutting) needs at all levels. *CIO respondent to NASCIO's 2010 state CIO survey.*

Since each line of business is function-based, multiple organizations may be involved in its service delivery; however, the technology and processes that support the lines of business are candidates for consolidation/integration/optimization. For example, the Departments are each supported by an Administrative Services Office (ASO) in roles if not in name. Most ASO services are duplicated from Department to Department primarily due to the distributed nature of the functional support

By implementing IT consolidation/ integration measures prior to standardizing processes, Michigan's Department of Information Technology (DIT) created unnecessary obstacles that had to be overcome down the road including, "...we had very informal operating processes...not much was written down, no data on service levels.... And that is a huge source of dissatisfaction." Defining and documenting the processes should have come first. *Teri Takai, former CIO State of Michigan (<http://www.govtech.com/security/Teri-Takai-Survival-Guide-to-IT.html>)*

but are hampered by non-integrated systems (e.g., accounting, procurement, human resources, and IT services). These ASO services/systems are potential candidates for consolidation/optimization and are identified as cross-cutting opportunities for business process identification and reengineering. The line-of-business structure makes the BRM analysis model a best-practice first step in

looking at and managing technology investments from an enterprise portfolio perspective and is a building block in defining an enterprise architecture. Figure 6 lists the high-level summary of State services. (NOTE: Detailed State services are defined in the EAD.)

⁴ The BRM SAIC applied is in alignment with the Federal BRM.

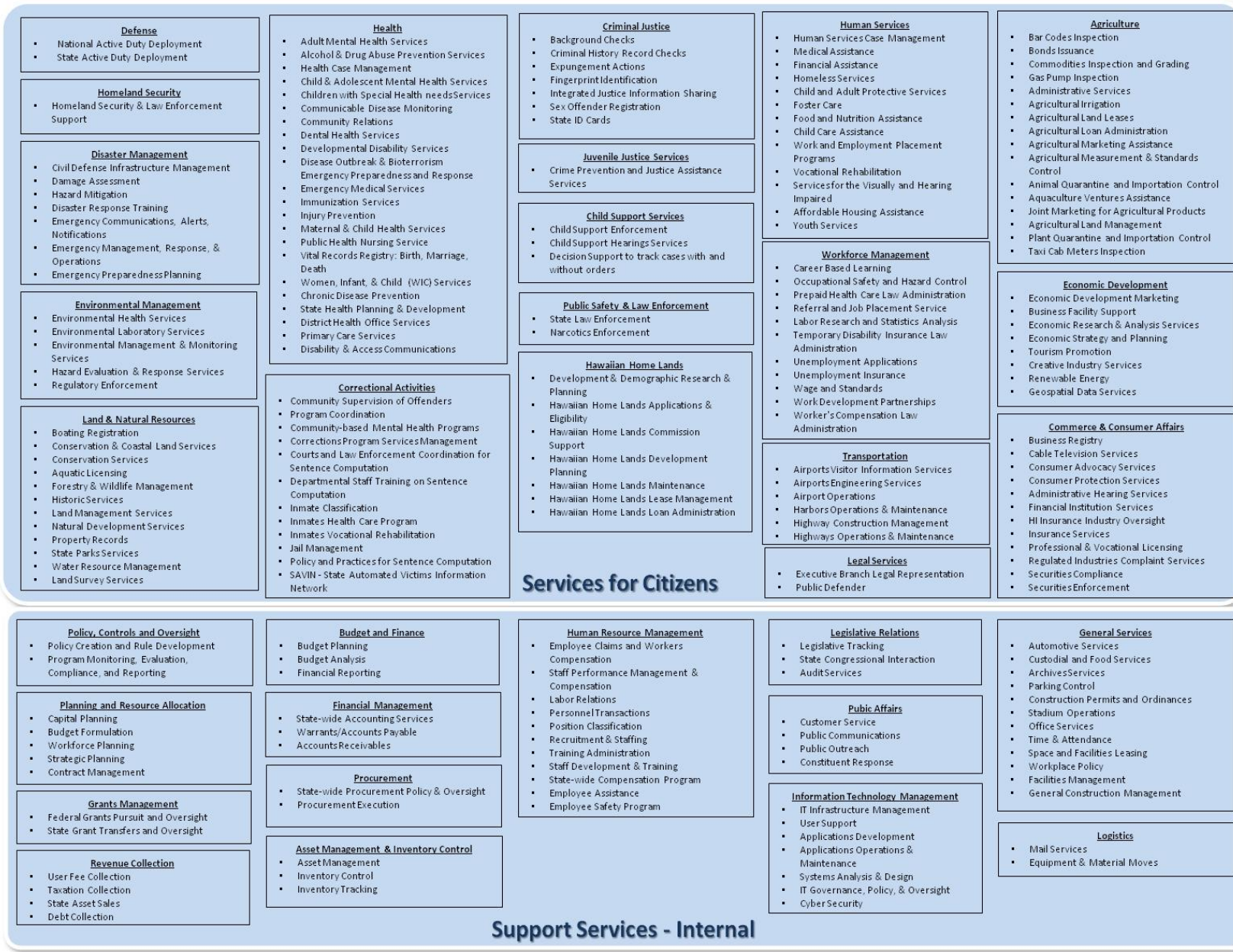


Figure 6: BRM for the State Focuses on Function Not Organization

To Be Recommendation 1: Maintain the Business Reference Model

- *Maintain and continue to refine the BRM as a tool to support statewide evaluation of service elements delivered to the citizens of Hawai'i and internal support services; when evaluating processes or implementation ideas, utilize the lines-of-business approach to gather input and promote implementation.*



2.1.2 Key Relationships and Dependencies

SAIC found that most of the Departments deal with one or more of their peer Departments on a frequent and regular basis in order to effectively meet mission objectives and deliver services to constituents. A number of organizations (i.e., Department of Accounting and General Services [DAGS], Department of Budget and Finance [B&F], Department of Human Resources Development [DHRD], and Department of the Attorney General [AG]) have key relationships with every Department to some extent. The most independent Department, by design due to their mission, is the University of Hawai'i (UH); however, even they have a close working relationship with the Department of Education (DOE). Additionally, many of the Attached Offices, Boards, and Commissions are fairly independent from other organizations or Departments (e.g., Office of Elections, Campaign Spending Commission, Employees' Retirement System [ERS], Hawai'i Employer-Union Health Benefits Trust Fund [EUTF], Public Utilities Commission, Office of the Public Defender).

Within the State, there are two common phrases used within the environment to describe the Departments: "haves" and "have nots."

- **Haves:** The "haves" are loosely defined as those Departments and/or organizations within the Departments who receive grants (e.g., Federal or private) or who are funded via revolving or special funds (e.g., self-funded). These Federally funded "haves" possess key relationships with, requirements from, and dependencies on their Federal counterparts (e.g., U.S. Department of Defense, U.S. Department of Transportation, and U.S. Department of Health and Human Services). These relationships can be driven by government regulations or, in many cases, by the delivery of services to the citizens of Hawai'i. The organizations that are funded via special or revolving funds may have relationships with external constituents or the public (e.g., via parking fees, meters, licenses, application fees).
- **Have Nots:** The "have nots" are loosely defined as those organizations dependent upon General Fund appropriations.

During the information-gathering phase, the Departments provided valuable input on key organizational interfaces with other Departments, Federal Agencies, Local Governments, and other external entities. Table 1 illustrates the high-level functional interfaces (i.e., "services") between Departments, or Federal, county, and city governments and includes an indication of whether those interfaces are automated, manual, or both. The EAD tool provides a more complete analysis of functional interfaces/services and the applications that provide automated components. This information provides insight into the degree to which IT is supporting the services that these Departments must provide. It should be noted that neither email communications nor electronic file transfers are considered an automated interface.



To Be Recommendation 2: Address Manual Interfaces

- *Focus on the elimination/minimization of manual interfaces.*



This elimination and minimization may require IT solutions, but most importantly it will require a focused BPR effort to decompose existing processes and reengineer the delivery of these services. [Section 2.1.4.1](#) provides additional insight into a number of BPR activities.

2.1.3 Composite View of Effectiveness of Services

During the effort to define the As Is state, SAIC queried each Department about how they measure service effectiveness. While the responses varied, the majority of the “have” organizations performed some measurements relative to effectiveness due in part to Federal reporting requirements and/or alternate revenue streams that required performance measurement. Generally speaking, the “have not’s” characterized their measure of effectiveness as a “lack of complaints.” There is a formal reporting requirement for “Measures of Effectiveness” to be reported to the Legislature; however, few organizations mentioned these as a management tool and some noted that these measures did not measure things that were meaningful in today’s environment.

SAIC was told by a variety of organizations that a number of services could not be performed or were less timely due to excessive backlogs, a lack of staff, and/or support from other Departments such as DAGS Information and Communications Services Division (ICSD). Examples offered by various Departments of reduced services (or services not being met), include but are not limited to:

- elevator inspections
- Section 508 of the U.S. Rehabilitation Act compliance
- incoming animal and agricultural inspections
- desk top systems and support
- server implementations
- system implementations
- Federal reporting requirements
- controls for Personally Identifiable Information (PII) protection
- cyber security assessments
- State reporting requirements

In addition to these examples, two other notable service delivery challenges were identified:

- *State of Hawai’i’s Comprehensive Annual Financial Report:* The impacts of funding and staffing reductions were most evident within DAGS where the State of Hawai’i’s Comprehensive Annual Financial Report (CAFR) for FY 2010 still has not been finalized (July 1, 2011, began FY 2012). This service deficiency has a real impact because the State cannot issue bond requests without a fully finalized and audited annual financial report, and bonds are a key vehicle for the State to fund capital projects. While the lack of staff is a key rational for the tardiness of this report, the underlying issue appears to be two-fold:

1. The State operates on a cash accounting basis, not an accrual basis⁵, and for the CAFR to be issued, financial information must be converted to an accrual basis for reporting.
 2. The current accounting system, Financial Accounting Management Information System (FAMIS) is a set of COBOL-based flat files. While some data can be/is extracted to a relational file structure that supports information reporting for the CAFR, the complete conversion required to translate the data from a cash to an accrual basis has not been done. This means the translation process is a very time-consuming and manual process involving each Department using spreadsheets and manually identifying purchases that must be accrued. (NOTE: The organization within DAGS that is tasked with creating the annual report has been cut from 6 to 2 people over the last several years.)
- *ICSD Services:* The other most notable example where services are insufficient to meet requirements is within ICSD. ICSD is the only organization within the State whose stated mission is to “comprehensively manage information processing and telecommunication systems and provide services to all organizations.” While interviewees were quick to say they believed that ICSD’s inability to respond, at least to some extent, was due to severe staff reductions (>60%) within the organization over the past 10-12 years; overwhelmingly, SAIC was told that ICSD was not meeting the advertised mission and/or perceived mission objectives for the State with the possible exception of the networking support team.

To Be Recommendation 3: Conduct Risk Assessments

- ***Improve the State’s ability to provide services by conscientiously identifying and assessing the risk of “not performing” or “partially performing” various functions.***



While SAIC identified a number of performance issues, we believe that there are many more instances that were not explicitly identified but are still formally tied to the mission of the organization. These unrecognized risks could be associated with public safety, not meeting Federal mandates, or not meeting constituent expectations, and may be creating a liability for the State depending on the service. Some Departments (i.e., Department of Taxation [DOTAX]) and even the Legislature have recognized the potential risks associated with not providing or only partially providing mission and service requirements. Those Departments who have not performed this review should do so, at least on an informal basis, and address mitigating actions. Once risks are identified, mitigating actions may include:

- Elimination of the mission objective or service and its removal from the Department’s mission requirements
- A documented decision to minimize mission objective or service activity and accept any associated risks
- The recognition that the complete mission objective or service is required and must be given priority in terms of funding, tools, etc.

Regardless of the result of the analysis, this process will allow the State’s leadership to address, accept, and/or acknowledge known risks.

⁵ In cash accounting, expenses are recorded when funds are expended (warrants written). In an accrual accounting system, expenses are recorded when the funds are committed via a procurement/contractual action.

To Be Recommendation 4: Institute Accurate Performance Measures

- *Review current performance measures, revise as warranted in order to create meaningful performance/service delivery measures for each organization, actively evaluate performance based on these revised measures, and, ensure that service recipients' satisfaction (citizens and internal service recipients) is measured and addressed (beyond the lack of complaints).*



While surveying and satisfaction measurement may be viewed as an unnecessary expense/luxury, the State should implement a consistent measurement process for mission objectives and service delivery. In addition, service recipients' responses are excellent justifications for funding to improve support and delivery capabilities (e.g., training, tools, process improvement).

✓ **BEST PRACTICE**

Establish memorandums of understanding (MOU) and service-level agreements with each agency to govern the relationship between Departments and to understand service-level expectations, and then measure and report on performance based on agreed-upon expectations

2.1.4 Impact of IT Infrastructure on Services Delivery

The impact of the IT infrastructure on services delivery is significant in some Departments and minimal in others; however, for each organization we spoke with, the need for additional IT infrastructure – in every sense (i.e., governance, organization, data and information assets, applications portfolio, and technology infrastructure) - to support service delivery was unanimous. Every Department recognizes that IT truly does support “doing more with less;” but as staff and budget reductions have occurred, the ability to utilize IT to improve the productivity of the remaining staff has been far too limited. As discussed in [Section 2.1.3](#), all Departmental services and mission objectives are not being delivered as required and in many cases this is due to the fact that IT does not effectively support this delivery.

We found that services could be more effective if IT solutions were more accurately tied to the current business needs/requirements of the Departments as well as economic and staffing realities within the State. Section 2.1.4.1, next, provides details about specific cross-cutting areas, activities, or processes that could provide the State with opportunities to redefine business processes and truly utilize IT to help accomplish mission objectives.

2.1.4.1 Cross-Cutting or Enterprise Solution Opportunities Requiring Business Process Reengineering (BPR), Process Identification, and/or Requirements Definition

As a follow-on to our analysis of IT's impact on Departmental service delivery, we noted a number of specific areas, activities, or processes that were:

- performed by each or nearly each Department
- required by a number of Departments, but for which inter-departmental requirements were not being coordinated
- paper-driven in many cases
- extraordinarily labor intensive and therefore drove users to create one-off solutions

In addition, some the Departments highlighted the need for these areas, activities, processes, or supporting tools/IT systems to be reviewed at a statewide or enterprise level. Figure 7 represents the activities that were named most frequently by the Departments or were areas that SAIC recognized as having the most redundancy. The following sections offer SAIC's observations/findings associated with the identified cross-Department opportunities. These observations include benefits that we believe would result from collaborative process identification or reengineering and/or requirements definition. We have not highlighted the reasons "why" the situation calls for a process assessment; at this juncture, the discussion regarding "how" to move forward is more important. We can state categorically that we did not find any overt neglect or negative intent by an individual or group of individuals relative to the implementation of the existing processes. Instead, we attribute the current need for process analysis to the general lack of coordinated direction and guidance from a CIO⁶ charged with:

Candidates for Cross-Cutting Enterprise Solutions
Financial Management Initiatives
Procurement and IT Acquisitions
Program/Project Management Process Definition
Time and Attendance Reporting
Check Printing and Processing
Legislative Bill Tracking
Constituent Response Tracking
Data Entry
Inventory/Asset Management
Document Tracking and Records Management
Enterprise Email Solution
Neighbor Island Solution
PPACA Implementation
Federal Grant Application and Lifecycle Management
GIS Enterprise Solution
Longitudinal Data Enterprise Solution

Figure 7: Opportunities to Implement Enterprise Solutions and Improve Service Delivery Efficiency

- providing the overarching governance of the State's information
- oversight of IT system investment decisions
- encouraging evaluation of processes and systems that support them

2.1.4.1.1 Financial Management Initiatives

There is a groundswell of activity relative to financial management and the systems and tools that are required to support it. This represents an immediate opportunity to evaluate processes that are being used statewide and to gather requirements for use in the evaluation of potential tools for future implementation at the enterprise level. Even though some Departments are aggressively reviewing potential solutions and commercial off-the-shelf (COTS) packages, an enterprise assessment will assure that solution selection by one Department will ultimately support an integrated enterprise solution. Table 2 provides observations relative to financial management initiatives and the perceived benefit of an immediate enterprise-level intervention to gather requirements.

Table 2: Financial Management Initiatives

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Most Departments acknowledged that they were performing financial management with a variety of point 	<ul style="list-style-type: none"> • Eliminates duplicate effort while enhancing the Departments' abilities to manage their budgets

⁶ With the passage of Hawai'i Revised Statute (HRS) 27-43, this situation will no longer exist within the State as the CIO establishes a governance process that ensures coordinated evaluation of how cross-cutting statewide initiatives or requirements for information are met.

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<p>solutions, custom systems, and hybrid spreadsheets and databases to pull and push information to/from the State's financial system, FAMIS.</p> <ul style="list-style-type: none"> • FAMIS is a 25+-year old system design that is COBOL/mainframe-based and does not facilitate information integration or manipulation. • Support for the mainframe will not be available indefinitely from the manufacturer and it will continue to be costly. • FAMIS does not meet current reporting needs as evidenced by the number of Departmental-based implementations of independent financial management and the inability to produce the CAFR. • Current financial reports (e.g., monthly and year-to-date expenditures) lag behind actual expenditures for the Departments. • The three Departments that manage the State's financial position, DOTAX, B&F, and DAGS, operate in a non-integrated environment. • B&F and DOTAX have stated the need for an automated financial system that supports revenue receipt, financial management, analytics and accounts payable, and invoicing. • DOE is updating a previously prepared requirement specification document for an enterprise resource planning (ERP) solution. (NOTE: UH is completing an implementation of a new consortium-developed financial management system, Kualii, for higher education delivery organizations.) • The Department of Transportation (DOT) is completing the implementation of DOT-wide financial management system. • EUTF, ERS, the Department of Hawaiian Home Lands (DHHL), and DOT all have made an investment in Oracle Financials. • Great Plains software is in use within B&F. • One-off systems will continue to proliferate within the Departments going forward. 	<p>and other funds and will save money once implemented.</p> <ul style="list-style-type: none"> • Reduces or eliminates overtime costs associated with annual report creation. • Minimizes or eliminates the need for the cash-to-accrual conversion process, thereby eliminating the need for Departments to track their procurements separately. • Enhances ability to prepare and release the annual report on time. • Provides the three primary Departments charged with financial responsibilities (i.e., revenue receipt, budget planning, and accounting) with the ability to effectively share information. • Upgrades the DAGS-owned accounting system with a state-of-the-art system that meets current financial management needs statewide. • Decreases replication in the investment/maintenance of one-off systems by the Departments. • Leverages economies of scale for procurements. • Ensures all requirements are considered as part of any go-forward plan or procurement action.

2.1.4.1.2 Procurement and IT Acquisitions

Throughout the Departmental interviews, SAIC was told that the procurement process (especially the IT acquisition process) is “broken.” Upon closer examination, we discovered that due to staff reduction that adversely impacted the State Procurement Office (SPO), many of the services originally supplied by the SPO were delegated to the Departments. Additionally, in relation to IT procurement activities, the Departments’ IT leadership expressed the need to have a more streamlined approach to “buying” from established State vendor lists. The assessment of this cross-cutting area should begin with a BPR activity. Additionally, as part of the BPR process, the nuances associated with IT acquisitions should be addressed especially with regard to IT investment management. Table 3 summarizes the team’s observations relative to Procurement.

✓ **BEST PRACTICE**
 West Virginia’s Office of Technology began rebidding statewide IT contracts to leverage volume pricing in 2006. West Virginia’s first personal computer enterprise contract reduced the average cost of a PC 47%; the statewide cell phone contract reduced charges by 19%; and the statewide telecommunication data circuit contract reduced the average cost of a MB by 65% over five years.

Table 3: Procurement and IT Acquisitions

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Departments believe that procurement needs to be streamlined to eliminate inefficiencies in the process. • An extensive study was completed in the 2008 timeframe regarding IT procurement process improvements and changes. • Procurements performed at the Department level is judged as very labor intensive. • Delays cause lapses in maintenance contracts and in replacing broken or obsolete equipment. • Procurement has a number of automated, web-based external-facing processes in addition to internal paper-intensive processes. • With the exception of the Western States Contracting Alliance (WSCA), Departmental staff has to offer all SPO pre-qualified, commodity-type vendors the opportunity to “bid” on their solicitation. This is time consuming and stretches IT resources further with the review and assessment of all offers, notifications, postings, etc. • A reciprocal agreement with the U.S. General Services Administration (GSA) does not exist for the State. • IT investment management relative to procurements and acquisitions does not have a rigor that assesses the need for, IT enterprise architecture alignment/implications. • ICSD reviews of IT acquisition plans by the Departments (ICSD-205 Form) can be avoided based on line item cost. 	<ul style="list-style-type: none"> • Reduces costs and the ability to deliver and improve services in a timely manner. • Streamlines the process. • Reduces paper-based processes and expands existing automation processes. • Reduces time involved and minimizes the number of pre-qualified vendors based purely on desired price points. • Ensures IT acquisitions are part of an investment review process prior to procurement actions.

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • ICSD does not log/track actual acquisition actions. • Some ASO's require ICSD-205 prior to authorizing payments for IT acquisitions. 	

2.1.4.1.3 Program/Project Management Process Definition

Every Department has projects they must manage from inception to delivery to ensure that contractual obligations are satisfactorily met. Almost all Departments cited the need for a documented common approach to program/project management including tools and staff training. Table 4 lists the team’s observations regarding program/project management.

Table 4: Program/Project Management Process Definition

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Departments manage projects from inception to delivery but this activity is performed with varying degrees of rigor from organization to organization. • Disjointed business processes result in delayed and incomplete information that can introduce risk to the State. • Project management is dependent upon contract management, financial management, procurement, and to some extent grant application and lifecycle management, but these processes are not integrated. • Business processes are not integrated causing redundant effort, lag in getting timely information, missed opportunities, and diminished decision making. • No collaboration with the Departments who have or are building project management processes and approaches. 	<ul style="list-style-type: none"> • Increases understanding and discipline in project management. • Reduces risk through better costing, budgeting, scheduling, tracking, and reporting. • Improves integrated information. • Facilitates decision making.

2.1.4.1.4 Time and Attendance Reporting

The time and attendance reporting process was cited by every Department as the one thing that should be handled the same statewide. Even the Departments that stated that they had created their own time and attendance “automated system” recognized the unnecessary redundancy. Table 5 summarizes the team’s observations regarding time and attendance reporting.

Table 5: Time and Attendance Management

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Time and attendance management is a recognized need. • Time and attendance is recorded in a variety of ways causing duplicated effort and erroneous data. 	<ul style="list-style-type: none"> • Eliminates duplication of data entry and erroneous data causing errors in payroll. • Cost savings from reduced effort to track down erroneous leave payments.

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Every Department and many Divisions are tracking time and attendance mostly to get accounts of leave balances and leave history. • Employees mistakenly take leave they do not have. • Time and attendance process needs to be analyzed in conjunction with how it interfaces with payroll since it is a fundamental input to the financial system. • Duplicate data entry, accounting, and erroneous paychecks occur fairly frequently, especially related to terminations and leave • Time and attendance requirements should be gathered and used to create an enterprise solution. • When addressing a solution for time and attendance, ensure it will interface with financial management system requirements. 	<ul style="list-style-type: none"> • Time and attendance entered at a single point and integrated into the financial management and payroll systems. • Employee leave status integrated into the system to prevent erroneous payroll.

2.1.4.1.5 Check Printing and Processing

Check printing and processing was cited by every Department as a process that was dated and ineffective given the commercial approaches for electronic funds transfers (EFT). It should be noted that this enterprise opportunity will ultimately be tied to the financial management solution, but a check printing and processing solution can be created and implemented independently as long as a standard best practice solution is selected. Table 6 summarizes the team’s observations regarding check printing and processing.

Table 6: Check Printing and Processing

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • ICSD prints ~ 272,000 payroll checks each year • ICSD prints ~291,000 vendor payment checks • ICSD prints ~1,700,000 other checks annually • ICSD check printing, given commercial rates (i.e., cents per check), is not cost effective 	<ul style="list-style-type: none"> • Eliminates the need to invest in the immediate replacement of the “check creation” printers • Provides a more “green” solution via the minimization of paper. • Reduces postage and other distribution costs associated with paper checks.

✓ **BEST PRACTICE**

To cut costs without compromising service, government agencies of all sizes are replacing checks with electronic payment cards (aka EPC or prepaid debit cards). Converting funds distribution to an electronic solution yields dramatic savings. The right payment card program can also enhance service to cardholders, eliminating mailing delays and providing round-the-clock customer service. State governments can use debit cards for a number of programs, including Temporary Assistance for Needy Families (TANF), unemployment, child support, foster care payments, child care provider payments, adoption subsidies, and government employee payroll. On average, governments spend \$2 per check in printing and mailing costs – savings that add up by implementing an EPC program.

The state of North Carolina saved \$4 million by delivering unemployment benefits via EPC in its first year. More than 20 other States are saving millions by adopting EPC for a variety of programs.

2.1.4.1.6 Legislative Bill Tracking

Legislative bill tracking is a cross-cutting business need within the State. Many Departments have taken advantage of the Lotus Notes-based system created by DCCA a number of years ago. Table 7 summarizes the team’s observations regarding legislative tracking.

Table 7: Legislative Bill Tracking

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> Each Department and the Governor’s Office needs an automated system linked to the Legislature’s system in order to know what legislation is being created or changed, so they can plan for its implementation and/or impacts. There is no one process supported by a centralized system, so many Departments have devised their own solutions to track legislation. 	<ul style="list-style-type: none"> Improved integration with the Legislature and more timely updates and communication supported by automation.

2.1.4.1.7 Constituent Response Tracking

Constituent response tracking is a cross-cutting business need within the State. Table 8 summarizes the team’s observations regarding constituent response tracking.

Table 8: Constituent Response Tracking

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> Each Department and the Governor’s Office need an integrated approach to tracking constituents’ requests and the State’s responses. Internet Quorum is being considered as a tool but with limited use statewide. Utilizing an Excel spreadsheet to track thousands of requests and inquiries each month is inefficient. Ensuring that delegated responses are handled by the Departments is a manual process. Ability to integrate with a enterprise document tracking system is a concern. 	<ul style="list-style-type: none"> Increases responsiveness to constituents. Completes the lifecycle of records of responses from initiation to case closure. Statewide approach improves efficiency and reduces costs. Provides an understanding of all requirements.

2.1.4.1.8 Data Entry

Data entry processes, while seemingly straightforward, are tightly integrated into numerous systems and processes (e.g., time and attendance, inventory/asset reporting) and Departmental service delivery processes (e.g., paper form transcription). Additionally, it was the opinion of several Departments that data entry processes are often “prescribed” by Federal grant requirements (e.g., number of keystrokes, verification). Table 9 summarizes the team’s observations regarding data entry.

Table 9: Data Entry

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> The current data entry equipment is old, maintenance intensive, will no longer be supported in 2012 by the equipment manufacturer, and, at a minimum, a new different solution is immediately required. The need for data entry services (91.5M keystrokes/year) in some form within the Departments will remain until processes are re-engineered. Elimination/minimization of Departmental processes that require data entry should be a priority within the State. ICSD data entry, given commercial rates, is not cost effective. 	<ul style="list-style-type: none"> Eliminates the need to invest in new technology to facilitate internal data entry processes. Creates a prototype of how to effectively implement re-training. Reduces costs associated with equipment maintenance.

2.1.4.1.9 Inventory/Asset Management

The State currently has an inventory and asset tracking approach that tracks all State-owned assets. Table 10 summarizes the team’s observation with regard to inventory/asset management.

✓ **BEST PRACTICE**
States analyzed in the benchmark study have implemented automated, statewide, IT asset inventory systems.

Table 10: Inventory/Asset Management

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> Inventory and asset management is very manual. At least two Departments (Department of Health [DOH] and Department of Human Services [DHS]) are implementing Maximo, a leading application solution for inventory/asset management. Nearly every Department has their own mechanisms to track assets (e.g., HDOA-internally developed system; DCCA – utilizing Altiris, Scriptlogic) Asset tracking numbers may be dynamic, forcing some additional tracking to static internal numbers. Inventory lists contain obsolete IT assets. 	<ul style="list-style-type: none"> Inventory would be performed consistently throughout the State with increased standard information to support IT decision making. Reduction of effort to track assets and perform audits.

2.1.4.1.10 Document Tracking and Records Management

One of the biggest challenges for State government is keeping up with documents and ensuring adequate and legal fulfillment of records/retention management. It is imperative to be accountable to the citizens so archival of official records is a major concern for all - from the Executive Branch to the Legislature and down to the Departments, Divisions, Agencies, and Offices of the State. Table 11 summarizes the team’s observations regarding document tracking and records management.

Table 11: Document Tracking and Records Management

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Each Department must meet archival and retrieval of documentation requirements. • There is no one process supported by a centralized system, so many Departments have devised their own solutions to manage documents. • For some Departments, there are many solutions and duplicated efforts. • Some Departments still keep hard copies in boxes. • Information is not easily accessible and could be better organized. • Reliability and completeness of documentation is questioned. 	<ul style="list-style-type: none"> • Utilizes an integrated process that incorporates document management, workflow, and records management and retention. • Realizes cost savings through reduction in effort tracking, storing, and retrieving documents. • Potentially automated retention reduces risk and ensures consistently met retention rules. • Creates an integrated process that supports document management, configuration management, and workflow for the State that would meet the State's needs across all Departments. • Establishes configuration management to increase the reliability and completeness of documentation sets.

2.1.4.1.11 Enterprise Email Solution

Across the State, the Departments stated their frustration with the current enterprise email solution/tool (Lotus Notes) and the size restrictions associated with email retention. Table 12 summarizes SAIC's observations regarding the need for an enterprise email solution.

Table 12: Email Enterprise Solution

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • There is no enterprise (statewide) management of the Lotus Notes tool. • The ICSD Lotus Notes server hosts various Executive Branch Departments excluding DHS, DAGS, DBEDT, DCCA, DOT, and DOH. • DHS, DAGS, DBEDT, DCCA, DOT, and DOH have their own email servers attached to the State of Hawai'i Electronic Messaging (SOHEM) network via hubs that ICSD maintains. • Domino and Lotus Notes R8.5.2 is the current release of the software and of the 22 email servers listed (Table 29), 68% are running end-of-support software from IBM. • Numerous applications have been built on "non-current" Domino versions and funding to upgrade as not been available. • No statewide shared calendaring. 	<ul style="list-style-type: none"> • Reduces email management costs statewide. • Converges on a single enterprise solution that will facilitate shared calendaring statewide. • Provides the ability to create statewide distribution lists.

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> Global addressing/distribution is possible via information sets provided by DHS, DAGS, DBEDT, DCCA, DOT, and DOH. A clean process notifying IT organizations of personnel changes does not exist; therefore, email distribution information is not always current. 	

2.1.4.1.12 Neighbor Island Solution

The neighbor islands are key components of the service delivery structure. The Departments are challenged with staying connected with and effectively supporting their neighbor island staff, especially now that travel has been minimized due to budget reductions. Table 13 summarizes the team’s observations regarding neighbor island solutions.

Table 13: Neighbor Island Solutions

Observation/ Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> Connectivity with neighbor islands is predominately via frame relay due to the cost-prohibitive nature of other solutions (e.g., ~\$500/month versus \$25K/month for T1 connectivity). Need for better connectivity is especially important in relation to disaster response. Current video conferencing capabilities are hardware intensive. Web-based video solutions (e.g., Skype) would enhance communications with all staff members and with constituents. Providing service/support (e.g., IT desktop support and service, equipment installation and implementation, patch maintenance) is especially challenging. 	<ul style="list-style-type: none"> Improves services and support to State employees located on a neighbor island. Improves service delivery by neighbor island staff to the constituents. Leverages lower-cost web-based solutions.

2.1.4.1.13 Patient Protection and Affordable Care Act Implementation

Two Departments have described their need to implement the requirements for the Patient Protection and Affordable Care Act (PPACA). An enterprise view of system requirements is advised. Table 14 summarizes the team’s observations regarding implementation of this Act within the State.

Table 14: Patient Protection and Affordable Care Act (PPACA) Implementation

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • PPACA implementation is required by the Federal government. • The State is not effectively implementing an integrated solution to the Act's requirements. • DCCA and DOH are involved in the Act's implementation. • SAIC suspects that more Departments will ultimately be impacted by the Act's implementation, and therefore, it should be addressed from an enterprise perspective. 	<ul style="list-style-type: none"> • Enterprise approach to the Act's data requirements enhances required reporting and services to citizens. • Supports stakeholders' involvement and buy-in starting in the requirements definition phase.

2.1.4.1.14 Federal Grant Application and Lifecycle Management

Many Departments apply, are awarded, and track grants. Many Departments need to identify grant opportunities to augment their budget. Table 15 summarizes the team's observations with regard to Federal grant application and lifecycle management.

Table 15: Federal Grant Application and Lifecycle Management

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Grants have many reporting requirements that must be satisfied. Some are stringent such as the American Recovery and Reinvestment Act of 2009. • Managing and tracking grants in the State's complex and demanding financial environment, with additional financial pressures arising from increased budget cuts and competition, makes maintaining an adequate grant funding pipeline essential to the health of many Departments. • Some Departments are not able to use all of the money provided by grants they have been awarded due to missed or inadequate reporting. • Staff needs to be trained and empowered with processes and tools to speed up application, tracking, and reporting. • A standard approach for grant applications and lifecycle management would benefit many Departments in the State. • Not currently working collaboratively with the Departments (who currently have grants) to determine what process improvements could be implemented to enhance the application process and reporting process and to create a standard approach statewide. 	<ul style="list-style-type: none"> • Increases use of grant money through more timely reporting. • Minimizes grant money returned to the Federal government due to missed reporting requirements. • Increases performance with better, more timely tracking information for Project Managers. • Provides consistency and efficiency in applying for and tracking grants. • Reduces missed deadlines. • Provides for improved information to support performance measurement.

2.1.4.1.15 Geographic Information System Enterprise Solution

Numerous Departments have described their needs for geographic information system (GIS) information, but an enterprise approach is not being addressed and is required. Table 16 summarizes the team’s observations regarding a GIS enterprise solution.

✓ **BEST PRACTICE**
 70% of the States analyzed provide enterprise GIS systems. Specifically, Indiana’s first strategic GIS plan was developed in 2008. Subsequently, data-sharing agreements were negotiated with county government organizations, and hardware/software investments were consolidated to reduce costs. Eventually, at least 13 separate entities collaborated to support Indiana’s enterprise GIS system. These entities ranged from the United States Geological Survey (USGS) to the Indiana Department of Transportation to the State GIS Center of Excellence (CoE) to the State Library.

Table 16: GIS Enterprise Solution

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • GIS is the responsibility of DBEDT’s, Office of Planning (by statute). • A GIS working group exists in relation to the DBEDT GIS implementation. • Numerous organizations have a stated need for a GIS solution (e.g., DBEDT, DOE, DLNR, DHHL, DOD, DCCA, DOT, UH). • GIS is not being effectively addressed from a truly enterprise perspective. • More organizations than those identified could utilize GIS for the fulfillment of their mission and service objectives. • GIS requirements are not being considered from an enterprise perspective. • Longitudinal data requirements should be factored into any GIS solution. 	<ul style="list-style-type: none"> • Enhances efficiency and effectiveness of the GIS solution environment. • Leverages the buying power of the State with regard to ArcInfo. • Enhances statewide sharing of GIS information.

2.1.4.1.16 Longitudinal Data Enterprise Solution

Numerous Departments have described their need for longitudinal data, but an enterprise approach is not currently being addressed. An enterprise view of system requirements must be completed and factored into a solution. Table 17 summarizes the team’s observations regarding a longitudinal data enterprise solution.

Table 17: Longitudinal Enterprise Solution

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> • Longitudinal data is difficult to collect and PS20 reported that numerous grants depend on this information. • Two groups have a stated need for a longitudinal solution (e.g., DOE, UH). • Multiple organizations provide information in support of the reporting required by Federal grants. 	<ul style="list-style-type: none"> • Enterprise approach to longitudinal data enhances required reporting. • Eliminates manual information gathering, manipulation, and report creation.

Observation/Finding	Process Identification/ Reengineering/Requirements Definition Benefit
<ul style="list-style-type: none"> Longitudinal information is not collected in an automated manner and is not being addressed from an enterprise perspective. 	

To Be Recommendation 5: Apply Business Process Reengineering

- Use BPR activities to improve the efficiency and effectiveness of service delivery including :
 - ensuring a line of sight between the Departments’ needs for IT as part of effective service delivery and solutions identified for Governance described in [Section 3.0](#)
 - identifying, thoroughly evaluating, and documenting processes for any new service implementation activities and performing BPR by decomposing existing processes and identifying streamlined approaches/opportunities for the most critical activities, especially those that have cross-cutting or statewide implications
 - addressing the top 16 cross-cutting areas or opportunities for an enterprise solution based on the priority assigned in Table 18 and [Section 5.0](#) by involving appropriate Departmental stakeholders (and bargaining unit representatives as appropriate) using proven BPR and/or requirement analysis techniques to identify enterprise or statewide solutions. (NOTE: The process improvements identified using BPR may or may not require IT solutions, although many will. It is recommended that enterprise business re-engineering be completed prior to implementation of any supporting enterprise IT tools.)



Table 18: Prioritized Cross-Cutting Activities

Candidates for Cross-Cutting Enterprise Solutions	Immediate-Term	Near-Term	Long-Term
Financial Management Initiatives	✓		
Procurement and IT Acquisitions	✓		
Program/Project Management Process Definition	✓		
Time and Attendance Reporting	✓		
Check Printing and Processing	✓		
Legislative Bill Tracking	✓		
Constituent Response Tracking	✓		
Data Entry	✓		
Enterprise Email Solution	✓		
Inventory/Asset Management		✓	
Document Tracking and Records Management		✓	
Neighbor Island Solution		✓	
PPACA Implementation		✓	
Longitudinal Data Enterprise Solution		✓	
Federal Grant Application and Lifecycle Management			✓
GIS Enterprise Solution			✓

Legend: Criteria Used to Assign Priority		
<p>Immediate-Term Criteria</p> <ul style="list-style-type: none"> • Reduce substantial risk in operations based on evaluation of risk impact, risk probability, and risk urgency (e.g., responsiveness, availability, continuity, security) • Avoid costs (due to fines/penalties and or other adverse impacts, e.g., loss of Federal funding) and/or public embarrassment/perception due to a lack of information protection (e.g., PII, data backup) • Immediately save or avoid costs in enterprise and/or Departmental operations 	<p>Near -Term Criteria</p> <ul style="list-style-type: none"> • Expand use of operational capabilities leveraging scalability – primarily operational cost reduction for another organization or function (e.g., improves capability to support increased demand, volume, and/or speed/responsiveness) • Add or enhance operational capability based on cost-benefit analysis (intermediate to long-term results expected) • Enhance process maturity and organizational skills based on cost-benefit analysis (long-term results expected) 	<p>Long-Term Criteria</p> <ul style="list-style-type: none"> • Extend or expand existing operational capability to prove strategic vision can be implemented • Add or enhance operational performance or processes via pilot project implementation • Prove feasibility of incremental improvement for long-term gain with immediate benefits

2.2 Other Areas of Note Related to As Is Services

2.2.1 Culture

During the assessment, SAIC enjoyed learning about the Hawaiian culture. It is a culture that insists on personal privacy, believes in the power of the story, listens intently, and appreciates being heard and having their opinions valued. They also believe in working together and cooperation, *laulima*. The SAIC team found the Aloha Spirit is real and truly does represent the attitude of friendly acceptance and commitment to resolve any problem and accomplish any goal. This commitment extends to so many of the State employees we observed who were intent on meeting mission objectives and delivering services to the citizens of Hawai'i, which often translated simply into working longer and harder with or without being paid overtime. Additionally, due to all the budget cuts, the staff has begun to accept the lack of support and tools to perform their jobs more effectively as “just the way it is.” Likewise, while they recognize processes that are inefficient, they seem to have lost the drive to surface these ideas as improvement opportunities, feeling that the answer from process/system owners will be “no money, no resources.”



The Departments' employees truly are the State's greatest assets!

2.2.2 Staffing

The vast majority of the State's staff members that the SAIC team interacted with were knowledgeable and extraordinarily committed to fulfilling their job requirements even under less than optimal circumstances (i.e., severe budget and staffing reductions without a recognized reduction in mission objectives and/or service delivery requirements). Approximately 58% of the State's employees are members of a bargaining unit and are generally non-exempt. Additionally, most



staff is covered under civil service administrative rules. Generally, managers are not members of the bargaining units, although some have chosen to be members. During recent reductions in force, “bumping”⁷ has caused the State to lose individuals with a more current skill base because these individuals had less seniority.

2.2.3 Funding



Funding within the State has been significantly reduced (\$350 million over the last three years that was redistributed to other areas of the budget, specifically the pension) as previously noted. All organizations, especially those funded from the General Fund (based primarily on tax revenues) have struggled to meet mission objectives and maintain services.

As discussed in [Section 2.1.2](#), in addition to the Departments that receive Federal grants, “have” organizations also include those that are funded via special or revolving funds where revenues are received from an “assessment/tax” or “external” source (e.g., DAGS Automotive Management Division, DAGS Aloha Stadium Authority, DCCA).

A true, internal fee-for-service model (where all services are delivered for a defined unit fee that covers overhead, service delivery costs, etc.) does not exist within the State. A modified fee-for-service model does exist and involves spending Federal funds outside the Department receiving the grant (e.g., for IT support). In this case, many grants require a defined rate or fee as part of the reporting.

2.2.4 Focused Approach to Obtaining Additional Federal Funding

There is a notable and significant need for the State to augment revenues. A logical first step in that process is to identify the availability of Federal funds that could be received via grants. A number of Departments seem to be positioned to receive additional funding via Federal grants, but do not have a process to actively create grant requests or proposals and/or an effective process to manage them, if received.

Several organizations within the State who are recipients of grants noted that it is not uncommon for some residual grant monies to be returned to the Federal government because the Department did not effectively spend the grant funding in a timely manner or meet reporting/delivery requirements.

2.2.5 Training

Additional fallout from budget reductions includes severely limited training. All organizations stated that they struggled to fund training, but most especially training that requires travel. It was noted by more than one organization that the majority of the training that their staff members had attended was associated with procurement.

⁷ A “qualified” person in a like position can “bump” or replace someone in the same job family and/or job level that has less seniority.

3.0 COMPREHENSIVE AGGREGATED BASELINE REPORT

The following sections provide a view of the State of Hawai'i's IT environment within the Departments of the Executive Branch. Details by Department are provided in [Section 6.0](#) and have been collected in the EAD tool that will be left as a resource for the CIO and OIMT to assist with the developing, implementing, and managing IT for the State.

3.1 Overview of Departmental IT Environment

As SAIC evaluated current Departmental IT environment within the Executive Branch, and as we talked with the Departmental leadership, and most importantly the IT leadership, within each Department, there was an overwhelming consensus of need and expectations with regard to the priorities of the newly hired CIO and his organization:

- Provide IT governance – overall direction with collaborative input from stakeholders; investment planning and management; and policies related to security, wireless use, smartphones, iPhones, social media, and web development/content
- Create a viable solution for disaster recovery (DR) and business continuity
- Address IT procurement challenges – coordinated IT “buys”
- Provide direction and solutions relative to security and privacy to protect but not hinder information flow internally or externally
- Coordinate information sharing through “open” government, collaboration tools, work flow processes, and social media
- Identify application solutions that can be leveraged statewide, for example to improve business management decisions, manage and track costs, record staff members time and attendance, share information, and manage document workflow
- Define and implement an improved, extended, and sustainable infrastructure including but not limited to enhancement of the network, a new more extendable email environment, improved video conferencing infrastructures for communications, secure and effective web services, and an increase in available storage for digital data
- Facilitate, improve, and expand wireless and mobile device usage

Given these consensus needs, SAIC (in conjunction with the State's new CIO) identified ten focus areas that require actions and solutions:

1. Governance and organization
2. DR and continuity of operations planning
3. IT procurement
4. Security and privacy
5. Open government and social media
6. Collaboration and workflow
7. Enterprise applications
8. Enterprise infrastructure
9. Wireless and mobile
10. Business process engineering or reengineering (NOTE: The tenth focus area was unspoken based on interviews but evident from the requirements identified in the rest of the list.)

Each of these 10 items aligns directly to the IT assessment areas (i.e., IT governance and organization, data and information assets, applications portfolio, and technology infrastructure) as illustrated in Figure 8.

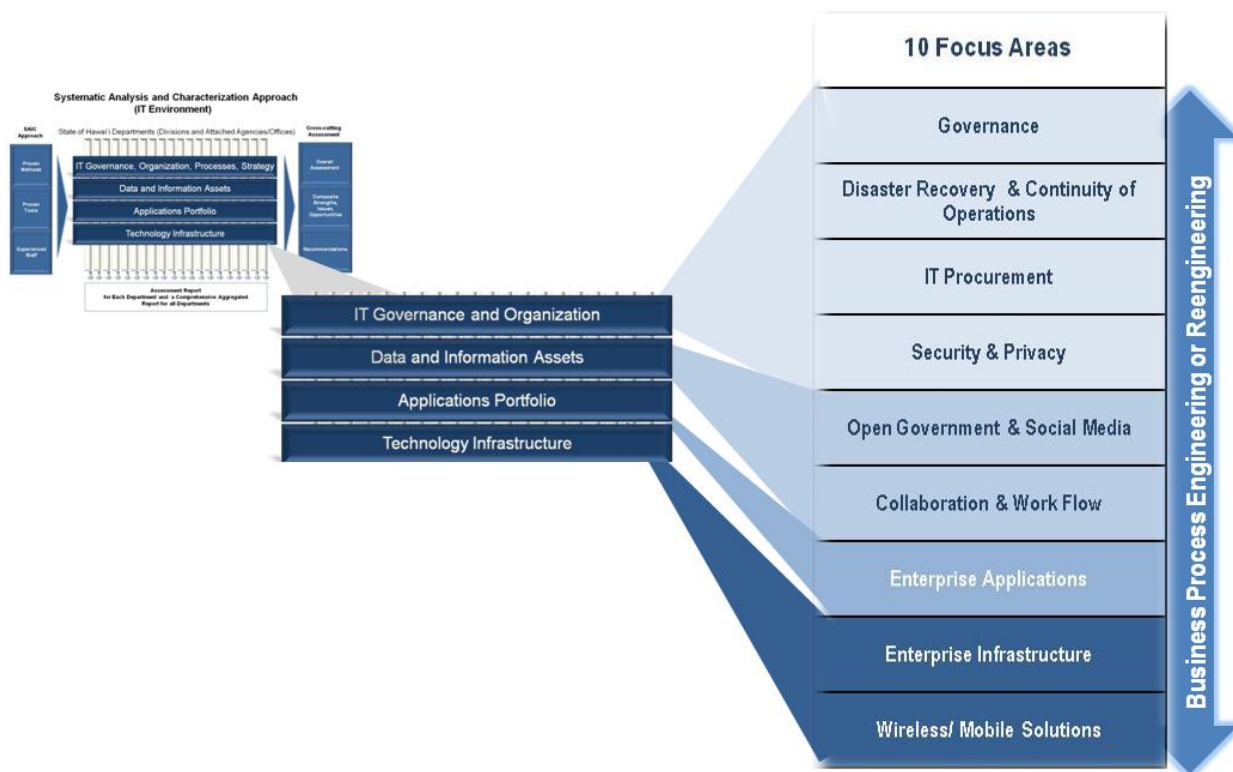


Figure 8: Systematic Analysis and Characterization Aligned with the 10 Focus Areas

The following sections describe the aggregated IT baseline against these assessment areas, which can then be utilized in the State of Hawai`i's IT Strategic Plan to ensure a "line of sight" to the identified findings, observations, and ultimately the To Be recommendations from this report.

3.1.1. IT Governance and Organization

The goal for IT within the State of Hawai`i should be to enable each Department, and State government as a whole, to effectively serve the citizens and businesses that call Hawai`i home. As SAIC reviewed the As Is environment, we found that despite the dollars allocated to IT and IT-related activities, the State was not maximizing its use of IT and was not benefitting from IT in terms of productivity improvements, cost savings, effectiveness, or efficiencies to the extent that other state governments, private industry, and the Federal government do. This recognition was supported by a host of reviews, studies, and audits (e.g., Audit of the State of Hawai`i IT: Who's in Charge?" #09-06; Charter for Digital Governments, Hawai`i Transitioning to an IT Best Practice State) and in the Legislative session tied to FY2011, the Legislature passed HRS 27-43 to begin actively addressing this issue. This statute established similar authority and responsibility for IT in the same spirit as the Clinger Cohen Act of 1996 at the Federal level for the position of CIO as the "developer and oversight for IT governance." Table 19 identifies the key requirements and responsibilities for the CIO based on HRS 27-43.

**Table 19: Key Elements from Hawai'i's HRS 27-43
CIO's Responsibilities As Described in HRS 27-43**

<ul style="list-style-type: none"> • Develop, implement, and manage statewide information technology governance; • Develop, implement, and manage the state information technology strategic plan; • Develop and implement statewide technology standards; • Report annually to the governor and the legislature (at least 20 days prior to the start of the legislative session) on the activities and programs under the authority of the chief information officer and the information technology steering committee, and the expenditures of all moneys received from all sources and deposited into the information technology trust account and the shared services technology special fund. • Employ persons exempt from chapters 76 and 89; • Leverage the legislatively mandated IT Steering Committee to: <ul style="list-style-type: none"> – Validate the IT strategic plan; – Assess executive branch departments' progress in meeting the objectives defined in the State's IT strategic plan and identifying best practices for shared or consolidated services; – Ensure technology projects are selected based on their potential impact and risk to the State, as well as their strategic value; – Ensure that executive branch departments maintain sufficient tools to assess the value and benefits of technology initiatives; – Assist in developing state information technology standards and policies; and, – Clarify the roles, responsibilities, and authority of the ICSD, specifically as it relates to its statewide IT duties. • Raise funds, as required, to defray administrative costs and may accept donations of money and personal property on behalf of the information technology steering committee; provided that all donations accepted from private sources shall be expended in the manner prescribed by the contributor, and all moneys received shall be deposited into the information technology trust account. • Receive donated personal services and personal property for which funding is not required.

Based on the statute, the focus of the Legislature was to ensure that the State took a strategic view of IT going forward and that technology standards were defined and implemented by the CIO across the State using an effective governance structure. As noted above, the structure for the governance approach and the accompanying organizational elements were not prescribed other than to state there should be a CIO supported by an IT Steering Committee.

As SAIC evaluated HRS 27-43 in relation to the charter of the CIO and the IT Steering Committee, we recognized that a governance structure that would ensure that nothing was overlooked in terms of our assessment of the As Is or in the definition of the To Be was required. To this end, SAIC once again looked at the Clinger Cohen Act and its 12 key competency areas to serve as a proven model for defining and managing IT regardless of the environment. These competency areas are illustrated in Figure 9.



Figure 9: Key Competency Areas for IT Governance

3.1.1.1 Governance (As Is)

As shown in Figure 9, a sound governance approach includes 12 competency areas. To judge the effectiveness of the existing statewide governance environment against the 12 competency areas, SAIC created a set of criteria.⁸ (see Figure 10) for each of five levels of implementation occurring relative to the 12 competency areas.

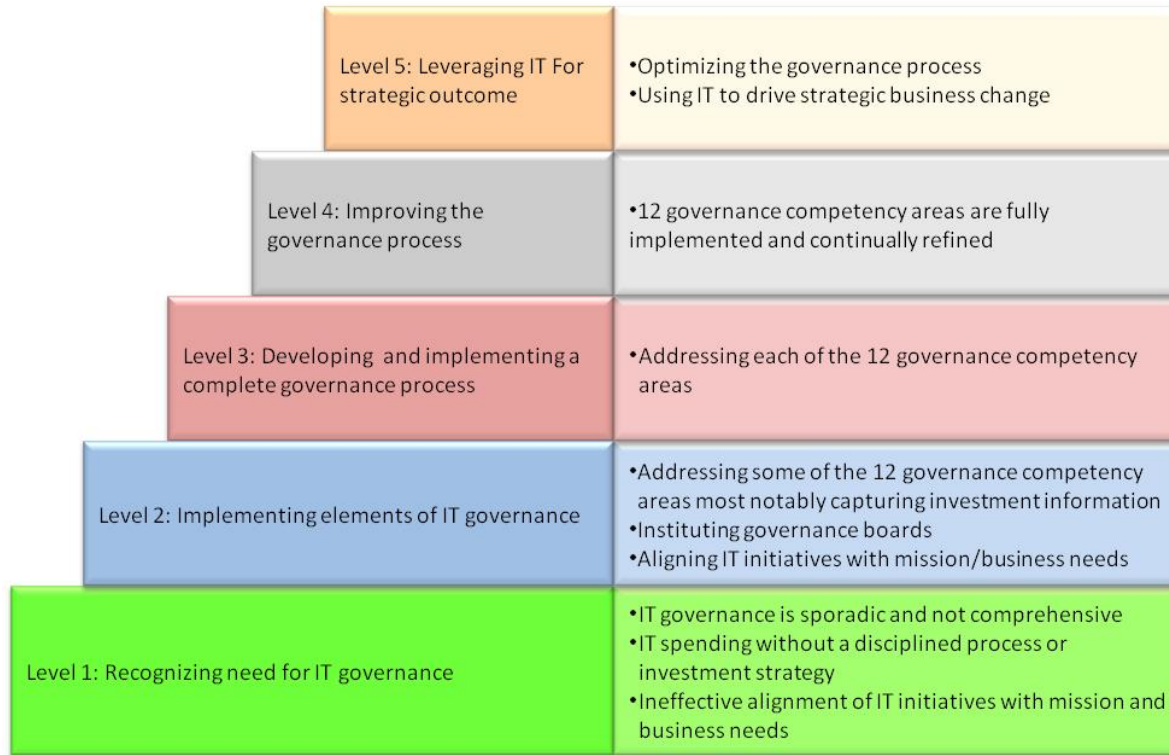


Figure 10: IT Governance Effectiveness Assessment Criteria

To assess the State’s effectiveness in terms of governance and the 12 key competency areas, SAIC applied the criteria defined in Figure 10 against the only organization that is recognized as having the mission to provide information processing and telecommunications systems to all Departments — ICSD. (NOTE: Approximately 60-70% of ICSD resources are devoted to providing IT services statewide, while the other 30-40% are devoted to IT operations and maintenance for DAGS Divisions that are the system and data owners (e.g., accounting, payroll, invoice/warrant). Table 20 provides the results of the As Is effectiveness of the only statewide processes relative to governance.

Mission of ICSD – Serve as the lead agency for information technology in the Executive Branch. It is responsible for comprehensively managing the information processing and telecommunication systems in order to provide services to all Departments of the State of Hawai‘i. The ICSD plans, coordinates, organizes, directs, and administers services to insure the efficient and effective development of systems.

⁸ The General Accounting Office (GAO) IT Investment Model (ITIM) was tailored to apply the effectiveness criteria.

Table 20: Effective of Statewide Governance Practices Based on IT Best Practice Competency Areas

IT Best Practice Competency Areas for Governance	Effectiveness Level (Criteria in Figure 10)	Basis for Effectiveness Assessment
Leadership/ Management	Level 1-2	<ul style="list-style-type: none"> • Prior to HRS 27-43, a CIO function was another assigned duty for the DAGS Director, the State's Chief Operating Officer, who had little expertise or time to devote to resolving IT challenges. • ICSD's attempt at statewide governance lost momentum due to budget cuts, staffing reductions, and the inability to effectively articulate the need for IT governance and IT capabilities as a whole for the State. • The IT Technical Governance Committee (ITGC – Technical) is now meeting regularly but is not used in a way that promotes effective governance statewide - not all Departments attend/actively participate. • The IT Executive Leadership Committee with membership consisting of the Department Directors or their designees no longer meets. • Other specialty user groups and/or topical groups do meet and take action (e.g., Lotus Notes Administrators Group, IT Privacy and Security Council).
Information Resources Strategy & Planning	Level 1	<ul style="list-style-type: none"> • No strategic plan exists to drive information resources, management, and planning. • No statewide approach to DR exists in a formal or informal way other than performance backups and moving them to another building in the same geographic area (across the street).
IT Performance Assessment: Models & Methods	Level 1-2	<ul style="list-style-type: none"> • Measures of Effectiveness exist and are reported but are not necessarily aligned with users' performance expectations. • ICSD submits weekly reports to DAGS management, but specific performance against defined service expectations is not articulated per se.
Capital Planning and Investment	Level 1-2	<ul style="list-style-type: none"> • With the 1977 Memorandum (Administrative Directive 77-2, Administrative Directive 87-01) regarding IT acquisitions, a structure is in place to review proposed IT acquisitions (>\$10,000 per individual line item). • ICSD Form 205 is provided for IT acquisitions based on the above 1977 requirements (and annual clarification of thresholds), and is reviewed by internal ICSD management; however, a defined criteria (e.g., documented strategic plan, enterprise, or technical architecture) is not used as a basis for review.
IT Project/Program Management	Level 1	<ul style="list-style-type: none"> • No standard project/program management methodology was identified for the management of IT projects. • ICSD noted that they do not effectively manage projects or programs because they focus primarily on reacting to identified needs.

IT Best Practice Competency Areas for Governance	Effectiveness Level (Criteria in Figure 10)	Basis for Effectiveness Assessment
Acquisition	Level 1-2	<ul style="list-style-type: none"> ICSD supports IT acquisitions as they relate to IT needs that impact other Departments (less than all Departments) and this includes conducting all procurement activities (i.e., creation of technical scope, posting/distribution of the solicitation, negotiation of terms and conditions, coordination of cooperative agreements, response evaluations, award determinations). ICSD struggles to staff acquisition functions and deliver them in a timely manner (e.g., recent IBM maintenance contract). Maintenance contract terms (e.g., award date, expiration date) are not actively tracked within ICSD.
Policy & Organization	Level 2	<ul style="list-style-type: none"> A set of policies exists within ICSD and the table of contents is posted on the ICSD web site. Many of the effective policy dates range from 1986-2009 with the vast majority of dates between 1986 and 2003. 47 ICSD forms for IT approval or service are posted with their instructions for use on the ICSD web site.
Process/Change Management	Level 1	<ul style="list-style-type: none"> No strictly defined process or change management function appears to exist within ICSD. No communication procedure to announce the schedule of change activities. No formal configuration control board (CCB). No adoption of Information Technology Infrastructure Library (ITIL), although at least one ICSD manager has the ITIL Foundations certification and ITIL books were made available to ICSD staff.
e-Government	Level 2-3	<ul style="list-style-type: none"> ICSD has a fairly robust web-site development and management function (predominately those sites that have no payment activity). HIC is a key partner in the e-Government process (predominantly those sites that have payment activity). Other e-government functions are not obvious within ICSD.
Technology Management & Assessment	Level 1	<ul style="list-style-type: none"> No system development lifecycle management process exists. Pockets of effectiveness were noted by the Departments with regard ICSD's network management team. Technical assessment appears stifled on many levels (e.g., implementation of Blade servers for a virtual web server environment, Active Directory, DR solutions; active proof-of-concept projects for utilization of Cloud computing).
Information Security & Assurance	Level 2	<ul style="list-style-type: none"> Cyber security functions, and especially communications regarding information security, are performed by ICSD in conjunction with the Information Privacy & Security Council whose "mission is to protect the security of personal information collected and maintained by state and county government agencies." Security standards are documented and posted on the ICSD web site; the Information Security standard is dated 2009; Personal Computer Security is dated 2001; and Network Security is dated 2003.

IT Best Practice Competency Areas for Governance	Effectiveness Level (Criteria in Figure 10)	Basis for Effectiveness Assessment
Enterprise Architecture	Level 1-2	<ul style="list-style-type: none"> • A complete enterprise architecture does not exist for the State. • Technical architecture documents for various components managed by ICSD do exist and are a current reflection of at least the environment managed by ICSD organizations.
OVERALL ASSESSMENT = Level 1-2		

The results noted above indicate that overall the State, and specifically ICSD, has the remnants of governance that dates back six or seven years, and that overall we assessed the effectiveness, in relation to the 12 competency areas, between Level 1 and 2 (i.e., recognizing need for IT governance and implementing elements of IT governance) given the organization's mission. From our analysis, we recognize that the effectiveness has changed over time due to:

- the organization's inability to innovatively respond budget to limitations and staff reductions
- the organizational assignment of ICSD to any existing Department
- the lack of a devoted champion, in the form of a CIO, who would develop, implement, and maintain technology governance in an effective manner in order to maximize its benefits statewide

Without a State-level governance approach, many Departments have recognized the need for IT governance components as IT projects failed, at least in part, due to:

- the lack of a strategic guidance or framework (e.g., technical architecture, system development standards) for identifying requirements and maintaining traceability
- no independent project status reviews to evaluate progress against defined measurements
- no recommended approach to identify, assess, and effectively mitigate risks
- no direction for setting, validating, and evaluating technical decisions

Table 21 lists a high-level overview of the level of governance that exists within the Departments.

Table 21: Departmental Governance Elements

12 Competency Areas	Level of Departmental Governance
1. Leadership/ Management	Every Department has at least one IT lead or coordinator who champions IT. Many of the "have" organizations have active governance committees that include the Department's senior leadership.
2. Information Resources Strategy & Planning	Most of the "have" Departments contain the building blocks (i.e., agency strategic plan, IT strategic plan, personnel within the agency that are knowledgeable about IT and the Department's mission and business relative to establishing a mature IT governance environment). Some of the "have not" organizations are also preparing to create an IT strategic plan as well. Where strategic plans are being developed, they are being aligned with Departmental Strategic Plans.
3. IT Performance Assessment: Models & Methods	IT performance is aggressively measured by some Departments (i.e., DOH, DCCA, DOE) while others measure IT performance based purely on the lack of user complaints.
4. Capital Planning and Investment	Many "have not" Departments address IT investments in relation to hardware based on a break-fix state (e.g., invest only when required to fix what is broken) while most of the "have" Departments tend to be more strategic in their investment processes including investment reviews by governance committees.
5. IT Project/Program Management	Several Departments (i.e., DOTAX, DOE, DOT, DLNR) have recognized the need for a formal approach to project management and are working to implement these approaches. Several organizations outside the IT space have formal project management processes due to their mission requirements (i.e., DAGS, DOT).
6. Acquisition	Departments are currently working in silos relative to IT procurements, and therefore, the State as a whole is not taking advantage of economies of scale relative to IT and IT services including the use of GSA schedules. Departments believe that IT acquisition is a broken process.

12 Competency Areas	Level of Departmental Governance
7. Policy & Organization	At least some documented policies and standards related to IT exist in some form within the “have” Departments.
8. Process/Change Management	Some Departments (i.e., DOTAX, DOE, UH, DHS, DCCA) have defined processes for change management and some have toolsets for managing process/change management.
9. e-Government	All Departments have a web presence and leverage electronic approaches to support their mission objectives and service delivery. Some have more presence due to their mission requirements relative to public-facing services.
10. Technology Management & Assessment	Some Departments (i.e., DOH, DCCA) have a documented system development lifecycle methodology. Many Departments have no lifecycle plans or means to migrate away from aging legacy systems that are not supported by vendors.
11. Information Security & Assurance	Some Departments have identified Information System Security Officers/leads (e.g., DOH, DOD, UH) while most rely on the guidance provided by the ICSD security team and/or the Information Privacy & Security Council.
12. Enterprise Architecture	Numerous Departments (i.e., DOE, DOT, UH, DHS, DOH, DHHL) have technical architectural documents and a few organizations have developed enterprise architectural strategies (i.e., DOE, UH, EUTF, ERS).

Overall SAIC would judge most of the “have” Departments and a few of the “have not’s” at a solid Level 2 (implementing levels of governance) based on Figure 10 levels.

To conclude the discussion of the As Is state of governance, it should be noted that the need for governance was one of the Departmental consensus items identified as part of SAIC’s assessment activities. Each Department recognized their abilities as well as their limitations with regard to governance and all recognized the importance of implementing a statewide approach. All Departments volunteered to work collaboratively with the CIO and OIMT to create and implement standards across the core competency areas.

To Be Recommendation 6: Implement Governance Strategies



- *Articulate if necessary, in conjunction with the Governor and/or Legislature, the intent of HRS 27-43 regarding the “development, implementation, and management of statewide IT technology governance” to include the responsibility and authority to participate in the agency-IT budget process, review all state-funded IT purchases, oversee IT projects and the application portfolio, and provide technology architecture management.*

✓ **BEST PRACTICE**

States benchmarked as being the most effective have given the CIO the authority to approve in advance of “legislative approval” IT Departmental budgets. NASCIO recommends that governors and Legislatures vest CIOs with the authority to participate in the agency-IT budget process, review of all state-funded IT purchases, and oversee the IT projects, application portfolio, and technology architecture management.


- *Identify a staff role to serve as a financial manager to support investment activities and in preparation for IT funding requests to the Legislature going forward.*
- *Create a governance structure and develop an IT strategic plan that highlights key themes (see Figure 11) that have been identified as part of the State’s goal to transform government (i.e., New Day Plan) and address recognized deficiencies noted in previous audits, assessments, and reviews.*



Figure 11: Overarching Themes Aligned with the State’s Vision for a New Day for IT

- *Evaluate and leverage, as appropriate, governance “building blocks” as implemented within the Departments (i.e., DHRD, DOE, UH, DHS, DOH, AG, DOTAX, and DCCA).*
- *Utilize the 12 competency areas (as defined on the following pages) to define all governance requirements and ensure that each competency area is addressed with a focused project plan for implementation to maximize organizational effectiveness.*

Below are specific actions relative the implementation of governance within the State using the 12 competency areas:

12 Competency Areas	Actions
<p>Leadership/Organization</p>	<ul style="list-style-type: none"> Charter (define mission, objectives, membership, roles, and responsibilities) for governance committees and work groups. Call the first IT Steering Committee Meeting with the identified members and review the overarching plans for IT governance and creating the IT strategic plan. Re-charter, re-invigorate, and re-name the IT Technical Governance Committee (ITGC - Technical) as the "CIO" Council, an effective two-way communication forum to discuss project plans, project status, investment requests, and to assist in evaluating and determining technical direction. <i>Figure 12 depicts a notional leadership structure.</i> Form a Leadership and Business Process Council given the need for input from Department leadership, the need to aggressively address process reengineering activities, and to promote and support of all governance functions. Establish a robust communications process to ensure all stakeholders are informed regarding the activities associated with establishing governance processes and activities associated with OIMT. <div style="float: right;">  </div> <div style="background-color: #4F81BD; color: white; padding: 10px; margin-top: 20px;"> <p>✓ BEST PRACTICE</p> <p>90% of the states benchmarked have established oversight/governance committees to support the CIO. Computer Economics finds that the creation of an IT Steering Committee is one of the most widely adopted and effective (if used correctly) IT management practices.</p> </div>

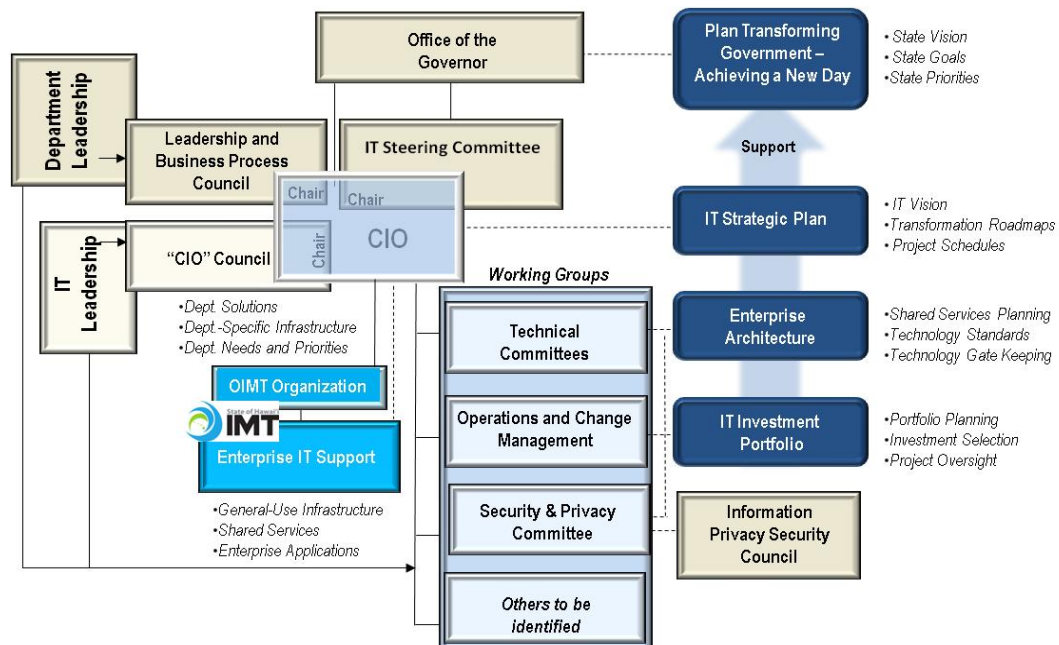












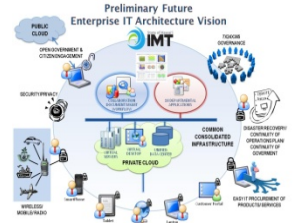


Figure 12: IT Governance Structure

12 Competency Areas	Actions
<p>Information Resources Strategy and Planning</p>	<ul style="list-style-type: none"> Finalize all staffing actions; determine the mechanism for acquiring additional support; and prepare any requests and justifications for additional funding in preparation for the upcoming January 1, 2013, Legislative session. Utilize this assessment report as a resource to create an outline and first draft of the IT strategic plan and utilize the wealth of information contained in the EAD tool to begin outlining tactical project plans. Work collaboratively with the Departments to identify and create a funding strategy to resolve DR concerns.  <p>The diagram shows a circular process for strategic planning. It includes stages: Business Review, Strategic Planning, Planning & Methods, Optimization, and Strategy Implementation. A central circle is labeled 'Strategic Planning' and is surrounded by 'Monitor', 'Measure', and 'Adapt'.</p>
<p>IT Performance Assessment: Models and Methods</p>	<ul style="list-style-type: none"> Review existing "Measures of Effectiveness" and other performance measurements and/or service-level agreements as they relate to IT for all Departments and recommend needed changes to the Legislature specifically for IT-related measures. Factor in performance measurements/reporting required as part of the Federal grant process as part of any IT measures. Begin tracking and reporting against these measures using a web-enabled, Cloud-based "dashboard" capability that provides visibility to all organizations.  <p>The image shows a screenshot of a dashboard with various charts and graphs, including bar charts, line graphs, and pie charts, representing performance metrics.</p>
<p>Capital Planning and Investment</p>	<ul style="list-style-type: none"> Create a simple, straightforward investment review process that can be used as a basis for investment and capital planning evaluation activities. Utilize the "CIO" Council as the "idea" entry point for new investment ideas/ requirements and leverage various working groups in the evaluation of investment approvals/prioritizations.  <p>A green 3D dollar sign icon with the word 'Investment' written vertically on its side.</p>
<p>IT Project/Program Management</p>	<ul style="list-style-type: none"> Create a best practices-based project management approach based on the Project Management Institute and/or Critical Chain Project Management (an approach that focuses on resources rather than time constraints). Establish an effective project management organization (PMO) function tailored to meet the State's needs and to support the Departments in their project management activities with streamlined tools and procedures. Leverage the EAD tool as a resource for maintaining the inventory of IT projects statewide. Leverage applicable elements of the existing project management models in use (i.e., DAGS, DOT) or under development (e.g., DOE) within the State, as appropriate. Manage all OIMT projects with sound project management practices. Use the development of the governance structure as an example of project management and reporting processes.  <p>The image shows the PMI logo (Project Management Institute) and a book titled 'Critical Chain Project Management' by Goldratt and Cox.</p>
<p>Acquisition</p>	<ul style="list-style-type: none"> Begin immediately gathering and managing data related to planned acquisitions by leveraging the EAD tool as a mechanism to review, evaluate, and capture Departmental acquisition plans. As recommended in Section 2.1.4.1.2, review the IT  <p>An illustration of a person sitting at a desk with a laptop, with several blue arrows pointing outwards from the laptop, symbolizing data flow or acquisition.</p>

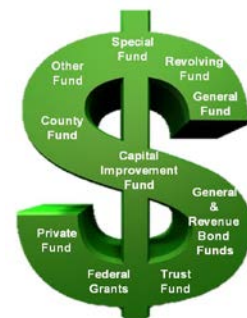
12 Competency Areas	Actions
	<p>procurement process and how the SPO, CIO, and the OIMT team can support and enhance IT acquisitions.</p> <ul style="list-style-type: none"> • Evaluate, in conjunction with the SPO, the pros, cons, and steps required for the State to sign a cooperative agreement with GSA in order to buy from price-competitive commodity and consulting schedules and include a review of the number of companies in Hawai'i holding GSA schedules. • Identify a Financial and IT Acquisition Manager who can spearhead reengineering of the IT acquisition process and lead it. Review the procurement study from 2008 as a potential starting point.
<p>Policy and Organization</p>	<ul style="list-style-type: none"> • Support the creation and/or enhancement of policies being requested by the Departments regarding the use of social media, cyber security, IT acquisition reporting thresholds, etc. • Spearhead a project to formalize documentation, relative to the statewide IT environment, that only exists with key personnel. • Work collaboratively with the Departments to understand their issues and needs relative to the policies area and how to minimize the impact of any changes. • Leverage any existing materials and approaches that have been developed within the Departments to serve as a starting point for OIMT. • Define the applicable IT policies/standards required and guide adoption by the Departments. • Establish an approach to measure overall implementation effectiveness. • Thoroughly review all existing ICSD policies and procedures, using COBIT standards as a basis, and build a plan to either rescind them and/or update them. 
<p>Process/Change Management</p>	<ul style="list-style-type: none"> • Ensure a communications mechanism is integrated into process/change management activities. • Leverage the EAD tool to support change management until more robust tools, such as Remedy, can be selected and procured. • Identify, thoroughly evaluate, and document processes for any new service implementation activities. • Perform BPR by decomposing existing processes and then identifying streamlined approaches/opportunities for the most critical activities, especially those that have cross-cutting or enterprise implications. • Create and plan for the implementation of a tailored version of ITIL in collaboration with the Departments.   
<p>e-Government</p>	<ul style="list-style-type: none"> • Evaluate other opportunities to enhance existing e-Government activities including the implementation of open government functionality and continued use of electronic government initiatives through HIC. 

12 Competency Areas	Actions
<p>Technology Management and Assessment</p>	<ul style="list-style-type: none"> Evaluate the existing technology environment using the EAD tool. Establish a new technology assessment approach to gauge potential adoption of new technology and processes including the following components: <ul style="list-style-type: none"> Needs assessment Market assessment Feasibility assessment Risk analysis Impact analysis Alternatives analysis Introduction planning Create a scalable (based on project complexity) system development lifecycle methodology in conjunction with the Departments that is agile but comprehensive enough to ensure effective results. Key criteria in selecting an approach will be: <ul style="list-style-type: none"> Ability to effectively leverage stakeholder resources Ability to leverage documentation tools based on platforms, development environment, and third-party tools Ability to define and deploy in an iterative manner and reasonable timeframe not as a “big bang” Address a cultural reality that assumes system implementations take years not weeks. 
<p>Information Security and Assurance</p>	<ul style="list-style-type: none"> Perform a comprehensive risk-based evaluation of the information security posture working in collaboration with the Departments and the Information Privacy Security Council, as appropriate. Address immediate concerns with solutions that can be leveraged statewide. Take advantage of the “models for use” within the State and identified in this report and leverage these as starting points. 
<p>Enterprise Architecture</p>	<ul style="list-style-type: none"> Create a complete enterprise architecture structure and the documentation of a comprehensive technical architecture design that moves the State toward smart integration and consolidation of technology elements. 

3.1.1.1.1 Funding for IT

As previously noted, funding within the State has been reduced significantly with those Departments that are funded via the General fund struggling the most to maintain services while reducing staff. As a result of these budget reductions, these organizations have also minimized funding for IT infrastructure and staff support.

The State budgetary process is based on a biennial budget cycle. FY 2013 is the last half the current biennial, and the preparation of the CIO’s Strategic



Plan will be a key tool that the Legislature will use to justify and validate all IT investment decisions across the State. Figure 13 illustrates the budget planning horizon and the notional OIMT budget trend lines⁹ assuming that no significant increases are authorized in advance of the next biennial budget cycle. This chart does not account for Federal grants within the various Departments and/or any current IT investment planning on the part of the various Departments.

The CIO’s current budget is categorized by HRS 27-43 as a Special fund. This fund type provides a level of flexibility (e.g., fund carryover with Legislative approval) that is not offered by most of the other fund types.

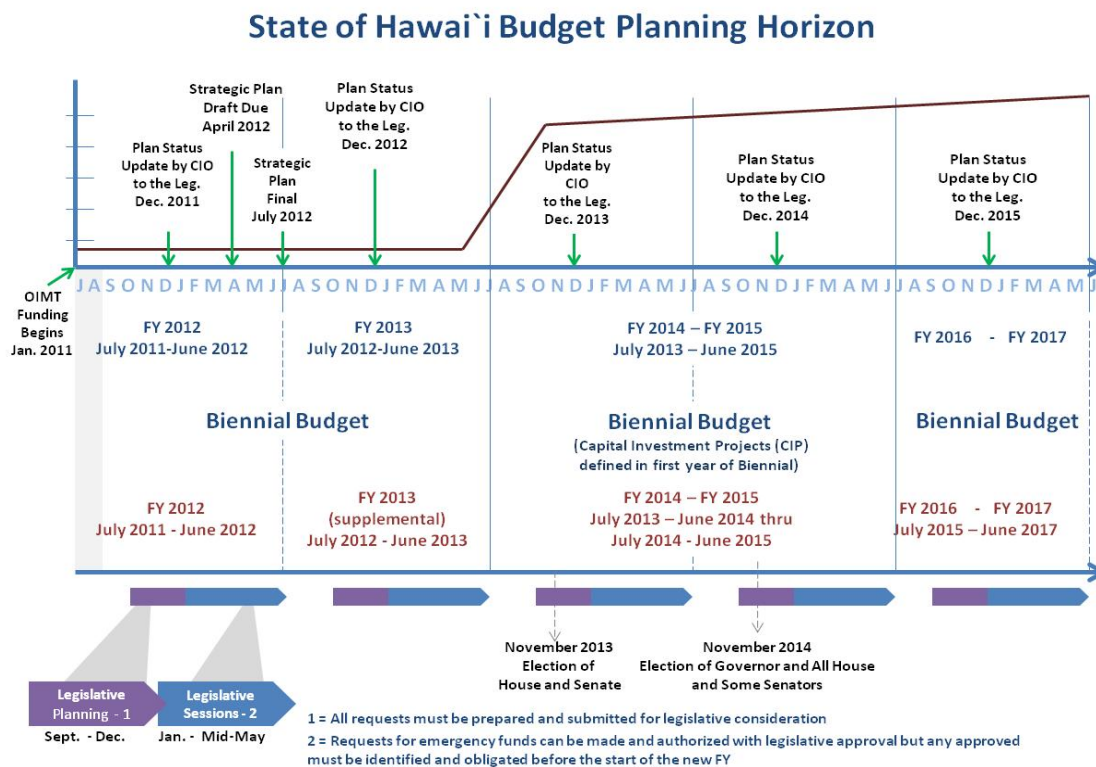


Figure 13: Budget Planning Process for the Next Biennial Budget

Table 22 defines the nuances of each fund type within the State as a reference, since all budget submittals, especially those out of cycle and proposed for the second year of the biennial budget; require identification of a funding strategy for all proposed requests.

Table 22: State Fund Types and Definitions

Fund Types
General funds are used to account for all budget dollars for a Department that are not accounted for in another funding source - more commonly known as the fund to which tax and non-tax revenues of the State are deposited.
Special funds are dedicated or set-aside funds (by law) for a specified object or purpose to be executed by a Department or Office, excluding Revolving funds and Trust funds. These funds are commonly associated with programs with revenue-generating capabilities.

⁹ Hawai`i Revised Statutes 27-43, stipulates the deposit, of three percent into the Shared Services Technology Special Fund, which will ensure an income of approximately \$1,200,000 annually.

Fund Types
General obligation bond funds are funds from the issuance of bonds, notes of indebtedness, or other instruments of indebtedness for the payment of the principal and interest of which the full faith and credit of the State are pledged as collateral to investors.
General obligation reimbursable bond funds are proceeds from bonds issued for a public undertaking, improvement, or system from which revenues, or user taxes, or a combination of both, may be derived for the payment of the principal and interest as reimbursement to the General fund (i.e. stadium improvements).
Revenue bond funds are proceeds from debt that are payable from the revenues, or user taxes, or any combination of both, of a public undertaking, improvement, system, or loan program and any loan made hereunder and secured as may be provided by law.
Federal funds are given to the State by the Federal government. Federal stimulus funds are separately designated in Department funding reports.
Private funds are funds provided by private entities to the State.
County funds are funds provided by one of the counties of Hawai'i for public undertaking.
Trust funds are those which designated persons or classes of persons have a vested beneficial interest of equitable ownership, or which was created or established by a gift, grant, contribution, devise, or bequest that limits the use of these funds to designated objects or purposes.
Interdepartmental transfers are funds that are being transferred from one Department to another Department for a specified reason. These funds are used by one Department but appropriated to a different Department.
Federal stimulus funds are provided under the American Recovery and Reinvestment Act of 2009.
Revolving funds are funds that are generated through charges made for goods or services provided by the State and paid for by transfer from another account or fee.
Other funds are the catch-all category designed to accommodate funds that do not properly fit into any of the other categories.

As noted above, a “true” internal fee-for-service model (where all services are delivered for a defined unit fee that covers overhead, service delivery costs, etc.) does not exist within the State. Most IT service delivery organizations have implemented a charge-back recovery approach. This provides visibility into the actual costs of IT and allows for the appropriate level of scrutiny by Departments buying the services as well as the organization delivering them and promotes more effective financial management. The fee-for-service approach allows for effective alignment of performance levels to cost.

✓ **BEST PRACTICE**

Sixteen of the twenty states (80%) analyzed have established charge-back/cost recovery for shared services. During West Virginia's consolidation and integration initiative, the Office of Technology (OT) established a shared services billing process. OT's billing methodology for core, non-optional services is based on the number of units deployed (total cost divided by total number of units) by an agency. Optional services are billed based on utilization. Of note, OT found some agencies' total costs *increased* despite a statewide IT cost *decrease*; this increase was due to the shared services billing process resulting in a more equitable distribution of service charges/costs to each agency.

It should be noted that a key element of HRS 27-43 is that the CIO and the State Comptroller may raise funds to defray administrative costs and may accept donations of money and personal property on behalf of the IT Steering Committee, provided that all donations accepted from private sources are expended in the manner prescribed by the contributor, and that all funds received are deposited

into an IT trust account. Further, the statute states that the CIO may also directly receive donated personal services and personal property for which funding is not required.

Finally, in relation to funding, the CIO must submit an annual report to the Governor and the Legislature (no later than 20 days prior to the start of each regular session of the Legislature) on the activities and programs under the authority of the CIO and the IT Steering Committee, the expenditures of all monies received from all sources and deposited into the IT trust account, and the Shared Services Technology Special fund.

To Be Recommendation 7: Address Funding For IT

- *Study the implications of implementing the fee-for-service model using the lessons learned by other States that have moved to this funding approach.*
- *Identify and staff the role of the OIMT Financial and IT Acquisition Manager to support the creation and management of the fee-for-service model and all reporting relative to costs, cost savings, return on investments, etc., for the Legislature, and to provide oversight and tracking for IT acquisitions.*



3.1.1.2 Organization (As Is)

The following sections describe the IT organizational environment statewide in terms of structure, staff, personnel levels, and skills.

3.1.1.2.1 IT Staff

The SAIC team found the Aloha Spirit is real and truly represents the attitude of friendly acceptance and a strong commitment to getting the job done. Hiring the new CIO, performing this comprehensive assessment, and creating an IT strategic plan that will set the course for IT within the State is also indicative of this spirit.



The “graying” of the state IT workforce looms large on the 3-8 year horizon of most states. Approximately one fourth of state CIOs predict that up to 30% of state IT employees are approaching retirement within the next five years. The greatest risk this poses is in the inherit drain of institutional knowledge particularly of antiquated systems and applications. While states have been given a temporary reprieve due to 52.4% of state employees choosing to work beyond retirement age, because of the recession, this is only a temporary fix.

SAIC noted a number of areas where staff represent “single points of failure” if they were to become ill or retire. This issue is compounded by the lack of training dollars to use in bringing other staff members up to speed or cross-training on a particular technology or tool. Specifically, the State is very vulnerable in the area of radio communications and frequency management and with any Department where only a single full-time equivalent (FTE) (or less) is providing IT support (i.e., Hawai‘i Department of Agriculture [HDOA], Governor’s Office, Lt. Governor’s Office). SAIC noted that Hawai‘i was not immune to challenges

facing other states in terms of a workforce that is “graying”/reaching retirement age. Many Departments noted the numbers of their IT staff who possess years of application-specific and

“how to” process operations knowledge are at or past retirement age. The fact that “how to” processes in many Departments is not documented is a very large concern. Several Departments noted a number of retirees who continue to “volunteer” to help fill the void left by their departures.

As stated earlier in this report, approximately, 58% of the State’s employees are non-exempt and members of a bargaining unit. Additionally, all non-bargaining unit staff is covered under civil service administrative rules and generally accrues the same benefit coverage as bargaining unit staff. Generally, managers are not members of the bargaining units, although some have chosen to be members. During recent reductions in force, “bumping”¹⁰ caused the State to lose individuals with more technologically current skills because these individuals had less seniority. The ability to bump in the IT space is based on a set job family, descriptions, and salary bands that are dated and do not speak to the skills required for the effective delivery of IT support in today’s environment.

Both unionized and non-union states have pursued IT consolidation/integration initiatives. In 2010, the CIO of Iowa conducted a survey of other states’ efforts. Specific to HR, survey results revealed that 50% of respondents involved in consolidation efforts dealt with collective bargaining issues.

Of note, HRS 27-43 stipulated allowable hiring practices for personnel relative to an exemption from Chapter 78 and Chapter 89. This exemption allows OIMT to employ individuals who are not citizens and who are not residents of Hawai‘i for at least one year prior to their employment, noting that such employees are “at will” and do not fall under the civil service administrative rules.

An additional challenge, related to hiring and retention of individuals with current and more state-of-the-art IT skills, is the pay structure that has not kept pace with the IT commercial marketplace. Of note, significant work was performed in 2000 by a committee led by representatives from DHRD and DAGS/ICSD with representatives from the DHS, DOH, DOTAX, DOT, and AG. The stated goal of the committee was to create a flexible, modernized classification system that would facilitate recruitment of professionals and better meet the needs of managers and employees in the IT family. The committee utilized the recently (at that time) updated and approved job descriptions implemented by UH. This committee worked collaboratively with representatives from the appropriate bargaining units in this effort. The effort lost momentum due to a loss of DHRD leadership on the committee. An attempt was made to revitalize the committee’s activities in 2005, but true momentum on this topic never was achieved.

To Be Recommendation 8: Partner with Bargaining Unit Leadership

- *Invite active participation by the bargaining units in IT initiatives and projects that will have staff impacts (e.g., new technology insertion, BPR, training/retraining, IT job family assessment and modification.)*
- *Identify and staff the role of OIMT Labor Relations/HR Generalist to serve as the key bargaining units’ interface, support development of re-training strategies, and lead the effort to revitalize the project to modify IT job descriptions, salary bands, and merit compensation approaches for the IT job family.*



¹⁰ A “qualified” person in a like position can “bump” or replace someone in the same job family and/or job level that has less seniority.

IT Personnel Levels

Table 23 indicates the number of IT organizations across the State and the approximate number of staff designated under one of the IT job titles. This table also provides a perspective regarding the relationship of the IT budget to total Department budget. During SAIC's assessment, it was evident that very few Departments identified IT as a separate budget item, so the information provided below is based in part on estimated numbers provided by each organization and State budget information overall. While all Departments discussed funded versus unfunded positions, we chose to focus on currently staffed positions. Additionally, ICSD was split with 50% assigned to DAGS and 50% (for calculation purposes) identified as those staff who support all other Departments. In general, the "have" Departments who receive Federal grants have more IT personnel than the "have nots."

Table 23: IT Staff and IT Budget Expenditures (Estimated)

Department	Approximate Number of Personnel Identified with IT Job Titles	Approximate Total IT Expenditures	Approximate Total Budget 2012 ¹¹	IT % Total Budget 2012
DAGS	66	\$6,350,000.00 ¹²	\$150,004,000.00	4.23%
HDOA	1	\$67,000.00	\$43,466,000.00	0.15%
AG	46	\$8,300,000.00	\$77,029,000.00	10.78%
B&F	2	\$110,000.00	\$47,815,000.00 ¹³	0.23%
DBEDT	6	\$460,000.00	\$245,611,000.00	0.19%
DCCA	16	\$1,600,000.00	\$49,300,000.00	3.25%
DOD	2 ¹⁴	\$178,000.00	\$127,995,000.00	0.14%
DOE	152	\$15,000,000.00	\$1,818,797,000.00	0.82%
DHHL	2	\$200,000.00	\$36,600,000.00 ¹⁵	0.55%
DOH	88	\$12,000,000.00	\$910,440,000.00	1.32%
DHRD	3	\$480,000.00	\$20,197,000.00	2.38%
DHS	54	\$49,434,000.00 ¹⁶	\$2,407,880,000.00	2.05%
DLIR	15	\$500,000.00	\$753,000,000.00	0.07%
DLNR	10	\$775,000.00	\$115,192,000.00	0.67%
PSD	10	\$230,000.00	\$238,600,000.00	0.10%
DOTAX	20	\$15,066,000.00 ¹⁷	\$23,632,000.00	63.75%
DOT	47	\$29,388,630.00	\$712,668,000.00	4.12%
ICSD	60	\$5,950,000.00	\$5,950,000.00	-

¹¹ Taken from the FY2012 Budget that was approved by the Legislature with notable exceptions cited below.

¹² Includes all of the Systems and Procedures Branch and half of ICSD.

¹³ The B&F budget estimate does not include EUTF, ERS, or PUC (\$1.6B). The budget allocation estimate for the Office of Public Defenders was included because they receive support from two IT staff members.

¹⁴ DOD has two dedicated IT support staff; however, they have additional support within other non-State supported components of the organization (e.g., Reserves).

¹⁵ Excludes \$148.4M in other assets for DHHL.

¹⁶ Includes a one-time \$30M IT project.

¹⁷ Includes a \$21M payment to a previous contractor.

Department	Approximate Number of Personnel Identified with IT Job Titles	Approximate Total IT Expenditures	Approximate Total Budget 2012 ¹¹	IT % Total Budget 2012
UH	145	\$11,313,053.00	\$913,758,000.00 ¹⁸	1.24%
Gov./Lt. Gov.	1	\$97,000.00	-	-
TOTAL	746	\$157,498,683.00	\$8,697,934,000.00	1.81%

Table 24 lists cost estimates of related to IT versus the spending benchmarks by other States.

Table 24: State of Hawai'i Spending in Relations to Other State Benchmarks

Categories	FY 2012 State of Hawai'i	Benchmarks from Other States
Percentage of central IT ¹⁹ spend to total budget	<.07%	~.5%
Percentage of IT spend to total budget	~1.50-1.90%	~2.75 – 3.0% ²⁰
IT spend per employee per year	~\$2,100	~\$8,400
End user to IT ratio	~100-130:1	~25-30:1

To Be Recommendation 9: Identify and Track IT Costs

- *Engage a financial management resource to continue tracking and validating IT costs. (Due to funding reductions, IT budget elements are less and less visible within the budget especially for the “have not” Departments.*
- *Understand the amount of IT that is funded directly by Federal grants as part of larger programs. This information is not always tracked explicitly by the Departments.*



The information SAIC gathered and validated (included in the Department-specific information in [Section 6.0](#)) is a solid baseline, but it may not represent an accurate comparison due to the number of footnoted items identified and the “guess-timates” that were required to get to all the numbers identified.

For the State of Utah, this analysis took more than a year to gather with a moderately high confidence level that there was a complete understanding/ picture of IT expenditures statewide.

IT Skills Development

As noted in the discussion on staffing in [Section 2.2.2](#), maintaining staff levels, and more importantly IT staff skills, across the State has been a challenge. In many cases, maintaining IT skills has fallen to each individual to take responsibility for their own “learning” due to budget cuts and elimination of training budgets. In addition, for many organizations, a significant amount of their service delivery is tied to dated processes (i.e., payroll check printing, tax payment processing,

¹⁸ Does not include all of the UH annual budget - just the portion from the State budget.

¹⁹ Total estimated enterprise IT spend using half ICSD’s budget figures.

²⁰ For 2010, a range of 6.5% - 8.6% government IT spend to total government expenditures (not limited to State government) was reported by various (Gartner, Weill & Broadbent) surveyor.

procurement, asset inventory, time and attendance processing), hardware (e.g., mainframe technology), and software (e.g., COBOL, PowerBuilder). Additionally, many areas are lagging behind current IT skill sets in other states and commercial organizations.

Staff retraining programs that focus on upgrading and enhancing workers skill levels in order to address new technology is minimal overall. This is a concern especially as the State invests in new IT tools and reengineers its processes. As noted in the organizational levels discussed below, applications development skills are confined to operations and maintenance and from the SAIC analysis, the amount of steady state (SS) far outweighs the amount of development, modernization, and enhancement (DME), which is another indicator of skills stagnation. Finally, new application development is generally provided by contractors, not internal staff.

To Be Recommendation 10: Address Need for IT Skills Development

- *Begin immediately identifying a staff retraining program in cooperation with the bargaining units.*
- *Identify an OIMT staff member to serve as a liaison to the bargaining units, lead retraining activities, and spearhead HR initiatives like updating IT job family descriptions.*



✓ **BEST PRACTICE**

- 75% of the states benchmarked have collective bargaining, indicated they had no union issues, but standardized job classification to create parity with others performing the same duties and skills as part of IT transformation.
- 25% of the states with collective bargaining worked with union leaders to ensure the member status would not change as long as the union members remained with the state.
- One benchmark noted that the state only allowed certain job classifications to be used by the "central" or statewide IT service delivery organization as part of integration activities.

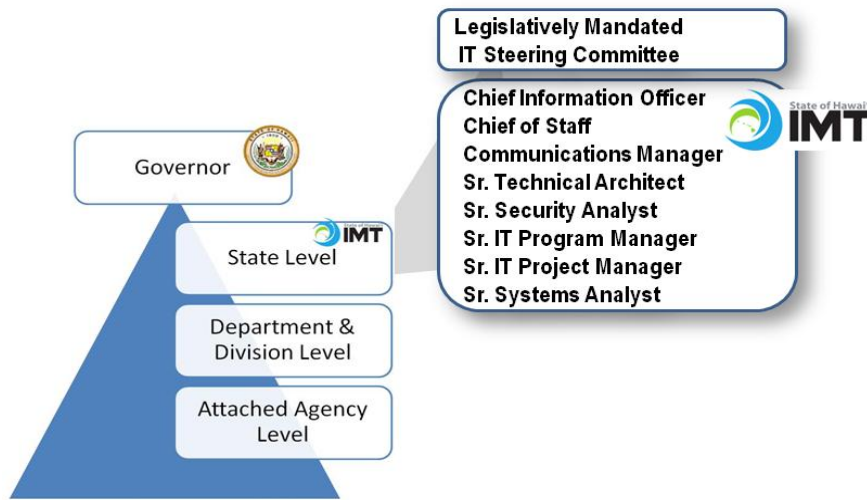
3.1.1.2.2 Organizational Structure



The As Is IT organization is aligned in three obvious levels, which, for purposes of this report, we have identified as the State-Focused Level, Departmental/Division-Focused Level, and the Attached Agencies-Focused Level.

State-Focused Level

The highest level of the IT organizational structure within the State, after passage of HRS 27-43, consists of the CIO and his organization, OIMT. This organization is in its infancy and currently consists of four full-time staff members: the CIO, the OIMT Communications Manager, an OIMT Senior Systems Analyst, and the Senior Security Analyst. The remaining four staff members, who



have are in the process of being hired, include the Chief of Staff, the Senior Technical Architect, Senior IT Program Manager, and Senior IT Project Manager. In addition to this organization, the Legislatively-mandated IT Steering Committee will be part of the IT oversight function.

The roles and responsibilities of the CIO and the OIMT organization will be focused

on meeting the requirements defined specifically by HRS 27-43 as well as the elements of activities specifically associated with governance and organization (includes the 12 competency areas), data and information assets, applications portfolio, and technology infrastructure. Table 25 cross-walks these requirements for the CIO and the OIMT staff relative to their roles - **R**esponsible, **A**ccountable, **C**onsulted, and **I**nformed.

Table 25: RACI Matrix for OIMT Relative to Currently Identified Roles and Responsibilities

Primary Responsibilities	CIO	Chief of Staff	Communications Manager	Senior Security Analyst	Senior Technical Architect	Senior IT Program Manager	Senior IT Project Manager	Senior Systems Analyst
Elements from HRS 27-43								
Develop, implement, and manage statewide information technology governance	A	C	C	C	R	C	C	C
Develop, implement, and manage the State IT Strategic Plan	A	C	C	C	C	R	C	C
Develop and implement statewide technology standards	A	C	I	C	R	C	C	C
Report annually to the Governor and the Legislature on activities and programs	A	C	R	C	C	C	C	C
Work with the Legislatively-mandated IT Steering Committee	A	R	C	C	C	C	C	C
Assess Executive Branch Departments' progress in meeting the objectives defined in the State IT Strategic Plan and identifying best practices for shared or consolidated services	A	C	I	C	C	R	C	C
Ensure technology projects are selected based on their potential impact and risk to the State as well as their strategic value	A	C	I	C	C	R	C	C
Ensure Executive Branch Departments maintain	A	C	I	C	C	R	C	C

Primary Responsibilities	CIO	Chief of Staff	Communications Manager	Senior Security Analyst	Senior Technical Architect	Senior IT Program Manager	Senior IT Project Manager	Senior Systems Analyst
sufficient tools to assess the value and benefits of technology initiatives								
Assist the CIO in developing State IT standards and policies	A	R	C	C	C	C	C	C
Clarify roles, responsibilities, and authority of ICSD, specifically as it relates to its statewide duties	A	R	I	C	C	C	C	C
Governance and Organization								
1. Leadership/Management	A	R	C	C	C	C	C	C
2. Information Resources Strategy & Planning	A	R	C	C	C	C	C	C
3. IT Performance Assessment: Models & Methods	A	C	I	C	C	R	C	C
4. Capital Planning and Investment	A	R	I	C	C	C	C	I
5. IT Project/Program Management	A	C	I	C	C	R	C	C
6. Acquisition	A	C	I	C	C	R	C	I
7. Policy & Organization	A	R	C	C	C	C	C	I
8. Process/Change Management	A	C	I	C	R	R	C	C
9. e-Government	A	C	C	C	C	R	C	I
10. Technology Management & Assessment	A	C	I	C	R	C	C	I
11. Information Security & Assurance	A	C	I	R	C	C	C	I
12. Enterprise Architecture	A	C	I	C	R	C	C	I
Data and Information Assets	A	C	I	C	C	R	C	C
Application Portfolio	A	C	I	C	C	R	C	I
Technology Infrastructure	A	C	I	C	R	C	C	I

Based on the functions identified above, OIMT staff will be challenged to cover all the necessary requirements without additional support. There is an opportunity for the CIO to leverage existing State employees from other organizations via an internal “detail” assignment and to identify contractor staff that can support the OIMT team.

The remaining elements of the State-focused level are not organizationally assigned to OIMT but provide IT services to all or nearly all the other Departments within the State. Identified components at this level include the ICSD staff that support network infrastructure, telecommunications infrastructure, radio communication, web site development, cyber security, and server hosting and housing for production systems.

To Be Recommendation 11: Collaboratively Address Organizational Change



- *Address organizational changes and modifications, in a collaborative and open manner, to exemplify laulima.*
- *Utilize detailees from other Departments (even if only through a part-time commitment) to lead/help accomplish tasks related to establishing governance, creating the IT Strategic Plan, provide insights regarding State government, and share Departmental models for use.*
- *Effectively leverage steering councils and working groups to augment the organization (refer to Recommendations in [Section 3.1.1](#)).*
- *Identify and leverage contract²¹ staff in a targeted manner.*
- *Maintain a lean OIMT leadership structure (Figure 14), but augment existing staff (perhaps through detailees at least initially) with a:*
 - *Financial and IT Acquisition Manager who can spearhead the reengineering of the IT acquisition process, lead the implementation of a fee-for-service model for enterprise IT services, and support the preparation of all funding requests to the Legislature going forward*
 - *Labor Relations/HR Manager who can spearhead the development of a collaborative working relationship with the bargaining units, support the development of re-training strategies, and lead the effort to revitalize the project to modify job descriptions, salary bands, and merit compensation approaches for the IT job family*
 - *Customer Relationship Managers (2-3) who can work as liaisons with Departments on a day-to-day basis to ensure that service needs are being met and new projects are being surfaced in a timely manner*
- *Identify a highly skilled detailee, contractor, and/or other team member who can coordinate and work through BPR process mapping and reengineering sessions as existing processes are reviewed and re-defined based on the transitioning and sequencing recommendations noted in [Section 5.0](#).*
- *Make judicious use of the employment exceptions (Chapters 76 and 89) authorized by HRS 27-43 to avoid misconceptions about intent and/or assessment of abilities available within the State and State government environment.*
- *Ensure the CIO remains independent of the day-to-day management of the “central” IT service delivery functions to allow focus on enterprise governance and policy decisions.*

✓ BEST PRACTICE

The CIO for the State of Utah identified the need for a financial and IT acquisition manager to establish a complete fee for service model, track cost savings and ROI, and oversee IT acquisition review and timely request processing in close coordination with the state's procurement office. In addition, this position was tasked with coordinating budget justification briefings with key legislative staffers and legislators in preparation for the session.

²¹ There is no intended implication that this should be SAIC.

- *Assess immediate opportunities to provide additional support to the Departments with little or no IT support.*
- *Review the IT Transition Document prepared by the ITGC – Technical, address suggested opportunities for organizational alignment, and make go-forward decisions based on each, specifically, the opportunities identified to plan and integrate technology infrastructure components at a State or enterprise level in order to stabilize, rationalize, and modernize to enhance efficiency and cost-effectiveness.*

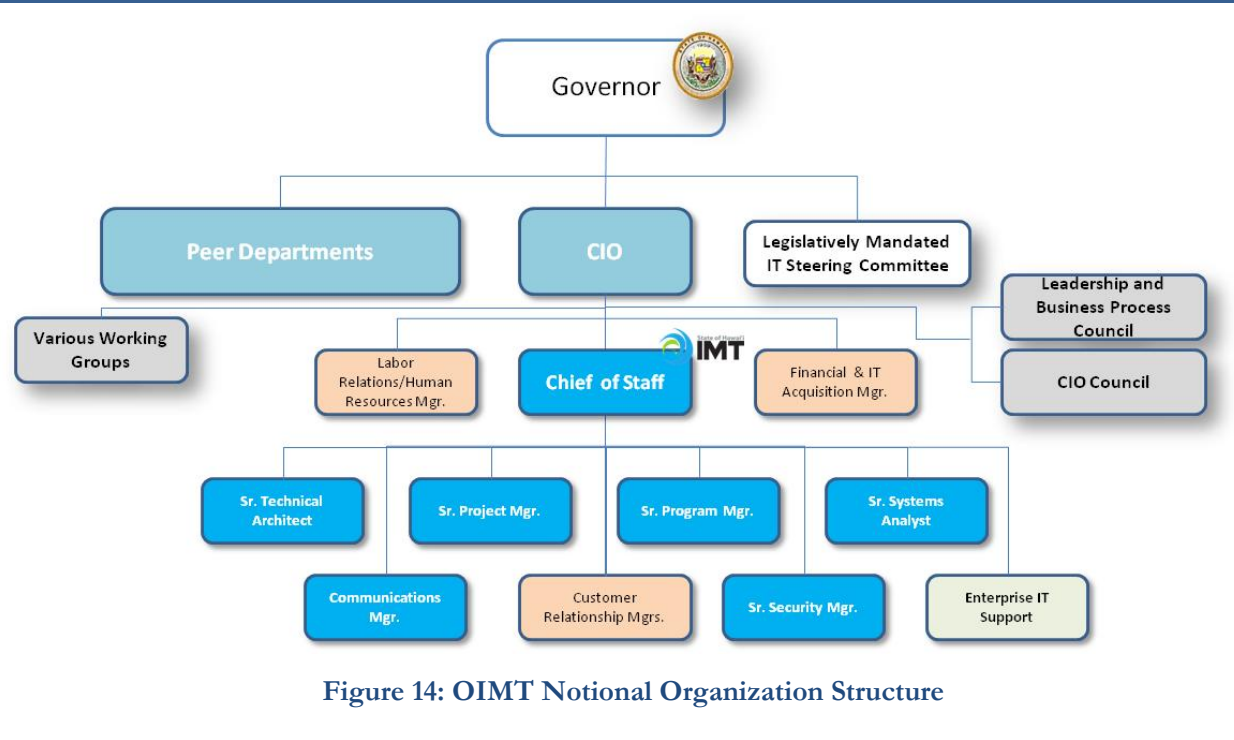


Figure 14: OIMT Notional Organization Structure

Department and Division-Focused Level

The Department and Division-Focused second level provides IT support from within a Department to the various Divisions and other organizations within the Department. This organizational layer generally comprises areas of infrastructure support for desktop and departmental-server environments with pockets of network support for larger agencies (i.e., DOE, DOTAX, DOT, and UH). Application support is provided at this layer and generally includes State IT support personnel who perform applications maintenance and operations functions. Most Departments reported that applications development functions are usually contracted to external providers/contractors.



This layer includes the organizational elements from ICSD who support applications operations and maintenance or development as well as infrastructure support functions for the systems and data owners within DAGS. This layer will often utilize ICSD housing services but will perform some, if not all, of the system administration/management functions themselves. Funding to support these

Departmental IT staff often comes from Federal grants. Organizations in this category represent all 18 Departments including the Governor's and Lieutenant Governor's offices.

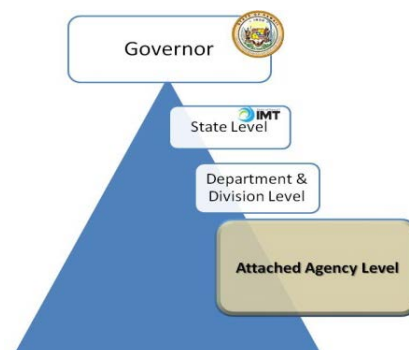
To Be Recommendation 12: Determine a Go-Forward Plan for ICSD

- *Thoroughly analyze the number of FTEs within ICSD who are devoted to supporting DAGS-owned systems and processes to determine exactly how many resources are devoted to enterprise services versus DAGS-specific functions and systems in order to truly analyze the costs and resources for both functions. (Note: This effort will require a detailed time reporting function for all ICSD staff for at least a two-three month period by defined tasks. Depending on the granularity of the task elements additional BPR activities may be identified.)*
- *Consider reassigning the ICSD individuals supporting services statewide (State-Level functions) (e.g., networking, web site development and management, cyber security, server management, telecommunications, and hosting/housing functions) to OIMT once the above noted analysis is completed. (Note: When this occurs ensure budget for salaries and accrued leave follows these reassigned individuals.)*



Attached Agency-Focused Level

The Attached Agency-Focused third level includes organizations (the Attached Agencies to the Department) with internal IT support as well as very focused missions and service delivery functions. This organizational element generally provides full-service IT functions with the possible exception of applications development. This layer will sometimes utilize ICSD housing services and will perform some, if not all, of the system administration/management functions themselves. Funding to support these IT staff is usually part of a Revolving or Special fund allocation. Organizations in this category include ERS, EUTF, PUC, and Charter Schools.



To Be Recommendation 13: Evaluate Attached Agencies' Models for Use

- Evaluate and leverage, as appropriate, the Attached Agencies (i.e., ERS, EUTF, Charter Schools) as potential models for the State.
- Integrate the Attached Agencies' requirements into each enterprise solution, as appropriate (e.g., financial management solutions, payroll, check printing, time and attendance).



SAIC found that many of the Attached Agencies (in many cases because of their funding sources) have more mature IT governance structures, defined architectural directions, and innovative approaches.

3.1.2 Data and Information Assets

Effective use of data and information is a major element of SAIC's assessment activities and it correlated directly to two of the 10 focus areas — open government and social media and collaboration and workflow. In addition, the security and privacy focus area is closely tied to data and information assets as well. For this reason, the SAIC team approached the assessment of data and information assets from a typical information management objective: *Enable access to the right information anytime and anywhere to anyone who has an appropriate need for it within a secure and reliable manner.*

Our assessment questions focused on critical information needs and information flows used in conducting the Department's business and the corresponding critical information sources and databases that supported the Department's business. As a result, our considerations for information sharing had both an individual perspective - do people have access to the information they need to effectively do their jobs and make key decisions, more specifically, the key user communities of State workers, workgroups or project teams, management, and the public; and, do the applications that support mission execution have access to needed information outside their own internally maintained data.

In assessing data sharing across Departments (or across Divisions or Programs within Departments), we found instances of systems dedicated to making critical data available for analysis and decision making, such as the FAMIS data mart, or DOH's data warehouse. In general, however, we found that across the enterprise, facilitating end user access to data through a data mart/warehouse approach including ad-hoc query and reporting tools was not common. Regarding data sharing across the application portfolio, the State's current management of data is characterized by complex interdependent data feeds and silos of data and information. This environment is derived from the programs within the Departments adapting to and addressing their own data needs without the benefit of any statewide strategy for managing and sharing data.

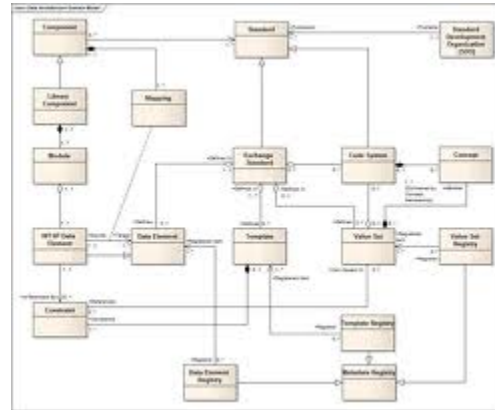
Many of the existing enterprise or statewide IT solutions (i.e., accounting, payroll, invoice payment or warrant creation, time and attendance) were originally designed and developed for mainframe environments in the early 1970's, have limited user interfaces, and only provide pre-programmed reports. These IT systems do not facilitate broad information sharing and reporting to minimize the need for manual intervention by employees who are already overtaxed. In general, individuals continue to rely upon programmed reports within the applications portfolio – an approach that is expensive and very unresponsive to changing needs. And in general, solutions for “making information available to a broad user community” were few, indicating that this emphasis area is not strong within the culture.

The To Be design is one where information and data are widely recognized as a statewide asset and are managed and shared effectively among all State organizations. As with any critical statewide asset, appropriate management processes and methodologies must be established to enable and facilitate this level of sharing and use. To manage data and information at an enterprise level, three key areas are required: Data Architecture and Governance; Data Sharing, Analytics, and Collaboration Capabilities; and Application Integration Capabilities.



3.1.2.1 Data Architecture and Governance

Data architecture is one of four more or less universally recognized foundational elements of an overall enterprise architecture (the other three being business, application, and technology architectures). The fundamental purpose of data architecture is to provide strategic perspective and direction for the transition from silo-based data and information solutions to an environment in which data and information is widely recognized and managed as a state asset and shared appropriately and effectively among all State organizations. A properly managed data environment should emphasize data sharing among State organizations by directing the design and implementation of shared data sources, such as data warehouses and data marts for analytics, as well as directing the creation of documented and accessible web services that can be used to enable data sharing in an operational and/or transactional processing environment. Making use of shared data resources and documented web services to enable interaction among State applications will go a long way in reducing the complex web of data feeds that exists among the State's applications today.



To Be Recommendation 14: Establish a Data Architecture and Data Governance Approach

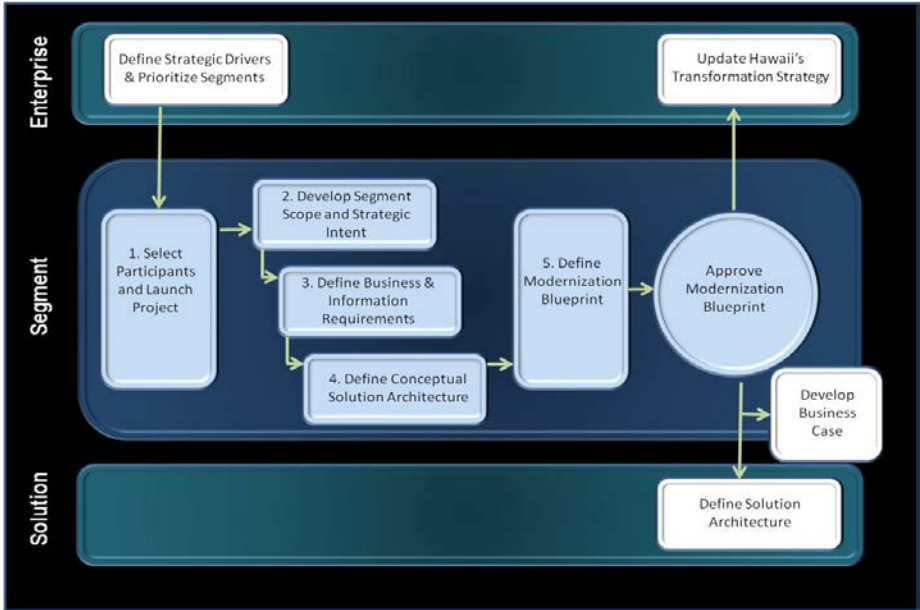
- **Establish a data architecture and associated data governance approach as a prerequisite for implementing a properly managed data environment that emphasizes the value of data and information as a critical shared asset. As part of this activity:**
 - **Include data architecture and governance within the enterprise architecture and IT governance competency area program plans. (Immediate)**
 - **Establish a data architecture and governance methodology as part of the overall enterprise architecture approach.**
 - **Establish a data and services governance structure in conjunction with the IT governance competency area.**
 - **Develop an initial data architecture to identify key subject areas for both statewide and Department-wide sharing and accomplish on-going data architecture development through key projects.**

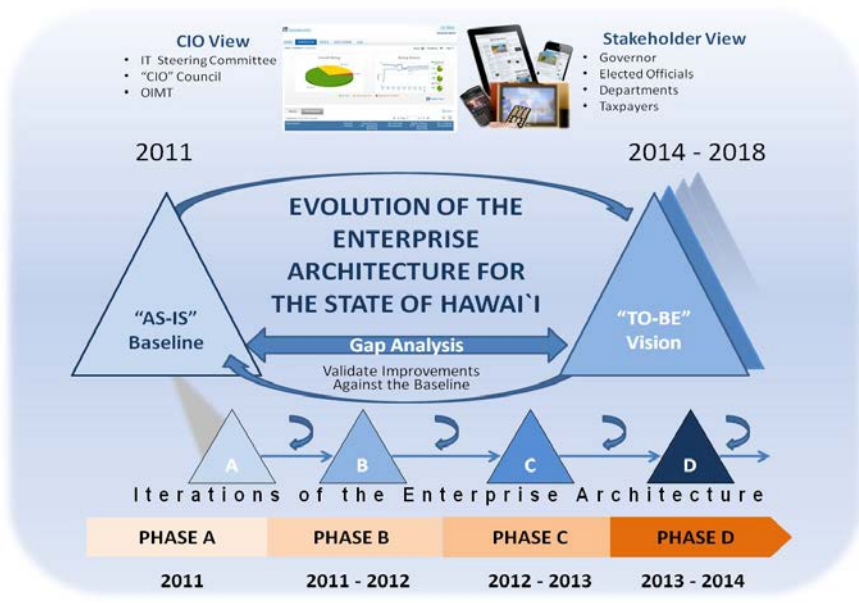



Below are specific actions relative to establishing data architecture and governance capabilities:

Key Recommendations	Actions
Program Plan (Concept of Operations [CONOPS] and Roles & Responsibilities)	<ul style="list-style-type: none"> • Establish data architecture and governance roles and responsibilities within the enterprise architecture and IT governance competency area program plans. (Immediate)
Integration and	<ul style="list-style-type: none"> • Outline, within the IT Strategic Plan, the desired objectives for integration and sharing



<p>Shared Data Management Strategy</p>	<p>of data across the State and within Departments as well as the strategies, approaches, and capabilities to be adopted for accomplishing this by obtaining broad buy-in and support.</p>  <p>Figure 15: Planning Approach</p>
<p>Enterprise Architecture Methodology</p>	<ul style="list-style-type: none"> Establish an architecture and governance methodology for both shared data and web services as part of the overall enterprise architecture approach. Follow an agile and pragmatic architecture approach that can be iterated (as illustrated in Figure 16 as IT matures within the State and that places importance on rapid incremental progress by partitioning the architecture development into high priority "segments" aligned with the BRM. <div style="border: 1px solid black; padding: 5px;"> <p>✓ BEST PRACTICE Establishing an advisory committee/work groups involving key stakeholders and reporting to the CIO and/or an overarching council) that are focused on specific scope is an effective practice. Many have tasked these work groups with developing enterprise architecture, performing critical research, and planning and promoting/supporting key initiatives.</p> </div>

	 <p style="text-align: center;">Figure 16: Evolution of EA</p>
<p>Data Governance</p>	<ul style="list-style-type: none"> • Establish a shared data and web services governance structure to bring together stakeholders to manage the brokering of agreements on data standards and assess changes related to shared data. • Consider use of a Leadership and Business Process Council whose structure (committee, policies, practices, etc.) should mirror the two levels of interest within data standard agreements – data that is shared statewide, e.g., employee data, and data that is shared within a Department or line of business, e.g., social service application data. 
<p>Data Architecture Development</p>	<ul style="list-style-type: none"> • Establish an initial high-level data architecture that outlines prioritized subject areas for cross-departmental sharing. The data architecture would include a number of elements and artifacts, but minimally it would include: <ul style="list-style-type: none"> – A description of important statewide data entities, elements, and services, how they currently are shared or moved about among applications, and how they might be organized and shared in the future. – A roadmap of potential projects to move toward the target architecture. • Accomplish on-going data architecture development in conjunction with or as a part of enterprise flagship projects or as designated shared (or master) data implementation projects. As part of these projects, assess industry-standard data models such as the National Information Exchange Model (NIEM) as a basis for data architecture development and standardization.

	<ul style="list-style-type: none"> • Manage initiatives within the enterprise for data standardization as “shared (or master) data management” initiatives. Through these projects, the State can focus on key “entities,” such as employee, applicant, business, account, etc., one at a time and create a common data view of the entity from all the inconsistent Departmental (or divisional/programmatic) implementations. With persistence, over time, significant efficiencies are gained by implementing and using these authoritative sources of enterprise data. (Long-Term) 	
<p>Shared Data Standards & Repository</p>	<ul style="list-style-type: none"> • Publish standards for shared data and services for use across the State. • Establish a comprehensive and well-maintained repository of standard data models and entity and element definitions. The development of the repository should emphasize the identification and precise definition of key data elements, providing a consistent body of terminology and language with which all aspects of data and information management may be discussed. 	
<p>Data Classification</p>	<ul style="list-style-type: none"> • Adopt data classification best practices to classify key data entities/elements to establish appropriate data protection strategies and approaches and facilitate their implementation. The Federal government requires compliance with a classification methodology that emanates from the Federal Information Security Management Act of 2002 (FISMA). The approach categorizes data elements and information systems using three different security attributes: Confidentially, Integrity, and Availability. While compliance with this classification methodology is not a requirement for the State’s Departments, it does provide a well accepted and comprehensive list of management, technical, and physical requirements for securing data elements based on the security profile designated by any combination of these three security attributes. It is often employed as a framework for data classification by non-Federal departments and agencies as well as private businesses, and its use is being recommended here as a best practice relevant to data and information management.) 	

- Evaluate and leverage, as appropriate, a shared data architecture approach implemented within the Hawai'i Information Justice Information Sharing (HIJIS) initiative within the AG. HIJIS shares criminal justice data throughout the State (e.g., with the Department of Public Safety [PSD]) as well as federally and with the county and city. Most notably, HIJIS is making use of national data standards such as NIEM supported by the Federal government in the Justice line of business. NIEM standard data models exist in several lines of business and could be leveraged for use in other areas of the State. This is a best practice that serves as a valuable program example.*

✓ HAWAII MODEL FOR USE

✓ **BEST PRACTICE**

NIEM is a key development in data architecture, modeling, and standardization. NASCIO published a recent position paper (April 2011): "NASCIO Recommends State Government Adopt the National Information Exchange Model (NIEM) to Enable Government Information Sharing." Excerpts from the publication are provided below and many relate to both NIEM advancement as well as data management in general:

NIEM provides a broad range of products and capabilities for planning and implementing enterprise-wide information exchanges. Government effectiveness and citizen-centric government services require effective cross line of business collaboration and communication. Use of national standards will avoid redundant investment and unnecessary variation. What is needed is a common discipline for information sharing that is employed by all government lines of business. The National Information Exchange Model (NIEM) exists as that discipline for Federal, state and local government. NASCIO recommends that state government adopt NIEM capabilities as a component of state government enterprise architecture and data management strategy.

In general, NASCIO recommends that state governments:

- Learn how to plan an information exchange and how to employ NIEM.
- Gain support through executive and technical staff briefings.
- Train - take advantage of NIEM training – online and on-site.
- Begin to use NIEM – leverage NIEM technical support.
- Grow staff knowledge, experience, and skills through ongoing training and NIEM National Events.
- Stay connected to the NIEM site for new developments, additional domains, and continued adoption across government.
- Promote NIEM for government interoperability by adopting NIEM as part of State Government Enterprise Architecture, Data Management Strategy and Standards.
- Incorporate NIEM into Project Management and Procurement Requirements.
- Explore and evaluate inter-line of business relationships that can enhance or transform agency service delivery.

3.1.2.1.1 Data Sharing, Analytics, and Collaboration Capabilities

In assessing data analytics capabilities, as mentioned above, SAIC found a few instances of systems dedicated to making critical data available for analysis and decision making; however, overall, SAIC found data information assets statewide lacking. In general, however, specific systems, resources, or

capabilities with the intent of supporting data analytics within the State are minimal. We found that across the enterprise, key user communities did not have needed information available to them. Some relevant examples include:

- Department executives largely did not have quality project or operations performance data available to them at a dashboard level to effectively oversee their organizations, programs, and projects. As discussed above, the existing performance management systems were antiquated and irrelevant. DOT is an example of a Department that expressed a specific desire to improve their ability to roll-up project information to the Department level across their major Highways, Harbors, and Airports Divisions.
- Workgroups or project teams for the most part did not have collaboration tools to more effectively collaborate on and manage project deliverables. There are a few exceptions of efforts to implement Microsoft SharePoint as a collaboration tool in Departments (i.e., DOE, DOH, DOT, and B&F)
- Shared data at the State- or Department-wide levels was not typically organized for end-user access and reporting with the exception of some key model areas such as DOH's data warehouse initiative.
- A strong emphasis on making information and tools available to the public (e.g., HIC, DHHL, DCCA, Lt. Governor).

✓ HAWAII BEST PRACTICE

It was noted by more than one IT leader within the Departments that pilots that involved information sharing demonstrated the power of the data, once shared, and encouraged the organizational elements to begin sharing even more.

Specific emphasis, resources, and investments must be managed to establish enterprise approaches to facilitate data access, collaboration, and analytics. An approach of note, worked by the State of Hawai'i's new CIO while in the Federal government, is making available XML-based datasets for reuse and mash-ups for both internal State use as well as an "open government" initiative for citizens' use. The platform (or repository) for supporting this Open Government initiative in the Federal government is Data.gov. The Data.gov web site states "An underlying goal of the Open Government Initiative is to change the culture of information dissemination, institutionalizing a preference for making Federal data more widely available in more accessible formats." As one of the flagships of the Open Government Initiative, Data.gov is designed to facilitate access to Federal datasets that increase public understanding of Federal agencies and their operations, advance the missions of Federal agencies, create economic opportunity, and increase transparency, accountability, and responsiveness across the Federal Government – i.e., "high value" datasets. The intention and approach for the Federal Open Government Initiative provide a model for the State of Hawai'i to consider in adoption of data-sharing capabilities.

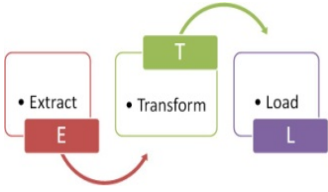





To Be Recommendation 15: Define Standard Enterprise Solutions for Data Sharing and Collaboration



- *Establish standard enterprise solutions to implement data sharing, analytics, and collaboration. Also:*
 - *Establish standard data sharing and analytics capabilities across the State such as a data mart/warehouse approach to facilitate user data access, querying, and reporting.*
 - *Establish standard collaboration solutions across the State with technical underpinnings for cross-departmental workgroup and project collaboration.*
 - *Establish a standard management-level dashboard reporting solution with supporting data aggregation and summarization.*
 - *Develop policies for use of emerging social media technologies and establish standard enterprise public-facing social media solutions.*

Below are specific actions relative to establishing data sharing and analytics capabilities:

Key Recommendations	Actions
Enterprise Data Analytics Solutions	<ul style="list-style-type: none"> • Establish a standard data analytics solution and approach with standard methods, skilled resources, and tools. Include approaches for user access to data such as data warehouses, marts, or portals. Include standard data replication, and extraction, transformation, and loading (ETL) approaches, methods, and supporting tools. Include standard enterprise ad-hoc query, reporting, and analysis tools. • Direct the design and implementation of shared data sources for user data sharing and analytics through the use of enterprise flagship projects for implementation. Establish a State of Hawai'i data.gov internal and public-facing web site to facilitate the sharing of "master data sets" as defined above. • Support internally-facing (for State use as well as application integration through web services layered on top of XML data sets) and external, public-facing (for publishing public-domain master data sets). 
Enterprise Collaboration Solution	<ul style="list-style-type: none"> • Establish standard collaboration solutions across the State adopting technology platforms such as Microsoft SharePoint or Lotus Domino Quickr. Implement necessary technical underpinnings and connectivity for cross-departmental workgroup and project collaboration. 
Enterprise Dashboard Solution	<ul style="list-style-type: none"> • In conjunction with the Enterprise Data Analytics Solutions above, establish a standard management-level dashboard reporting solution with supporting data aggregation and summarization capabilities. 
Enterprise Social Media Solutions	<ul style="list-style-type: none"> • Develop policies for use of emerging social media technologies. (Immediate) • Establish standard, enterprise, public-facing social media solutions, methods, expertise/skilled resources, and tools. 

To Be Recommendation 15: Define Standard Enterprise Solutions for Data Sharing and Collaboration (continued)

- *Evaluate and leverage, as appropriate, notable implementations of end-user data access systems to make critical data available for analysis and decision making. Specifically:*
 - *FAMIS Data Mart – developed as a solution for end-user access to financial data from the need to mitigate constraints of the mainframe master file. The solution has served the organizations well, and should continue to be invested in and improved.*
 - *DOH Data Warehouse – working towards integration of health-related data sets from various source organizations from disjointed, dissimilar data structures/formats within multiple databases. The Health Information Systems Office (HISO) within DOH attests to the synergy within the user community that continues to grow as more data is integrated into the data warehouse. DOH as a whole is maturing in data standardization processes and best practices and is a model to leverage statewide.*
 - *Juvenile Justice Information System (JJIS) – provides a single comprehensive source of information about juveniles across State and County agencies.*

3.1.2.2 Application Integration Capabilities

In assessing application-level data sharing and integration across Departmental boundaries or across Division or program boundaries within Departments, SAIC found only a few pockets of excellence in current program initiatives. Again, in general, we found that across the enterprise, enterprise-level policies, approaches, and solutions that encourage, facilitate, and enable application data integration do not exist. Even where interfaces exist, the interfaces are often accomplished through printing information from one system and manual re-entry (e.g., fixed asset inventory, personnel benefits, time and attendance) into another. This not only absorbs resources but introduces errors and lag. Within the State, the next level of information-sharing sophistication is file transfer protocols (FTP). There are essentially no shared databases (the GIS database is one of the few exceptions) within most of the Departments or across Departments.


Although the needs definitely exist to cut across Departmental boundaries for data that will enable process streamlining, improve efficiency, and increase visibility and transparency into program performance, the enterprise leadership to bring this about has not been present. Application solutions are primarily driven by program funding from the bottom up, and when standard enterprise-level policies, approaches, solutions, and technologies do not exist, then application implementation projects continue to solve bounded program needs without fitting into and benefitting the whole. These standard enterprise-level capabilities to support application integration need to be established and promoted, and together with the synergy of the enterprise architecture initiative and IT project architectural review and oversight, convergence towards streamlining and efficiency objectives will be achieved.

To Be Recommendation 16: Determine Enterprise Solutions for Application Integration



- *Establish enterprise solutions for application integration.*
- *Establish a standard enterprise solution for web services implementation and use to facilitate application integration.*

Below are specific actions relative to establishing application integration capabilities:

Key Recommendations	Actions
<p>Enterprise Application Integration Solutions</p>	<ul style="list-style-type: none"> • Establish a standard enterprise solution for application integration that includes standard approaches, methods, knowledge/expertise, skilled resources, and tools/technologies to enable and support web services implementation and use. • Establish an internal-facing web site to facilitate sharing of “master data sets” as defined above for application integration through web services layered on top of XML data sets. • Accomplish ongoing web services development in conjunction with (or as a part of) enterprise “flagship” or strategic projects, or as designated shared web services implementation projects. Through these projects, the State can focus on key shared services, such as employee look-up, registered business validation, applicant look-up, etc., and establish reusable enterprise web services. With persistence, over time, significant efficiencies are gained by implementing and using these shared services for application integration.
<ul style="list-style-type: none"> • <i>Evaluate and leverage notable implementations of application data integration through advanced capabilities (e.g., services oriented architecture [SOA]). Specifically:</i> <ul style="list-style-type: none"> - <i>DOH Services Implementation – a best practice within the State for establishing application-level services to facilitate data access across other Departmental applications.</i> - <i>Shared databases and shared code components - leveraged by HIC - to promote effective and efficient use of information across a substantial set of public-facing web applications.</i> 	<div style="border: 1px solid black; padding: 5px; text-align: center;">  <p>✓ HAWAII MODEL FOR USE</p> </div>

3.1.3 Application Portfolio

In discussions with the Departments’ leadership, a repeated theme was the need for enterprise applications. To gather more insight into this need, SAIC evaluated the existing State of Hawai’i applications portfolio using the following questions:

- What are the critical and/or significant applications that support the Department’s mission objectives and business services?
- Is there clear alignment between the Department’s mission and services and the applications that support them?
- How well are the Departmental mission and services supported by the applications?
- Do the Department’s major applications integrate with those of other State agencies or offices?

- In general, how many COTS applications exist versus internally developed applications? For the COTS applications, how customized are they?
- What is the general state of the applications portfolio (e.g., age, cost to maintain, effectiveness, documentation, etc.)?
- Are there standard application platforms or development technologies that are assumed and depended upon?
- Are there known issues or needs in the Department’s application portfolio?

In addition to the responses to these questions, we found that the State has periodically informally surveyed the Departments to gather applications, software, and hardware information. One specific survey was done in 2005, but not all of the Departments provided application inventory information. SAIC used the available data as one validation source for the data collected as part of our interviews. The resulting data was used to populate the EAD, and data validation with the Departments will continue through September 2011.

3.1.3.1 Applications Portfolio Management

Applications portfolio management (APM) is an industry best practice to manage the lifecycle costs, benefits, and investments related to the total set of applications within the enterprise. Each application is assessed and measured regarding its current value compared with its operations and maintenance (O&M) costs, in the light of a total lifecycle cost – including the need to periodically fund a substantial refresh, upgrade, or replacement. The ultimate goal of APM for the State is to be more cost effective in the use of IT and to achieve cost savings for the Departments, Divisions, and programs, and to improve the overall strategic impact of IT in support of Departments’ missions and services. APM enables the State to have greater visibility in applications “steady state” or O&M costs, convergence on standard technologies, and improved decision making on right-sizing the portfolio as a whole.

The goals used to measure the applications portfolio change over time as the portfolio reaches different levels of maturity. Criteria typically used in measuring the maturity of the portfolio, shown as in increasing levels of maturity, are listed in Figure 17.

Lastly, there is the general perception in the industry that many of these goals are optimized by the use of COTS (or government off-the-shelf [GOTS]) applications.

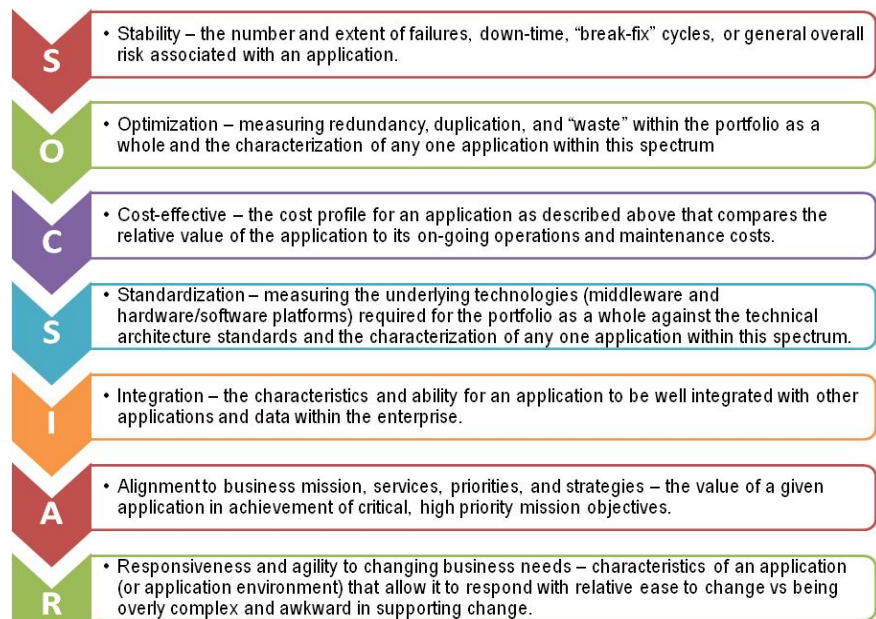


Figure 17: Criteria Used to Measure Application Portfolio Maturity

SAIC's remaining observations relative to Hawai'i's applications portfolio's As Is environment are listed below.

- There are over 500 applications in the portfolio. This is a larger number than expected, due to various reasons:
 - A significant set of older mainframe applications, based on the "batch processing" model, require numerous smaller applications to support data interface feeds and outputs.
 - A lack of enterprise-wide data governance and integrated databases results in numerous interfaces to deal with data mapping and translation.
 - A lack of effective central systems for many of the shared service areas causes the Departments to develop their own supporting systems to ease their ability to interface with the central system. Examples of this include procurement support systems, time and attendance reporting, and asset/inventory tracking systems. (NOTE: [Section 2.1.4.1](#) highlights SAIC's findings and recommendations relative to the opportunities for enterprise solutions regarding these central systems and their processes.)
 - Federal program-driven funding pushes application architecture decisions against enterprise application consolidation.
 - A lack of budget/funding creates an environment that proliferates single user or small workgroup applications that are easier and less costly to create such as Microsoft Access and Excel applications.

As depicted in Figure 18, SAIC characterizes the State's portfolio as unbalanced, reflecting significant investments within the "have" Departments, and minimal funds to develop and maintain applications within the "have not" Departments. Further, a critical characteristic of the existing applications portfolio is the age of the applications. SAIC heard repeatedly within our interviews that during recent budget cuts and funding shortages, many initiatives to upgrade or replace legacy applications and their supporting middleware and hardware infrastructures were postponed. Examples of aging applications include DOS-based and Dbase III applications still running in production.

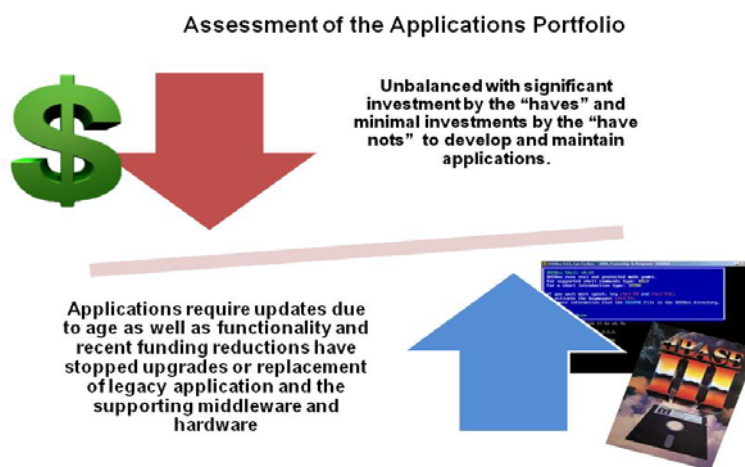


Figure 18: The State's Application Portfolio is Unbalanced and Needs Technology Refresh

The lack of funds to support upgrades also results in a broad set of older technologies continuing to be used in the environment, and this causes an increase in incompatibilities between these technologies and others, such as desktops needing to run an older unsupported version of Windows or Internet Explorer. The number of software product incompatibilities makes it almost impossible to plan for enterprise-level upgrades, and this mixture of new and old software versions opens the enterprise to increasing levels of vulnerability to malware.

The point-solution approach/situation is proliferated because of the overwhelming need to address cross-cutting or enterprise business processes (defined as a significant need and discussed in detail in [Section 2.1.4.1](#)) through BPR to decompose the current workflow, define current interdepartmental information needs, and define tools/applications

An excerpt from SAIC's Benchmarking Report provides a good comparison to the size of Hawai'i's application portfolio:

...West Virginia's application development, maintenance, and support activities are highly distributed. Currently, there are over 500 legacy applications utilizing over 70 languages and 40 unique database tools, costing the State over \$35 million annually and being supported by more than 300 FTEs and 60 contractors in 31 agencies. Several of these applications are 15+ years old; vendor technical support is no longer available for the obsolete technologies. This fragmentation has resulted in limited standards and weak continuity of operations and disaster recovery strategies. As result, enhancing the enterprise applications development environment is one of the four key focus areas for West Virginia OT during the 2010-2013 period. West Virginia's ERP implementation will replace approximately 100 of these systems.

requirements to ensure application solutions are procured or developed. The goal of BPR, depicted in Figure 19, is to empower the State by reducing replication of data, duplication of data entry, and increased data sharing. With IT governance, increased integration will be based on appropriate standards that will provide higher degrees of maintainability.

The Departments were essentially unanimous on the priority issues or needs for improving enterprise systems. These are a subset of the initiatives described in [Section 2.1.4.1](#) above – the areas with substantial issues with the functioning of the current application systems, thus having high priority:

- Lack of an enterprise-wide time and attendance system.
- Challenges of the legacy payroll system, lack of automated interfaces, and EFT.
- Challenges of the legacy FAMIS and the complexities of interfacing to it.
- Overall age of legacy applications and the need for a comprehensive refresh of all underlying software.

Significant issues have developed from not recognizing and supporting a lifecycle perspective for application portfolio investments including upgrades and even replacements.

Regarding alignment among the Departments' mission objectives and services, the applications that support them, and the effectiveness of the support, there was a general consensus across the Departments' leadership that IT is essential to their success, but that there is a considerable gap between the level of support they were receiving and the level needed to fulfill their missions. Some relevant examples are:

- Frustration due to the fact that to fundamental



Figure 19: BPR Improves Processes and Enhances Efficiency

These findings echo the findings in the services assessment and illustrate the significant need for statewide governance outlined as missing in the [Section 3.1.1](#) above. They also speak to the responses provided by each Department and highlighted by the Top Ten focus areas.

capabilities expected in the email system were lacking such as an always current, automatically maintained, global address list and shared calendaring.

- Paper-based processes were predominant, and there was a general lack of automated document management and workflow.
- “Rolling up” or assembling program-level information regarding project or operational performance into critical management dashboard- level information was minimal.
- Mobile computing as a pervasive emerging technology had limited support. Blackberries were the only supported mobile device for email. Only one mobile application was found within the application portfolio – the Mobile Emergency Response Command Interface (MERCi) application developed by OceanIT for the DOD State Civil Defense.
- Roughly one-third of the application portfolio is characterized as “public-facing” and providing access by the citizenry through the web as compared to the mix of internal support services; the non-public-facing applications are a higher percent.
- Public-facing applications using social media are emerging in several Departments (i.e., DHHL, DLNR); however, many more needs were identified.
- Public-facing mobile applications were not found.



Relative to the level of application integration within and across the Departments and with external organizations, SAIC found that instances of using best-practice techniques, such as web services, were limited. The need for applications integration was highlighted in Table 1. It illustrates the need for automated integration, in terms of Departmental relationships and dependencies, is significant. There were emerging pockets of excellence with focus on integrated databases and services being architected, implemented, and reused by multiple Departments (e.g., HIJIS and DOH) and the set of applications developed and maintained by HIC.

Considerable customizations have been made to COTS software (e.g., PeopleSoft, ProLaw, and iManage), which make future upgrades with the COTS more complex, time-consuming, and expensive. As a result, several key systems have not been upgraded and kept synchronized with the vendor’s support requirements. Additionally, numerous one-off applications that organizations have come to rely upon (e.g., the DCCA Lotus Notes-based Legislation Tracking System) were created based on older versions and their proliferation as pseudo-enterprise systems are now preventing the application of vendor upgrades as well. Finally, the Departments, in general, find it difficult to make business process changes, because they perceive they may be constrained by Legislative statutes in order to effectively use COTS (or GOTS) software.

To Be Recommendation 17: Manage the Applications Portfolio

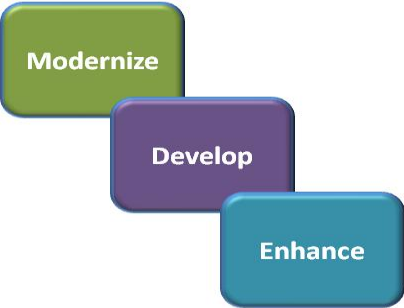
- *Establish an APM approach for managing both steady-state applications costs/value and application development, modernization, and enhancement (DME) projects.*



- *Ensure the CIO begins to immediately institute oversight of all IT projects and applications; develop the emerging picture of enterprise IT standard policies, capabilities, solutions, and technologies related to application investments, and compare and measure the projects against these standards.*
- *Begin an initiative to assess and stabilize critical applications.*
- *Address priority areas of need for business mission and services support and general operational efficiencies across the enterprise.*

Below are specific actions relative to improving APM capabilities:

Key Recommendations	Actions
Application Profile	<ul style="list-style-type: none"> • Identify all projects and begin gaining visibility into application scope, potential reuse or consolidation with other efforts, and guidance on enterprise standards. • Identify flagship/strategic projects to establish key segments of the enterprise application environment area of the technical architecture. • Begin to evaluate/audit/spot-check other projects to foster compliance with standards. • Establish a management-level dashboard for “rolling up” program-level information for project and operational performance, and institute processes for projects and operations to begin reporting. • Create application technology lifecycle management and refresh plans. • Promote avenues for internal marketing of existing application capabilities and the ability for organizations to reuse those applications – a version of an internal “apps store” catalog. Consideration should be specifically given to sharing of “easier to implement” Lotus Domino applications or Access applications. <div style="text-align: right;"> </div>
Stabilization	<ul style="list-style-type: none"> • Over-arching direction: All mainframe batch processing applications must be retired as soon as possible. • Plan for replacements/improvements to central systems – FAMIS, Procurement, Payroll, Accounts Payable/Warrants, Accounts Receivable, Asset Management (Fixed Asset Inventory System [FAIS]). • Stabilize the email system versions and enhance overall enterprise capabilities including addressing a global address list and shared calendaring. • Secure funds (directly or indirectly) to refresh all legacy applications at risk due to aging software/hardware versions, platforms, etc. Use a Pareto analysis of the portfolio to identify top risk areas and plan and work through conversions, upgrades, and refreshes to stabilize the applications. • Institute an enterprise-level change management process to communicate, assess impact, and disposition/schedule changes to the enterprise infrastructure to manage overall systems stability. <div style="text-align: right; margin-top: 20px;"> </div>

<p>Priority Areas for Application Portfolio Development, Modernization, and Enhancement</p>	<ul style="list-style-type: none"> • Implement an enterprise-wide time and attendance system. SAIC received considerable input on the need for a common time and attendance system including background on a previous implementation effort that was stopped. Successful Departmental-level time & attendance applications exist, most notably DCCA, and other organizations (internal and external) that have the same timekeeping business rules have implemented COTS products such as Kronos (i.e., DOE, City and County Board of Water Supply). • Implement near-term enhancements to the legacy payroll system to automate EFT (Near-Term). (NOTE: Significant implementations of EFT exist within the State – ERS performs RFT directly to banks for pension payments. Prior Legislative guidance required use of EFT/direct deposit for all new enrollees.) Charter Schools use EFT effectively for payments to all personnel. • Replace the legacy payroll system. Replacement of the payroll system is one of the most urgent needs within the application portfolio. Numerous payroll applications exist that should be evaluated for implementation, either within the context of an ERP selection and implementation or standalone. Consideration could be given to outsourcing payroll operations; Charter Schools outsourced payroll to Ceridian; County of Kauai outsourced to ADP. • Evaluate an ERP-type replacement for FAMIS. (Near-Term). (As mentioned above, the scope of central systems needing replacement/upgrade within the State indicates that an ERP system could provide additional benefits of integrated business functions, cross-functional workflows, and data integration. As stated in Section 2.1.4.1, statewide requirements definition is a priority for the financial management system. This initiative and its accompanying BPR/requirements definition must be driven by executive leadership within the Departments in order to drive the adoption of a COTS solution and any Legislative changes.) • Upgrade PeopleSoft and roll-out Employee Self Service (ESS) and Manager Self Service (MSS) capabilities. The State’s Human Resource Management System is a mission-critical central system. The current PeopleSoft implementation is out-of-date and a decision on upgrade or replacement options as specified in the DHRD IT Transition Plan must be made in the near-term. PeopleSoft is obviously an industry-leading solution, and a decision to move forward with upgrades to that package would be a good direction, with the exception of a new potential ERP-type package discussed above. One issue with the PeopleSoft implementation is the lack of additional modules that would improve overall efficiencies of the enterprise as a whole, such as implementing the ESS and MSS modules, and by facilitating greater data access to important employee data to other users and applications through a data-sharing platform (e.g., data mart, web services, or an internal “data.gov”). (Near-Term) • Evaluate implementation of Maximo as an enterprise-wide asset management, inventory control/tracking system. Effective asset management, maintenance tracking, and inventory control are cross-cutting needs where several Departments have invested in the industry-leading package, Maximo. OIMT could sponsor an incremental roll-out of this functionality controlling Department/Division/program participation and obtain significant gains from leveraging this common software system. 
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<p>Use of COTS/GOTS Applications</p>	<ul style="list-style-type: none"> Charter a Leadership and Business Process Council to govern decisions regarding customizations to COTS software and to function as a liaison to the Legislature for appropriate legislative adjustments to facilitate changes to business processes to minimize COTS customizations. 	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Leadership and Business Process Council</p> </div>
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3.1.3.2 Standard Application Platforms and Technologies

The use of standard application platforms reduces maintenance support costs and facilitates synergies in enterprise-wide knowledge and expertise. SAIC did not find standard application platforms across the State, but all Departments were putting importance on technology standardization. There were pockets of standardization to be noted:

- Several organizations were standardizing on an applications technology stack – the most common included the Linux/Apache/MySQL/PHP (LAMP) stack, the Windows stack (Windows\IIS\SQL Server\.NET), and the Java web application stack (Linux or Solaris/Tomcat/JSP).
- Several Departments use HIC for development of public-facing, eCommerce web applications; HIC’s mature development environment standardizes on LAMP applications technology architecture to capitalize on staff expertise, reduce support costs, and to facilitate reusable code and data across the environment.
- Pockets of common technology investments have been made and could be leveraged to advance to an enterprise capability:
 - GIS ARCInfo – DOD, DAGS, DOT, DBEDT, DLNR, DOH, HDOA, AG, DOE, UH
 - Asset Management: Maximo – DOH, DHS
 - Document Management: KOFAX and/or IBM FileNet– DOT, B&F, (and the Judiciary), AG, DAGS, DOTAX
 - Collaboration: SharePoint – DOE, DOH, B&F
 - Email Lotus Notes – majority of Departments but on multiple versions
 - Enterprise Systems Management: SolarWinds – DOT, DAGS/ICSD, DOE
 - Human Resource Management: PeopleSoft – DHRD
 - Financial Management: Oracle Financials implementations - DOT Air, DOT Highways (FAST) project underway, DHHL Financial Management System, ERS, EUTF, DOTAX, B&F
 - Payroll: Ceridian Services and Applications – Charter Schools



The challenge for standard enterprise solutions and technologies will continue to be the nature of significant portions of funding at the program level. Historically, this has resulted in program point solutions that have also implemented their own supporting infrastructure, both at the application level (i.e. the technology stacks described above) and at the server level. Both ICSD and the Departments’ IT organizations try to stay ahead of these developments and lobby for standardization but struggle to be effective given the previous lack of a CIO to champion enterprise approaches.

This is a long-term strategic area of emphasis for the new CIO to establish standard enterprise-level application platforms, capabilities, and technologies for all Departments to leverage. It is a relatively simple model: Within any solution domain (for example, electronic document management), the technologists within the Departments need to assess, pilot (if necessary), and agree upon the standard recommended product (in this example, assume IBM FileNet). Once agreed upon, all energies and efforts provide synergy in effective use and reuse of shared capabilities with that standard product. And, in a controlled manner, any recommendations for evaluating new emerging technologies are sanctioned, and an overall enterprise discipline for “new product/technology evaluation and insertion” matures. In the long run, the overall cost effectiveness of managing standard technologies and the ability for the enterprise to more effectively leverage technology for enhancing impact in business service delivery are optimized.

To Be Recommendation 18: Standardize Application Platforms and Technologies



- *Develop standards and guidance regarding technology decisions, specifically with respect to application architecture, design, and implementation for use and adoption across the Departments, Divisions, and programs.*
 - *Rapidly baseline current assumptions regarding sunset, legacy, preferred, and standard application platforms, architectural stacks, and technologies within the technical architecture.*
 - *Recognize strategic application platforms and technologies for future applications development and establish enterprise capabilities for these including standard development methods, skills development (training) and skills acquisition (contracting), and tools/technologies. Strategic focus areas include:*
 - *Web applications development*
 - *Mobile applications development*
 - *Social media development*
 - *Develop a “promotion path” strategy for applications developed with “easy to use” tools such as Lotus Notes Designer or Microsoft Access. Encourage individuals and small work groups’ innovations with such tools, but recognize when an application reaches a “critical mass” of importance (business dependence) and take the application through a promotion phase to safeguard application availability, reliability, and security.*
- *Create a communication plan to “market” the standards and guidance within each Department.*



Below are specific actions relative to standardizing application platforms and technologies:

Key Recommendations	Actions
Technology Standards for Enterprise Applications	<ul style="list-style-type: none"> • Leverage the CIO Council to develop an immediate baseline of current assumptions regarding sunset, legacy, preferred, and standard application platforms, architectural stacks, and technologies within the technical architecture. • Develop standard enterprise application solutions, capabilities, and technologies based on current investments within the State for the following critical areas:

	<ul style="list-style-type: none"> - A workflow system such as Lotus Notes/Domino. - A collaboration system such as Lotus Notes or SharePoint. - An automated document management and records management system such as IBM FileNet. - A GIS software platform/technology such as ARCInfo. - An IT infrastructure management tool such as SolarWinds. • Incorporate ongoing decisions regarding technology standards for enterprise applications into the technical architecture initiative. • Develop an enterprise methodology for new product technology evaluation and insert sufficient stage-gate reviews for enterprise-level decision-making. Suggested steps include: needs analysis, market analysis, feasibility study, alternatives analysis, impact analysis, and new product/technology introduction planning and execution as illustrated in Figure 20). It should be characterized by an agile, iterative, incremental design (no long, drawn-out analysis steps) and should facilitate rapid prototyping and piloting of new technologies. <div style="text-align: center;"> </div> <p style="text-align: center;">Figure 20: Pragmatic Investment Approach</p>
<p>Standard Enterprise Capabilities for Applications Development</p>	<ul style="list-style-type: none"> • For web applications development, analyze and decide upon standard and preferred approaches, capabilities needed, and tools/technologies for public-facing web applications development. Leverage the successful HIC model, adjust as needed to minimize the approaches used, and upgrade needed human resource skills for growth, including both advanced training programs for staff and putting in place contractor resources. • For mobile applications development and social media development, analyze, pilot, and invest/implement a standard approach, capabilities, and tools for developing mobile applications. Upgrade needed human resource skills for growth including both advanced training programs for staff and putting in place contractor resources. <div style="float: right;"> </div>
<p>Workgroup Application Innovation and Promotion</p>	<ul style="list-style-type: none"> • Develop a "promotion path" strategy for applications developed with "easy to use" tools such as Lotus Notes Designer or Microsoft Access that specifically addresses enhancing application stability and safeguarding application availability, reliability, and security. • Integrate the promotion path strategy into overall application portfolio investment planning decisions.

- *Evaluate and leverage, as appropriate, the HIC best practices approach to applications management statewide, specifically in relation to:*
 - *Data sharing and integration approaches such as database replication for internal use.*
 - *Reuse of considerable portions (services/components) of application code including single sign-on and payment processing with a common reporting capability for auditing.*
 - *Ability to leverage/reuse applications from other states - ideas, specifications, and some code if on the same target platform.*
 - *Use of a common application platform and technical infrastructure for all applications specifically Linux, Java, Oracle or MySQL, and some Perl.*
 - *Significant security credentials including PCI Digital, SarBox, HIPAA, and IRS audits.*
 - *DR for their infrastructure using DR Fortress previously and now using Endeavor.*

✓ HAWAII MODEL FOR USE



HIC has a track record of successful web application development projects including instances of working through business process changes within the organization to effectively use new applications. A recent example is the new application Land Record System developed for DLNR's Bureau of Conveyances.

3.1.4 Technology Infrastructure

SAIC evaluated the technology infrastructure of each of the Departments and ICSD against the following:

- Identification and location of the data center(s)/closet(s)/corner(s) within the Departments, use of others' data centers, or the data center managed by ICSD, or some combination.
- Primary Departmental computing infrastructure used, i.e., servers and/or mainframe and the average age of the infrastructure devices.
- Desktop infrastructure (hardware and software) used, the primary OS for the desktop environment, and the refresh cycle.
- Network architecture and infrastructure – topology, device characterization, and security measures applied.
- Whether an inventory of infrastructure hardware and software is maintained.
- Telecommunications (phones) contract used, contractor, and contract period.
- Use of mobile technologies in the Department, kinds of devices, contractor, and contract profile.
- Whether enterprise systems management or monitoring tools are used, and if so, the products.
- Whether a continuity of operations plan or DR plan exists for the Department.
- Any known issues or needs in the infrastructure area within the Department or the State as a whole.

As a result, one of the ten focus areas identified as part of the SAIC's interviews was the need for an enterprise infrastructure solution. Specifically, SAIC repeatedly heard from the Departments about

the need to define and implement an improved, extended, and sustainable infrastructure including, but not limited to, the enhancement of the network, a new more extendable email and collaboration environment, improved video conferencing infrastructures for communications, secure and effective web services, and increased available storage for digital data. The needs described by the Departments were validated as part of our Data Center Assessment as well.

Figure 21²² depicts the lack of integration and alignment statewide, while Table 26 provides a detailed overview of the As Is technology infrastructure and outlines existing technical infrastructure elements.

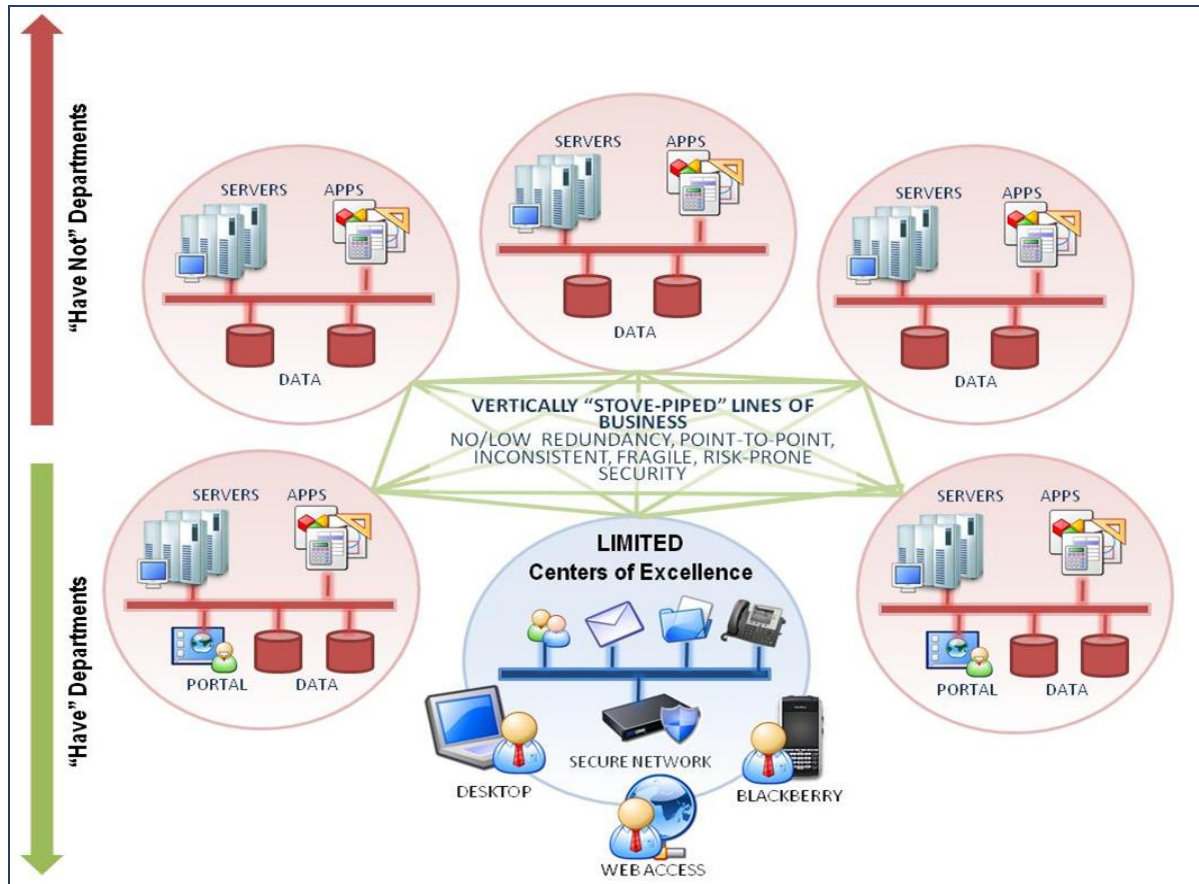


Figure 21: As Is Technology Architecture

²² Adapted from a GSA graphic

Table 26: As Is Technical Architecture Taxonomy

Technical Architecture Layers		Description of Statewide Infrastructure Elements	Current Environment
Enterprise Collaboration & Messaging	Email	Lotus Notes, Exchange mail system, Google Mail, Iron Port Anti-Spam	<ul style="list-style-type: none"> Lotus Notes – most pervasive across all Departments Some instances of Exchange (ERS, EUTF, DOE, DOH, AG-HCJDC) UH is migrating to Google Mail (in the Cloud)
	Broadcast, User Messaging, & Social Media	Messaging tools (e.g., Instant Messenger, Mobile Broadcast Messaging, Twitter)	<ul style="list-style-type: none"> Emerging interest in and use of Twitter, Facebook (Governor’s and Lt. Governor’s Offices, DHHL) Broadcast messaging products used in State Civil Defense and UH
	Collaborative Workspaces	SharePoint Portal, Google Apps, TeamRoom	<ul style="list-style-type: none"> No standard enterprise solution selected for collaboration SharePoint purchased for use in DOE, DOH, B&F, Office of Hawaiian Affairs (OHA) Minimal use of Lotus/Domino for collaboration UH is utilizing Google Apps DOT is utilizing Lotus/Domino TeamRoom
Enterprise Information Management	Document Management	iManage, Adobe, DropBox	<ul style="list-style-type: none"> No standard enterprise solution Document and imaging system components KOFAX and IBM FileNet being used in DOT, B&F, OHA, DAGS Adobe and Microsoft Office products are prevalent across all Departments Global 360 Imaging and Workflow software are implemented and used by DCCA AG and DBEDT are utilizing DropBox
	Data Management	DBMS	<ul style="list-style-type: none"> Oracle, SQL Server, MySQL, Adabas, APPX, DB2
	Analytics	ETL Tools, Reporting	<ul style="list-style-type: none"> Crystal Reports is used in DOTAX Oracle Discoverer is used by DOT
	Geospatial, Graphics, & Imaging	ESRI software/ARCGIS (e.g., ARCInfo, ARCMAP, ARCGIS GeoPortal)	<ul style="list-style-type: none"> ARCInfo used in DOD, DAGS, DOT, DBEDT, DLNR, DOH, HDOA, AG, DOE, UH
Enterprise Application Environments	Enterprise Application Interaction & Integration	Web Services	<ul style="list-style-type: none"> Enterprise Services Bus technologies used in DOH and HIJIS IBM Rational Architect
	Client/Server Applications	Development Tools	<ul style="list-style-type: none"> PowerBuilder is implemented.
	Web Applications	Development Tools	<ul style="list-style-type: none"> Java, .Net, PHP, Perl, Oracle Forms used across the State
	Mobile Applications	Development Tools	<ul style="list-style-type: none"> Emerging need identified with only DOD having a non-public-facing one, MERCI

Technical Architecture Layers		Description of Statewide Infrastructure Elements	Current Environment
Enterprise Infrastructure	Directory Services	DNS, Active Directory	<ul style="list-style-type: none"> External DNS servers reside on the ICSD network Most Departments have internal DNS servers Centralized Active Directory does not exist; numerous Departments deploy Active Directory to manage local infrastructure
	Enterprise Systems Management (configuration, performance, capacity, availability, licensing, patching)	ArcSight, SolarWinds, Tivoli, Multi-Router Traffic Grapher (MRTG), ZENwork, and WireShark	<ul style="list-style-type: none"> No enterprise-wide fault, configuration, performance, or capacity management tools exist in the State Each Department is responsible for monitoring and managing its own infrastructure Decentralized annual software license management
	Web Portals & Platforms	Plone Web Content Management	<ul style="list-style-type: none"> ICSD has deployed Plone (a free and open source solution) for content management for all Hawaii.gov web sites
	Enterprise Servers	IBM, Dell, HP	<ul style="list-style-type: none"> Very diverse with no consistency in terms of vendor products
	Hosting Environments, Cloud, & Data Center	ICSD	<ul style="list-style-type: none"> Server-hosted environment at ICSD Very diverse with no consistency in terms of vendor products
	Business Continuity (Backup/Restore, DR)	Veritas, Tivoli, DRFortress, Endeavor by SystemMetrics	<ul style="list-style-type: none"> DLNR has an installation with DRFortress HIC recently migrated to SystemMetrics Endeavor data center ICSD uses Veritas and Tivoli to perform tape and data backups
Enterprise Communications	Network	Cisco, 3Com, Dell	<ul style="list-style-type: none"> ICSD-managed Cisco-based MPLS network is structured to provide services to all Departments Each Department supports internal LAN with mixed vendor networks
	Video Conferencing	Polycom, Alcatel-Lucent, Skype	<ul style="list-style-type: none"> ICSD-managed video conference center established to support, schedule, and troubleshoot Contains multiple video bridges for large conference support DBEDT utilizes Skype to communicate with non-State business prospects
	Voice Communications	Centrex, CISCO VOIP, VOIP-as-a-service, RIM converged devices	<ul style="list-style-type: none"> Majority of the State utilizes Hawaiian Telcom (HATS) contract for Centrex phone services Some key systems exist as do small pockets of VOIP Many employees utilize their personal cellular and/or smartphones or iPhones for non-office voice service

Technical Architecture Layers		Description of Statewide Infrastructure Elements	Current Environment
	Wireless & Radio	Cisco, Buffalo	<ul style="list-style-type: none"> No Wi-Fi policy or enterprise solution is available to the Departments Departments have deployed Wi-Fi independently where required “Rogue” access points exist as end users install consumer WiFi devices Robust RF Radio network is in place; however, it is a single threaded organization with one person in charge of all infrastructure
Personal Computing	Desktops, Laptops, & Mobile Devices	Dell, Lenovo, IBM, Acer, Panasonic, HP, Apple, Palm, RIM	<ul style="list-style-type: none"> Departments have discretion to buy desktop/laptop devices (most use Western States Contracting Alliance [WSCA] vehicle) No standard operating system or enterprise image exists All purchasing and warranty support is done at the Department level Many employees utilize their personal smartphones or iPhones for non-office email service
	User Productivity Software	Windows 98, 2000, XP, 7; Internet Explorer 6, 7, and 8	<ul style="list-style-type: none"> Operating system is being driven by legacy applications; new PCs ship with Windows 7 but in many cases the Departments must downgrade them to Windows XP to run native legacy applications
	User Presentation	MS Office 2000, 2003, 2007, 2010; Corel WordPerfect; Adobe Creative Suite; Adobe Photoshop 5.5, 6, 7, 8; MS Project; ArcGIS	<ul style="list-style-type: none"> No standard offerings exist for users to select software; the State is not leveraging enterprise-level discounts for common tools
Security	Anti Virus/Spam	Symantec Endpoint, Cisco NAC	<ul style="list-style-type: none"> All Departments have endpoint security deployed via Symantec or similar offerings
	Security (Authentication, Authorization, Credentials, etc.)	Cisco VPN, WebSense, IronPort, SAINT	<ul style="list-style-type: none"> There is no governance standard at the State level for secure authentication There is no hard-drive encryption policy Virtual Firewall and IPS deployed on NGN connections to each Department Some Departments engage third parties for penetration testing and security policy creation

NOTE: Details from each architecture element are contained in the EAD tool.

In addition to evaluating technical infrastructure elements, SAIC also reviewed the existing infrastructure management processes within the State Executive Branch Departments as well as the centrally-managed infrastructure assigned to ICSD. To perform this evaluation, we utilized the ITIL maturity model. This model provides a system for measuring the process maturity of an organization and it includes indicators that show evidence of capabilities. This maturity model relies upon five-layers where Layer 1 represents initial or minimal maturity and layer 5 represents optimized or fully mature capabilities. Figure 22 depicts and describes each layer.

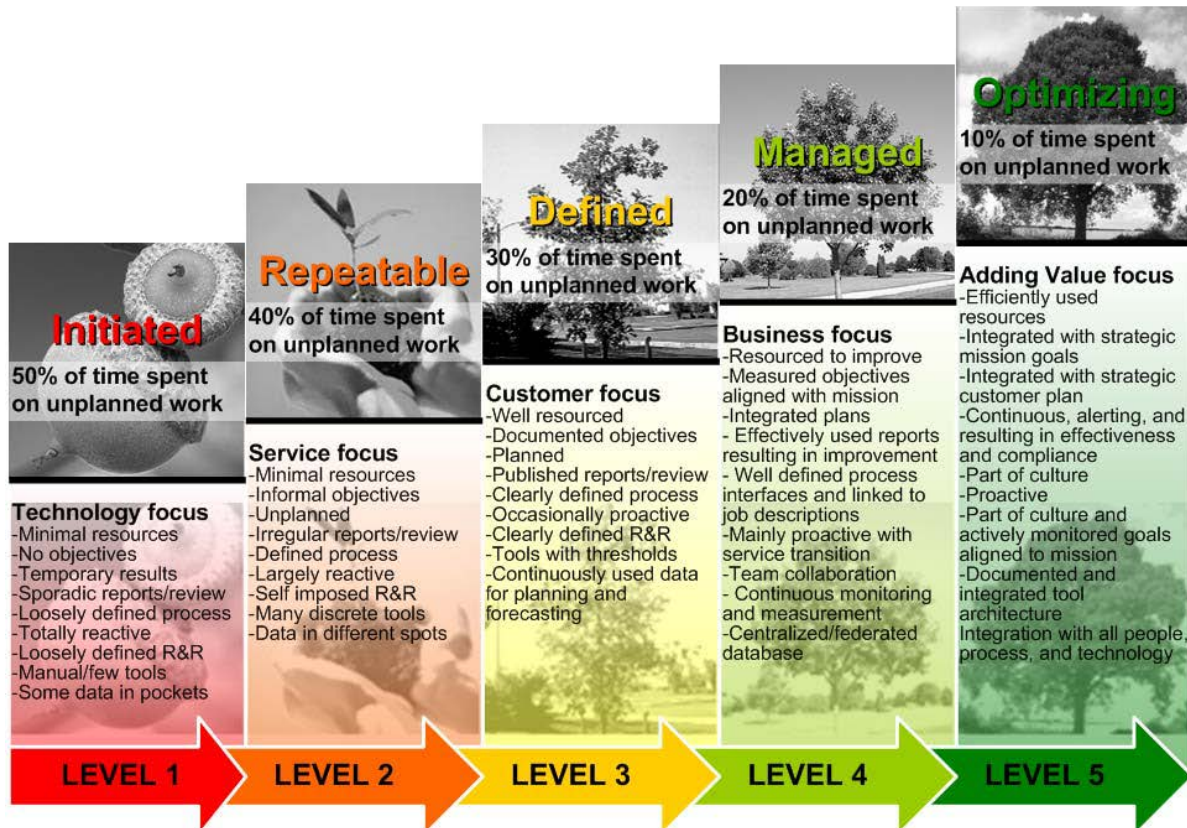


Figure 22: ITIL Service Maturity Level Criteria

Using the maturity model; we defined the process capabilities of ICSD and Table 27 lists the results as well as the basis for our assignment of the maturity level.

Table 27: Technical Infrastructure Service Maturity Analysis

IT Best Practice Competency Areas for IT Service Management	Maturity Level (Criteria in Figure 22)	Basis for Assessment
SERVICE STRATEGY		
Service Financial Management	Level 1-2	<ul style="list-style-type: none"> • ICSD has limited insight into true cost of services and is only allowed to charge for services in support of Federally-funded programs. • IT budget and staff have been cut repeatedly over the last decade and while impact analyses have been performed by the operational team, the senior leadership/designated CIO has not effectively articulated risks to the State. • Reduced staff and budgets have resulted in a reduction of services that ICSD must perform.
Service Portfolio Management	Level 1	<ul style="list-style-type: none"> • No planning exists to evaluate new products to enhance the services that ICSD provides to their customers. • Almost all services are in maintenance mode; no enhancements are performed within ICSD.
Service Demand & Customer Relationship Management	Level 1	<ul style="list-style-type: none"> • There is a defined understanding and documentation of DAGS' vital mission functions; however, it is not well defined and documented for other Departments and services. • Not meeting with customers on a regular basis to discuss requirements and priorities. • Limited reporting capabilities. • When outages occur, timely and meaningful status does not regularly occur. IBM P590 outage in July 2011 affecting DOTAX and DCCA is an example. Most services are not monitored resulting in customer complaints driving action.
SERVICE DESIGN		
Service Catalog Management	Level 1	<ul style="list-style-type: none"> • A service catalog is under development but has not been published. • No State electronic service catalog of products and services to enable users to understand the costs associated with service or the performance levels that exist.
Service Level and Reporting Management	Level 1-2	<ul style="list-style-type: none"> • Basic service agreements between ICSD and Departments do not exist for all services unless it is a defined service expectation that is driven by a Federal grant (e.g., data entry key strokes and verification, security requirements). • No regular service reviews occur with the supported Departments. • There are limited tools to provide meaningful reports on the services and performance against established service levels. • A weekly performance report is created and distributed; however, standard performance measurement categories are not included as a reporting standard.

IT Best Practice Competency Areas for IT Service Management	Maturity Level (Criteria in Figure 22)	Basis for Assessment
Service Capacity Management	Level 1	<ul style="list-style-type: none"> Limited monitoring, reporting, and trending capacity for critical service information, applications, infrastructure, human resources, and suppliers. No documented strategic capacity plan. A consolidated list of supported applications and systems is not maintained as a management tool.
Service Availability and Continuity Management	Level 1	<ul style="list-style-type: none"> No end-to-end service monitoring. Communication during outages is sporadic and lacks detail. Definitions of degradation versus outage are not documented or published. No continuity plan; testing of backup and failover services are performed on routine basis. A current list of systems that data owners define as "mission critical" exists. Currency of documentation relative to continuity of operations was not evident, if it was available. No DR plan is in place.
Service Security Management	Level 2-3	<ul style="list-style-type: none"> Cyber security functions, and especially communications regarding information security, are performed by ICSD in conjunction with the Information Privacy Security Council. Security standards are documented and posted on the ICSD web site. The Information Security standard is dated 2009; Personal Computer Security is dated 2001; and Network Security is dated 2003. Virtual FW and IPS are deployed in NGN to protect the core network. Tools such as ArcSight are used to inspect logs for security-related events; staffing prevents more robust deployment and proactive use of the data. IronPort is a tool that is used to identify and control spam.
SERVICE TRANSITION		
Service Configuration and Asset Management	Level 1-2	<ul style="list-style-type: none"> No comprehensive IT asset (hardware and software) management database exists. No documentation exists pertaining to how elements are configured and what relationships exist between IT elements. Some configuration data for NGN is collected and stored for engineering and support needs.
Transition Project Management	Level 1	<ul style="list-style-type: none"> No project management resources have been identified to manage data, applications, and infrastructure during a transition of service.
Change Project Management	Level 1	<ul style="list-style-type: none"> No strictly defined process or change management function appears to exist within ICSD. No communication procedure to announce schedule of change activities. No formal CCB.
Release, Validation, Testing,	Level 1-2	<ul style="list-style-type: none"> Formal process to implement approved changes into a production environment under approved timeframes has been defined.

IT Best Practice Competency Areas for IT Service Management	Maturity Level (Criteria in Figure 22)	Basis for Assessment
Deployment and Evaluation Management		<ul style="list-style-type: none"> Documentation of roll out/roll back is not provided or communicated. No formal monitoring period to validate success or rapidly enact roll-back plan.
Knowledge Management	Level 1	<ul style="list-style-type: none"> No knowledgebase is deployed to collect work-around or permanent solution articles for the teams' use.
SERVICE OPERATIONS		
Event Management	Level 1	<ul style="list-style-type: none"> No proactive tracking or reporting of critical service thresholds. No notifications are a trigger for incident management. Event management tools (SolarWinds, ArcSight) tools are deployed but not optimized to alert prior to service interruption.
Incident Management	Level 1	<ul style="list-style-type: none"> No documented classification, priority, or escalation of events. Communication to impacted customers not performed on a regular basis.
Problem Management	Level 1-2	<ul style="list-style-type: none"> Some root-cause analysis is performed but lacks focus on implementation and documentation of a permanent solution. Consolidated problem reporting and trending is not being performed.
Request Management	Level 1	<ul style="list-style-type: none"> ICSD Form 205 is provided for IT acquisitions and is reviewed by internal ICSD management; however, defined criteria (e.g., documented strategic plan, enterprise, or technical architecture) are not used as a basis for review. No automated workflow for request approval; feedback is not timely and response time varies greatly. Requests for services are documented in an internal ICSD-developed system; the service request process for all of ICSD is just being integrated.
Access Management	Level 1	<ul style="list-style-type: none"> No common platform to manage and maintain user rights to enable the use of a service or a group of services.
OVERALL ASSESSMENT = Level 1		

While SAIC rated the State's enterprise infrastructure and support at a Level 1 where 50% of the time is reactive to technology-base problems, within the various Departments and specifically the "have" organizations, SAIC found examples of Level 2 (service-focused environments) with definite movement toward Level 3 (customer focused environments) that were operating proactively.

✓ **BEST PRACTICE**

SAIC's Integrated Service Management Center (ISMC) in Oak Ridge, Tennessee, provides similar Tier 1 and 2 Service Desk and Enterprise Operations Center services and other managed IT services for more than 550,000 global end users working for more than 20 Federal and commercial customers including our own SAIC corporate users. By using the ISMC as our core organizational capability for service delivery, we leverage our extensive investment and experience in delivering managed services, evidenced by the breadth of customer programs supported seven days a week, 24 hours a day, 365 days a year (7/24/365) with users around the world by more than 500 IT support personnel in our Oak Ridge facility. In addition, our ISMC service delivery model includes peer facilities in Somerset, Kentucky, Broomfield, Colorado, and Little Rock, Arkansas, that also provide comparable managed services. We leverage our in-place ITIL-based best practice processes, supporting infrastructure, and tools, including Remedy as our COTS IT service management (ITSM) solution. Our best-practice implementation is evidenced by our service delivery accreditations of the International Organization for Standardization (ISO) 20000 standard, which measures compliance to ITIL-based ITSM best practices, and the ISO 9001 standard, which measures compliance to quality management best practices, and the ISO 17001 standard, which measures compliance with information security best practices.

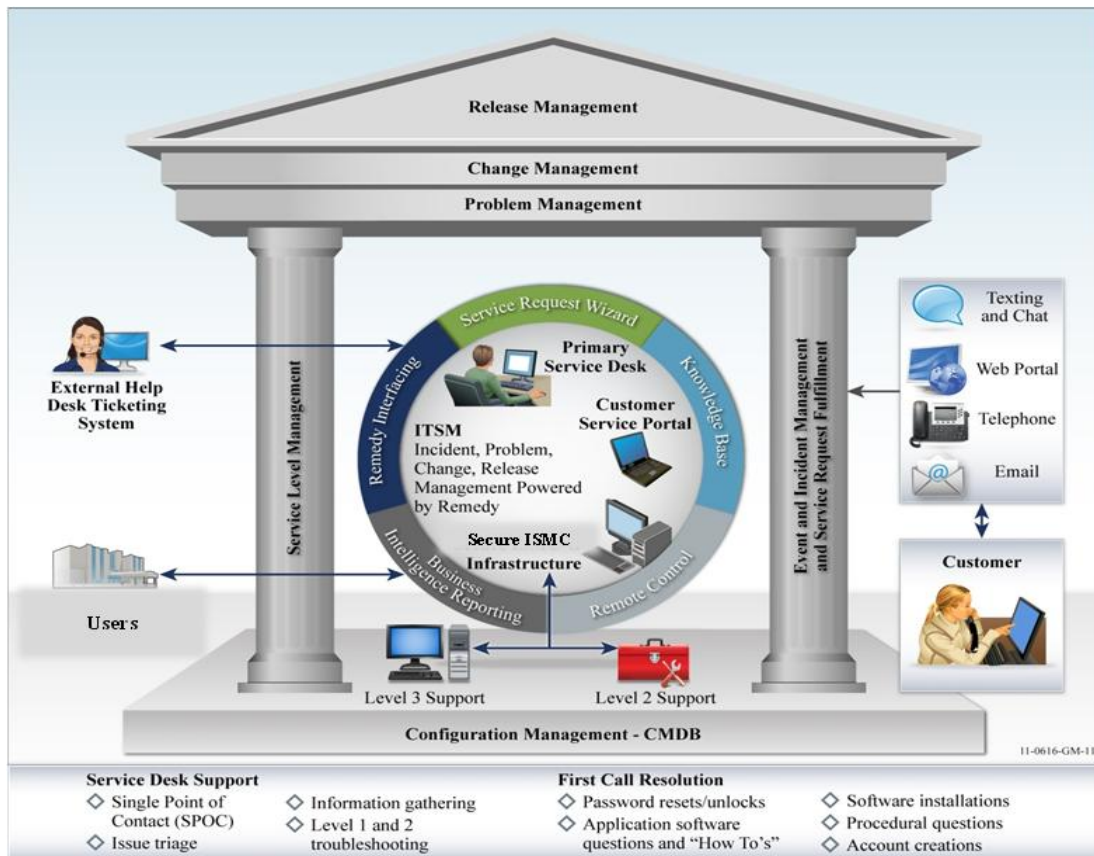


Figure 23: SAIC's ISMC Service Model

To Be Recommendation 19: Use a Defined Service Management Model

- *Adopt a tailored ITIL-compliant service management model as a best practice for establishing OIMT enterprise-level services.*
- *Plan and implement ITIL using project management best practices and approaches.*



Below are specific actions relative to OIMT establishing an enterprise IT services management approach within the State:

Key Recommendations	Actions
SERVICE STRATEGY	
Service Portfolio Management	<ul style="list-style-type: none"> • Develop a services portfolio management program plan and CONOPS with responsibility for such development residing with the OIMT IT Program Manager. • Expand the portfolio management approaches described above for DME projects and spreadsheet applications, and hardware and software assets to include enterprise-level services. Use this as a basis for planning the new OIMT enterprise services to be offered including their definition, price/cost/funding structure, and service level agreements; leverage and repurpose ICSD's service catalog work. • Adapt the new product/technology evaluation and insertion methodology described above to address new services insertion into the enterprise. • Adopt and use the EAD as an interim portfolio management tool until the approach matures for consideration of a replacement system.
Service Demand & Customer Relationship Management	<ul style="list-style-type: none"> • Establish customer liaison or customer relationship management role within OIMT and include services input and demand planning as part of the overall responsibilities.
Service Financial Management	<ul style="list-style-type: none"> • Include IT services financial management roles and responsibilities with IT governance competency areas (Information Resources Strategy & Planning and Capital Planning & Investment), where a key staff member of OIMT is responsible for financial oversight. • Establish services cost build-ups and pricing structures as part of overall funding strategy for OIMT. • Develop needed cost measurement and validation and accounting processes and systems to support fee for service models.
SERVICE DESIGN	
Service Catalog Management	<ul style="list-style-type: none"> • Publish services catalog-level information regarding all production services through the OIMT web site in conjunction with services portfolio management discussed above. • Include IT hardware products defined/authorized based on the technical architecture. • Expand service catalog capabilities in the future to include on-line requests and provisioning, e.g., use of a web form to request a virtual server and an automated provisioning system that implements the virtual server for the requester in near real-time.
Service Level and Reporting Management	<ul style="list-style-type: none"> • Develop a program plan for service-level measurement and reporting in conjunction with services portfolio management noted above. • Identify all required service-level measures and measurement methods and techniques/tools. • Implement service-level reporting systems and summary dashboards for OIMT.

Service Capacity Management	<ul style="list-style-type: none"> • Mature server and storage inventory data to include capacity attributes. • Implement server and storage monitoring systems to track and trend usage data. • Integrate demand planning and usage trend analysis into ongoing capacity management plan.
Service Availability and Continuity Management	<ul style="list-style-type: none"> • Implement end-to-end service monitoring system and measure up-time and response-time for critical applications, databases, processes, servers, storage devices, and networks. Leverage existing SolarWinds Orion toolset as the foundation. • Develop comprehensive availability and continuity plan including graded approach for DR based on business impact assessment.
Service Security Management	<ul style="list-style-type: none"> • Integrate with cyber security program. • Integrate security operations monitoring and event response with enterprise operations center approach. • Establish standard security monitoring solutions, approaches, and reporting. Leverage ArcSight and other existing products.
SERVICE TRANSITION	
Service Configuration and Asset Management	<ul style="list-style-type: none"> • Develop program plan for IT configuration and asset management in conjunction with portfolio management including policies, roles, responsibilities, and CONOPS. Determine appropriate graded approach based on scope of asset use and potential impact to State, Department, program, etc. • Establish EAD tool as interim configuration and asset management tool until the approach matures and a more robust system is justifiable. Consider a federated configuration management data base (CMDB) model with the EAD at the enterprise level initially. Over time, consider promotion of Department best practice systems and processes for adoption at the enterprise level.
Transition Project Management	<ul style="list-style-type: none"> • Establish new service/product/technology insertion and transition approach as a critical OIMT process for ensuring stability of the enterprise infrastructure. Address project management and oversight of all key elements of a well-planned roll-out of new capability including communications to and involvement of all key stakeholders in schedule decisions and transition execution, and impact analysis, planning, and mitigation.
Change Management	<ul style="list-style-type: none"> • Develop program plan for IT change management in conjunction with related areas of portfolio and configuration and asset management including policies, roles, responsibilities, and CONOPS. Determine appropriate graded approach based on scope of asset use and potential impact to State, Department, program, etc. • Establish enterprise-level change management approach to include: <ul style="list-style-type: none"> ○ Request for change creation, review, and disposition ○ CCB to review all critical changes ○ Forward schedule of change to publish planned changes ○ Communication of all changes to all Departments
Release, Validation, Testing, Deployment and Evaluation Management	<ul style="list-style-type: none"> • Establish enterprise standards and procedures for execution of releases to the production environment. • Ensure adequate impact analysis and testing to mitigate impact on the production environment. • Ensure appropriate deployment plans are developed, tested, and executed including roll-back procedures.

<p>Knowledge Management</p>	<ul style="list-style-type: none"> • Establish enterprise processes and system for knowledge management. • Ensure that all documentation regarding environments, asset configuration, known problems, work arounds, solutions, user requests for service, and resolution scripts are all stored within the knowledge management repository. • Ensure that IT workers at all levels use the knowledge management repository for environment and work instruction documentation. Leverage multiple approaches in relation to knowledge management (e.g., internal social networking, wiki's, traditional work groups)Begin by ensuring that OIMT central services use this approach.
<p>SERVICE OPERATIONS</p>	
<p>Incident Management</p>	<ul style="list-style-type: none"> • Develop service operation program plan to include all policies, roles, responsibilities, and CONOPS. • Establish enterprise-level service desk with overall responsibility for resolution of all service and support requests, incidents, and event resolution. Establish Tier 1 central point-of-contact. Use catch and dispatch model initially as needed to invoke Departmental resources. Over time, move and grow resolution capabilities in central service desk. • Establish enterprise processes and system for tracking all service requests, incidents, events, and problems. • Establish best practices for end-user interaction including single phone number, online web form request and feedback, texting, chat sessions, and mobile applications. • Establish plan and procedures for addressing high priority or critical incidents including notification lists, triage, resolution, and reporting approach. • Ensure that all service or support requests are documented and tracked to closure within the ticketing system. • Over time, ensure that all IT workers at all levels use the ticketing system for work management. Begin by ensuring that OIMT central services use this approach.
<p>Event Management</p>	<ul style="list-style-type: none"> • Establish monitoring system to identify application and infrastructure events (e.g., a server outage) and initiate appropriate incident notification and resolution processes. • Establish a best-practice operations model that integrates and consolidates service desk, infrastructure operations, and security operations into a common enterprise operations center approach. Begin by ensuring that OIMT central services use this approach.
<p>Problem Management</p>	<ul style="list-style-type: none"> • Establish root cause analysis approach and procedures as part of a problem management process within the service operations program plan. • Over time, ensure that all IT critical failures at all levels include a root cause analysis. Begin by ensuring that OIMT central services use this approach.
<p>Request Management</p>	<ul style="list-style-type: none"> • Include all service requests in central service desk implementation. • Establish OIMT central services web site and automate online service request. • Over time, ensure that all IT service requests follow this standard approach. Begin by ensuring that OIMT central services use this approach.
<p>Access Management</p>	<ul style="list-style-type: none"> • Include all access requests in central service desk implementation. • Establish access management systems to provide self-service options for end users on password management and resets. • Establish identity management systems for management of credentials and role-driven access management. • Over time, ensure that all access requests follow this standard approach. Begin by ensuring that OIMT central services use this approach.

In addition to the interviews conducted with the IT leadership in each Department, SAIC also conducted a Data Center Assessment and an independent review of the technology infrastructure using a network scanning process. A separate information survey was also completed. The detailed results of this analysis of the As Is are documented in the *Data Center Assessment Report*.

To Be Recommendation 20: Create a Technical Architecture Foundation



- *Identify a new primary data center and a DR strategy*
- *Assess, plan, and consolidate the IT infrastructure beginning with server closets and server rooms*
- *Create and actively implement a virtualization and Cloud strategy*
- *Implement enterprise systems management like Active Directory and secure DNS*
- *Establish/enhance enterprise-level network and service monitoring*
- *Address an enterprise solution to email*
- *Create and execute a wireless network deployment strategy*
- *Define and execute an enterprise approach to personal computing*
- *Address and implement a robust information security posture*

At the conclusion of implementation of the recommended steps and actions (beginning on the next page), the technical architecture should have a foundation that will propel the State of Hawai'i into the future relative to IT. Figure 24 illustrates a notional vision of the To Be enterprise IT architecture in terms of the 10 focus areas identified in the As Is assessment.

- *Evaluate and leverage, as appropriate, existing processes, procedures, and tools relative to the technology infrastructure implemented.*

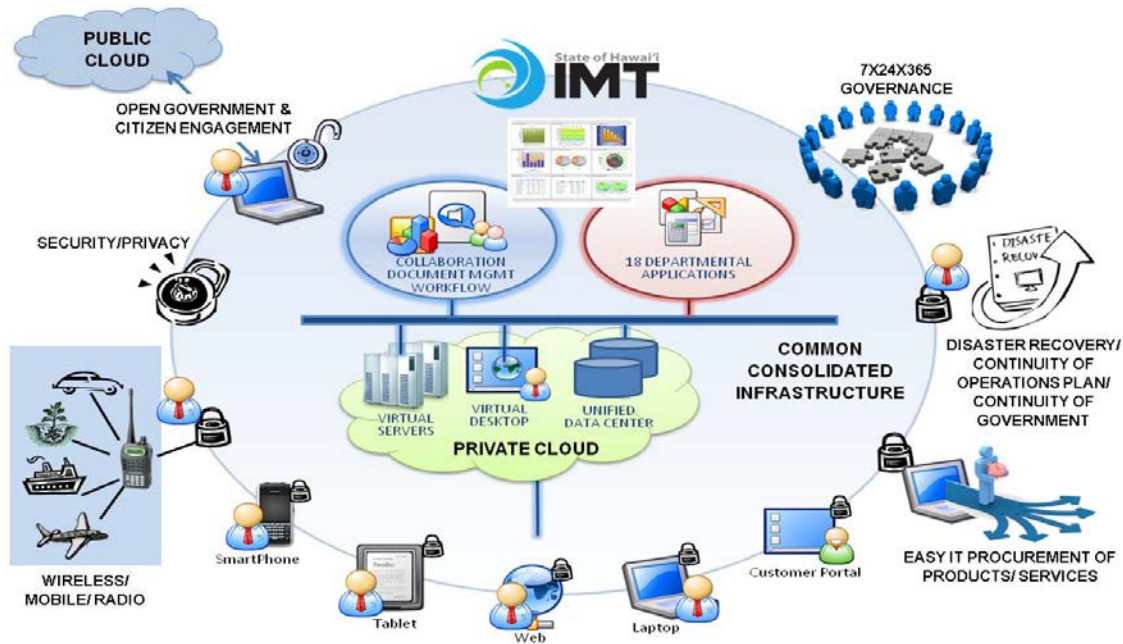


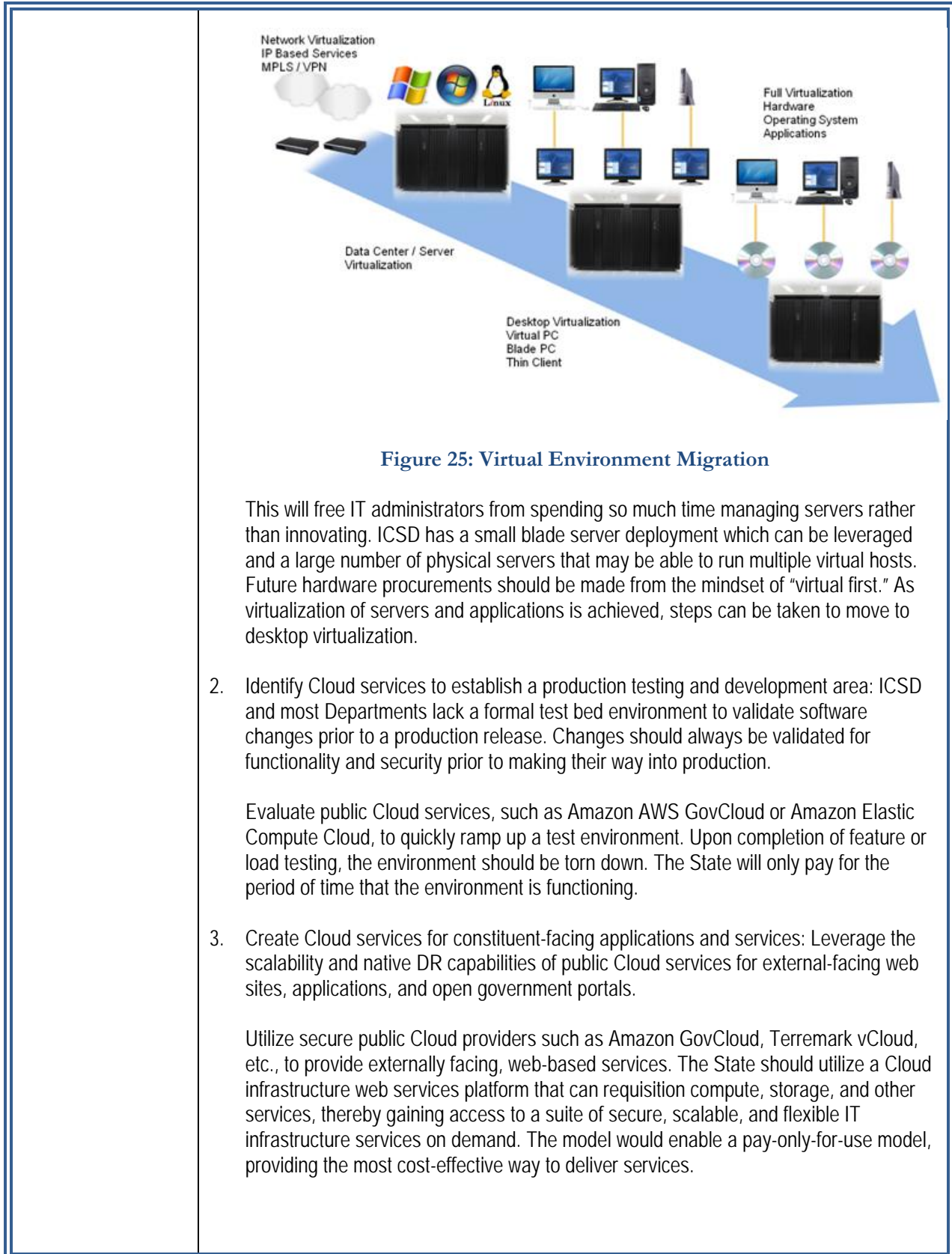
Figure 24: “To Be” Enterprise IT Infrastructure Architecture*

*Figure 24 - Adapted from a GSA graphic

<p>Below are actions relative the implementation of an enterprise infrastructure within the State based on the key findings that resulted from the Data Center Assessment:</p>	
Key Recommendations	Rationale and Actions
<p>Primary Data Center and DR Strategy</p>	<p>Rationale: The Current environment is decentralized with the majority of Departmental applications and servers being housed within Departmental server rooms. As identified in the 2009 legislative audit of IT, the State continues to operate without a DR facility to support critical operations in the Kalanimoku building. To further complicate matters, per the <i>IBM Data Center Efficiency Assessment (May 2010)</i>, the Kalanimoku data center has severe cooling issues, air supply blockages of up to 90%, and air restrictions of 80%. Years of poor cabling practices have lead to under-floor cabling issues that defeat efforts to improve air flow in the facility.</p> <p>Actions:</p> <ul style="list-style-type: none"> • Create a cross-functional team chartered to determine where the “primary” data center should reside and develop an overall DR approach. Based on SAIC’s assessment of existing data centers within the State and third-party facilities, below are options that the State and the cross-functional team may want to consider: <ul style="list-style-type: none"> – Utilizing third-party facilities as a primary/DR data center configuration - This would leverage a third-party facility as a co-location site for servers, storage, and network equipment. The State would still retain management, configuration, and deployment for servers and applications. This provides the State with a data center facility certified in environmental controls, power, 24x7 services, and physical security. SAIC puts forth DRFortress and Systemmetrics as options; both providers have solutions that meet the State’s near-term and long-term needs. – Remaining in Kalanimoku – This would require substantial expenditure to address cooling, airflow, structural inefficiencies, power distribution, and UPS requirements. To alleviate flooding concerns, the data center should be located on the second or third floor to reduce the threat of flood water entering it. – Blending a solution between third-party options and State facilities - The State may opt to utilize a third-party location as the primary data center while retaining a State facility for DR.
<p>Consolidation of IT Infrastructure</p>	<p>Rationale: As shown in Table 28, many computing centers within the Departments are of a size that promotes consolidation through technologies such as virtualization and Cloud computing. The benefits that the State will receive from a consolidation approach include:</p> <ul style="list-style-type: none"> • Promote the use of Green IT by reducing the overall energy and real estate footprint of data centers • Reduce the cost of data center hardware, software, and operations • Increase the overall IT security posture of the State • Increase the use of more efficient computing platforms and technologies • Enhance reliability • Standardize processes and tools <p>Action: Develop a plan to consolidate services, hardware, and physical infrastructure locations consistent with the <i>IT Transition Document Prepared by ITGC-Technical</i>. Begin with the server closets/rooms and then data centers. (NOTE: SAIC used the Federal Data Center Consolidation Initiative (FDCCI) to classify the existing facilities and help develop an overall footprint required for any future consolidation efforts.)</p>

Table 28: Departmental Server Closets, Server Rooms, and Data Centers			
Departments	Server Closet (<200 sq. ft.)	Server Room (< 500 sq. ft.)	Dedicated Data Center
Legal (AG)		X	
CPJAD (AG)		X	
CSEA (AG)		X	
HCJDC (AG)		X	
B&F	X		
DAGS (non-ICSD)	X		
DBEDT	X		
DCCA		X	
DHHL		X	
DHRD		X	
DHS		X	
DLIR		X	
DLNR		X	
DOD		X	
DOE			X
DOH		X	
DOT		X	
DOTAX		X	
HDOA	X		
PSD		X	
UH			X
ICSD			X
GOV/LT GOV	X		

<p>Virtualization and Cloud Strategy</p>	<p>Actively address and implement a virtualization and Cloud strategy.</p> <p>Actions:</p> <ol style="list-style-type: none"> Virtualize server and application infrastructure: The majority of applications in the ICSD environment, as well as across all Departments, resides on physical servers. Improve the efficiency and availability of IT resources and applications through virtualization. Virtualization of servers will reduce required data center square footage and reduce hardware cost through a physical-to-virtual migration plan. <p>As depicted in Figure 25, the State of Hawai'i currently has achieved almost complete network virtualization with the MPLS-based NGN. To further save resources and increase server availability, SAIC would suggest that the State develops a go-forward strategy to eliminate the "one server, one application" model currently in place and utilize virtual servers to run multiple virtual machines on each physical machine.</p>
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<p>Enterprise Systems Management (Immediate- to Long-Term)</p>	<p>Execute on the following in order to create a true enterprise systems management environment.</p> <p>Actions:</p> <ol style="list-style-type: none"> 1. Implement Active Directory/LDAP – Unify the Active Directory infrastructure: Most Departments have stand-alone Active Directory deployments for intra-departmental use. No enterprise-level Active Directory solution exists. It is critical for asset control and security reasons to bring all Departments into a single Active Directory structure. Design and deploy a unified Active Directory to store all information and settings for a deployment in a central database. Active Directory allows administrators to assign global policies, set security standards, deploy, and update software. The benefits are: <ul style="list-style-type: none"> • Single user name and password • Reduce overhead through standardization • Improve services through centralized management capabilities • Provide foundation for the following Active Directory-related services: <ul style="list-style-type: none"> – Cloud-based email such as Exchange or Google – SharePoint • Improve workstation security • Central storage provided for individuals and departments • Backup and restoration services for central storage. 2. Deploy Secure DNS – The primary security goals for DNS are data integrity and source authentication, which are needed to ensure the authenticity of domain name information and maintain the integrity of domain name information in transit. Availability of DNS services and data is also very important; DNS components are often subjected to denial-of-service attacks intended to disrupt access to the resources whose domain names are handled by the attacked DNS components. DNS is susceptible to the same types of vulnerabilities (platform, software, and network-level) as any other distributed computing system. <ul style="list-style-type: none"> • Implement appropriate system and network security controls for securing the DNS hosting environment such as operating system and application patching, process isolation, and network fault tolerance. • Protect DNS transactions such as update of DNS name resolution data and data replication that involve DNS nodes within an enterprise’s control. The transactions should be protected using hash-based message authentication codes based on shared secrets as outlined in the Internet Engineering Task Force’s (IETF) Transaction Signature (TSIG) specification. • Protect the ubiquitous DNS query/response transaction that could involve any DNS node in the global Internet using digital signatures based on asymmetric cryptography as outlined in IETF’s Domain Name System Security Extension (DNSSEC) specification. 3. Establish Network and Service Monitoring – SAIC recommends that the State moves to a holistic methodology that integrates people, processes, technology tools, and physical facilities around a “central service desk” concept. The central service desk, a cornerstone of ITIL philosophy, serves as a single point of accountability to the customer for all service support, enhancing its importance to mission support.
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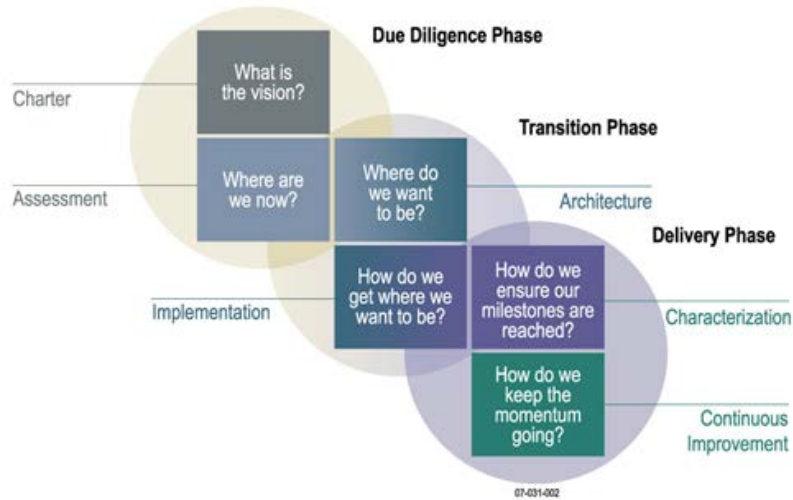


Figure 26: Approach To Enterprise Transformation Is Based On Proven, Best Practice Methods.

As shown in Figure 26, SAIC recommends a comprehensive approach to organizational transformation based upon ITIL's Planning to Implement Service Management that consists of three logical lifecycle phases and six key steps. This proven approach to organizational change integrates the State's strategic vision, mission/business strategies, people, processes, and technologies in graded ways to achieve enterprise-specific objectives. Below are additional recommendations regarding strategies related to gaining process maturity:

- *Establish standardized processes.* The State should build upon a foundation of standardized ITIL-compliant processes, with associated organizational structures, roles, and responsibilities. At the core of the methodology are detailed process architectures for each of the ITIL process areas.
- *Deploy standard tools and technologies.* There are opportunities for elimination of redundant disparate tool implementations and practices across the States. OIMT should identify and implement a standard tool set. Standardizing on tool/technology implementation within the process reduces the complexity of the technical environment and enhances overall productivity and agility of the professional staff saving O&M costs long term.
- *Enhance operational availability monitoring.* Thorough monitoring of service infrastructure using network and server management tools such as SolarWinds, CiscoWorks, and Tivoli. Automate alerts and forward to an incident management system for automated ticket creation and support staff notification where they are then tracked to resolution by the service desk.
- *Implement capacity management.* Accurate capacity management and planning will yield accurate business forecasts, the application of knowledge about current and future technologies, an ability to demonstrate cost effectiveness, and a commitment to planning and implementing capacity to match the State's business needs.

Enterprise Email

Rationale: The need to quickly and effectively communicate inter- and intra-departmentally is a priority. A centralized IT organization should design and deploy a multi-faceted communication suite that utilizes voice, video, email, and mobile technologies. The solution suite should be integrated, flexible, and enable greater collaboration and effectiveness of State employees. The ICSD Lotus Notes Server hosts the various Executive Branch Departments excluding DHS, DBEDT, DCCA, DOT, part of AG, and DOH. These five Departments have their own email servers attached to the State of Hawai'i Electronic Messaging (SOHEM) Network via hubs that ICSD maintains. Domino and Lotus Notes R8.5.2 is the current release of the software. Of the 22 email servers listed (Table 29), 68% are running end-of-support software from IBM.

Table 29: Versions of Lotus Notes Deployed within the State

Department	Versions of Lotus Notes		
	6.x	7.x	8.5
	Support End April 2008	Support End April 2011	Latest Version
DAGS		X	X
DOA	X	X	X
AG ²³		X	
B&F		X	X
DBEDT	Have own email service		
DCCA	Have own email service		
DOD		X	
DOE			
DHHL		X	X
DOH	Have own email service		
DHRD		X	X
DHS	Have own email service		
DLIR	X	X	X
DLNR	X	X	X
PSD	X	X	
DOTAX		X	X
DOT	Have own email service		

The mixed versions result in an inconsistent email experience for users, inability to utilize email on mobile devices, and difficulty sharing and distributing calendars across organizations. ICSD has communicated that all Departments should upgrade to release 8.x of Lotus Notes by September 2011. For many Departments, the upgrade in software will require new hardware which they may not have funds to purchase.

Actions: SAIC proposes that OIMT assemble a working team to evaluate email, calendar, and collaboration requirements across the State. The 2010 Request For Information pertaining to "Enterprise Messaging Services Consolidation" is a good starting point for the assembled team. We would strongly encourage close inspection of Cloud-based services such as Google Apps, Microsoft Office365, and LotusLive. These services provide hosted email with large storage options, ability to share calendars, and native collaboration tools. A Cloud-based solution alleviates the need to stay current with software releases, hardware requirements, and reduces administration overhead considerably.

²³ HCJDC utilizes Exchange/Outlook.

<p>Wireless Network Deployment</p>	<p>Rationale: SAIC found a number of “rogue” Wi-Fi access points deployed across the State during our interviews. With no policy or guidance, it is not surprising that Departments deploy their own wireless solutions to provide productivity benefits.</p> <p>Actions:</p> <ul style="list-style-type: none"> • Create a Wireless Data team to study the costs and benefits of Wi-Fi deployment. • Create a wireless policy to address rogue access points and to ensure Departments that have deployed full wireless solutions meet specified levels of security and monitoring for unauthorized access. • Collaborate with DOE’s wireless project for the school buildings. Synergies between vendors may exist that could be replicated at the Department level. • Create a Wireless LAN Security Policy: Much like the security policy for wired access, it’s a good idea to begin with a written wireless policy that covers authorized use and security. A recommended starting place is with templates that already exist for the specific sections that should be covered. Typically, security policy documents include the following sections: <ul style="list-style-type: none"> – Purpose – Scope – Policy – Responsibilities – Enforcement – Definitions – Revision History
<p>Personal Computing</p>	<p>Rationale: Decisions for computing hardware are currently made at the Department level; therefore, the outcome is the current, mixed vendor, multi-operating system environment. SAIC uncovered at least 10 separate computing vendors within the State, which creates complications and cost for the support and maintenance of hardware.</p> <p>Actions:</p> <ul style="list-style-type: none"> • Identify standard desktop, laptop, and mobile devices. • Establish a service catalog with Procurement to centralize approval, purchasing, and warranty coverage. • Standardize operating system levels, patch levels, and a productivity application suite (e.g., Windows 7 with Office 2010...). • Create central remote support, with service desk/network operations center supplied with the tools to provide rapid real-time desktop support to reduce repair times. • Create and maintain “Gold” images for devices to streamline support and maintenance. • In terms of mobile devices, evaluate utilizing tablets and smartphones for field agents, inspectors, etc. • Create a mobile application service to provide mobile applications which increase staff productivity and collaboration and improve delivery of State service to constituents. • Leverage the Hawai’i Broadband Initiative which addresses high-speed Internet access for the residential and commercial market and in relation to communications with the neighbor islands. This will empower the remote workforce, video, distance learning, etc.; also ensure all future application development can support remote and mobile clients.

<p>Security (Immediate- to Long-Term)</p>	<p>Rationale: Security-related areas (Security Information and Event Management [SIEM], Information Assurance, and Security Integration) need to be addressed, because there is a need to unify the security approach and policies between Departments. As one of the CIO's key hires, the new security officer should drive a consistent approach in the areas of Information Assurance and Security Integration.</p> <p>Actions: Drive and develop a consistent statewide approach in the areas of Information Assurance and Security Integration.</p> <hr/> <p>SIEM Rationale: SIEM exists within the ICSD ArcSight tool suite; however, the staff lacks the training and availability to exploit the full capabilities of the tool.</p> <p>Action:</p> <ul style="list-style-type: none"> • Audit existing log files to ensure that all sources are reporting security events and logs to the ArcSight collectors. • Define standard rule sets based on security best practices, and map alarms and action plans based on these alarms. • Educate all Departments on cyber security policy enhancements; leverage the Information Privacy Security Council to drive policies, standards, education, and compliance for all users. <hr/> <p>IA Rationale: IA is the practice of managing risks related to the use, processing, storage, and transmission of information or data and the systems and processes used for those purposes. IA is not consistently applied across the State today, leading to vulnerabilities and risk.</p> <p>Action:</p> <ul style="list-style-type: none"> • Perform the following: <ul style="list-style-type: none"> • Security & Risk Management: <ul style="list-style-type: none"> ▪ Security Program Review ▪ Risk/Vulnerability Assessments ▪ Security Policy & Program Development ▪ Business Continuity Planning • Incident Management: <ul style="list-style-type: none"> ▪ Incident Response ▪ Digital Forensics ▪ Incident Resolution(IR) Procedure Development ▪ IR Table Top Exercises ▪ Application Security ▪ Source Code Review ▪ Database Security ▪ Secure Code Training for Developers ▪ Threat Modeling • Data Security: <ul style="list-style-type: none"> ▪ Data Leakage Protection ▪ Data Classification • Compliance (related to Federal Directives due to grant funding): <ul style="list-style-type: none"> ▪ FISMA, OMB Mandates, Agency Directives ▪ C&A's: NIST, DIACAP ▪ FDCC, HSPD-12 Regulations
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	<ul style="list-style-type: none"> ▪ PCI Scanning & Audits ▪ SOX, GLBA, ISO 27001
Security Integration (Near Term)	<p>Rationale: As part of future projects, Security should participate in upfront design and engineering as well as implementation of new tools, systems, and applications to ensure security is not an afterthought.</p> <p>Action:</p> <ul style="list-style-type: none"> • Implement a common security design and posture around the following technologies: anti-virus, application gateway, authentication, content management, end-point security, firewall/VPN, scanning, wireless, IDS/IDP, SSL/VPN, monitoring/management, security application, security event management, reporting, and traffic management.

3.2 Current Key Projects

A list of key initiatives (or projects) has been compiled and entered into the EAD tool. Interestingly, many of the “key” projects that the Departments identified were often the implementations of a new server and/or deployments of several new desktops units. While not wanting to diminish the importance of any project, in identifying the current key projects, SAIC decided to identify a few major projects for the CIO’s immediate attention having the potential to serve as strategic flagship projects to advance enterprise directions. **Table 30** lists these initiatives, provides a brief description, and the implications for the enterprise.

Table 30: Technical Infrastructure Service Maturity Analysis

Department	Key Project Description	Implications for the Enterprise
DHS	New MedQuest Eligibility System (Affordable Care Act) \$30 million new eligibility system to increase timeliness and transparency, electronically verify information, and interface with health insurance exchange. Replaces current 23 year old system.	Establish and leverage enterprise application integration capabilities
DHS	Benefit, Employment, and Support Services Division BPR Project BPR evaluation of the existing financial assistance and SNAP eligibility process, redesign work flow processes for efficiencies in issuing benefits; address document imaging and e-forms and portable devices to allow DHS staff to be more mobile in addressing routine tasks (e.g. child care licensing) and for responding to emergency disasters (e.g. emergency food stamps); explore the possibility of expanding the concept of telecommuting with the availability of portable devices.	Establish and leverage enterprise capabilities in BPR methodology, mobile apps, and telecommuting
AG	Hawai i Integrated Justice Information Sharing Program (HIJIS) Strategic initiative to build enterprise-wide integrated information sharing capabilities between justice agencies and other government entities throughout the State to improve public safety and enhance the efficiency of operations.	One of the largest, most successful information sharing initiatives in the State – pattern for broader adoption
DOH	Hawai i Health Data Warehouse Strategic initiative to standardize the collection and management of Hawai i’s health data; dedicated to providing useful data to support public health professionals, the community and health agencies to become more effective in the application of health data.	One of the most successful data sharing initiatives in the State – pattern for broader adoption

Department	Key Project Description	Implications for the Enterprise
DOTAX	Tax Modernization Strategic initiative to explore ways to streamline and modernize tax processing electronically so that it is more cost effective and efficient.	Position enterprise for broader Financial Management improvements
HHSC	Health IT Health information technology initiative to improve the quality and efficiency of health care through electronic health record (EHR).	Establish and leverage enterprise application integration capabilities
DBEDT/ DCCA	Hawai'i Broadband Initiative A major economic development initiative to provide statewide access to affordable ultra high-speed Internet by 2018. Positions Hawai'i to be the first state in the nation with 1 gigabit per second broadband connectivity at every public school, every public library, and every public university and college campus by using about \$33.6 million of federal monies received through the American Recovery and Reinvestment Act (ARRA).	Leverage connectivity for State offices at remote islands and improvements for State NGN

3.3 Other Areas of Note Related to As Is Information Technology

The IT environment within the State and within various Departments has undergone numerous assessments, audits, and reviews (e.g., numerous Departmental studies, *Audit of the State of Hawai'i IT: Who's in Charge?*" #09-06; Charter for Digital Governments, Hawai'i Transitioning to an IT Best Practice State; IT Technical Governance Committee's, *State of Hawai'i IT Transition Document*) performed by internal and external organizations and companies. Each report has put forth various recommendations, but there has been a common theme and similar, if not the same, recommendations. In fact, one common question asked of SAIC was, "How will this study be different?" Our response was that while, in many cases, SAIC's report (while far more extensive relative to each Department's mission, mission objectives, and services and the IT environment that supports them) will echo many of the same recommendations especially in relation to the governance and organization, data and information assets, applications portfolio, and technology infrastructure, the difference is the foundation from which the assessment occurred given:

- Strong gubernatorial and Legislative support and critical prioritization with the passage of Act 200 and Act 84
- Identification and hiring of the State's first CIO
- Establishment of OIMT
- Department and IT leaderships' overwhelming recognition of the need to enhance IT solutions in order to conduct the business of the State and service the citizens more effectively and efficiently
- Creation of an IT Strategic Plan
- Establishment of an IT Steering Committee to support the CIO and IT governance activities
- Mandated annual briefings to the Legislature regarding the status of IT and progress against the IT Strategic Plan.

These actions, in totality, provide evidence that the State is now ready to take the next steps in addressing IT needs and opportunities with both commitment and focus.

4.0 APPLICABLE BENCHMARKS

4.1 State of the States: Facing Budget Pressure

Like Federal and local government organizations and private sector entities, State government organizations continue to experience fiscal pressure from the lingering recession. The May 2011 National Association of State Budget Officers (NASBO) fiscal survey of State governments found that State General Fund expenditures remain below pre-recession levels and the Center on Budget and Policy Priorities reported that States' overall budget shortfalls for 2011 may amount to \$119 billion.^{xiii} Since the recession has exacerbated States' abilities to accurately predict revenues at the beginning of each fiscal year and 49 of the 50 State constitutions require a balanced budget,^{xiv} 23 States have had to implement mid-year budget cuts during 2011 and six states enacted mid-year tax and fee increases.^{xv} In addition to putting downward pressure on State budgets, the fallout from the recession has tended to *increase* the State workload as more citizens seek aid from the States. Additionally, PPACA has expanded the user base of the Medicaid program managed by the States (with no accompanying Federal aid to support additional administration costs) and requires the launch of State-based Health Insurance Exchanges by January 1, 2014.^{xvi}

In the State IT space specifically, NASCIO's 2010 survey of State CIOs revealed that State leaders expect two-thirds of State IT budgets to be reduced during the 2011-2013 period.^{xvii} Nearly 2/3 of CIOs also anticipate having to reduce IT staff in the future.^{xviii} Due to fiscal pressure, State IT organizations must justify costs and, now more than ever, position themselves as key business partners and creators of business value rather than as expensive overhead costs.

CIOs' predictions on IT budget changes for 2011-2013

- Decrease 64%
- Increase 13%
- Remain the same 23%



In addition to fiscal pressure, the “graying” of the State IT workforce looms large on the 3-8 year horizon for most States. Approximately one fourth of State CIOs predict that up to 30% of State IT employees are approaching retirement within the next five years.^{xix} The greatest risk this poses is in the inherent drain of institutional knowledge particularly of antiquated systems and applications. While States have been given a temporary reprieve due to some employees choosing to work beyond retirement age because of the recession, this is only a temporary fix.

4.2 State of the States: Responding to the Budget Pressure

These pressures are being viewed by some as a positive force and an opportunity for improving performance. The National Association of State Chief Information Officers (NASCIO) believes the “new fiscal pressure is actually working to help break down historical barriers to inter-agency collaboration and partnering, sharing services, and pooling of resources.”^{xx} And one CIO, in response to NASCIO's 2011 annual survey of state CIO's, shared that “The size of the IT portfolio increases, but the budget decreases; this has not been easy at all. The budget situation has provided us with a crisis, but because of that we are breaking through barriers that we would have never even been able to approach. We're doing amazing stuff, and some of our cross-boundary stuff is really fantastic.” Another indicated that, “We are doing things better, like using shared services, renegotiating contracts and exploiting the state government's economies of scale when purchasing.

We are making better decisions by looking at total cost of ownership. We are now looking at having agencies share applications across boundaries, instead of building them multiple times.”^{xxi}

In alignment with these pressures, consolidation/ optimization was identified by state CIO’s as the most prevalent management strategy among state government technology organizations in 2011.^{xxii}

All twenty of the states analyzed in this benchmark exercise have implemented or are engaged in implementing some level of consolidation/integration/optimization. These strategies have resulted in cost savings as high as \$14 million annually.

With so many consolidation efforts across the nation well underway or completed and the cloud environment becoming more mature, State of Hawai`i is an excellent position to benefit from lessons learned by other state government IT organizations. State of Hawai`i is also well positioned to capitalize on low-entry-cost technologies such as cloud computing to achieve significant cost savings and performance standardization and improvement.

4.2.1 Governance

Standardized technology governance is one of the benefits garnered from the nationwide trend toward consolidation/integration. The majority of States with federated IT organizations suffered from a complete lack of technology standards at worst and competing standards at best.

Designating governance structures early in the consolidation/integration initiative has proven critical to the success of these efforts. The majority of States analyzed, that successfully completed consolidation efforts, found that executive or legislative mandates, direct communication channels, governing committees representative of all stakeholders, and specific agreements with each agency upon which subsequent reporting was based were vital to prevent “cyclical” consolidation efforts (i.e., the CIO’s organization consolidating servers and then agencies coming right behind and re-installing agency-based servers). The tables below provide an overview of the IT consolidation efforts of Michigan and Utah including some of the lessons learned.

Table 31: Michigan Technology Consolidation Overview

Michigan’s IT Consolidation Overview	
Directive	Executive order
Centralized staff	Yes
Phased centralization	No. All staff and services moved under the authority of CIO on one day. Michigan recommends a phased approach for other States and standardization of processes/procedures prior to centralization.
Phases	<ul style="list-style-type: none"> • Centralization • Data Center Consolidation • Standardization and Consolidation
Length of effort	Moved 400 people in the first year. ^{xxiii} Standardization and consolidation still ongoing.
Savings/ benefits	Michigan’s IT workforce shrunk from 2,300 employees/2,300 contractors in 2002 to 1,700 employees/800 contractors in 2011. IT is more closely tied to agency needs. Between 2002 and 2008, savings totaled approximately \$100 million (24%). ^{xxiv}

Michigan's IT Consolidation Overview	
Other	<p>The State of Michigan was the first State in the nation to consolidate and centralize technology services. In 2001, the Department of Information Technology (DIT) was formed by Executive Order. Upon being launched in 2002, DIT consolidated 19 IT organizations and 2,300 employees. Additional activities included:</p> <ul style="list-style-type: none"> • Central IT platform – Initiated in 2007, the Michigan One initiative was designed to standardize file and print services, desktop installations, and security. All 55,000 desktops and 900 applications were transitioned to the new platform by 2010. Server reduction anticipated - 2,612 to 670. ^{xxv} • Data center consolidation – Consolidated 36 data centers into 3. • Technology standardization – 70 disparate email systems transitioned into 2. ^{xxvi} <p>Due to the success of Michigan's technology centralization/consolidation effort, DIT is now part of the Department of Technology, Management and Budget and the CIO has been tasked with applying centralization/consolidation principles to other administrative areas of the State (e.g., State facility management) to achieve savings beyond the technology space. ^{xxvii}</p>

Table 32: Utah Technology Consolidation Overview

Utah	
Directive	Legislative mandate.
Centralized staff	Yes. 900+ staff from 24 agencies was transitioned into the Department of Technology Services (DTS) under the purview of the CIO.
Phased centralization	Authorized in March 2006, all IT staff transferred to DTS in July 2006, and DTS began collecting fees from State agencies. Data center consolidation occurred January 2009 – June 2010.
Length of effort	Approximately three years.
Savings/ benefits	From FY 2007 to FY 2010, a cost savings of \$26.55 million was achieved. By managing to SLAs, DTS' customer satisfaction ratings in 2010 averaged 4.61 on a scale of 1 to 5. Utah was also the first State in the country to win the Center for Digital Government's Best of the Web award in consecutive eligible years. ^{xxviii} Since inception, FTE counts have been reduced by 148 (19.3%). Managed attrition has saved DTS \$14.8 million and covered employee compensation increases totaling \$15.9 million for the same period. Rural enterprise IT support has reduced travel costs approximately 20% ^{xxix} .
Other	<p>Utah's centralization/consolidation effort began with a legislative mandate in 2005. Anticipating full consolidation by mid-2006, the mandate established DTS and required the appointment of a CIO.</p> <p>To launch this initiative, DTS began with audit of assets and resources and centralization of staff. Additional activities included:</p> <ul style="list-style-type: none"> • Oversight – A DTS Transition Advisory Council (DTAC) was formed comprising senior department managers and several agency IT Service Directors. DTAC works with each agency to ensure business needs are met and presents/reviews

Utah

optimization opportunities via an established IT investment review process. The Technology Advisory Board, comprising sector, educational, and government members also provides guidance.

- Enterprise planning – In 2006, DTS began developing Strategic and Annual IT Plans. The first IT Strategic Plan was delivered to the legislature in 2006. Plan development involves key stakeholders; business leaders identify and discuss business needs and areas of potential collaboration; DTS reviews, recommends optimizations, and estimates costs; business leaders and DTS jointly fund and launch the initiatives.
- Managed desktop – prior to 2005, Utah had 369 “standard” desktop configurations and 22 versions of word processing software in use. DTS standardized on a statewide desktop image and saved \$3.5 million annually on desktop purchases by accessing WSCA.
- Data center/server consolidation – DTS consolidated 35 data centers into 2 over 18 months saving \$4 million annually, reducing servers from 1864 to 591, and providing enhanced security and performance. One example of performance enhancements achieved via consolidation/virtualization was a 60% performance gain on a regular batch job within the Department of Workforce Services. Another was that total runtime for statewide payroll decreased to 3.5 hours from 39 and provided a cost avoidance of \$300K in hardware needs.^{xxx} For more details on this initiative and lessons learned, see <http://www.cio.gov/documents/Utah-data-consolidation.pdf> and <http://dts.utah.gov/architecture/datacenterconsolidation/documents/DTSDataCenterConsolFinalReport.pdf>.
- Centralized support – DTS consolidated 22 separate agency-based help desks into one centralized support team^{xxxii}.
- Online services – With DTS leadership, the number of online services in Utah grew from 200 in 2004 to over 900 in 2010. Utah.gov receives more visitors per capita than any government website in the U.S. and more unique monthly visits than Colorado, Arizona, Nevada, and Idaho combined.
- Customer focus – Emphasized communications via a formal communications plan including scheduled email newsletter updates. DTS designated 24 Agency IT Service Directors who serve as the liaisons between DTS and the agencies. DTS also created service-level agreements and manage performance to these agreements^{xxxii}.

DTS supports over 22,000 network connected devices, over 1 million emails per business day, 500+ servers, over 20,000 desktops, 890+ business applications, and 14,600 service requests per month^{xxxiii}. In 2007 and 2008, DTS operated on a net negative income due to start-up costs and unfunded employee compensation. By FY2009, DTS was operating with a net positive income and purposely used extra funds to pay for new projects, investments and to prevent raising service rates. Maturation of the technology environment continues:

- Email – DTS is currently pursuing a Cloud-based email service to replace the existing, end-of-life system. Once a contract is in place, DTS plans to offer use of this system to city and county governments and educational institutions^{xxxiv}.
- Mainframe – DTS mandated that legacy applications be retired from the mainframe by 2013.
- Desktop virtualization – Planned for 2010-2013.

Utah	
	<ul style="list-style-type: none"> Enterprise Planning – Four communities of interest have been formed (government operations, social services, public services, regulatory services) and each State agency assigned to at least one. These communities are tasked by the Governor's office with identifying programs and data that can serve multiple agencies. DTS serves as a facilitator and "optimization consultant" to help each community reach its goal. ^{xxxv}

To gain buy-in for consolidation/integration initiatives, 45% of States analyzed have established a formal Customer Relationship Manager (CRM) role in their central IT organization, tasked specifically with serving as the interface point between agency leadership and the IT organization. To further support this customer focus, 60% of the States analyzed have selected ITIL as the framework of choice for structuring their service management model. Since the response of States to fiscal and other pressures centers on collaboration and consolidation initiatives, it comes as no surprise that the IT management strategy with the highest adoption rate, among IT organizations as reported by Computer Economics, is the establishment of an IT Steering Committee.

4.2.2 Organizational Structures

Organizational structures vary from State to State, but the majority of States are moving toward integration of IT resources. In 20% of the States, all IT staff/services were centralized under the CIO; in the remaining 80%, some services are managed by a central IT organization and some are managed within each agency.

In at least seven of the 20 (35%) States analyzed, the CIO reports directly to the Governor. Given the trend toward integration, it is of note that approximately 35% of State CIOs have been given the authority to approve IT agency budgets, effectively making them a "paper tiger"^{xxxvi}. To be effective, governors and legislatures need to vest CIOs with authority to participate in the agency-IT budget process, review all State-funded IT purchases, and oversee a statewide portfolio management process. ^{xxxvii}

4.2.3 Disaster Recovery and Continuity of Operations Planning

Fourteen of the 20 states (70%) benchmarked in this study have implemented some level of DR planning. DR plans vary greatly by State; the degree of enterprise-wide disaster planning is somewhat linked to the level of consolidation and integration within the enterprise. As data center consolidation, virtualization, and Cloud computing become prevalent, DR planning efforts will continue to grow.

4.2.4 IT Procurement

In response to fiscal pressure, States are pursuing alternative funding sources for IT projects. The implementation of self-funded State government portals began has become popular over the past decade. With increased fiscal pressure due to the recession, this trend has grown. Currently, at least 20 States, including Hawai'i, have implemented the self-funded web-portal model, delivering efficiencies without expenditure of appropriated funds. In addition to user-fee revenue, other alternative IT funding strategies pursued by States include grant funding (private and public grants), retaining technology funds that remain unspent at the end of a given fiscal year, reallocating project savings to fund upcoming projects, issuing project bonds through the State's bonding authority,

benefits funding (i.e., fund the project through additional revenues generated by the project upon implementation), selling bulk data to private entities, public-private partnerships and public-public partnerships. Specifically in the cyber security space, Federal government funding opportunities are increasing (e.g., DHS state grants) giving States an opportunity to implement required security measures with limited state outlay.^{xxxviii}

In addition to seeking new funding sources, States are also centralizing IT procurement within the State and “looking beyond their borders” for opportunities to partner with private-sector organizations, local governments, higher education institutions, and other States to leverage the power of collective purchasing.

- *Centralized IT procurement:* The Indiana Office of Technology (IOT) approves all technology purchases. Savings have been achieved via consolidating multiple contracts into enterprise-wide agreements and re-negotiating contracts based on new standards, larger quantities, etc. One example is when IOT negotiated a statewide cell phone plan into an agreement that mimics the popular, private “family plans;” this new arrangement saved the State \$1 million.^{xxxix}
- *Partnering to procure:* IOT found that approximately two thirds of the PCs purchased on a contract the State made available to local governments and educational institutions were purchased by local governments; this partnership greatly increased the buying power of all participants.^{xl}

Other states have also found savings via processes such as “bid-within-a-bid” (i.e., vendors are allowed to bid sections of a project) and indefinite delivery indefinite quantity (IDIQ) contracts in which vendors compete against each other under a master contract.^{xli}

4.2.5 Security and Privacy

With more State government-to-citizen services being offered online and more States embracing social media communication tools, security risks for State governments are growing exponentially. To address these additional risks, many States (92%) have designated an Enterprise Chief Information Security Officer (CISO) tasked with developing security standards, providing security training, and offering other governance guidance. Fifty-five percent of States have documented and approved information security strategies; the majority (90%) prefers the National Institute of Standards and Technology (NIST) framework. While these initiatives represent a vast improvement over state security management maturity levels of just a few years ago, only 43% of state CISO’s have jurisdiction over information security budgets and most State security budgets are slim, ranging from 1-3% of the total technology budget. States also lack a nationwide governing body (such as FISMA) and most CISO’s report performance to the CIO rather than to the CIO and the Legislature, Governor, or State Attorney General. This limits actual adherence to security policies.^{xlii}

“A scan of public data loss notification websites indicates that more than one-fifth of reported data breaches in 2009 occurred in the state and local government sectors.”
NASCIO 2010 Cybersecurity Survey

States capture and maintain a wealth of PII. To address this situation, 92% of States have laws in place guiding the definition and use of sensitive information and 18% have designated a Chief Privacy Officer (CPO) responsible for assessing the management of privacy data across the State enterprise (Executive Branch).

More work remains to be done in the security space. Most states (80%) have fully deployed antivirus, firewall, and IDS/IPS solutions, but 45% of States are only “somewhat confident” of their ability to protect assets from external attack.^{xliii}

4.2.6 Open Government and Social Media

Ninety-five percent of the 20 States analyzed in this study use social media tools. The emergence of social media (e.g., YouTube, Twitter) as a viable communication tool in the State environment has leapt ahead of most States’ policy creation processes. As of 2010, only about one fourth of States had developed a statewide policy to govern social media use and some State Attorneys General have prohibited the use of certain types of social media based on legal concerns.^{xliiv} See the *Benchmarking Final Report* for links to sample State government social media policies and standards.

Social media ...“the biggest business technology story that the IT department is barely involved in.”

“5 Ways Social Will Change The IT Profession”

(http://www.informationweek.com/thebrainyard/news/social_networking_consumer/231601007/5-ways-social-will-change-the-it-profession)

Driven by the need to report on and justify Federal stimulus dollars, several States have established transparency websites that give citizens easy access to State government budget and expenditure data. Oregon’s transparency web site is a good example of a mature transparency site.

4.2.7 Collaboration and Workflow

Nine of the 20 States (45%) analyzed provide enterprise-level collaboration tools. To prevent a myriad of distributed SharePoint implementations cropping up across the State, several State IT organizations offer enterprise SharePoint as a service. Additionally, a number of organizations are assessing Google Apps as a collaboration option.

4.2.8 Enterprise Applications

Infrastructure services (e.g., email, hosting, network) are the technology areas most organizations tap first for enterprise consolidation. Nineteen of the 20 States (95%) have implemented centralized or shared email services.

- *Alabama:* In 2005, Alabama’s new governor tried to send an email to all State employees and could not due to lack of a centralized email service. At the time, Alabama utilized over 50 unique email systems. Some agencies had multiple email servers installed. The governor issued an executive order and Alabama’s IT organization was given 18 months to consolidate email services; as of May 2011, 45 of the 50+ email systems have been consolidated.^{xliv}
- *Florida:* The Agency for Enterprise Information Technology (AEIT) is facilitating the transition to a new, enterprise, outsourced email service in FY 2010-2011; tentative date for beginning of transition is October 2011, with expected completion December 2012. Expected savings for FY 2011-2012 is \$735K and over the life of the seven year contract, \$15 million. Input was solicited from agencies regarding a draft standard for State email addresses (final rulemaking August – September 2011).^{xlvi}

Another key enterprise application focus area among State governments is the modernization of legacy applications. As a result of the “graying” of the State IT workforce, some States are including application portfolio management and modernization as a core focus of their consolidation/integration initiatives and utilizing multiple technology strategies to update these systems including Enterprise Architecture Integration (EAI), SOA, data conversion, virtualization, COTS replacement, and application wrapping.

- *North Carolina*: North Carolina implemented an applications portfolio management tool that allows them to maintain an accurate inventory of applications, analyze each application within the context of the entire portfolio (considering such criteria as cost, performance, risk, etc.), and develop end-of-life planning scenarios. ^{xlviii}

4.2.9 Enterprise Infrastructure

Virtualization and Cloud computing head the list as the top technology focus areas among state IT organizations for 2011. Seventeen of the 20 States analyzed (85%) have implemented or are pursuing the implementation of server and/or desktop virtualization, many as a best-practice first step toward provisioning a Cloud solution. Thirteen of the 20 States (65%) are actively pursuing a Cloud solution. Thirteen percent of States responding to the annual 2010 NASCIO survey reported that they were undertaking a Cloud computing pilot. ^{xlviii} Based on two studies completed in 2010 and 2011 by the Ponemon Institute, the majority of Cloud providers who participated see security as their customers' responsibility and most did not have dedicated security personnel. ^{xlix} In recognition of some of these pitfalls and also aware of some of the significant value public Cloud solutions offer, the majority of States analyzed in this benchmarking effort appear to be pursuing a hybrid solution versus a strict private or public solution. The paths States are taking to enter the Cloud computing space varies; a few key examples are provided below:

- *Montana* – planning a private Cloud with access to a public Cloud for just-in-time delivery expansion capability during high load times.
- *Montana, Oregon, Utah, and Colorado* – teamed up to release a single Request For Information (RFI) soliciting information about public, Cloud-based GIS solutions.
- *Colorado*: Consolidation began in 2008. Existing assets included 40 data centers with 1,800 servers (including 122 email servers hosting three types of email systems). The Office of Information Technology envisioned gaining the ability to share resources among 17 state agencies and also with local jurisdictions and schools across the State. To accomplish this, Colorado decided to implement a hybrid Cloud solution with three elements: a private Cloud for line-of-business/highly secure data and systems, a virtual private Cloud for archival storage/disaster recovery, and a public Cloud for e-mail, office productivity applications, and websites. To quickly establish the private Cloud, Colorado will overhaul an existing data center with server virtualization. Colorado's public Cloud access was piloted in three agencies with access to Google Apps for email and office productivity tools. Based on pilot results and final

NASCIO's annual survey of state chief technology and information officers identified the top 10 management focus areas for 2011 as follows:

1. Consolidation / Optimization
2. Budget and Cost Control
3. Health Care
4. Cloud Computing
5. Shared Services
6. Governance
7. Security
8. Broadband and Connectivity
9. Legacy modernization
10. Data and Information Management

Top 10 technology focus areas for 2011:

1. Virtualization
2. Cloud computing
3. Networking
4. Legacy application modernization / renovation
5. Identity and access management
6. Document/Content/Records/E-mail management
7. Security enhancement tools
8. Business Intelligence (BI) and analytics applications
9. Enterprise Resource Planning (ERP)
10. Social media and networking

cost-benefit analysis, all 27,600 Executive Branch employees will be transitioned. (Early cost benefit analysis indicated the potential for \$8 million in annual savings plus an additional \$20 million in cost avoidance over three years.)¹

- *Kentucky* – The Kentucky Department of Education switched 700,000 PreK-12 users to Microsoft’s Live@edu Cloud service for email, communications, and collaboration for an expected savings of \$6.3 million over the course of four years. The major transition (500,000 users) occurred over one weekend.ⁱⁱ

In alignment with the virtualization and Cloud computing trends, 50% the States analyzed have completed or are planning a data center consolidation project. And 50% of the States analyzed have adopted the NASCIO recommended NIEM data standard.

4.2.10 Wireless and Mobile

Mobile computing is another technology area growing almost faster than State policy and support frameworks can accommodate. Eighty-five percent of the States analyzed have implemented mobile applications; the most frequent mobile solutions provide access to the State web site; motor vehicle applications are the second most frequent. Figure 27 highlights some of the services that State government organizations are most frequently offering via mobile applications.

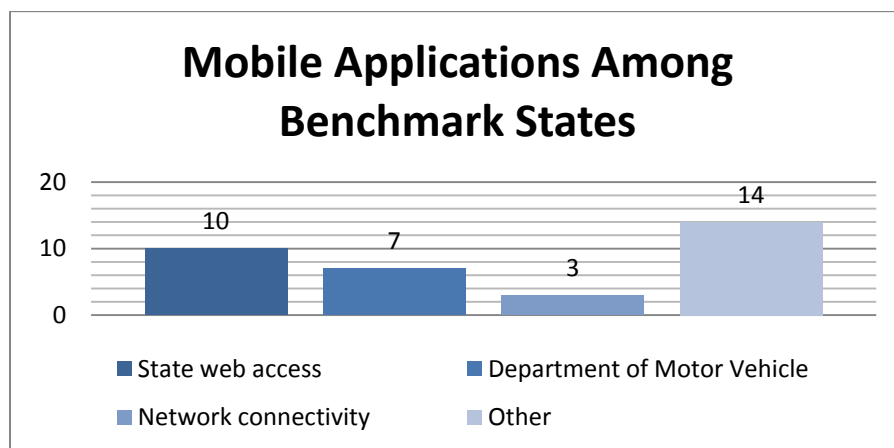


Figure 27: Mobile Application Types Implemented Among Benchmark States

States have found that syncing multiple types of mobile devices (e.g., Blackberry devices) with the State’s email system can be a challenge. Montana’s State Information Technology Services Division (SITSD) addressed this by implementing “ActiveSync” which allows all mobile devices (regardless of type) to send/receive State email.

4.3 Examples of Process and Implementation Maturity within the State of Hawai‘i

Within the State, there are examples of IT processes and implementations of note. In addition, there are mature IT processes and implementations that can be evaluated for use statewide. Table 33 depicts SAIC’s assessment of each of these with blue shading delineating the Department that has elements of the focus area implemented, and green shading denoting that the identified Department has a level of maturity with the majority of items associated with the focus area.

Table 33: IT Process and Implementation Maturity is Available to Leverage Statewide

		Departments																				
		Blue shading delineates the Department has elements of focus area. Green shading denotes the Department has a level of maturity with the majority of items associated with the focus area.																				
Top Ten Focus Areas		GOV/LG	AG	HDOA	B&F	DAGS/ICSD	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	DLNR	PSD	DOT	DOTAX	UH	Benchmark Related to Other States	
Governance and Organization																					<ul style="list-style-type: none"> IT Steering Committee (90%) Executive or Legislative order directing consolidation/integration (majority) Charge-back/cost recovery (80%) Published service catalog (90%) Service-level agreements (50%) Standardized policies, processes, technical configuration (95%) Enterprise standards/architecture (55%) IT operational spend: \$5-\$13,000/user Central IT staff to end user ratio: 46:1 Portfolio management process (multiple) 	<ul style="list-style-type: none"> CRM role within IT organization (45%) ITIL implementation (60%) CIO's approve IT budgets (35%) State-wide technology asset inventory (20%) CIO reports directly to Governor (35%) All IT staff/services centralized under CIO (20%) Some services managed by a central IT organization/some managed within each agency (80%) CISO's report to CIO (76%)ⁱⁱⁱ
DR & Continuity of Operations																					<ul style="list-style-type: none"> DR plan (70%) 	
IT Procurement																					<ul style="list-style-type: none"> Self-funded web portals (20 States) Technology inventory asset management (20%) 	<ul style="list-style-type: none"> Partnerships with private-sector organizations, local governments, and higher education (growing)

		Departments																				
		Blue shading delineates the Department has elements of focus area. Green shading denotes the Department has a level of maturity with the majority of items associated with the focus area.																				
Top Ten Focus Areas		GOV/LG	AG	HDOA	B&F	DAGS/ICSD	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	DLNR	PSD	DOT	DOTAX	UH	Benchmark Related to Other States	
Security & Privacy																					<ul style="list-style-type: none"> Established Enterprise CISO role (92%)^{liii} CISO's responsible for information security budget (43%)^{liv} Documented/approved information security strategy (55%)^{lv} for sensitive information (92%)^{lvi} CPO role (18%) Privacy law in place guiding definition/use 	<ul style="list-style-type: none"> NIST- chosen framework (90%)^{lvii} Information security budget 1-3% of total IT budget (50%)^{lviii} Internal breaches deemed accidental (55%) Fully deployed antivirus, firewall, IDS/IPS (80%)^{lix} Enterprise privacy program in place (24%)
Open Government & Social Media																					<ul style="list-style-type: none"> Social media tools (95%) Statewide policy governing social media use (25% as of 2010)^{lx} Prohibit use of social media (7%)^{lxi} 	<ul style="list-style-type: none"> Social media ... "the biggest business technology story that the IT department is barely involved in"^{lxii}
Collaboration & Work Flow																					<ul style="list-style-type: none"> Enterprise-level collaboration tools (45%) 	<ul style="list-style-type: none"> A number of states have deployed collaboration tools (e.g., SharePoint) and some are assessing Google Apps
Enterprise Applications																					<ul style="list-style-type: none"> Enterprise/shared email (95%) Legacy system modernization (growing trend) Business intelligence systems (60%) Enterprise GIS (70%) 	<ul style="list-style-type: none"> States with health insurance exchanges (12%) SOA (45%) Share data (or are actively planning to) via enterprise systems (e.g., ERP) (50%)
Enterprise Infrastructure																					<ul style="list-style-type: none"> Virtualization (85%) Most States prefer a hybrid Cloud environment over a public or private environment Data center consolidation (50%) 	<ul style="list-style-type: none"> States actively pursuing Cloud solution (65%) Adopted NIEM data standard (50%)

		Departments Blue shading delineates the Department has elements of focus area. Green shading denotes the Department has a level of maturity with the majority of items associated with the focus area.																					
Top Ten Focus Areas		GOV/LG	AG	HDOA	B&F	DAGS/ICSD	DBEDT	DCCA	DOD	DOE	DHHL	DOH	DHRD	DHS	DLIR	DLNR	PSD	DOT	DOTAX	UH	Benchmark Related to Other States		
Wireless/Mobile																						<ul style="list-style-type: none"> • Mobile applications (85%) 	
Process Engineering																						<ul style="list-style-type: none"> • Consolidation preceded by standardized processes critical 	

5.0 GAP CLOSURE WITH TRANSFORMATION AND PROJECT SEQUENCE PLANNING RECOMMENDATIONS

The following section provides a roadmap of activities that will close (or begin to close) the gap between the As Is and To Be environments. SAIC has outlined these gap closure actions and project activities in a sequence (Immediate-Term, Near-Term, and Long-Term perspective). The following identifies the general timing for the sequencing terminology:

- Immediate-Term – An action that must begin now both to have maximum impact and in order to prepare for future actions of Near- or Long-Term projects. Completion for immediate actions will be determined by the magnitude of the effort; however, it should be shorter in duration than Intermediate- or Longer-Term efforts.
- Near-Term – An action that can begin now, but with somewhat of a lesser urgency than Immediate-term activities. These projects may be completely self-contained without dependencies to Long-Term activities but may also prepare for the initiation of Long-Term initiatives. Completion of Near-Term actions will be determined by the magnitude of the effort and will generally take more time to complete than Immediate-Term projects but less time than Long-Term efforts.
- Long-Term – Those actions that can begin now due to urgency, complexity, and overall length of time to plan and execute. These projects may have key dependencies with associated Immediate- and/or Near-Term activities that must be completed prior to initiation and/or completion of a Long-Term project. Completion of Long-Term activities will be determined by the magnitude the effort takes and must be longer to complete than Immediate- or Near-Term projects.

Figure 28 provides a summary view of the three terms in relation to the planning horizon for the next four years.

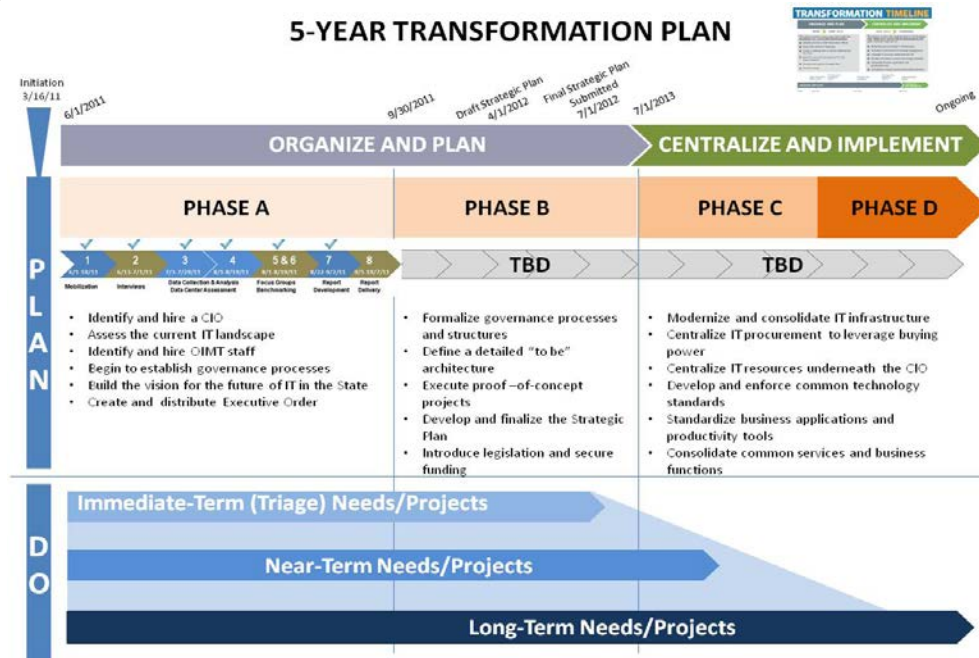


Figure 28: 5-Year Project Sequencing Overview

5.1 Transition and Sequencing Activities

The 20 recommendations and actions cited throughout the report have been prioritized and sequenced. Figure 29 provides an overarching perspective to project sequencing.

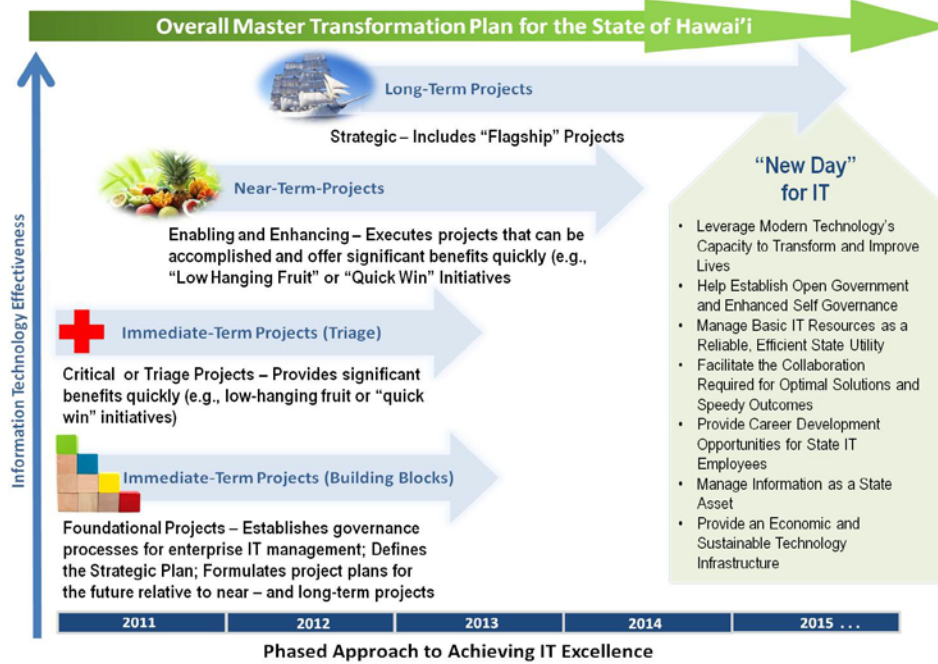


Figure 29: Master Project Sequencing Overview

Figure 30 characterizes the relative activity levels for planning, implementing, and then reaching a steady state operation in relation to the 10 focus areas. Table 34 contains the complete list of actions, integrated across the assessment areas and recommendation noted above. The table organizes the actions by the top 10 focus areas and “schedules” them using the general timing described above.

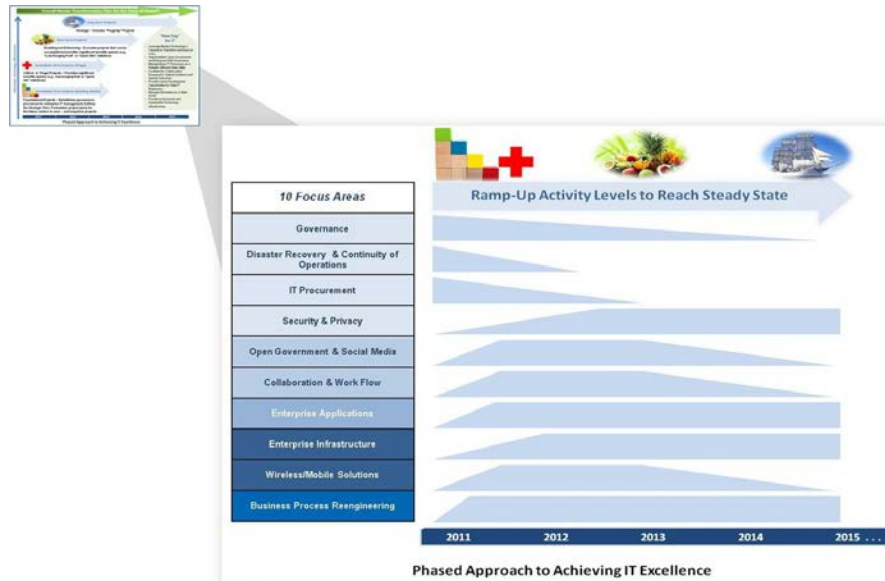


Figure 30: Ramp-Up Characterization

Table 34: Comprehensive Set of Recommendations

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
			IMMEDIATE-TERM	✓		
Governance	Leadership & Management	6	Articulate the intent of HRS 23-47 regarding the “development, implementation, and management of statewide IT technology governance” to include the responsibility and authority to participate in the agency-IT budget process, review of all state-funded IT purchases, and oversee the IT projects, application portfolio, and technology architecture management.	✓		
			Charter (i.e., define mission, objectives, membership, roles and responsibilities) governance committees and work groups.	✓		
			Call the first IT Steering Committee meeting with the identified members; review overarching plans for IT governance and creating the strategic plan.	✓		
			Re-charter, re-invigorate, and re-name the IT Technical Governance Committee (ITGC - Technical) as the "CIO" Council.	✓		
			Form a Business Process Council, given the need to aggressively address process reengineering activities, to promote and support this function.	✓		
			Establish a robust communications process to ensure all stakeholders are informed about activities associated with establishing governance processes and activities associated with OIMT.	✓		
	Policy & Organization	6, 9, 11	Staff a Financial and IT Acquisition Manager to support investment activities, spearhead reengineering of the IT acquisition process, lead implementation of a fee-for-service model for enterprise IT services, support preparation of all funding requests to the Legislature going forward, and continue tracking and validating IT costs.	✓		
			Staff a Labor Relations/HR Manager who can spearhead the development of a collaborative working relationship with the bargaining units, support development of re-training strategies, and lead the effort to revitalize the project to modify job descriptions, salary bands, and merit compensation approaches for the IT job family.	✓		
			Identify a highly skilled detailee, contractor, and/or other team member who can coordinate and work through high-priority BPR process mapping and reengineering sessions.	✓		
			Augment OIMT staff: Utilize detailees from other Departments (even if only through a part-time commitment). Effectively leverage steering councils and working groups to augment the organization. Identify and leverage contract staff in a targeted manner.	✓		
			Utilize the 12 competency areas to define all the requirements of governance and ensure that each component is addressed with a focused project plan for implementation to maximize organizational effectiveness. Establish architecture and governance roles and responsibilities within the enterprise architecture competency area program plans.	✓		

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
			Support creation and/or enhancement of policies being requested by the Departments regarding the use of social media, cyber security, IT acquisition reporting thresholds, etc.	✓		
	Human Capital	10	Invite active participation by the bargaining units in IT initiatives and projects that will have staff impacts (e.g., new technology insertion, BPR, training/retraining, IT job family assessment and modification.)	✓		
			Begin immediately identifying a staff retraining program in cooperation with the bargaining units.	✓		
			Standardize job classification to create parity with others performing the same duties and skills as part of IT transformation. Work with union leaders to ensure the member status would not change as long as the union members remained with the State.	✓		
	Investment and Capital Planning	6	Create a simple, straight-forward investment review process that can be used as a basis for investment and capital planning evaluation activities.	✓		
			Utilize the CIO Council as the idea entry point for new investment ideas/ requirements and leverage various working groups in the evaluation of investment approvals/prioritizations.	✓		
	Business Transformation Methodology	2, 6	Establish a go-forward BPR methodology using the GSA SLAM model and begin continual lessons learned on improving the BPR approach. Include specific focus on improved integration, elimination of manual interfaces, and streamlining of cross-organizational interaction.	✓		
			Begin BPR, process evaluation, and requirements definition activities in conjunction with stakeholders Departments.	✓		
	Technology Management & Assessment	11	Review the IT Transition Document prepared by the ITGC – Technical, address suggested opportunities for organizational alignment, and make go-forward decisions based on each (specifically the opportunities to first plan and integrate technology infrastructure components to stabilize, rationalize, and modernize to enhance efficiency and cost-effectiveness).	✓		
	Business Process Reengineering & Enterprise Application Solutions	Check Printing	5, 17	Implement a check printing and processing solution. Implement near-term enhancements to the legacy payroll system to automate EFT.	✓	
Financial Management		Initiate BPR assessment, solution selection, and implementation of a new enterprise solution for financial management. Evaluate an ERP-type replacement for broad Departmental/functional integration.		✓		
Data Entry		Initiate a project to eliminate and minimize Departmental processes requiring data entry.		✓		
Payroll		Replacement of the payroll system is one of the most urgent needs within the application portfolio. Numerous payroll applications exist that should be evaluated for implementation, either within the context of an ERP selection and implementation or standalone.		✓		

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
	Procurement and IT Acquisitions		Initiate BPR assessment of the State procurement process. Leverage previous committee work to streamline procurement.	✓		
	Time and Attendance		Initiate implementation of common enterprise time and attendance system.	✓		
	Legislative Bill Tracking		Initiate implementation of a common enterprise legislative bill tracking system.	✓		
	Constituent Relations Tracking		Initiate implementation of a common enterprise constituent relations tracking system.	✓		
Disaster Recovery	Hosting Environments, Cloud, & Data Center	20	Create a cross-functional team chartered to determine where the “primary” data center should reside and develop an overall DR approach. Work collaboratively with the Departments to identify and create a funding strategy to resolve DR concerns.	✓		
IT Procurement Solutions	IT Acquisition Review	6	Begin immediately gathering and managing data related to planned acquisitions by leveraging the EAD tool as a mechanism to review, evaluate, and capture Departmental acquisition plans.	✓		
	IT Acquisition Process		Review the IT procurement process and how the SPO, CIO, and the OIMT team can support and enhance IT acquisitions.	✓		
	IT Acquisition Agreements		Evaluate, in conjunction with the SPO, the pros, cons, and steps required for the State to sign a cooperative agreement with GSA to buy from price-competitive commodity and consulting schedules and include a review of the number of companies in Hawai‘i holding GSA schedules.	✓		
Enterprise Application Solutions	Application Portfolio Management	17	Identify all projects and begin gaining visibility into application scope, potential reuse, or consolidation with other efforts and guidance on enterprise standards.	✓		
			Identify flagship/strategic projects to establish key segments of the enterprise application environment area of the technical architecture.	✓		
	Enterprise Architecture	18	Leverage the CIO Council to develop an immediate baseline of current assumptions regarding sunset, legacy, preferred, and standard application platforms, architectural stacks, and technologies within the technical architecture.	✓		
			Develop standard enterprise application solutions, capabilities, and technologies based on current investments within the State for the following critical areas: workflow system; collaboration system; document management system; GIS software platform/technology; and IT infrastructure management/enterprise system management tool.	✓		
Enterprise Infrastructure	Enterprise Systems	20	Unify the Active Directory infrastructure. Design and deploy a unified Active Directory to store all information and settings for deployment in a central database.	✓		

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
Solutions	Management		Deploy Secure DNS.	✓		
	Enterprise Email System		Stabilize the email system versions and enhance overall enterprise capabilities including issues regarding a global address list and shared calendaring. Assemble a working team to evaluate email, calendar, and collaboration requirements across the State.	✓		
Wireless/ Mobile Solutions	Wireless & Radio	20	Create a wireless data team to study the costs and benefits of Wi-Fi deployment. Create a wireless policy to address rogue access points and to ensure Departments that have deployed full wireless solutions meet specified levels of security and monitoring for unauthorized access. Collaborate with DOE's wireless project for the school buildings. Synergies between vendors may exist that could be replicated at the Department level.	✓		
			NEAR-TERM		✓	
Governance	Information Resources Strategy & Planning	6	Develop a strategic plan that highlights key themes been identified as part of the State's goal to transform government. Utilize this assessment report as a resource to create an outline and first draft of the IT strategic plan and utilize the wealth of information contained in the EAD tool to begin outlining tactical project plans. Evaluate and leverage, as appropriate, the Departmental governance "building blocks" implemented within the Departments (DHRD, DOE, UH, DHS, DOH, AG, DOTAX, and DCCA).		✓	
	Policy & Organization	12	Analyze the number of FTEs within ICSD who are devoted to supporting DAGS-owned systems and processes to determine exactly how many resources are devoted to enterprise services versus DAGS-specific functions and systems. Consider reassigning ICSD individuals supporting services statewide (State-level functions) (e.g., networking, website development and management, cyber security, server management, telecommunications, and hosting/housing functions) to OIMT.		✓	
		11	Assess immediate opportunities to provide additional support to the Departments with little or no IT support.		✓	
			Spearhead a project to formalize documentation, relative to the IT environment statewide, that only exists with key personnel.		✓	
		6	Define applicable required IT policies/standards and guide adoption by the Departments. Work collaboratively with the Departments to understand their issues and needs relative to the policies area and how to minimize the impact of changes. Leverage existing materials and approaches that have been developed within the Departments to serve as a starting point for OIMT. Establish an approach to measure overall implementation effectiveness.		✓	
			Thoroughly review all existing ICSD policies and procedures, using COBIT standards as a basis, and build a plan to either rescind them and/or update them.		✓	
	IT Project/ Program Management	6	Create a best practices-based project management approach. Establish an effective PMO function tailored to meet the State's needs and support the Departments in their project management activities with streamlined tools and procedures.		✓	

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
			Leverage the EAD tool as a resource for maintaining the inventory of IT projects statewide.		✓	
			Leverage existing project management models in use (i.e., DAGS, DOT) or under development (e.g., DOE) within the State, as appropriate for alignment.		✓	
	Process/ Change Management	6	Institute an enterprise-level change management process to communicate, assess impact, and disposition/schedule changes to the enterprise infrastructure to manage overall systems stability.		✓	
			Leverage the EAD tool to support change management until more robust tools, such as Remedy, can be selected and procured.		✓	
	IT Services Financial Management	9	Understand the amount of IT that is funded directly by Federal grants as part of larger programs. This information is not always tracked explicitly by the Departments.		✓	
	Technology Management & Assessment	6	Evaluate the existing technology environment using the EAD tool.		✓	
			Establish a new technology assessment approach to gauge potential adoption of new technology and processes.		✓	
			Create a system development lifecycle methodology, in conjunction with the Departments, that is agile but comprehensive enough to ensure effective results. Agile Unified Process and/or SCRUM should be considered. Address a cultural reality that assumes system implementations take years not weeks.		✓	
	Enterprise Architecture	6, 14, 1	Adopt an agile and pragmatic architecture approach that can be iterated as IT matures within the State and that places importance on rapid incremental progress by partitioning architecture development into high priority "segments" aligned with the BRM.		✓	
			Establish an architecture and governance methodology for both shared data and web services as part of the overall enterprise architecture approach.		✓	
			Outline, within the IT Strategic Plan, desired objectives for integration and sharing of data across the State and within Departments as well as the strategies, approaches, and capabilities to be adopted for accomplishing this by obtaining broad buy-in and support.		✓	
			Create an initial high-level enterprise architecture structure, including a data architecture, that outlines prioritized subject areas for cross-departmental sharing and a technical architecture that moves the State toward smart integration and consolidation of technology elements.		✓	
			Maintain and continue to refine the BRM as a tool to support statewide evaluation of service elements delivered to the citizens of Hawai'i and internal support services. When evaluating processes or implementation ideas, utilize the "lines of business" approach to gather input and promote implementation.		✓	

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
			Establish a shared data and web services governance structure to bring together stakeholders to manage brokering of agreements on data standards; assess changes related to shared data; mirror the two levels of interest within data standard agreements: (1) data that is shared statewide and (2) data that is shared within a Department or line of business.		✓	
			Evaluate and leverage, as appropriate, a shared data architecture approach implemented within the Hawai'i Information Justice Information Sharing (HIJIS) initiative within the AG.		✓	
Business Process Reengineering & Enterprise Application Solutions	Program/Project Management Process Definition	5, 17	Collaborate with the Departments who have, or are building, project management processes and approaches and then create and implement a statewide approach to IT program/project management.		✓	
	Inventory/Asset Management		Initiate BPR assessment, solution selection, and implementation of a new enterprise solution for inventory/asset management. Leverage the existing investment in Maximo (as an option).		✓	
	Document and Records Management		Initiate implementation of a common enterprise document and records management system.		✓	
	Longitudinal Data Enterprise Solution		DOE and UH are working a longitudinal solution. Multiple organizations must provide information/files to ensure accurate and complete longitudinal reporting as required by Federal grants. Assess how to more effectively collect longitudinal information in an automated manner from a truly enterprise perspective.		✓	
	Affordable Care Act		Implement an integrated enterprise solution to the Act's requirements, involving all required stakeholders: DCCA, DHS, and DOH. Use as a flagship initiative to move forward enterprise application integration objectives.		✓	
	Neighbor Island Solutions		Initiate assessment and consolidated improvements of several technology fronts to enhance overall connectivity of islands including video sharing (dedicated, web-based, and mobile), improved bandwidth, and desktop virtualization. Leverage the Hawai'i Broadband Initiative which addresses high-speed Internet access for the residential and commercial market.		✓	
	Human Resources Management System		Upgrade PeopleSoft and roll-out ESS and MSS capabilities.		✓	

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
Security and Privacy	Information Security & Assurance	6	Perform a comprehensive risk-based evaluation of the information security posture working in collaboration with the Departments and the Information Privacy Security Council, as appropriate.		✓	
			Address immediate concerns with solutions that can be leveraged statewide.		✓	
			Take advantage of the “models for use” within the State and identified in this report and leverage these as starting points.		✓	
	Security Integration and Event Management	20	Audit existing log files to ensure that all sources are reporting security events and logs to ArcSight collectors.		✓	
Collaboration & Work Flow	Enterprise Data Analytics Solutions	15	Establish a standard data analytics solution and approach with standard methods, skilled resources, and tools. Evaluate and leverage, as appropriate, notable implementations of end-user data access systems to make critical data available for analysis and decision making. Specifically: FAMIS Data Mart, DOH Data Warehouse, and Juvenile Justice Information System (JJIS). Direct the design and implementation of shared data sources for user data sharing and analytics through the use of enterprise flagship projects for implementation.		✓	
	Enterprise Collaboration Solution	15	Establish standard collaboration solutions across the State, adopting technology platforms such as Microsoft SharePoint or Lotus Domino Quickr. Implement necessary technical underpinnings and connectivity for cross-departmental workgroup and project collaboration.		✓	
	Enterprise Application Integration Solutions	16	Evaluate and leverage notable implementations of application data integration through advanced capabilities (e.g., SOA). Specifically, DOH services implementation and HIC.		✓	
		16	Establish an enterprise solution for application integration that includes standard approaches, methods, knowledge/expertise, skilled resources, and tools/technologies to enable and support web services implementation and use. Establish an internal-facing web site to facilitate sharing of “master data sets” for application integration through web services layered on top of XML data sets.		✓	
Open Government & Social Media	Open Government Solutions	15	Establish a State of Hawai‘i data.gov internal and public-facing web site to facilitate the sharing of “master data sets” as defined above. Support both internal-facing (for State use as well as application integration through web services layered on top of XML data sets) and external, public-facing (for publishing public-domain master data sets).		✓	
	Enterprise Dashboard Solution	15	Establish a standard management-level dashboard reporting solution with supporting data aggregation and summarization capabilities. Implement “rolling up” program-level information for project and operational performance, and institute processes for projects and operations to begin reporting.		✓	

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
Enterprise Application Solutions	Application Portfolio Management	17	Begin to evaluate/audit/spot-check projects to foster compliance with technology standards.		✓	
	Enterprise Architecture	18	Develop standards and guidance regarding technology decisions, specifically with respect to application architecture, design, and implementation for use and adoption across the Departments, Divisions, and Programs. Recognize strategic application platforms and technologies for future applications development and establish enterprise capabilities for these including standard development methods, skills development (training), skills acquisition (contracting), and tools/technologies. Strategic focus areas include: web applications development, mobile applications development, and social media development. Create a communication plan to “market” the standards and guidance within each Department.		✓	
Enterprise Infrastructure Solutions	Service Portfolio Management	19	Develop a services portfolio management program plan and CONOPS with responsibility for such development residing with the OIMT IT Program Manager. Adopt and use the EAD as an interim portfolio management tool until the approach matures for consideration of a replacement system.		✓	
	Change, Configuration and Asset Management		Develop a program plan for IT change, configuration, and asset management in conjunction with portfolio management including policies, roles, responsibilities, and CONOPS. Establish the EAD tool as interim tool until the approach matures and a more robust system is justifiable.		✓	
	Change Management		Establish an enterprise-level change management approach to include: - Request for change creation, review, and disposition - CCB to review all critical changes - Forward schedule of change to publish planned changes		✓	
	Knowledge Management		Establish enterprise processes and a system for knowledge management. Ensure that all documentation regarding environments, asset configuration, known problems, work arounds, solutions, user requests for service, and resolution scripts are stored within the knowledge management repository. Ensure that IT workers at all levels use the knowledge management repository for environment and work instruction documentation. Begin by ensuring that OIMT central services use this approach.		✓	
	Incident, Request, and Access Management		Establish an enterprise-level service desk with overall responsibility for resolution of all service and support requests, incidents, and event resolution. Establish a Tier 1 central point-of-contact. Use a catch and dispatch model initially as needed to invoke Departmental resources. Over time, move and grow resolution capabilities in the central service desk. Establish a common ticketing system.		✓	
	Incident Management		Establish plans and procedures for addressing high priority or critical incidents including notification lists, triage, resolution, and reporting approach.		✓	

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
	Event Management		Establish a best-practice operations model that integrates and consolidates service desk, infrastructure operations, and security operations into a common enterprise operations center. Begin by ensuring that OIMT central services use this approach.		✓	
	Hosting Environments, Cloud, & Data Center	20	Develop a go forward strategy to eliminate the "one server, one application" model currently in place and utilize virtual servers to run multiple virtual machines on each physical machine.		✓	
			Utilize secure public Cloud providers, such as Amazon GovCloud or Terremark vCloud, to provide externally facing web-based services. Evaluate public Cloud services, such as Amazon AWS GovCloud or Amazon Elastic Compute Cloud, to quickly ramp-up a test environment.		✓	
	Enterprise Systems Management	20	Establish network and service monitoring; move to a holistic methodology that integrates people, processes, technology tools, and physical facilities around a central service desk concept and integrate monitoring event management with incident resolution in an enterprise operations center.		✓	
	Desktops, Laptops, & Mobile Devices	20	Identify standard desktop, laptop and mobile devices. Standardize OS levels, patch levels and a productivity application suite (i.e., Office 2010). Create and maintain "Gold" images for devices to streamline support and maintenance. Establish a service catalog with Procurement to centralize approval, purchasing and warranty coverage.		✓	
			Create central remote support with a service desk/network operations center supplied with the tools to provide rapid real-time desktop support to reduce repair times.		✓	
			Create a mobile application service to provide mobile applications that will increase staff productivity and collaboration and improve delivery of State services to constituents. Evaluate utilizing tablets and smartphones for field agents, inspectors, etc.		✓	
			LONG-TERM			✓
Governance	Information Resource Strategy & Planning	6	Finalize all staffing actions, determine the mechanism for acquiring additional support, and prepare any requests and justifications for additional funding in preparation for the upcoming January 1, 2013, Legislative session.			✓
		7	Study the implications of implementing the fee-for-service model using the lessons learned by other States that have moved to this funding approach.			✓
	Policy & Organization	11	Staff Customer Relationship Managers (2-3) who can work as liaisons with Departments on a day-to-day basis to ensure that service needs are being met and new projects are being surfaced in a timely manner.			✓
	Enterprise Architecture	6	Complete the enterprise architecture high-level structure and establish the documentation of comprehensive business, data, applications, and technical architecture segment designs through follow-on flagship projects. Accomplish on-going data architecture and web services development in conjunction with, or as a part of, enterprise flagship projects or as designated shared (or master) data implementation			✓

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
			projects. As part of these projects, assess industry-standard data models such as NIEM as a basis for data architecture development and standardization.			
		14	Manage initiatives within the enterprise for data standardization as "shared (or master) data management" initiatives. Through these projects, focus on key "entities," such as employee, applicant, business, account, etc., one at a time and create a common data view of the entity from all the inconsistent Departmental (or divisional/programmatic) implementations.			✓
			Establish a comprehensive and well-maintained repository of standard process models, data models, entity and element definitions, and infrastructure designs.			✓
			Adopt data classification best practices (FISMA) to classify key data entities/elements to establish appropriate data protection strategies and approaches and facilitate their implementation.			✓
	Technology Management & Assessment	18	Develop an enterprise methodology for new service/product/technology evaluation and insert sufficient stage-gate reviews for enterprise-level decision-making. Suggested steps include: needs analysis, market analysis, feasibility study, alternatives analysis, impact analysis, and new product/technology introduction planning and execution. It should be characterized by an agile, iterative, incremental design (no long, drawn-out analysis steps) and should facilitate rapid prototyping and piloting of new technologies.			✓
	IT Performance Assessment: Models & Methods	6	Review existing "Measures of Effectiveness" and other performance measurements and/or service-level agreements as they relate to IT for all Departments and recommend needed changes to the Legislature, specifically for IT-related measures. Begin tracking and reporting against these measures using a web-enabled, Cloud-based "dashboard" capability that provides visibility to all organizations.			✓
Business Process Reengineering & Enterprise Application Solutions	Risk to Mission	3	Improve the State's ability to provide services by conscientiously identifying and assessing the risk of "not performing" or "partially performing" various functions.			✓
	Performance Management	4	Review current performance measures, revise as warranted in order to create meaningful performance/service delivery measures for each organization, and then actively evaluate performance based on these revised measures. Ensure that service recipients' satisfaction (citizens and internal service recipients) is measured and addressed (beyond the lack of complaints).			✓
			Establish MOUs and service-level agreements with each agency to govern the relationship between Departments and to understand service-level expectations and then measure and report on performance against these expectations.			✓

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
	Federal Grant Application and Lifecycle Management	5	Improve the State's ability to identify, apply, and track grants with common processes, capabilities (expertise and skill development), and supporting systems.			✓
	Geographic Information System Enterprise Solution	5	Exploit rapid growth of GIS technologies to meet the needs for a comprehensive and integrated GIS solution across numerous Departments (e.g., DBEDT, DOE, DLNR, DHHL, DOD, DCCA, DOT, UH).			✓
Open Government & Social Media	Enterprise Social Media Solutions	15	Establish standard, enterprise, public-facing social media solutions, methods, expertise/skilled resources, and tools.			✓
Security and Privacy	Information Assurance and Security Program	20	Drive and develop a consistent statewide approach in the areas of information assurance and security integration. Educate all Departments on cyber security policy enhancements; leverage the Information Privacy Security Council to drive policies, standards, education, and compliance for all users.			✓
	Security Integration and Event Management		Define standard rule sets based on security best practices, and map alarms and action plans based on these alarms.			✓
			Implement a common security design and posture around the following technologies: anti-virus, application gateway, authentication, content management, end-point security, firewall/VPN, scanning, wireless, IDS/IDP, SSL/VPN, monitoring/ management, security application, security event management, reporting, and traffic management.			✓
Enterprise Application Solutions	Application Portfolio Management	17	Create application technology lifecycle management and refresh plans.			✓
			Promote avenues for internal marketing of existing application capabilities and the ability for organizations to reuse those applications, a version of an internal "apps store" catalog. Consideration should be specifically given to sharing of "easier to implement" Lotus Domino applications or Access applications.			✓
			Over-arching direction: All mainframe batch processing applications must be retired as soon as possible. Plan the work and work the plan.			✓
			Secure funds (directly or indirectly) to refresh all legacy applications at risk due to aging software/hardware versions, platforms, etc. Use a Pareto analysis of the portfolio to identify top risk areas and plan and work through conversions, upgrades, and refreshes to stabilize the applications.			✓
	Standard Enterprise Capabilities for Applications	18	For web applications development, analyze and decide upon standard and preferred approaches, capabilities needed, and tools/technologies for public-facing web applications development. Leverage the successful HIC model, adjust as needed to minimize the approaches used, and upgrade needed human resource skills for growth			✓

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
	Development		including both advanced training programs for staff and putting in place contractor resources.			
			For mobile applications development and social media development, analyze, pilot, and invest/implement a standard approach, capabilities, and tools for developing mobile applications. Upgrade needed human resource skills for growth including both advanced training programs for staff and putting in place contractor resources.			✓
			Develop a "promotion path" strategy for applications developed with "easy to use" tools such as Lotus Notes Designer or Microsoft Access that specifically addresses enhancing application stability and safeguarding application availability, reliability, and security. Integrate the promotion path strategy into overall application portfolio investment planning decisions.			✓
Enterprise Infrastructure Solutions	IT Service Management	19, 20	Adopt a tailored ITIL-compliant service management model as a best practice for establishing OIMT enterprise-level services. Plan and implement ITIL using project management best practices and approaches.			✓
	Service Portfolio Management		Expand portfolio management approaches for DME projects and spreadsheet applications, and hardware and software assets to include enterprise-level services. Use this as a basis for planning new OIMT enterprise services to be offered including their definition, price/cost/funding structure, and service-level agreements; leverage and repurpose ICSD's service catalog work. Adapt new services/product/technology evaluation and insertion methodology for services portfolio management.			✓
	Service Demand & Customer Relationship Management		Establish a customer liaison or customer relationship management role within OIMT and include services input and demand planning as part of the overall responsibilities.			✓
	Service Financial Management		Establish services cost build-ups and pricing structures as part of the overall funding strategy for OIMT. Develop needed IT services cost measurement and accounting processes and systems.			✓
	Service Catalog Management		Publish services catalog-level information regarding all production services through the OIMT web site in conjunction with services portfolio management including IT hardware products defined/authorized based on the technical architecture. Expand service catalog capabilities in the future to include on-line requests and provisioning, e.g., use of a web form to request a virtual server and an automated provisioning system that implements the virtual server for the requester in near real-time.			✓

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
	Service Level and Reporting Management		Develop a program plan for service-level measurement and reporting in conjunction with services portfolio management. Identify all required service-level measures and measurement methods and techniques/tools. Implement service-level reporting systems and summary dashboards for OIMT.			✓
	Service Capacity Management		Mature server and storage inventory data to include capacity attributes. Implement server and storage monitoring systems to track and trend usage data. Integrate demand planning and usage trend analysis into an ongoing capacity management plan.			✓
	Service Availability and Continuity Management		Implement an end-to-end service monitoring system and measure up-time and response-time for critical applications, databases, processes, servers, storage devices, and networks. Leverage existing SolarWinds Orion toolset as the foundation.			✓
	Service Availability and Continuity Management		Develop a comprehensive availability and continuity plan including a graded approach for DR based on business impact assessment.			✓
	Service Security Management		Integrate security operations monitoring and event response with the enterprise operations center approach. Establish standard security monitoring solutions, approaches, and reporting. Leverage ArcSight and other existing products.			✓
	Transition Project Management		In new service/product/technology insertion, address project management and oversight of all key elements of a well-planned roll-out of a new capability including communications to and involvement of all key stakeholders in schedule decisions, transition execution, impact analysis, planning, and mitigation.			✓
	Release, Validation, Testing, Deployment and Evaluation Management		Establish enterprise standards and procedures for execution of releases to the production environment. Ensure adequate impact analysis and testing to mitigate impact on the production environment. Ensure appropriate deployment plans are developed, tested, and executed including roll-back procedures.			✓
	Event Management & Enterprise Systems Management		Enhance operational availability monitoring and thorough monitoring service infrastructure using network and server management tools such as SolarWinds, CiscoWorks, and Tivoli. Automate alerts and forward to an incident management system for automated ticket creation and support staff notification, then track to resolution (by the service desk). Design and implement needed monitors for application and infrastructure events (e.g., a server outage) and initiate appropriate incident notification and resolution processes.			✓
	Problem Management		Establish root cause analysis approach and procedures as part of a problem management process within the service operations program plan. Over time, ensure that			✓

Final Report

Baseline of Information Management and Technology and Comprehensive View of State Services

Top Ten Focus Area	Element	No	Recommendation/Action	Immediate-Term	Near-Term	Long-Term
			all IT critical failures at all levels include a root cause analysis. Begin by ensuring that OIMT central services use this approach.			
	Access Management		Include all access requests in a central service desk implementation. Establish access management systems to provide self-service options for end users on password management and resets. Establish identity management systems for management of credentials and role-driven access management.			✓
	Hosting Environments, Cloud, & Data Center		Develop a plan to consolidate hosting services, hardware, and physical infrastructure locations consistent with the IT Transition Document Prepared by ITGC-Technical. Begin with the server closets/rooms and then data centers.			✓

6.0 INDIVIDUAL DEPARTMENT SERVICES AND BASELINE REPORTS

To gather Department-specific data for this report, SAIC conducted interviews, and gathered information from more than 200 individuals from the State of Hawai'i's Executive Branch Departments and agencies supporting the State (e.g., Hawai'i Health Systems Corporation, Hawai'i Public Housing Authority). SAIC formed three teams of two and interviewed each Department's Director and members of their executive leadership, IT leadership, and other relevant staff. Using a structured interview process, we gathered information regarding mission, services provided and key stakeholders, key relationships and dependencies, composite views on effectiveness of services and mission delivery, and impact of the IT infrastructure on mission and service delivery. We also gathered information about the IT environment relative to governance processes and strategy, data and information assets, applications portfolio, and the supporting technology infrastructure, as explained earlier in this report. More than 1,500 pages of notes and other materials were cataloged and provided to OIMT as reference as part of SAIC's final project close-out.

The intent of this section of the report is to provide important insight into each Department, with particular emphasis on Departmental services and an IT perspective, rather than providing an in-depth look at each Department. Figure 31 illustrates SAIC's approach for systematic analysis and characterization of mission objectives and services as well as the baseline of information management and technology.

Systematic Analysis and Characterization Approach (Departmental Services)

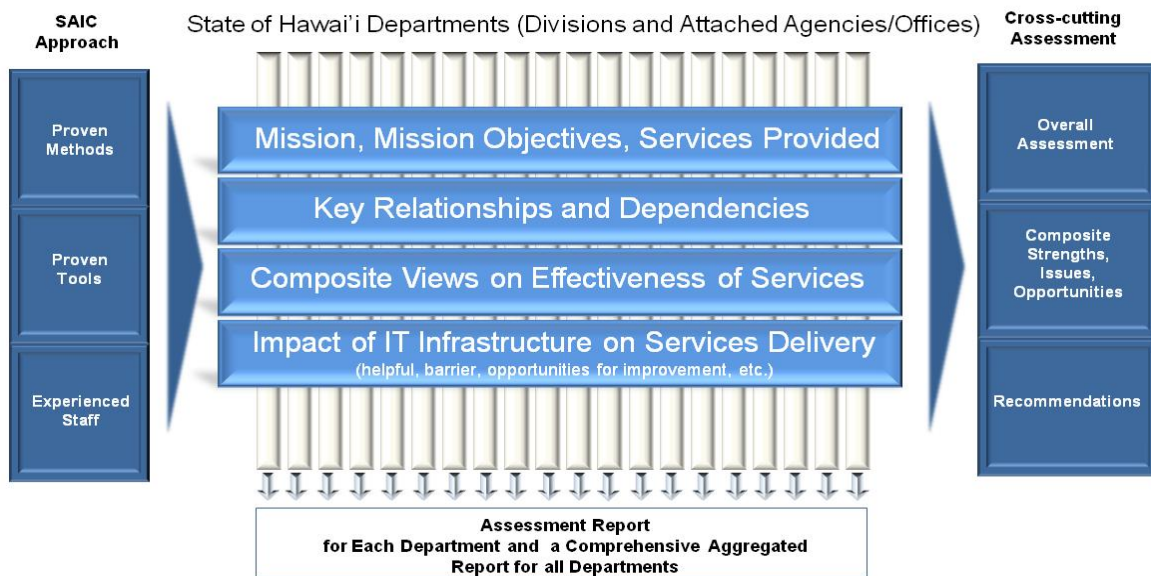


Figure 31: SAIC's Approach to Characterizing Departmental Services

All State employees were extremely forthcoming and candid. Follow-up information was provided in a timely manner and additional meetings were conducted as warranted.

The remainder of this report contains Department-specific data that characterizes, at a high level, relevant IT information (as needed by OIMT) that succinctly characterizes the Department. The following information is included for each Department:

- Executive leadership including the Director and Deputy(ies)
- IT leadership, as determined by each Department
- Departmental mission (high-level strategic mission)
- Organizational structure including attached agencies, boards, councils, etc.
- Key applications, as determined and indicated by Departmental personnel
- Budget/funding, as provided to SAIC by either the Department or via DAGS
- IT service providers, both in- and outside the Department
- Departmental items of note (additional relevant Departmental findings and/or those items that distinguish the Department from all other Departments)
- Key IT initiatives and opportunities/challenges (in terms of IT), as indicated by the Department during the interview process
- IT quick wins, as indicated by the Department during the interview process
- Data Center findings, as determined during the Data Center Assessment phase of this project

DEPARTMENT OF THE ATTORNEY GENERAL (AG)	
Director: David Louie, Attorney General	Deputy Director: Russell Suzuki, First Deputy Attorney General; Joshua Wisch, Special Assistant to the AG
CIO/IT Coordinator: Herbert Lam, IT Lead; Greg Malick, CPJAD Lead Analyst; Liane Kimura, CSEA IT Manager; Liane Moriyama, Administrator, Clay Sato, HCJDC DP Systems Manager	
Mission	
The Attorney General (AG) is the chief legal officer and chief law enforcement officer of the State of Hawai'i. Duties include the administration of the sex offender registry, issuance of state IDs, commission of notaries public, managing statewide criminal history and fingerprint information systems, and administration of child support enforcement.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Legal Services Division: <ul style="list-style-type: none"> ○ Administration Division ○ Appellate Division ○ Civil Recoveries Division ○ Civil Rights Litigation Division ○ Commerce and Economic Development Division ○ Criminal Justice Division ○ Education Division ○ Employment Law Division ○ Family Law Division ○ Health and Human Services Division ○ Labor Division ○ Land/Transportation Division ○ Legislative Division ○ Public Safety, Hawaiian Homelands, and Housing Division ○ Tax Division ○ Tort Litigation Division • Public Services Division: <ul style="list-style-type: none"> ○ Child Support Enforcement Agency (CSEA) ○ HI Criminal Justice Data Center (HCJDC) ○ Crime Prevention and Justice Assistance Division (CPJAD) ○ Office of Child Support Hearings • Investigations Division • Administrative Services Office <p>Attached Agencies</p> <ul style="list-style-type: none"> • Missing Child Center-Hawai'i (attached to Legal Services/Criminal Justice Division) 	<ul style="list-style-type: none"> • ProLaw (case management) • iManage (document management) • Westlaw (for research) • Word and Word Perfect • HIJIS – Hawai'i Justice Information System • JJIS – Juvenile Justice Information System • CJIS-Hawai'i – Criminal Justice Information System • AFIS – Automated Fingerprint Identification System (Federal) • NCIC – National Crime Information Center • Green Box – arrest booking • State ID Cards • Sex offender registration • Criminal history record checks: eCrime and public access • Keiki – child support enforcement (Federally certified system)

Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12 Total Budget: ~\$77.1M: <ul style="list-style-type: none"> ○ Federal = ~\$25.5M ○ General = ~\$24.9M ○ Special = ~\$2.4M ○ Trust Fund = ~\$6.2M ○ Interdepartmental = ~\$8.9M ○ Revolving Fund = ~\$6.6M ○ ARRA/Other Funds = ~\$2.6M • FY12 IT Budget = ~\$8.3M 	<ul style="list-style-type: none"> • Staff counts: organizational FTEs and IT FTEs: <ul style="list-style-type: none"> ○ Department Total = 770 ○ Department-wide IT = 50 positions <ul style="list-style-type: none"> - Legal Services Division = 8 - CSEA = 19 - CPJAD = 7 • HCJDC = 16 with 2 temporary, and 1 quasi-IT FTEs
Departmental Items of Note	
<ul style="list-style-type: none"> • AG functions as a very large law firm (150 attorneys) with additional services for CSEA, HCJDC, and CPJAD • AG Legal Services interfaces with all other Departments in the State plus the Governor's office and the Legislature • AG would like to become a paperless office but need to think through the impacts • HCJDC collaborates with Judiciary, law enforcement, intake services, prosecution, public safety, and affiliated agencies and Federal agencies. • CPJAD and HCJDC systems must be available 24/7, due to juvenile justice and criminal justice information needs • CSEA is rated (by Federal law) every year on cost effectiveness: amount spent vs. amount collected (collect ~\$124M/year and spend ~\$13M/year) • CSEA must meet IRS data protection rules and currently does not • IT purchases are typically made with left-over year-end money • Confidentiality and security are serious concerns for this Department. • HCJDC launched the Hawai'i Integrated Justice Information Sharing (HIJIS) Program in March 2007 to integrate various criminal information systems and support data sharing with various other departments to reduce redundancies and delays in getting data to key decision makers representing the principal justice agencies throughout HI including judiciary, law enforcement, prosecution, intake services, public safety and affiliated agencies, and Federal agencies. This program has been very successful at getting disparate departments and systems to share and integrate data using Open Justice Brokering technology and standards. (See the <i>HIJIS Strategic Plan 2008</i> and <i>HIJIS Overview</i> brief June 2011.) Several pilot programs are underway. • The HIJIS program is incorporating the use of SOA and an enterprise services bus; these are complex requirements that cause issues with the lack of expertise within HCJDC division, ICSD, and with those organizations with whom they are trying to interface. HCJDC recently joined the Open Justice Broker Consortium (OJBC) which will provide much needed expertise including training at a significantly reduced price than previously researched or piloted options. HCJDC is also in the process of procuring professional services to employ contractors that can provide various necessary development services. Besides going through the formal procurement processes, they will be working to line up other agency's resources to assist in the integration and upgrade of all affected systems. • Various approaches are being used for disaster recovery. CPJAD runs the statewide JJIS application on a mainframe housed at the Honolulu Department of Information and Technology (DIT). The DIT mainframe has a separate disaster recovery failover site in Kapolei which is tested on a regular basis. CPJAD is in the process of moving the JJIS application from the mainframe to a web server at ICSD which will also provide a yearly ~\$80K savings. CPJAD works closely with law enforcement, family courts, HI youth correctional facilities, county prosecutors, and the AG's office to facilitate integration of data in their systems. • CSEA is currently not meeting their IRS data protection rules (Public 1075 Federal Data Management 	

Standards); ICSD does not have the funding to add this type of tracking capability, so they were forced to hard code flags in the software.

- ICSD is not currently able to comply with IRS and FBI protections for data.

Key IT Initiatives and Opportunities/Challenges

- CSEA has a digital project underway for content management for all case records.
- CSEA has a new decision support system that looks across all cases to see trends and trouble spots.
- HCJDC has digital end-to-end (fingerprints, mug shots, etc) CJIS-Hawai'i.
- CPJAD is trying to launch an "egrants" system for grant management and tracking.
- HCJDC launched the HI Integrated Justice Information Sharing program which was successful at getting courts, police departments, and counties to work together and share information. This is one of the largest information-sharing initiatives in the State.
- Need a strategic direction for IT. The goal should be an all-digital, paperless environment. There are challenges with tying information to case documents.
- There are issues with storing documents in native formats due to difficulty locating information and the fact that searching does not work well in iManage; look at moving to better legal services' software packages that support trial documentation, research support, and practice management.

IT Quick Wins

- More robust email system (than Lotus Notes) that enables mobile access (attorneys must have access to email at all times) and integrates with ProLaw and iManage; this is a dire need.
- Need calendar/scheduling software (something with the functionality of TimeMatters to provide reminders for complaint/answer dates).
- Need disaster recovery and business continuity plans.
- Need remote access to documents; many attorneys work from remote locations or home as needed.
- Need to upgrade to latest versions of iManage and ProLaw (sunsets at the end of 2011); caution – there are issues with customization to make these products work with Lotus Notes. ICSD has to grant rights and is not satisfied with documentation from the ProLaw vendor; ProLaw does not have many Domino accounts.
- Need to upgrade to the latest versions of Microsoft Office products – there are too many versions in existence which makes it difficult to share files.
- Need to upgrade computers; not sure if their processors are adequate for the latest versions of the software.
- Need training for the staff that is fast and efficient to bring staff up to speed quickly on new versions of software; train power users to mentor others.
- Need network scanner, large monitors, and desktop scanners.

Data Center Findings – Legal Services Division	
Strengths	Weaknesses
<ul style="list-style-type: none"> Administrators are knowledgeable and have necessary skills to maintain their servers 	<ul style="list-style-type: none"> Undersized UPS No standard cycle for equipment refresh Single connection to NGN
Opportunities	Threats
<ul style="list-style-type: none"> Virtualization to expand server capacity Use of Cloud-based services to include storage and applications 	<ul style="list-style-type: none"> Aged equipment; failure could bring production applications down Lack of disaster recovery and continuity of operations plans Lack of robust security policies regarding computer and network password requirements
Data Center Findings – Public Services Division, CSEA	
Strengths	Weaknesses
<ul style="list-style-type: none"> Modern data center, raised above ground level Physical security monitored 27x7 Well-designed Cisco-based network Knowledgeable staff 	<ul style="list-style-type: none"> Building’s fire suppression system may dispense water on servers during an emergency Located in a building with a high volume of public traffic
Opportunities	Threats
<ul style="list-style-type: none"> Migrate Keiki system to modern server-based solution to improve support and effectiveness 	<ul style="list-style-type: none"> Mainframe-based application with very old undocumented code
Data Center Findings – Public Services Division, HCJDC	
Strengths	Weaknesses
<ul style="list-style-type: none"> Data center is clean and has adequate cooling and power Utilizes virtualization to consolidate servers onto fewer blade-based servers Has separate development and test environments Administrators are knowledgeable 	<ul style="list-style-type: none"> Located on the first floor in a building with a high level of public traffic No backup air conditioning
Opportunities	Threats
<ul style="list-style-type: none"> Leverage strong integration and collaboration systems and skills statewide 	<ul style="list-style-type: none"> Single connection to NGN Lack of intrusion detection system Security system not monitored remotely after hours

Data Center Findings – Public Services Division, CPJAD	
Strengths	Weaknesses
<ul style="list-style-type: none"> Administrators are knowledgeable and have the necessary skills to maintain the infrastructure 	<ul style="list-style-type: none"> Small local server room with Windows servers and database servers Servers do not have required cooling Old hardware and software with not budget for upgrade of systems
Opportunities	Threats
<ul style="list-style-type: none"> Provide centralized support to reduce IT staff workload Provide virtual server and storage services to move assets into secure data center 	<ul style="list-style-type: none"> Single connection to NGN Potential loss of sensitive data - need encryption capabilities on all data whether in-transit or at rest.

DEPARTMENT OF BUDGET & FINANCE (B&F)

Director: Kalbert Young	Deputy Director: Dean Hirata
CIO/IT Coordinator: Kyle Kawamoto	
Mission	
The Department of Budget & Finance (B&F) administers the state budget, develops near- and long-term financial plans and strategies for the State, and provides programs for the improvement of management and financial management of state agencies.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Administrative and Research Office (ARO) - plans, directs and coordinates programs, services and functions for the Department. • Budget, Program Planning and Management Division (BPPMD) - primary function is to optimize the expenditure of all public funds by assisting State agencies to improve the operational effectiveness of their programs and the effectiveness of agency budgeting. They also coordinate the State's capital improvement program. • Financial Administration Division (FAD) - responsible for planning, directing and coordinating development of the State's plans and strategies relative to cash management, investments and bond financing; administers State's financial affairs. <p>Attached Agencies</p> <ul style="list-style-type: none"> • Missing Child Center-Hawai'i (attached to Legal Services/Criminal Justice Division) • EUTF - Employer Union Health Benefit Trust Fund • ERS – Employees' Retirement System 	<ul style="list-style-type: none"> • Great Plains (Treasury Division) • FAMIS Data Mart • Oracle Financials (ERS) • DMS (Dayhuff and Kofax) • Vi-Tech (EUTF and ERS)

Budget/Funding	Staff
<ul style="list-style-type: none"> • FY 2012: Entire B&F 2012 budget is ~\$1.8B, but for B&F proper ~\$500,000: <ul style="list-style-type: none"> ○ General = ~\$1.8B ○ Special = ~\$15M ○ Trust Fund = ~\$12M ○ Interdepartmental = ~\$0.1M ○ ARRA/Other Funds = ~\$10.8M • IT Budget: ~\$110K • 100% of funding for B&F proper is General funding 	<ul style="list-style-type: none"> • Staff counts: organizational FTEs and IT FTEs: <ul style="list-style-type: none"> ○ B&F core organization = 68 budgeted positions, only 40 (excludes attached organizations and offices) positions are staffed <ul style="list-style-type: none"> - B&F and Public Defenders has 2 FTEs (one of the two serves as the overall coordinator for IT across the organization) - Public Defenders has 130 staff and attorneys (often a few IT savvy attorneys help the 2 FTEs that support them) - Public Utilities has 1.5 FTEs supporting IT - EUTF has ~6 FTEs supporting IT - ERS has ~12 FTEs supporting • Each attached organization varies in size (e.g., 130 attorneys and staff in the Office of the Public Defender)
<p>Departmental Items of Note</p>	
<ul style="list-style-type: none"> • Web-front end (developed and maintained by ICSD) does not reflect the most current state of B&F data. • B&F uses a cash-basis accounting method; what is needed is accrual-basis accounting. • B&F noted that all departments need greater visibility into their quarterly budget appropriations and spend plans and there is currently no mechanism to generate or communicate how B&F derives this information. • Departments receive <25% of their budget quarterly (there is a 3-4% hold back); exceptions are organizations that have revolving or special funds that carryover. • The creation and analysis of the State of Hawai`i's budget (that includes the analysis of incoming revenue and estimated appropriations and expenditures) is done in Microsoft Excel spreadsheets. • B&F maintains the state's budget of ~\$6B in a single Excel spreadsheet. • B&F's budget, while it appears very large, also includes the State's retirement account and health premium payments as well as the State's debt service. This inflates the budget numbers and makes it difficult to analyze their budget by line item based on labor and services. • Hyperion was mentioned as a possible solution for performance management software. • Financial management system (used by specifically by DOTAX, Accounting, and B&F) was mentioned as a possible way to integrate information across Departments. 	
<p>Key IT Initiatives and Opportunities/Challenges</p>	
<ul style="list-style-type: none"> • Centralized purchasing for commodity IT is an opportunity • Need an accrual-basis accounting system to address reporting needs 	

IT Quick Wins	
<ul style="list-style-type: none"> • A digital dashboard displaying the State’s financial situation and providing the potential to drill down into the Department’s financial spending against the budget would facilitate open communication of the State’s financial situation to both the citizens of Hawai‘i, the Legislature, and each Department. • Security assessments of systems with PII and HIPPA – EUTF would like this done. • Enterprise approach to financials statewide (vs. Tax, DOE, ERS, etc., procuring separate solutions). • A statewide procurement system that facilitates smart buys across the state (e.g., licenses, selected solutions) 	
Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Administrators are knowledgeable and have the necessary skills to maintain the infrastructure 	<ul style="list-style-type: none"> • No true data center or server room, B&F has four servers • Servers do not have required cooling • Old hardware and software with no budget for upgrade of systems • Two staff to perform IT support for B&F and Public Defenders
Opportunities	Threats
<ul style="list-style-type: none"> • Provide centralized support to reduce IT staff workload • Provide virtual server and storage services for B&F to move assets into secure data center 	<ul style="list-style-type: none"> • Single connection to NGN • B&F stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches

DEPARTMENT OF ACCOUNTING & GENERAL SERVICES (DAGS)

Director: Bruce Coppa	Deputy Director: Jan Gouveia
CIO/IT Coordinator: Glenn Sewaga (ICSD – Debra Gagne)	
Mission	
<p>The Department of Accounting & General Services (DAGS) is responsible for accounting, records management, digital archives, internal audit, automotive services, State parking lot management, building and ground management, information technology for the State, land survey activities, public works, and capital planning project oversight. In addition, DAGS ensures the effective management of a host of other functions including the Aloha Stadium, access Hawai'i, elections, information privacy and security, and the State procurement functions.</p>	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Accounting Division – develops and maintains the State's accounting systems; verifies expenditures before making payments; and records and reports on the state's financial transactions. • Archives Division – ensures open records, preservation of historical records, and assists government divisions with active and inactive records management. • Audit Division – ensures all accounting and internal control systems are effective and adhere to appropriate controls and GAAP processes. • Automotive Management Division – administers a revolving fund authorized by Chapter 105-11, HRS to establish and manage a motor pool for the state, including the acquisition, rental, maintenance, repair and disposal of state vehicles, and administers a revolving fund established by Chapter 107-11, HRS to provide, operate, maintain, control and assess fees for parking on lands under the jurisdiction of the Comptroller. • Central Services Division – plans, coordinates, organizes, directs, and controls a variety of centralized services. • Information & Communication Services Division – comprehensively manages the information processing and telecommunication systems to provide services to all agencies of the State. • Land Survey Division – Provides field and office land survey assistance for state agencies, including Land Court and other government jurisdictions. • Public Works Division – Plans, coordinates, organizes, directs, and controls a variety of engineering and architectural services for the State. 	<ul style="list-style-type: none"> • FAIS • eMaintenance • Kovax • CIP • FAMIS - Financial Accounting Management and Information System and the FAMIS Data Mart • NGN network

Budget/Funding	Staff
<ul style="list-style-type: none"> • FT12 : ~\$155M: <ul style="list-style-type: none"> ○ Federal = ~\$8.8M ○ General = ~\$65.2M ○ Special = ~\$27.3M ○ Trust Fund = ~\$1.2M ○ Interdepartmental = 16.5M ○ Revolving Fund = ~\$37M • IT Budget: <ul style="list-style-type: none"> ○ Payroll = ~\$386k ○ IT Expenditures = ~\$14k • 90% from the General Fund with the remainder predominantly from: <ul style="list-style-type: none"> ○ Revolving Fund (i.e., Automotive Management) ○ Bond issues (i.e., Public Works) ○ Employees/guests (i.e., Automotive Management) ○ other departments (e.g., UH with the Stadium Authority, DNLR via Land Survey) 	<ul style="list-style-type: none"> • Staff counts: organizational FTEs and IT FTEs: <ul style="list-style-type: none"> ○ 750 FTEs with usually between 50-75 vacancies at any one time/IT includes 6 from Systems and Procedures and probably half to three quarters of the ICSD FTEs (~60-75) who support DAGS-owned systems for the Statewide systems (e.g., FAMIS, payroll)
Departmental Items of Note	
<ul style="list-style-type: none"> • One or more of the DAGS organizations, with the exception of the ASO, touch every organization across the State. • Two organizations provide IT support: (1) ICSD (infrastructure, payroll, and FAMIS) and (2) Systems and Procedures Branch (system development, desktop support, some email). • There are very few subcontractors supporting DAGS, and they are very specialized (e.g., elevator maintenance, escalator maintenance). Part of the rationale for the lack of subcontractors is the State's bargaining unit agreements with various unions. • DAGS accounting system is COBOL-based and runs on dated hardware. Disaster recovery is an issue. As DOTAX and B&F look at ERP solutions, Accounting's requirements should be included as part of any solution. • Many of DAGS processes are paper-based and require the continuation of data-entry processes. 	
Key IT Initiatives and Opportunities/Challenges	
<ul style="list-style-type: none"> • Staffing is at the minimum level to maintain operations. • Need to overhaul and centralize EPARS to eliminate the need for every Department to keep its own master record of personnel and payroll. • Need to overhaul the procurement system to eliminate the need for a six-part carbon PO form and use of twinax dot matrix printers in all Departments. • Need to overhaul the payroll system; migrate from the mainframe system. • Need to overhaul the finance system; migrate from the mainframe system. 	
IT Quick Wins	
<ul style="list-style-type: none"> • Expanded network bandwidth and connectivity. • Creating a viable Disaster Recovery Plan. 	

Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Knowledgeable staff • Some use of virtualization 	<ul style="list-style-type: none"> • Old servers likely to fail • Unsuitable server room <ul style="list-style-type: none"> ○ Uses a portable air conditioner ○ No fire suppression systems ○ Servers sitting on the floor and not in racks • Have their own DMZ for public-facing applications
Opportunities	Threats
<ul style="list-style-type: none"> • Move DMZ servers to ICSD • Host servers at ICSD data center 	<ul style="list-style-type: none"> • Security concerns due to age of hardware and software supporting Active Directory and email

DEPARTMENT OF BUSINESS ECONOMIC DEVELOPMENT & TOURISM (DBEDT)

Director: Richard Lim, Director	Deputy Director: Mary Alice Evans
CIO/IT Coordinator: Wade Kamikawa	
Mission	
The Department of Business Economic Development & Tourism (DBEDT) is Hawai'i's resource center for economic and statistical data, business development opportunities, energy and conservation information, and foreign trade advantages.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Strategic Marketing & Support Division (SMSD) – promotes industry development and economic diversification in Hawai'i. • Creative Industries Division – promotes the development and growth of Hawai'i's Creative Economy. • Strategic Industries Division (SID) – supports statewide economic efficiency, productivity, development, and diversification. • Foreign-Trade Zone (FTZ) Division – administers the Federal grant issued to Hawai'i in 1965 by the Foreign-Trade Zones Board in Washington D.C. and is responsible for ensuring that U.S. Customs and FTZ Board regulations are followed at these sites. • Research & Economic Analysis Division (READ) – works to enhance and contribute to the economic development of the State by providing analyses and policy recommendations on economic issues. <p>Attached Agencies</p> <ul style="list-style-type: none"> • Hawai'i Tourism Authority (HTA) – lead tourism agency responsible for creating a vision and developing a long-range plan for tourism for the State of Hawai'i. • Natural Energy Laboratory of Hawai'i Authority – mission of NELHA is to participate in the development and diversification of the economy of Hawai'i by providing resources and facilities for energy- and ocean-related research, education, and commercial activities in an environmentally sound and culturally sensitive manner. • Hawai'i Strategic Development Corporation (HSCD) – mission is to develop a sustainable venture capital industry in Hawai'i which will stimulate the growth of viable new businesses. • High Technology Development Corporation (HTDC) – works to facilitate the growth and development of the commercial high technology 	<ul style="list-style-type: none"> • Legislative Tracking System (LGS) – created internally by DCCA • Document Tracking System (DTS) • GIS for the State (maintained by the Office of Planning) • Host for systems based on Access, Lotus Notes, Excel, etc. • Filemaker • Hawai'i Film Office, film permit log • Creative Industries Division, purchase order log • HHFDC, accounting system • HTDC, accounting system

<p>industry in Hawai'i and assists in developing, managing, and operating technology centers statewide.</p> <ul style="list-style-type: none"> • Hawai'i Housing Finance and Development Corporation (HHFDC) – the State's premier housing finance and development agency. • Aloha Tower Development Corporation (ATDC) – mandated to redevelop an area of land surrounding the Aloha Tower in order to strengthen the international economic base of the community. • Hawai'i Community Development Authority (HCDA) – works to stimulate the economic development of specific community districts by planning and implementing community development programs and facilitating capital investments. • Office of Planning (OP) – maintains an overall framework to guide the development of the State through a continuous process of comprehensive, long-range, and strategic planning to meet the physical, economic, and social needs of Hawai'i's people, and provide for the wise use of Hawai'i's resources in a coordinated, efficient, and economical manner. • Land Use Commission – works with the State Legislature, County Planning Departments, interest groups, and landowners to define constitutionally mandated standards and criteria for protecting important agricultural lands in the State of Hawai'i. • Small Business Regulatory Review Board – the watchdog for small business within the Hawai'i state government. 	
<p>Budget/Funding</p>	<p>Staff</p>
<ul style="list-style-type: none"> • FY12: ~\$245M: <ul style="list-style-type: none"> ○ Federal = ~\$24.5M ○ General = ~\$9M ○ Special = ~\$166.4M ○ Trust Fund = ~\$22M ○ Revolving Fund = ~\$17.5M ○ ARRA/Other Funds = ~\$6M • IT Budget : ~\$460K; funding sources are General Fund, Special Fund, Revolving Fund, and Federal Funding 	<ul style="list-style-type: none"> • Staff counts: organizational FTEs and IT FTEs – 250/7-10 IT Staff FTEs • ICSD • Service Pack for VOIP (outsourced service)

Departmental Items of Note
<ul style="list-style-type: none"> • DBEDT is very diverse in terms of its mission and service delivery activities; the common thread is the need to reach beyond the boundaries of the islands. • DBEDT produces the State of Hawai'i Data Book (900K hits/month). • GIS governance and planning – by statute (Chapter 225M-2(4)(B)), OP is the statewide coordinating agency for GIS in State government. • Director Richard Lim is quoted, “We want/need to be as autonomous as possible.” • DBEDT has the largest and most diverse constituent pool of any agency in the State. The need for multi-language approaches in dealing with foreign countries, as well as multi-cultural aspects, is an implied business concern in development of the State economy.
Key IT Initiatives and Opportunities/Challenges
<ul style="list-style-type: none"> • The organization is very creative as they identify ways to use social media, forwarding their email to Gmail to enable receipt on an iPhone or Droid-type phone and increase email storage; saving mail to personal hard drives; using WIKI forms; outsourcing VOIP; using Google Docs for file share; using Skype. • For the State’s GIS, historically ICSD provided file server and IT technical support, OP provided overall policy direction, database management, and user application support. Note that the file servers and databases are used by all State agencies. OP and ICSD jointly planned for system upgrades/growth/evolution. Infrastructure was generally part of ICSD’s budget. In recent years, due to budget and staff cuts, ICSD has found it difficult to maintain previous level of support. In addition, there has been a significant deterioration in the partnership that had been in place for many (15+) years. There have been many system problems, with significant down time, so that State GIS users would like ICSD removed from support of the State GIS.” OP has been investigating alternatives. • No data center, just a space for servers within an office.
IT Quick Wins
<ul style="list-style-type: none"> • Better email solutions • Ability to do email blasts • Ability to store email greater than 20MG • Electronic signatures coupled with Document Tracking System (DTS) • Improved document management system • Additional video conferencing capabilities, especially with neighbor islands and the mainland • IT solution that supports use of credit cards • Electronic signatures/paperless transactions • Ability to handle video-intense files (videography) • Faster network speeds • Ability to work with external people via email, etc., and send large files • Getting to a paperless environment • Case management

Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> Administrators are knowledgeable and appear to have the necessary skills to maintain their infrastructure 	<ul style="list-style-type: none"> No dedicated server space, equipment is in corner of a room in rack
Opportunities	Threats
<ul style="list-style-type: none"> Investigating mobile technologies and GIS based solutions, can be leveraged in other departments 	<ul style="list-style-type: none"> Single connection to NGN Servers not physically secured

DEPARTMENT OF COMMERCE & CONSUMER AFFAIRS (DCCA)	
Director: Keali'i S. Lopez	Deputy Director: Everett S. Kaneshige
CIO/IT Coordinator: Kevin G. Thornton, Information Systems Mgr, ISCO	
Mission	
The Department of Commerce & Consumer Affairs (DCCA) promotes a strong and healthy business environment while protecting the community from unfair and deceptive business practices. Some duties include business registration, professional licensing, examination of financial institutions, and handling complaints against the entities they regulate.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Administrative Services Office (ASO) • Business Registration (BREG) <ul style="list-style-type: none"> ○ Business Action Center (BAC) ○ Securities Compliance (SEC) ○ Securities Enforcement Branch (SEB) • Cable Television (CATV) • Consumer Advocacy (DCA) • Consumer Protection (OCP) • Director's Office (DO) • Financial Institutions (DFI) • Fiscal Office (FO) • Information Systems and Communication Office (ISCO) • Insurance • Office of Administrative Hearings (OAH) <ul style="list-style-type: none"> ○ MCCP - Medical Claims Conciliation Panel (MCCP) • Personnel Office (PO) • Professional and Vocational Licensing (PVL) • Regulated Industries Complaints Office (RICO) 	<ul style="list-style-type: none"> • Director's Office Referral System (DRS) • Applicant/Licensing Integrated Automated System (ALIAS) • Business Registration Information Management System (BRIMS) – business registration system • Registered Document Processing & Management System (RDPMS) - electronic documents and workflow system • HI Insurance Division System (HIDS) • Complaint Management System (CMS); • RICO tracking system • Legislature Tracking System (LTS) • Employee Leave System (ELS) • DCCA Financial System (DILOG) • Financial Institution Management System (FIMS) • RICO Citation Database (Citation) • Computer Account Request System (CAR) • Request for Action (RFA) • State Certified Arbitration Program (SCAP)
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$49.3M: <ul style="list-style-type: none"> ○ Special = ~\$46.8M ○ Trust Fund = ~\$2.5M ○ 5% of the revenue is transferred to B&F for the Central Service Assessment (CSA) • IT Budget: ~\$1.6M (ISCO) + \$154K for PVL ICSD Staff • Remainder of funding predominantly from: <ul style="list-style-type: none"> ○ Federal grants from DHHS to Insurance Division: <ul style="list-style-type: none"> - ~\$1M to study healthcare exchange - ~\$1M to develop health premium rate regulation report data 	<ul style="list-style-type: none"> • Staff counts: <ul style="list-style-type: none"> ○ Organizational FTEs = 358; no part-time, and a small number of 89-day hires); DCCA uses many consultants ○ IT FTEs = 16 plus two FTEs maintaining Professional Vocational Licensing (PVL) ALIAS system screens at ICSD
Departmental Items of Note	
<ul style="list-style-type: none"> • State legislature is a critical interface; DCCA tracks bills and prepares to support new 	

laws/requirements; often there is a short cycle between bill passage and enforcement of new policies. This demands immediate attention and quick response from DCCA's Information Systems and Communication Office (ISCO).

- Annually, May–June bills are passed that can require expedited work on systems; causes surges in backlog of work requests to the ISCO.
- Hawai'i Information Consortium (HIC) takes in DCCA online transactions for a fee (~\$1.3M). DCCA was one of the first to use HIC. HIC is very responsive to work requests.
- Able to leverage funding to make IT improvements; they plan and prioritize improvements with each division; their goal is to have all systems paperless.
- ICSD maintains the PVL license for system screens, maintains/backs up the main Oracle server (P590 AIX), maintains the web server, provides web site programming, and provides WAN and bridging services for VCC. ISCO provides all other maintenance and helps support ICSD.
- DCCA is agile in terms of IT but finds that interfaces to other departments cause bottlenecks due to paper processes and antiquated systems.
- DCCA focused on internet services and incurred significant costs to move off of ICSD's mainframe and Wang systems to a more internet-friendly platform.
- The licensing and registration databases are considered critical information and are relied on by businesses and government agencies to check on the licensure of business entities.
- ISCO has requested replacement of the AIX system, but its replacement depends on ICSD and their ability to move forward.
- ISCO has a stable backlog of 350 work requests. One or two additional IT staff could reduce or eliminate the backlog, but improvements are needed in the business processes and the systems that support them.
- IT staff in this Department are dedicated, very knowledgeable, and experienced. They are interested in moving some of their services to a Cloud-based model. They would like to use DCCA funding to provide the first State Cloud-based solution. However, they need the AG's review and approval.
- All custom applications have two staff members assigned to reduce the risk of succession and to increase cross-training.
- The connections between DCCA and HIC, located at DRFortress, are critical to maintain processing guarantees. DCCA also maintains data connectivity to the National Association of Insurance Commissioners, synchronizing the insurance data. (Synchronizing the data between the systems is complex so they are trying to move to the National format). Processing guarantees on these systems is measured in days so they can handle disruptions of up to one week.
- Status of servers: HP stand-alone servers are ~6 years old; the SAN is ~6 years old. They are actively migrating to an HP Blade server running VMware. The SAN is planned for replacement next year.
- Refresh cycle on other IT: PCs are refreshed every 4 years; printers every 5 to 6 years. PCs are currently running Windows XP due to problems with Oracle. MS Office is budgeted for replacement in FY13.
- Need better data sharing between departments. For example, DCCA holds business filing information that the tax Department needs; however, their applications do not have access to enable correlating business-owner individual tax with business tax paid.
- ICSD was planning to create an alternative data center. In support of that effort, DCCA purchased an IBM AIX P590 server. The alternative data center was not created, so DCCA replicated their Oracle databases to HIC at DRFortress, but there are no recovery options. DCCA is currently investigating disaster recovery options. They think a possible solution is DRFortress or i365 (www.i365.com) with virtual PCs.
- ICSD networking is generally responsive; however, other support areas have suffered due to staff constraints. Consequently, DCCA depends on local vendors particularly for specialty areas such as the IBM P590 AIX, but mainland vendors are problematic due to the time difference and the fact that

<p>Hawai`i is a small market.</p> <ul style="list-style-type: none"> • DCCA has a strategic plan with weighted priorities. There are active projects for each initiative in the strategic plan. • DCCA has mature custom applications built on Oracle databases. Each system is currently undergoing at least three major enhancements. • ISCO is seeing a growing trend toward use of national databases; with registrations, they are moving toward a strategy that uses the national databases and will keep only Hawai`i-specific information locally. • DCCA has tried to unify business information across Departments by creating a central repository, but the project floundered due to lack of agreement by divisions to agree on the management of master data. They were able to automate exchange of business-entity information and standardized a database model. Information should be shared in a common database with other businesses such as DOTAX and DLIR. • Interdependencies between software and incompatible versions can slow progress and improvements to service delivery. Examples: current Oracle screens will not run on Windows 7, Oracle Reports only runs on IE 8 or lower, IBM Host on Demand only runs on IE 7, and some packages will not run with lower versions of MS Office.
<p>Key IT Initiatives and Opportunities/Challenges</p> <ul style="list-style-type: none"> • ISCO is looking at ways to improve the financial system; the biggest problem is that DAGS will not give them additional accounts for payments; insurance, financials, etc., are all entered into one account. Paper money is not deposited quickly. To eliminate duplicate data entry, DCCA’s financial system needs to be integrated with FAMIS. • Need better video conferencing to drive down the cost of flying people from neighbor islands. • XP will sunset in 2014 and their screens only run in XP; they are looking at using VMV - Virtual PCs as part of remote virtual desktop (financial institution inspectors use them successfully now). • Need to perform business process re-engineering to provide efficiencies and upgrades to enable analysis and reporting of business performance. • Just beginning a project to enhance the Computer Account Request System (CAR).
<p>IT Quick Wins</p> <ul style="list-style-type: none"> • Integrate the DCCA financial system and other custom applications with the central financial system to eliminate duplicate data entry. • Increase the automated clearinghouse (ACH) processes to speed the deposit of monies into the State’s treasury. • Allow online applications for (initial) Professional and Vocational Licensing. • Need better communication between legislature and DCCA; more timely input of data. • Disaster Recovery – DCCA maintains database replicas at DRFortress; the application software resides locally at DCCA.

Data Center Findings	
<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Servers neatly rack mounted with adequate cooling and ventilation • Utilizing virtualization for servers • Using virtual desktops <ul style="list-style-type: none"> Dedicated application test/development environment 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Single connection to NGN No backup air conditioning available
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Strong staff and leadership with virtual server and application experience which may be leveraged statewide 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Data center located in basement level

DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL)

Director: Albert "Alapaki" Nahale-a	Deputy Director: Michelle Kauhane
CIO/IT Coordinator: Rodney Lau, Administrative Services Officer	
Mission	
The Department of Hawaiian Home Lands (DHHL) manages the Hawaiian Home Lands trust to develop and deliver lands to native Hawaiians.	
Organization (including attached agencies)	Key Applications
<p>DHHL Organization:</p> <ul style="list-style-type: none"> Office of the Chairman Administrative Service Offices Fiscal Office Planning Office Information and Community Relations Office <p>DHHL Divisions:</p> <ul style="list-style-type: none"> Land Management Division Land Development Division Homestead Services Division <p>Executive Board:</p> <ul style="list-style-type: none"> Hawaiian Homes Commission 	<ul style="list-style-type: none"> The Applicant/Lessee, Recordation and Mortgage Loan Systems are over 20 years old (although they are continuously being updated and the application was recently upgraded), are managed in-house, minimally effective, and partially documented. DHHL has LAN and WAN. The WAN allows neighbor island branch offices connectivity to the Kapolei main facility. The WAN and LAN are configured for file sharing, printing, and access to internal resources as well as State of Hawai'i resources and the internet. HSD and Fiscal utilize the Loans application database (APPX Loans application) and all departments utilize Oracle Financials; DHHL uploads information from the Oracle Financial Management System (FMS) (10 years old) to the FAMIS system.
Budget/Funding	Staff
<ul style="list-style-type: none"> FY12: ~\$36.6M: <ul style="list-style-type: none"> Federal = ~\$8.6M Special = ~\$13M Trust Fund = ~\$15M Act 14 Settlement: When HI became a state, homesteads had to be produced – Trust Fund provides ~\$30M/year – money runs out in 2014 IT budget: ~\$200K, embedded inside the Administrative Services Office (ASO) 	<ul style="list-style-type: none"> Total DHHL FTEs: 134; 2 DHHL IT employees. ICSD approves Hawai'i.gov and other websites but DHHL has its own social media; ICSD hosts Lotus Notes accounts and provides access to the NGN and statewide applications such as FAMIS. Sandwich Isles Communications (SIC) has the telecommunications contract for the Kapolei Office.
Departmental Items of Note	
<ul style="list-style-type: none"> There are defined beneficiaries with a defined trust. The purpose is to provide beneficiaries with homesteading opportunities of three kinds: residential, agricultural, and commercial. Address cleanup is a real need; there are multiple lists with no authoritative source. DHHL generates revenue through rents and delinquencies and gets to keep the monies generated. Revenue collection is a major activity. There are 740 general lease, license, and revocable permit accounts that need to be managed. Due to maintenance difficulties, such as poor content management tools, restrictions on updates, and delays in getting needed modifications, DHHL determined that the State-provided website for DHHL could not meet their needs. Therefore, they moved their web page from .gov to .org, and the .org page 	

<p>contains a link back to the .gov site.</p> <ul style="list-style-type: none"> • Some areas of the Kapolei office have wireless connectivity. • Sandwich Isles Communications (SIC) has the telecommunications (VoIP) contract for the Kapolei Office. 					
<p>Key IT Initiatives and Opportunities/Challenges</p> <ul style="list-style-type: none"> • A proof of concept is underway to virtualize one of DHHL’s neighbor island offices and the related desktops. If the project is successful, they plan to virtualize five neighbor island district office desktops, and then eventually most of the Kapolei servers, applications, and desktops. • DHHL needs a concrete electronic methodology for managing The List (see “Departmental Items of Note”). • DHHL would like to devise a way to track and/or communicate why lands are handled in a certain way. They need to be able to provide rationale so that outside entities will understand and to help address the backlog. • A real need is integrated data (GIS, loans, demographic information, leases, applications, and genealogy). • Another area of need is the ability to view online who owns surrounding lands to be able to work with other departments. • Would like to be able to provide central servers for sharing information among distributed teams as well as provide a system upgrade due to capacity issues. • In working toward the mission, applicants qualify by being 50% Hawai`i and by meeting financial qualifications. They are then put on a waiting list (i.e., “The List”). A measurement of success is how many applicants have been moved off The List. There is no means for applicants to apply/status information online. Managing The List is an issue due to lack of information between entities. A ~\$3M request made for a beneficiary study was denied during the last legislative session. A \$1.5M request will be made as a legislative proposal for a Wait List assessment. 					
<p>IT Quick Wins</p> <ul style="list-style-type: none"> • Provide online access for current constituents including minutes and community information. • Provide an interface for current constituents to add/update their information. 					
<p>Data Center Findings</p> <table border="1"> <tr> <td style="text-align: center;"> <p>Strengths</p> <ul style="list-style-type: none"> • Operating on current versions of Oracle and Windows server • Data center is newly constructed and built for its purpose </td> <td style="text-align: center;"> <p>Weaknesses</p> <ul style="list-style-type: none"> • Roof leaks • Single connection to NGN </td> </tr> <tr> <td style="text-align: center;"> <p>Opportunities</p> <ul style="list-style-type: none"> • Expand the use of server virtualization • Finalize proof of concept around desktop virtualization with goal of virtualizing neighbor island environment • Investigate Cloud solutions for collaborative services and data storage </td> <td style="text-align: center;"> <p>Threats</p> <ul style="list-style-type: none"> • DHHL stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches </td> </tr> </table>		<p>Strengths</p> <ul style="list-style-type: none"> • Operating on current versions of Oracle and Windows server • Data center is newly constructed and built for its purpose 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Roof leaks • Single connection to NGN 	<p>Opportunities</p> <ul style="list-style-type: none"> • Expand the use of server virtualization • Finalize proof of concept around desktop virtualization with goal of virtualizing neighbor island environment • Investigate Cloud solutions for collaborative services and data storage 	<p>Threats</p> <ul style="list-style-type: none"> • DHHL stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches
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DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT (DHRD)

Director: Barbara Krieg	Deputy Director: Barbara Krieg
CIO/IT Coordinator: David Keane	
Mission	
The Department of Human Resources Development (DHRD) provides timely and responsive leadership, resources, and services to fully support the State in the recruitment, management, and retention of a high-performing workforce for the State's Executive Branch (excluding the Department of Education, certain employees of and services for the University of Hawaii, and several other agencies).	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Compensation and Classification Division – provides job/position classification; auditing of positions – ~1500 classifications. • Employee Claims Division (ECD) – administers Workers Compensation for the Executive Branch. Fee-based service for HPHA, City and County of Honolulu, and Charter Schools. • Employee Relations Division: <ul style="list-style-type: none"> ○ Personnel Transactions Office (PTO) – executes all personnel transactions for employees on leave, employee transfers, and employee terminations (owners of employee information for the Executive Branch). ○ Labor Relations – provides collective bargaining, negotiations, and contract interpretations. • Staffing Office – provides services for civil service jobs, not for exempt positions. Has a key interface with Department Personnel Officers. • Administrative Services (Office) – provides internal administrative services such as budgeting, finances, purchasing, and internal personnel support for new employee orientation. 	<ul style="list-style-type: none"> • HRMS (PeopleSoft) <ul style="list-style-type: none"> ○ HRMS Modules <ul style="list-style-type: none"> - Position Management - Personnel Transactions - Claims Management - Training Administration • Workers Comp Access applications • Neo.gov recruitment system (stand-alone system – stops at the point of providing a list of candidates)
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$20M: <ul style="list-style-type: none"> ○ General = ~\$14.6M ○ Special = ~\$0.7M ○ Interdepartmental = ~\$4.9M • Funding Sources: mostly General Funds. • Staffing – 92 FTE positions, 83 current employees with 9 open positions. • IT Budget: ~\$480k in FY2011 	<ul style="list-style-type: none"> • Information Services Office <ul style="list-style-type: none"> ○ Only 1 funded – 2 people reassigned to support PeopleSoft ○ Effectively 4 IT staff members – Unix Sys Admin, Oracle DB support, PeopleSoft Support, Networking and Desktop Support • Neogov – subscription based software as a service • ICSD <ul style="list-style-type: none"> ○ 2 people who support transaction processing in PeopleSoft. No funding provided for this. ○ Formerly used AIX support but ICSD lost the person. • Oracle maintenance as needed but minimal

Departmental Items of Note
<ul style="list-style-type: none"> • Key interfaces: DAGS, departmental personnel staff, unions, persons seeking positions with the Executive Branch Departments • Interfaces with payroll, pensions (ERS), and benefits (EUTF), also. • IT Governance meets quarterly and includes four Division chiefs, one Administrative Services staff member, and is chaired by the IT Director and Deputy Department Manager. • Difficult to have adequate funding for the entire lifecycle of a major application like PeopleSoft to include necessary upgrades to stay current with the software, and a normal life expectancy of the software with a replacement effort at the appropriate time.
Key IT Initiatives and Opportunities/Challenges
<ul style="list-style-type: none"> • HRMS (PeopleSoft) • PeopleSoft platform • Have used PeopleSoft for about 15 years. • Current version (v. 8) is no longer supported. • Heavily customized (20-50%) • New services or changes to the application. • Restoring training and employee assistance counseling that were previously cut. • Adding an EEO component for reasonable disability accommodations.
IT Quick Wins
<ul style="list-style-type: none"> • Enhance skills and/or solutions for end-user data query and reporting for items such as: <ul style="list-style-type: none"> ○ Media inquiry – some queries can take days. ○ Workforce profile is periodically performed and is very difficult to do. • Address no or minimal integration/interfaces: <ul style="list-style-type: none"> ○ Hiring lifecycle - data reentry from PeopleSoft to Neogov and then back to PeopleSoft ○ Pay lifecycle – data reentry from PeopleSoft to Payroll. Have to enter pre-tax benefit information, dependent care information, and medical information; this is not automatically sent to Payroll. Currently, DHRD sends a file/document and it gets re-entered. This process introduces a great number of errors and differences. ○ One of the biggest issues is overpayment because of the timing of when an employee leaves and when they are actually removed from the payroll. It can take several weeks/months to communicate to Payroll. ○ No timekeeping system to track hours. Leave balances are kept by administrative personnel in each Department on paper/departmental spreadsheet applications. The Payroll system is based on flat salary – no deviations so exceptions have to be entered/applied. • Need a self-service portal for basic information updates for personnel. • Need a document management system. • Need an upgraded email system with a common directory statewide. • Collaborative web portals needed. (Note: SPIN was an employee portal that's not been updated but was supposed to be used by DPOs for HR functions.) • Need to address inadequate skill sets in IT.

Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Knowledgeable staff 	<ul style="list-style-type: none"> • Old equipment likely to fail • Outdated software (Windows 2000) • No equipment/network documentation and standards • No budget for upgrading equipment
Opportunities	Threats
<ul style="list-style-type: none"> • Use virtualization to move applications to more robust hardware • Develop failover strategy for critical applications 	<ul style="list-style-type: none"> • Operating system software no longer supported • Equipment failure could bring production applications down; no backup systems

DEPARTMENT OF HUMAN SERVICES (DHS)

Director: Pat McManaman	Deputy Director: Pankaj Bhanot
CIO/IT Coordinator: Ryan Shimamura	
Mission	
The Department of Human Services (DHS) provides programs, services, and benefits, for the purpose of empowering those who are the most vulnerable in our State to expand their capacity for self-sufficiency, independence, healthy choices, quality of life, and personal dignity.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • MedQuest Division (MQD) – Medical assistance (Medicaid and Medicare) • Benefit, Employment and Support Services Division (BESSD) <ul style="list-style-type: none"> ○ Financial assistance (TANF, TAONF, GA and AABD), Supplemental Nutrition Assistance Program (SNAP) (formerly food stamps) and child care subsidies ○ Case management, work preparation and job placement services to TANF, TAONF, and SNAP recipients. ○ Child care licensing services ○ Programs and services for homeless. • Social Services Division (SSD) <ul style="list-style-type: none"> ○ Child welfare services programs; Title IV E and non-IV E eligibility determination, authorization, and issuance of benefits. ○ Adult community care services programs • Vocational Rehabilitation Services for the Blind Division (VRSBD) <ul style="list-style-type: none"> ○ Vocational rehabilitation and independent living services for individuals with disabilities, who require assistance to prepare for, secure, retain or regain employment. <p>Attached Agencies</p> <ul style="list-style-type: none"> • Office of Youth Services (OYS), Obtains fiscal, personnel, and IT support from DHS – OYS and Hawai`i Youth Correctional Facility provide and coordinate a continuum of services and programs for youth-at-risk to prevent delinquency and reduce the incidence of recidivism. • Hawai`i Public Housing Authority (HPHA), Mostly autonomous; receive personnel support – helps provide Hawai`i residents with affordable housing and shelter without discrimination. • Hawai`i State Commission on Status of Women (HSCSW) – works for equality for women and girls in the State by acting as a catalyst for positive change through advocacy, education, collaboration and program development. (Essentially a one-person organization.) 	<p>Mainframe:</p> <ul style="list-style-type: none"> • HAWI – Hawai`i Automated Welfare Information System – (BESSD) Supports financial programs such as Temporary Assistance to Needy Families (TANF), Temporary Assistance to Other Needy Families (TAONF), General Assistance, and the Assistance to the Aged, Blind, Disabled (AABD), the Food Stamp Program, and Medical Programs such as Quest (Managed Care), Title XIX (Fee for Service), and Title XXI Child Health Insurance programs. • HANA – Hawai`i Automated Network for Assistance – (BESSD) Supports the First to Work (JOBS), Employment & Training (E&T) and Child Care Programs • CPSS – Child Protective Services System – (SSD) Supports the Child Welfare Services Abuse & Neglect, Foster Care and Adoptions Programs, supports the Adult Protective Services Adult Day Care, Foster Grandparent, Respite Companion Service, Nursing Home Without Walls, Developmentally Disabled/Mentally Retarded Home and Community-based Services, Residential Alternatives Community Care, Medically Fragile Community Care, HIV Community Care and All-Inclusive Care for the Elderly Programs • VRISS – Vocational Rehabilitation Information and Statistical System – (VRSBD) Supports the Assessment, Counseling and Guidance for Rehabilitative Services, Supported Employment Services, Job Placement, Services for the Blind and the Disability Determination (Title II and Title XVI) programs. • HARI – Hawai`i Accounts Receivable Information System – Supports the Entitlements and Benefits Overpayment Claims generated from HAWI, HANA, CPSS, etc.

<ul style="list-style-type: none"> State Commission on Fatherhood** (SCF) to promote healthy family relationships between parents and children. (Essentially a one-person organization.) 	<p>Other:</p> <ul style="list-style-type: none"> HIRMS POLog – Looking to Maximo to potentially replace Domino applications for support services
<p>Budget/Funding</p>	<p>Staff</p>
<ul style="list-style-type: none"> FY12: ~\$2.4B: <ul style="list-style-type: none"> General Funds: ~\$1.1B Special Funds: ~\$600K Federal Programs/Grants: ~\$1.3B Interdepartmental: ~\$44.8M Revolving: ~\$8M ARRA: ~\$10K IT Budget/Funding: <ul style="list-style-type: none"> BESSD: FY11: ~\$8,885,567 FY12: ~\$11,201,830 SSD: FY11: ~\$1,056,274; FY12: ~\$595,631 MedQUEST: <ul style="list-style-type: none"> SFY2011:ACCHHS: ~\$8,000,000 (75% Federally funded) SFY2012: <ul style="list-style-type: none"> ACCHS: ~\$7,000,000 (75% Federally funded) New eligibility system ~\$29,436,760 (90% Federally funded) VRSBD: Estimated FY2011: ~\$820k FY2012: ~\$1.2M 	<ul style="list-style-type: none"> Staff counts: <ul style="list-style-type: none"> Position Count = 2,217 Actual = 1,737 IT Staff = 51 Department Office of Information Technology (OIT) organization: <ul style="list-style-type: none"> Administration/Office Support: Applications Network (including desktop support and all WAN/LAN/desktop hardware) Production Operations (includes help desk) with staff of 5 Division IT Resources: <ul style="list-style-type: none"> IT Liaisons from Divisions – business analysts that represent Divisions in terms of needs MedQUEST has their own Network support person Housing Authority has their own IT support staff of 3 or 4 VR Division, Disability Determination Branch – works with SSA and Fed network and tied to DHS network – has 1 IT staff Two primary contract areas: <ul style="list-style-type: none"> Analysis and Programming with eWorld Enterprise Solutions – most pervasive, and also Roses (2 people) to support Child Protective Services – CPSS and AWS <ul style="list-style-type: none"> eWorld supports control and management of HAWA system IBM provides networking architecture and new technologies support – also supporting HALA systems management, application expertise. IBM also supports both DHS and ICSD for mainframe support (5 or 6 people).
<p>Departmental Items of Note</p>	
<ul style="list-style-type: none"> Key processes: Eligibility determination and benefit issuance, case management, procurement of health and human services, consulting contracts, fiscal management and reporting, budget management, program audit, quality control, IT support, and personnel management. <ul style="list-style-type: none"> Key process issue to improve: Dealing with lawsuits related to lack of timely processing and backlog of people receiving benefits. New processes, working relationships, and interfaces need to be addressed for the Patient 	

Protection and Affordable Care Act (PPACA) such as an insurance exchange worked through DCCA.

- Numerous interfaces:
 - State: B&F, DAGS, DOE, DOH (death records), DLIR, DCCA (contractors), UH, DOD State Civil Defense
 - City and County of Honolulu, County of Kauai, County of Maui (includes Molokai and Lanai), County of Hawai'i
 - State of Hawai'i Judiciary
 - US DHHS (Center for Medicaid and Medicare Services, Administration for Children and Families – Office of Family Assistance, Child Care Bureau, and Head Start Bureau), USDA (Food and Nutrition Service), US DOI (Compact of Free Associated matters), SSA (income and eligibility verification)
 - Multiple private for-profit and not-for-profit organizations.
 - Needs among the DHS Divisions and administratively attached agencies as well. (Example: internal awareness of enrollment of a person in one program when they apply for another – when someone applies for a childcare license knowing that they are already registered as a foster care home.)
- Had major reductions in the past several years (up to 50% in some areas) while individuals receiving services grew.
- Treaty with Pacific Island Nations and impact upon DHS: people can freely migrate and the U.S. is required to provide State services, healthcare, and education to 7,000-12,000 people. This is an uncompensated cost of ~\$27-30M a year.
- Department's staff is geographically distributed in each of the counties (namely Oahu, Maui [including Lanai and Molokai], Kauai [including Niihau], and Hawai'i).
- BESSD, electronic forms, need help with language proficiency; nine languages need to be supported in Hawai'i.
- Acting CIO has an IT Steering Committee within the Department and a Technical Advisory Council that meets monthly.
- Section 508 of the Rehabilitation Act Compliance is required due to constituency.
- Strengths for sharing: Process of case management system for work program and child care subsidies and child care licensing resource file; Maximo for inventory and emergency preparedness; and Tivoli for single log on and secured access.
- Wish list:
 - Electronic availability of demographic data, case load, reports, real-time fiscal (revenue and expenditure) information, DOH death records, and electronic records related to companies doing business with the State.
 - VR works with the following departments but does not have any information-sharing capabilities:
 - Department of Labor: VR is reimbursed approximately ~\$100,000 per year by the Social Security Administration when SSI/SSDI recipients are employed. VR needs the client's current wage information that DOL possesses. If VR were able to access the client's wage information, the SS reimbursement rate would be greater.
 - Department of Education: VR works with DOE students with disabilities ages 14 -21.
 - Department of Health: VR works with adults and students with developmental disabilities and/or with mental health disabilities.
 - Electronic consumer interface and management tools, with website that is easy to navigate, and interfaces with various databases and systems to manage the work flow process more efficiently.
 - Need an interface with Judiciary.
 - Provide online access for consumers and modern communication tools/applications such as texting, emailing, or tweeting.
 - Explore the possibility of a new phone system (e.g., VoIP) and telecommuting.

- Provide online access and depository for foster children and BESSD clients to save their vital records, photographs, employment records, resumes, etc., so that they have portable digital files/records.
- Ability to oversee, monitor, and audit service provision partners. Need improved data about those companies providing services from either the State procurement system or DCCA.
- PO Log is kept today and have to manually reenter data into procurement system/FAMIS.

Key IT Initiatives and Opportunities/Challenges

- Replacement Applications Systems (BESSD, MQD, VR, SSD):
 - MQD has ~\$30 million budgeted to comply with the Affordable Care Act requirements by redesigning the eligibility system.
 - Integration with Hawai'i Health Insurance Exchange
 - Hawai'i Prepaid Medical Management Information System (HPMMIS) enhancement/replacement
 - VR has just begun the process of procuring the services of a vendor to build an Automated Case Management System (ACMS).
 - SSD is in the intermediate stages of building their new Child Protective Services System. (Note: new development is being done with Ruby on Rails, SQL Server database, and .Net – all technologies that would be non-standard today.)
- Business Process Re-engineering Project. BESSD has hired a consultant to evaluate the existing eligibility process pertaining to financial assistance and SNAP benefits and help redesign the work flow processes to accomplish the goal of issuing benefits in a timely manner with diminished resources:
 - Address document imaging and e-forms as well as portable devices to allow DHS staff to be more mobile in addressing routine tasks (e.g. child care licensing) and for responding to emergency disasters (e.g. emergency food stamps).
 - Explore the possibility of expanding the concept of telecommuting with the availability of portable devices. This would address some of the lease rental issues.
- Request for grant (~\$900k) from USDA to demonstrate content and imaging via Xerox machines they already have.
- Implement new application and database (Maximo) to capture inventory and manage civil defense emergency preparedness.
- New Purchase Order Log, in addition to the Hawai'i Compliance Express, repository for procurement documents that are routinely needed to execute contracts and make payments. Investigate use of Maximo.
- Better Access to Department (Gateway Portal). (Provides access to DHS both internally and externally [Fed partners].)
- Dashboard (Data Warehouse—not yet started).
- Need language accessible services and disability access.
- Medicaid staff are on a separate implementation of Lotus Notes which creates issues in communications with them and other DHS staff.

IT Quick Wins	
<ul style="list-style-type: none"> • VR virtual desktop environment • BESSD document imaging and content management • Short term/immediate needs: <ul style="list-style-type: none"> ○ Old equipment and software ○ Routine repair and maintenance of hardware such as PCs, servers and routers need to be done or new equipment purchased ○ Purchase backup tapes for the mainframe ○ Basic software maintenance costs ○ Equipment and infrastructure needed for relocated staff due to the SSD consolidation and reorganization • Longer term needs: <ul style="list-style-type: none"> ○ BESSD needs to review and assess the viability of the HAWI and HANA systems on the mainframe. BESSD needs to address the cost issues and the potential inability to maintain the legacy system as-is. ○ Online training would assist the Division in addressing staffing needs and ability of the Division to maintain operations. ○ Moving to the IFL and considering Cloud computing would address some cost issues. ○ Long-term decision for MQD network and email; i.e., join DHS network or remain independent. (Medicaid staff are on a separate implementation of Lotus Notes which creates issues in communications with them and other DHS staff.) ○ SSD: Complete building and implement the new child protective services system (SHAKA) • SSD Adult Community Care Services Branch (ACCSB): CPSS data system needs to be replaced. Discussion is to have ACCSB data from CPSS included in CWSB's new SHAKA information system. Cost estimate to modify SHAKA to accommodate ACCSB-APS information is not known. 	
Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Knowledgeable staff 	<ul style="list-style-type: none"> • Not enough staff to support the Department • Old equipment • Outdated software (Windows 2000) • Uses ICSD mainframe • No budget for upgrading equipment
Opportunities	Threats
<ul style="list-style-type: none"> • Virtualize servers to move applications to more robust platform • Develop failover plans for critical applications • Migrate from mainframe to server architecture to enable mobile and web services 	<ul style="list-style-type: none"> • Operating system software no longer supported • Equipment failure could bring production applications down; lack of failover

DEPARTMENT OF LABOR AND INDUSTRIAL RESOURCES (DLIR)

Director: Dwight Takamine	Deputy Director: Audrey Hidano
CIO/IT Coordinator: Norman Ahu, BMO, and Karl Nagamine	
Mission	
The Department of Labor and Industrial Resources (DLIR) is responsible for ensuring and increasing the economic security, well-being, and productivity of Hawai'i's workers.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Disability Compensation Division (DCD) • Occupational Safety and Health Administration Division (HIOSHA) • Research and Statistics Office (RS) • Unemployment Insurance Division (UI) • Wage Standards Division (WSD) • Workforce Development Division (WDD) • Administrative Services Office • Personnel Office <p>Attached Agencies</p> <ul style="list-style-type: none"> • Employment Security Appeals Referees' Office (Appeals Court) (ESARO) • Hawai'i Labor Relations Board (HLRB) • Workforce Development Council (WDC) • Hawai'i Labor and Industrial Relations Appeals Board • State Fire Council (SFC) • Hawai'i Civil Rights Commission (HCRC) • Office of Language Access (OLA) • Office of Community Services (OCS) 	<ul style="list-style-type: none"> • Unemployment Insurance – prints unemployment checks • Disability Compensation Information System (DCIS) – Shared database monitored and used by worker's compensation (WC) Temporary Disability Insurance (TDI) and Prepaid Healthcare (PHC) programs. • Workforce Development – job banks/Geosoul • Public assistance systems – various • Cost Accounting System (CAS) – a timesheet system that feeds FAMIS; supports UI, WDD, and HIOSHA • Interactive Voice Response System (IVR) • HCRC Custom Database – tracks discrimination cases • WSD Employer Information Database – emerged from DCD and then UI databases
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12 Total: ~\$753.0M: <ul style="list-style-type: none"> ○ Federal Funds = ~\$83.9M ○ General Fund = ~\$13.3M ○ Special Funds = ~\$653.1M ○ Interdepartmental = ~\$2.7M ○ Revolving = ~\$70K NOTE: The operating budget is ~\$100M while the benefits allocation is ~\$600M. • IT Budget: Approx. ~\$500K • Predominant Funding Source: Special Funds = ~\$653.1M • Funding by Division: <ul style="list-style-type: none"> ○ Unemployment Insurance = ~\$376.7 M ○ Workforce Development = ~\$62.2M ○ Disability Compensation = ~\$28.6M ○ Overall Program Support = ~\$7.6M ○ Enforcement and Adjudication = ~\$9.4M 	<ul style="list-style-type: none"> • Staff counts: <ul style="list-style-type: none"> ○ Organizational FTEs: 580 filled positions ○ IT FTE: 8 official (plus ~3 unofficial) <p>Personnel and IT fall under the Director's office; many staff members are performing IT but are not officially IT; some IT positions are Federally funded. There are only a handful of dedicated IT personnel.</p>

Departmental Items of Note

- UI, WDD, and Appeals Court comprise 60-70% of the Department.
- As unemployment rates increase, so does their budget; when it decreases, the budget goes down as well.
- The Department's mission is to facilitate a better work environment; however, many new employers with job openings can't hire until they get a certificate of insurance to show that they have the proper permits and have paid into worker's compensation, etc. DLIR has one person performing data entry for this process and was as much as six months behind. This created a huge backlog resulting in delays in the hiring process.
- The DLIR's IT staff is not able to do any planning because they are consistently in a reactive mode responding to one crisis after another. They feel as though they are barely keeping their heads above water to keep IT running.
- DLIR has had to pay overtime and cross-train staff to handle clerical backlogs.
- DLIR thinks it might be good to have desktop support centralized within the State but worry about response time and quality of service.
- For any functions that are centralized, policies need to be written to address priorities especially in the case of crises or extreme workload. Priorities need to be defined; for example, who gets priority if there is a disease outbreak and unemployment checks need to go out?
- DLIR is using a product called Total Network Inventory that they purchased for ~\$600 and customized for their purposes; it produces a hardware/software inventory database and reports (currently only using it in the Work Force Development Division), but trying to deploy it Department-wide.
- The Cost Accounting System (CAS) is maintained by and hosted at DataHouse Consulting. It includes an online financial data intake module and a batch processing module. The electronic data intake module is used by DLIR employees to enter their semi-monthly timesheets, purchasing, travel, and payments.
- CAS is web-based and allows secure user access anytime from the DLIR WAN to the CAS web server located at DataHouse Consulting through a secure VPN. The batch module runs on an IBM AS400 server at DataHouse.
- DLIR IT staff participated in the IT Technical Committee (run by ICSD) but they do not anymore because even though lots of good ideas were shared, the the IT chief position was abolished in DLIR as part of recent staff reductions and no one is available to attend.. Also, the IT Administrators Committee has not met this year.
- IT staffing: There are issues with people being moved into positions for which they are not fully qualified and often do not have the right skill set. People are performing IT duties that are not part of their job description. IT staff are trying to get more users involved and educated to become the first line of contact to assist current IT staff.

Key IT Initiatives and Opportunities/Challenges

- Want to be able to link information with DCCA to help people find jobs and/or re-train.
- Want to be able to link information with DBEDT to understand labor needs (increases and decreases).
- Want to be able to link information with the University of HI to assist job seekers with career development and increasing knowledge/skills.
- For planning purposes, DLIR, Department of Tax, and DCCA need to know when a new business comes to Hawai'i.
- IT should support business services; DLIR has a great vision to better serve the community, but IT deficiencies are hampering their ability to deliver on that long-term vision; they need more efficient automation to free up people to deliver on that vision.
- Examples of how IT can better support DLIR business services:
 - Insurance companies could electronically send their renewals to them.

<ul style="list-style-type: none"> ○ Paperless elevator inspections. ● DLIR is pushing the use of Symantec across the Department to reduce their security risk. 	
<p>IT Quick Wins</p>	
<ul style="list-style-type: none"> ● Need defined standards and policies; in particular, security standards so DLIR knows what to buy to facilitate sharing data and interfacing between systems. ● Network monitoring is needed to be able to see if the network is meeting their needs. ● Need a standard mechanism to perform inventorying with automated discovery. ● Need a Tier 1, 2, and 3 escalation process supported by a contractor for IT problems they cannot address. 	
<p>Data Center Findings</p>	
<p>Strengths</p>	<p>Weaknesses</p>
<ul style="list-style-type: none"> ● Data center located on third floor ● Data center is a dedicated room with separate cooling and power 	<ul style="list-style-type: none"> ● No budget for upgrade of systems ● Single connection to NGN
<p>Opportunities</p>	<p>Threats</p>
<ul style="list-style-type: none"> ● Migrate from mainframe to server architecture to enable mobile and web services ● Virtualize servers to move applications to a more robust platform ● Develop failover plans for critical applications 	<ul style="list-style-type: none"> ● No intrusion detection systems

DEPARTMENT OF LAND AND NATURAL RESOURCES (DLNR)

Director: William Aila	Deputy Director: William Tam
CIO/IT Coordinator: Lila Loos, IT Director	
Mission	
The Department of Land and Natural Resources (DLNR) enhances, protects, conserves, and manages Hawai'i's unique and limited natural, cultural, and historic resources held in public trust for current and future generations of visitors and the people of Hawai'i in partnership with others from the public and private sectors.	
Organization (including attached agencies)	Key Applications
<p>DLNR Divisions:</p> <ul style="list-style-type: none"> • Water Resource Management • Office of Conservation & Coastal Lands • Land Division • State Parks • Boating and Ocean Recreation • Forestry and Wildlife • Bureau of Conveyances • Engineering • Fiscal: • Personnel • Aquatic Resources • Conservation & Resources Enforcement • Historic Preservation • Administrative Services • Information Technology <p>DLNR Offices:</p> <ul style="list-style-type: none"> • Administrative Office • Personnel Office • Public Information Office <p>Note: Some employees are managed by RCUH, and DLNR has partnership arrangements with the Nature Conservancy, USGS, and the Army Corps of Engineers.</p> <p>DLNR Boards/Councils:</p> <ul style="list-style-type: none"> • Board of Land and Natural Resources • The Commission on Water Resource Management • Natural Area Reserves Commission • Kahoolawe Island Reserve Commission • Island Burial Councils • Hawai'i Historic Places Review Board 	<ul style="list-style-type: none"> • SLIM – State Land Information Management System; integrates with other agencies and Departments to which they need to pay fees/leases • BCIS – Bureau of Conveyances Information System (buy, sell, timeshare) • Enforcement Management Information System (reports, warnings, citations) • National Flood Insurance Program; manages dams in the State; flood designations • BARS – Boating AR System; vessel registration and mooring • Fourteen systems for state licensing (e.g., fishing, hiking, water wells, camping, fish catching, game, commercial fishing, conveyance search and order, conveyance uniform commercial code, vessel registration)

Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$115M: <ul style="list-style-type: none"> ○ Federal = ~\$19.3M ○ General = ~\$27.6M ○ Special = ~\$61.4M ○ Interdepartmental = ~\$6M ○ Revolving Fund = ~\$0.9M • IT Budget: <ul style="list-style-type: none"> ○ Payroll = ~\$535k ○ Expenditures = ~\$240k ○ The number of civil service positions totals: 834 (739 Permanent, 95 Temp) 	<ul style="list-style-type: none"> • 10 IT staff that support about 800 computers in 50 locations • Online apps provided by HIC (Hawai'i Information Consortium) • ICSD provides NGN infrastructure and Lotus Notes server
Departmental Items of Note	
<ul style="list-style-type: none"> • One of DLNR's major successes was the establishment of the State's first offsite DR; uses DRFortress by the airport; in the second stage of developing a business continuity structure that will create a network system for backup and remote accessibility utilizing replication and virtualization services in an effort toward real-time data retrieval. • Implemented a Polycom HDx8000 statewide video conferencing system and the RMX2000 that serves as a backup to ICSD's bridging capabilities. • DLNR uses GIS as an important tool for program decision making; participated in the statewide strategic planning process for enterprise GIS and plan to develop GIS interfaces to DLNR databases as well as mobile technologies. • DLNR uses HIC for a variety of transaction-based web applications; HIC receives a portion of the collected fee and is also paid by DLNR; HIC has created more than 10 systems for DLNR. • Enforcement Management Information Systems automates manual processes and provides timesheets and automated reporting for leave. • DLNR adds up to just <1% (0.96%) of the entire state operating budget and 1.6% of permanent civil service workforce. • DLNR infrastructure is based on NGN; equipment is standardized on Dell PCs and Cisco communications equipment. • 50 remote sites use DSL; some may move to an Ethernet solution. • Twitter available to constituents via home page. 	
Key IT Initiatives and Opportunities/Challenges	
<ul style="list-style-type: none"> • Develop a comprehensive database management system • Expand the Civil Resource Violation System to improve compliance with State laws and rules protecting Hawai'i's natural resources, in support of the Office of Civil Compliance. • Under development/recently deployed: Bureau of Conveyances' electronic recordation and management system; Boating's accounts receivable system; Conservation and Resources Enforcement's electronic management information system. • Implement phase two of the DR and business continuity plan. • Provide data replication through virtualization and storage area networks. • Need buy-in and ownership for successful application development; need ability to manage and change business processes. • Improve the network infrastructure in the areas of bandwidth, services, and security. 	
IT Quick Wins	
<ul style="list-style-type: none"> • Ability to acquire in-house business analysts and application developers 	

Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Knowledgeable staff • Offsite DR for critical applications 	<ul style="list-style-type: none"> • No budget for upgrading equipment
Opportunities	Threats
<ul style="list-style-type: none"> • Virtualize servers to move applications to a more robust platform 	<ul style="list-style-type: none"> • Bandwidth issues to other islands impede the Department's mission

DEPARTMENT OF DEFENSE (DOD)	
Director: Darryll Wong, The Adjutant General	Deputy Director: Joseph K. Kim, Deputy Adjutant General
DOD and Civil Defense IT Coordinator: George Burnett Hawai'i Air National Guard IT Coordinator, Reynold Hioki Hawai'i Army National Guard, Edwin Parubrub	
Mission	
The Department of Defense (DOD) assists authorities in providing for the safety, welfare, and defense of the people of Hawai'i.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Hawai'i Army National Guard • Hawai'i Air National Guard • State Civil Defense • Office of Veteran's Services • Youth ChalleNGe Academy 	<ul style="list-style-type: none"> • WebEOC (used to document the status and history of emergency operations) • HRSS (Secure Portal) • System Backup (Survival) • Purchase Order Management System • MERCI – Mobile Emergency Response Command Interface – Damage Assessment – iPhone application: <ul style="list-style-type: none"> ○ Information is used to potentially support Presidential declaration of emergency/disaster ○ Locally developed by OceanIT; found source of funding and made use of grant to create it. Federal ~\$ - 200k. ○ 10 iPhones bought for this effort. • EAS/CAP – Emergency Alert System/Common Alerting Protocol; for TV/Radio, have a special client to send notifications. EAS is customized and the CAP Server is off-the-shelf (uses a standardized messaging format). • VTC is extremely vital to maintaining interagency collaboration between the State and county agencies • FSC – Commander – COTS for siren control; uses radio, wireless, satellite; turns sirens on/off by computer • Interisland Data Net – SMTP delivery and automated printing of emergency warning messages to State and County EOCs/Warning Points, and emergency backup satellite systems between the State and counties and is considered essential to maintain public safety.

Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$128M: <ul style="list-style-type: none"> ○ Federal = ~\$95M ○ General = ~\$20.4M <ul style="list-style-type: none"> – Interdepartmental = ~\$12M – County: = ~\$464k • IT Budget: <ul style="list-style-type: none"> ○ Payroll = ~\$104k ○ IT Expenditures = ~\$74k • Department budget break down by business services: <ul style="list-style-type: none"> ○ Administration (OTAG, Special Staff, PAO, HIENG, DPO, ASO and Fiscal Services) 18% ○ HIARNG: 17% ○ HIANG: 3% ○ SCD: 54% ○ OVS: 2% ○ YCA: 6% 	<ul style="list-style-type: none"> • Staff count: State workers = 389 • Department Level – No CIO established: <ul style="list-style-type: none"> ○ SCD – IT Specialist ○ Youth Challenge – 1 IT Specialist ○ FISCAL 1 pseudo IT Specialist ○ HIANG – 12 ○ HIARNG – 14 • ICSD provides payroll for State DOD employees, network support (NGN) to the Department via SCD at Diamond Head Crater and DNS, firewall, VTC management, and microwave connectivity. • Pacific Disaster Center is funded through DOD in Maui; DOD has an MOA with them; sends warning messages to affected areas (e.g., Civil Defense). • Contractor support for security/firewalls, maintenance support (WEBEOC, VTC, Checkpoint/PIX, EAS, Pacific Disaster Center, antivirus, backups). • Data center in State EOC in Diamond Head Crater.
<p>Departmental Items of Note</p>	
<ul style="list-style-type: none"> • The DOD supports Civil Defense activities and provides infrastructure for assigned and volunteer personnel. • There are Emergency POCs in each of the Departments; regular meetings are conducted with them. • The DOD provides the operations and training of all National Guard units. • Follow Federal DOD information assurance/security policies. • Sometimes it takes six months to get a paycheck from the State when working State Active Duty. EDOPS (the State active duty orders system) does not interface with the state accounting system; each order has to be hand-typed and results in a paper check. • A mobilization could cost ~\$500k. • Have a need for multi-lingual communications in times of emergency. • Note: The State of FL has an emergency response system that could be used as a model; estimate that it would cost about ~\$250k to automate the current emergency response system. 	
<p>Key IT Initiatives and Opportunities/Challenges</p>	
<ul style="list-style-type: none"> • DOD has issues with separate networks that the DOD has to work with and the challenges that presents for consolidating communications, email, and calendaring across the executive leadership. Have already moved to Exchange for email. Need special protocols for sharing calendar information across networks. • DOD acknowledges the need to increase bandwidth across the islands and across the .mil to the State’s network to support greater use of video and imaging as part of disaster response. 	

IT Quick Wins	
<ul style="list-style-type: none"> • Need: <ul style="list-style-type: none"> ○ Consolidated cross-domain information sharing ○ Wireless services ○ Infrastructure upgrade ○ VTC hardware/software refresh ○ AV Matrix Switch refresh ○ Router and switches refresh (five years old) • Desktop virtualization • Development and execution of a security program to address intrusion detection, antivirus, etc.; designation of an ISSO at the CIO level (Note: DOD NG has information assurance expertise that can be leveraged.) 	
Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Located in secured bunker • Emergency generator available 	<ul style="list-style-type: none"> • No intrusion detection platform deployed • Single connection to NGN
Opportunities	Threats
<ul style="list-style-type: none"> • Expand mobile services, partnering with the State to help mobile application adoption 	<ul style="list-style-type: none"> • A number of separate networks provides the opportunity for sensitive data leakage between networks

DEPARTMENT OF EDUCATION (DOE)	
Director: Kathryn S. Matayoshi Superintendent	Deputy Director: N/A
CIO/IT Coordinator: David Wu	
Mission	
The Department of Education is dedicated to the commitment to a quality education for all of Hawai'i's children by administration of public and private schools as well as programs such as special needs, gifted/talented, learning centers, Hawai'i language, and junior reserve officer training corps programs.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Assistant Superintendent of Schools for Curriculum, Instruction, and Student Support • Assistant Superintendent of Schools for Human Resources • Assistant Superintendent of Schools for Business Services • Assistant Superintendent of Schools for Information Technology Services (All of the above are appointed/hired by the Superintendent.) • 15 complexes (2-4 schools each). Each complex consists of a high school and the associated elementary and intermediate/middle schools. There are seven geographical districts: <ul style="list-style-type: none"> ○ Honolulu ○ Central ○ Leeward ○ Windward on Oahu ○ Hawai'i, Maui (including Molokai and Lanai) ○ Kauai (including Niihau) 	<ul style="list-style-type: none"> • FMS – current financial system (interfaces via FTP transmittals to FAMIS and Payroll) • Educational Focused Systems: DSI (Learning Management), eSIS (Student Information Management), eCSSS (Student Case Management), FMS (ERP Financials and Procurement) and K-12 LDS (Longitudinal Data Analysis) • Maximo for facilities repair and capital dollar tracking • eHR system to recruit and hire teachers, aides, and administrators
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$1.8B: <ul style="list-style-type: none"> ○ Federal = ~\$263.6B ○ General = ~\$1.4B ○ Special = ~\$49.9M ○ Trust Fund = ~\$33M ○ Interdepartmental = ~\$10.6M ○ Revolving Fund = ~\$30.4 • ARRA/Other Funds = ~\$47.9M ~\$IT Budget: ~\$15M • ARRA dollars were ~\$110M over last 2 years • DOE has legislative approval via their special/revolving funds to carry funds over year to year 	<ul style="list-style-type: none"> • Staff counts: organizational FTEs and IT FTEs: ~21,670 FTEs/153 IT FTEs within DOE formal IT organization plus approximately 288 other individuals (many are performing at the full-time level) IT in-school support staff. Note: ~13,000 teachers. • eWorld is a DOE subcontractor and currently they are providing project management support as well as establishing a PMO and its required processes (3-5 staff members).

Departmental Items of Note

- SharePoint has been implemented (used but not maximized) for collaboration and reporting/coordination for Race to the Top.
- The organization effectively implemented Kronos as a time and attendance solution and has created a payroll module to feed the ICSD payroll application.
- The DOE collects comprehensive metrics and feedback from their Centralized Support Desk on services provided.
- The DOE uses a balanced score card approach to measure performance against strategic plan targets.
- OITS uses Solar Wind's Orion Network Management System to monitor traffic in the Wide Area Network (WAN).
- BMC Software's Atrium Configuration Management Data Base (CMDB), which is part of BMC's Remedy system, was purchased but not fully implemented.
- Centralizing on Cisco equipment.
- Effectively implementing video conferencing between schools to maximize teaching talent and student-to-teacher ratios.
- Two data centers (one primary and one backup; McKinley High School is the backup, and the primary is in the DOE Building on Miller Street), plus ICSD and space within a third-party data center.
- The superintendent or CEO is appointed/hired by the Board of Education (BOE). (The BOE is now appointed by the Governor; the last appointment was May 2011.)
- The Hawai'i's school system is unique among the states and serves more than 178,000 students (255 regular schools, two special schools, and 31 charter schools).
- The Hawai'i's school system is approximately the tenth largest school system in the nation.
- Hawai'i's state Board of Education formulates policy for the public schools and state library system.
- DOE is treated almost independently in that they do their own building and grounds maintenance (not DAGS Central Services); they also do their own procurement functions with only some oversight from the Office of Procurement.
- ICSD hosts/houses the FMS system and provides payroll and vendor payment services.
- Charter schools do not utilize ICSD for payroll. Charter schools have outsourced payroll and payment systems with Ceridian and have nearly 100% electronic deposit rate for employees.
- Building a new data center in the cafeteria of an old elementary school that has space available for ICSD to use as an alternate site (Phase 1 will house 2,000 to 3,000 square feet with Phase 2 expandable to 5,000 square feet).
- DOE CIO has created an advisory council of key CIOs in the public and private sectors that meets monthly to review plans and strategies and to provide their opinions and recommendations.
- Expressed interest in Ceridian outsourced payroll system that the charter schools use.
- The teaming relationship between DOE and UH has improved both organizations. DOE is looking closely at UH Google Mail and Apps deployment as a model for them.
- Third-party provider has used NETBrain to document recent Cisco installations.
- The Superintendent has just launched a data governance council.
- The Superintendent is extremely engaged and involved in IT governance/direction setting within the Department.
- Key intra-state interfaces:
 - UH – graduates from DOE as Federal grant partners.
 - Other critical interfaces are with the Department of Human Services (DHS) and Department of Health (DOH) to be able to understand a child's holistic environment and better serve the student to achieve goal One. (This interface is not as robust as it should be.)
 - Department of Hawai'i Homelands (DHHL) from a cultural basis relative to DHHL's mission.
 - Other critical interfaces on the non-mission side are with the Department of Business, Economic

<ul style="list-style-type: none"> Development, and Tourism to understand changes to community environments. o Budget and Finance from a budgeting perspective. o DAGS and its Office of Accounting (FAMIS, payroll, warrants) and to some extent the Office of Procurement. o Office of Hawaiian Affairs. 	
<p>Key IT Initiatives and Opportunities/Challenges</p> <ul style="list-style-type: none"> • New financial system, specifically an ERP solution, is on top of the DOE list (leveraging Gartner Study from 2009 and upgrading the specifications). • Building out a new primary data center. • Organization is pursuing a form of electronic signatures via two pilot projects. • Upgrading the network in every school over the next 3 years – 3 schools per month (wireless is also part of the equation). 	
<p>IT Quick Wins</p> <ul style="list-style-type: none"> • Leverage DOE’s standards and processes; e.g., governance, PMO (under development), performance measurements, disaster recovery, and collaboration. • Leverage DOE’s new data center for at least critical server disaster recovery and/or alternate support site. 	
<p>Data Center Findings</p>	
<p>Strengths</p> <ul style="list-style-type: none"> • Primary and backup data center architecture • Server and network equipment is current and is patched regularly • Adequate data center facilities with acceptable cooling • Comprehensive network monitoring approach 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Configuration Management Database (CMDB) not implemented to track the large number of assets in DOE
<p>Opportunities</p> <ul style="list-style-type: none"> • Since DOE is building out new data center space, investigate options to house other State services in this facility • Collaborate with ICSD on SolarWinds monitoring tools and BMC Remedy tools 	<p>Threats</p> <ul style="list-style-type: none"> • Lack of robust security policies regarding computer and network password requirements • DOE stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches

DEPARTMENT OF HEALTH (DOH)	
Director: Loretta Fuddy, A.C.S.W., M.P.H.	Deputy Director: Gary L. Gill, Environment Health Administration; Keith Y. Yamamoto, Deputy Director of Health; (open position), Health Resources Administration; Lynn N. Fallin, Behavioral Health Administration
CIO/IT Coordinator: Dwight Bartolome, Chief, Health Information Systems Office (HISO)	
Mission	
The Department of Health (DOH) protects and improves the health and environment for all people in Hawai'i. Services include the issuance of vital records, issuing marriage licenses, tracking contagious disease outbreaks, disability/elder care services, and emergency preparedness.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Deputy Director of Health Administration: <ul style="list-style-type: none"> ○ Affirmative Action Office (AAO) ○ Administrative Services Office (ASO) ○ Health Information Systems Office (HISO) ○ Human Resources Office (HRO) ○ Office Planning, Policy & Program Development (OPPPD) ○ Office Health Status Monitoring (OHSM) ○ Office of Health Care Assurance (OHCA) ○ Hawai'i District Health Office (DHOH) ○ Maui District Health Office (DHOM) ○ Kauai District Health Office (DHOK) • Communications Office • Tobacco Settlement Programs • Health Resources Administration, Deputy Director's position (open): <ul style="list-style-type: none"> ○ Communicable Disease Division (CDD) ○ Disease Outbreak Control Division (DOCD) ○ Family Health Services Division (FHSD) ○ General Medical and Preventive Services Division (GMPSD) ○ Emergency Medical Services Systems and Injury Prevention Branch (EMSSB) • Behavioral Health Administration: <ul style="list-style-type: none"> ○ Adult Mental Health Division (AMHD) ○ Alcohol and Drug Abuse Division (ADAD) ○ Child and Adolescent Mental Health Division (CAMHD) ○ Developmental Disabilities Division (DDD) • Environmental Health Administration: <ul style="list-style-type: none"> ○ Compliance Assistance Office (CAO) ○ Environmental Planning Office (EPO) ○ Environmental Resources Office (ERO) ○ Hazard Evaluation & Response Office (HERO) 	<ul style="list-style-type: none"> • Disease Outbreak Control & Emergency Preparedness and Response: <ul style="list-style-type: none"> ○ Electronic Communicable Disease (ECDR) ○ Public Health Sentinel Surveillance System (PHS3) ○ Electronic Lab Reporting (ELR) ○ Laboratory Information Management System (Starlims) ○ Hawai'i Immunization Registry (HIR) ○ Response Manager (RM) ○ Incident Management System (ETeAM) ○ Public Safety Incident Management System (PSIMS) ○ Resource Management (Maximo) • Emergency Medical Services and Injury Control: <ul style="list-style-type: none"> ○ Hawai'i Emergency Medical Services Information System (HEMSIS) ○ Trauma Registry • Social and Safety Net Services Health Plan Processing: <ul style="list-style-type: none"> ○ Behavioral Health Management Information System (BHMIS AVATAR/ECURA) ○ Child Adolescent Mental Health Information System (CAMHIS) eVista ○ Developmental Disabled Client Services Tracking (DDCARES DDMIS) ○ Public Health Nursing System (PHNSYS) ○ Healthy Start & Early Intervention System (CHEIRS) ○ DHDS ○ WEB Information for Treatment Service (WITS) ○ Track children with Special Health Needs (CSHN)

<ul style="list-style-type: none"> ○ Environmental Health Services Division (EHSD) ○ Environmental Management Division (EMD) ○ State Laboratories Division (SLD) <p>Attached Agencies/Boards/Councils</p> <ul style="list-style-type: none"> ● Board of Health ● Developmental Disabilities Council ● Disability & Communication Access Board ● Executive Office on Aging ● Hawai'i Health Systems Corporation (HHSC) ● Office of Environmental Quality Control ● Special Advisory Committees/Boards ● State Health Planning & Development Agency 	<ul style="list-style-type: none"> ● Communicable Disease: <ul style="list-style-type: none"> ○ TB Screening/Registry (TIMS/TBMIS) ○ STD/Aids Registry/Tracking (STDR/HPMMS) ○ Hansen's Disease Registry/Tracking System ● Genetic Disorder Women & Children Services: <ul style="list-style-type: none"> ○ Newborn Metabolic/Hearing Screening ○ Birth Defects Registry ○ Child Death Review ○ Pregnancy Risk Assessment (PRAMS) ○ WIC Online Voucher System (SWICH) ○ Request/process reimbursements (CHCPoint) ● Vital Records Registry: Birth, Marriage, Death: <ul style="list-style-type: none"> ○ Vital Statistics System (VSS) ○ Electronic Birth Registration System (EBRS) ○ Electronic Death Registration System (EDRS) ○ Electronic Marriage Application and License Reporting System ● Environmental Health Monitoring and Reporting: <ul style="list-style-type: none"> ○ Hawai'i Environmental Information Exchange (HEIX) ○ Hawai'i Environmental Health Warehouse (HEHW) ○ Air Monitor Reporting System (ADMS) ○ Laboratory Management Information System – Starlims ○ Bioterrorism Response Manager Alert System – Emsystem ● Permits and Licensing: <ul style="list-style-type: none"> ○ Environmental Impact Statement (EIS) ○ Document Management System ○ MDS ○ DCABS ○ ePermitting System ● Chronic Care Quality of Health Improvement: <ul style="list-style-type: none"> ○ Behavioral Risk Factor Surveillance System (BRFSS) ○ Health Surveillance System (HSS) ○ Hawai'i Health Data Warehouse (HHDW) ● Administrative Support: <ul style="list-style-type: none"> ○ Employee and Position Management System (POINTS) ○ FAMIS/Data Mart Financial Reporting ○ Purchase Order Generation System ○ Payroll Reporting System
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	<ul style="list-style-type: none"> ○ G1 Vacation / Leave Tracking System ○ Legislative Tracking System (LTS) ○ Correspondence/Contract Log ○ Grants/Contract/Financial Management& Reporting System ○ Pcard Reconciliation System ● HPS Handicap Placard Registration and Query System
<p>Budget/Funding</p>	<p>Staff</p>
<ul style="list-style-type: none"> ● FY12: ~\$910.4M: <ul style="list-style-type: none"> ○ Special Funds = ~\$195.7M ○ General Funds = \$412.8M ○ Federal Funds = ~\$124.5 ○ Revolving Funds = ~\$168.3M ○ Interdepartmental Funds = ~\$9.2M ● IT budget FY11: ~\$12M <ul style="list-style-type: none"> ○ IT Payroll: ~\$3.5M ○ IT Non-payroll: ~\$1.3M ○ IT Contracts: ~\$7.2M 	<ul style="list-style-type: none"> ● Staff counts: <ul style="list-style-type: none"> Organizational FTEs: 2,642 IT FTEs: 88 (staff based at funding division) <ul style="list-style-type: none"> ○ 1 Manager, 2 Administrative ○ 67 Systems Services IT ○ 18 User Support Technicians ● 206 Agency contractors and more than 10,000 vendors
<p>Departmental Items of Note</p>	
<ul style="list-style-type: none"> ● Critical interfaces with organizations and stakeholders is broad and far-reaching; encompasses coalitions, working groups, businesses, non-profits and others making up the health care community, environmental protection, and human services safety net. Interfaces include: <ul style="list-style-type: none"> ○ State: Human Services, Public Safety, Education, Defense, DLNR, DAGS, B&F, DHRD, HHSC, DHHL, SCD, UH/JABSOM, SPH, DOA, DBEDT, and the DOT. ○ City and County: Kauai, Maui, Hawai'i, Honolulu: Emergency preparedness and emergency response. ○ Federal: CDC, HRSA, DOE, ACF, SAMSHA, CMS, USDA, FEMA, EPA, FDA, and the Army Corps of Engineers. ○ Private: HI Primary Care Assoc., HI Disease Surveillance Assoc. of Hospitals, Health/Human Service Organizations, HI Medical Assoc., Papaolokahi Child Care Centers, Substance Abuse Treatment Coalition, and the Mental Health Assoc. of Hawai'i. ● DOH relies on real-time data to perform critical tasks that have far-reaching implications for the public. ● Systems that interface with other State agencies: <ul style="list-style-type: none"> ○ Vital Records: tracks births, marriages, and deaths. ○ Client Tracking: Medicare/Medicaid reimbursement from DHS assists HI State Hospital with understanding treatments/needs of people. ○ Immunization Records: School entrance requirements. ● DOH/HISO is working with the Director's Committee and the Department Executive Committee to ensure a shared vision for how IT can support their mission and that IT is moving forward to improve the technical infrastructure SOA, systems, network, and the end user. ● DOH/HISO has an innovative approach for sharing the IT workload while maintaining each Division's IT staff ownership; staff is based in the funding Division with a six-point agreement on how the IT work will be assigned and shared. HISO provides overall technical direction. IT staff are organized dynamically into project teams, and staff member perform specialized functions. ● Many DOH IT positions (up to 70%) are funded through Federal or Special funds; this limits how they can be used. There are personnel in exempt positions who are performing IT functions that may not be part of the job description as defined in the grant budget. Super users can be leveraged more, especially for workstation troubleshooting, configuring, and installing software. ● The HISO budget, which is 100% General funds, has been decreasing from year-to-year as the 	

demand for IT support increases. Reduction in force is the primary reason for the declining funds.

- Approximately 50% of the Department's applications are COTS.
- Microsoft ASP .NET is the primary development environment and Oracle ADF is secondary. SharePoint is also used as a portal framework and development environment where applicable.
- OITS uses SolarWinds' Orion Network Management System to monitor traffic in the WAN.
- DOH has limited use of ICSD services:
 - Network connectivity for access to entities outside of the DOH network.
 - DOH internet website is housed at ICSD.
 - Access to the financial system – FAMIS.
 - Ongoing data entry for DOH Vital Statistic system.
- The integrated strategy that DOH has regarding Microsoft Exchange, SharePoint, and Office should be applied statewide.
- Biggest concerns:
 - Financial situation that makes DOH more reactive in focus versus strategic.
 - Retaining core staff to respond to end-user support requests, to provide system administration of the server banks, and maintain the DOH network. Note: HISO would like to explore replacing their bank of servers in the Cloud.
- DOH has information assurance/security policies in place that are well-documented (based on HIPAA guidelines). (See *DOH Security Policies and Procedures*.) HISO is sharing these policies and procedures with other Departments.
- Behavioral Health is resolving issues with the TeleHealth initiative due to firewall restrictions at ICSD by using (with ICSD's permission) the video conference firewall traversal appliance (RADVISION).

Key IT Initiatives and Opportunities/Challenges

- Electronic Medical Records (EMR): looking at this for many areas but especially Client EMR; creating information exchange capability.
- Hawai'i Health Emergency Surveillance System: disease outbreak and syndromic surveillance.
- Permits and Licensing: ePermitting System soon to be released.
- Complaints Tracking, Compliance Enforcement.
- Electronic Verification of Vital Events (EVVE); HI is one of eight states participating in the national initiative.
- Genetic Disorder Information System.
- WIC Electronic Bank Transfer (EBT); migrating to web-enabled.
- Integrate social media into public information dissemination/education.
- Increase use of video and audio files to share information.
- Behavioral Health is developing/piloting TeleHealth using telepresence to provide psychiatrists in group therapy; catalyst for sharing to provide care for kids in Special Ed.
- Vital Records is adding Civil Unions; new this year.
- Use of SharePoint (underway) to increase collaboration and document sharing/tracking, documentation management.
- Increased access to data:
 - Hospital and community health data.
 - Insurance/claims data.
 - County-level data.
 - DOE student data.
 - DHS Medicaid and child welfare data.
 - Program accomplishments/success stories, best practices, and case studies.
 - Current/future sponsored conferences, speaker sessions, trainings, public meetings and events.
 - Employee dialog and views on public health initiatives.

<ul style="list-style-type: none"> • Upgrade AVATAR and ECURA to enhance billing function. • Electronic Disease Surveillance system replacement (Maven). • Inbound/outbound call center replace outdated key systems with VOIP. 									
<p>IT Quick Wins</p> <ul style="list-style-type: none"> • DOH views social networking as an important way to communicate with the public, but staff needs to be assigned to keep the information current. • Expand/facilitate SharePoint initiatives (priority of the current administration): <ul style="list-style-type: none"> ○ Continue to build on the SharePoint intranet portal by training and having more users administer content for the portal. ○ Continue to leverage features that promote document sharing and collaboration. • More user-developed applications that can leverage the capability of SharePoint. • Begin strategic move to paperless environment and automate document workflow and tracking. • Improve DOH intranet; outlying offices' connectivity is not good. • Upgrade Department website. • Cell phone consolidation. • Resolve firewall issues at ICSD to facilitate using video streams. • Create social networking policies, procedures, and training (e.g., Facebook, Twitter, YouTube). • Assistance with Vital Records: upgrade for verification and issuance of licenses (civil unions); system is due out in January 2012, but needs to be up and running in December 2011 									
<p>Data Center Findings</p> <table border="1"> <thead> <tr> <th style="text-align: center;">Strengths</th> <th style="text-align: center;">Weaknesses</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> • Strong IT management and staff • Standards-based enterprise architecture • SOA and web services deployed • Continuity of Operations Plan has been created and published </td> <td> <ul style="list-style-type: none"> • Lack of DR for all critical applications and services • Security policies should be documented and enforced • DOH has replication sites but not a formal disaster recovery plan </td> </tr> <tr> <th style="text-align: center;">Opportunities</th> <th style="text-align: center;">Threats</th> </tr> <tr> <td> <ul style="list-style-type: none"> • Integration of MS Exchange, SharePoint, and MS Office could be used as a model for the State • Expand the use of server virtualization • Investigate Cloud solutions for some services • Work with Hawai'i Broadband Initiative to migrate DOH frame relay sites to high-speed connections </td> <td> <ul style="list-style-type: none"> • DOH stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches </td> </tr> </tbody> </table>		Strengths	Weaknesses	<ul style="list-style-type: none"> • Strong IT management and staff • Standards-based enterprise architecture • SOA and web services deployed • Continuity of Operations Plan has been created and published 	<ul style="list-style-type: none"> • Lack of DR for all critical applications and services • Security policies should be documented and enforced • DOH has replication sites but not a formal disaster recovery plan 	Opportunities	Threats	<ul style="list-style-type: none"> • Integration of MS Exchange, SharePoint, and MS Office could be used as a model for the State • Expand the use of server virtualization • Investigate Cloud solutions for some services • Work with Hawai'i Broadband Initiative to migrate DOH frame relay sites to high-speed connections 	<ul style="list-style-type: none"> • DOH stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches
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DEPARTMENT OF TRANSPORTATION (DOT)

Director: Glenn Okimoto	Deputy Director: Jadine Urasaki, Capital Projects; Ford Fuchigami, Airports Division; Randy Grune, Harbors Division; open, Highways; Jade Butay, Staff Services
CIO/IT Coordinator: Arthur M. Minagawa, DOT Computer Systems Support Office, Information Technology Manager	Division IT Coordinators: Robert W. Sequeira, P.E., DOT Highways Division Information Technology Manager; Amy Saito, DOT Airports Division Information Technology Officer; Charles Miyamoto, DOT Harbors Division IT Support
Mission	
The Department of Transportation (DOT) plans, designs, constructs, operates, and maintains State facilities for all modes of transportation including air, water, and land.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Highways Division: 2,433 miles of paved freeways, highways, and roadways on Hawai'i's 6 major islands. • Harbors Division: 10 harbors on the 6 major islands. • Airports Division: Operates and maintains 15 airports located throughout the State with 30 million passengers traveling per year through the airport system. • Staff Services Division: Provides program planning and administrative support including financial management, HR, procurement, property management, and IT support <p>Attached Agencies</p> <ul style="list-style-type: none"> • Commission on Transportation • Highway Safety Council • Medical Advisory Board • Oahu Metropolitan Planning Organization 	<ul style="list-style-type: none"> • Departmental: <ul style="list-style-type: none"> ○ Budgeting: Department system for O&M Budgeting. ○ Human Resources: Small Domino databases used as document repositories and logs. ○ DOTCMS – Document/Content Management – just beginning to use for correspondence, contracts, and project documents at the Departmental level. Airports has a separate system for engineering documents. ○ Small Workgroup-Level Tracking Systems for correspondence and procurement requests, including Capital Improvements Program budgeting, Construction Contracts, operations and maintenance budgeting. • Highways: HWYAC is a 30 year-old system that supports financial and cost accounting for DOT Highways. HWYAC is essential for all accounting and Federal Highways billing functions and is essential for division cash flow. • Airports: <ul style="list-style-type: none"> ○ Administration Application Types: <ul style="list-style-type: none"> – Accounts Receivable and Accounts Payable – Property Contract Management – Cash Management/Grant Tracking ○ Engineering Project Management ○ Operations Application Types: <ul style="list-style-type: none"> – Security Access and Badging System – Flight Information Display System – Public Announcement System

	<ul style="list-style-type: none"> - Gate Management System - Airport Operations Log - Noise Monitoring System
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$712.7M: <ul style="list-style-type: none"> ○ Federal = ~\$54.8M ○ Special = ~\$657.5M ○ ARRA: ~\$423K • Airports Division (approximate percentages) <ul style="list-style-type: none"> ○ Special Funds: 77% ○ Federal Grants: 13% ○ Passenger Facility Charge: 7% ○ Customer Facility Charge (Rent-A-Car): 3% ○ Also charge airline landing fees and have leases for properties • Harbors – 90% from fees, lease rents 1/3, use fees 2/3. Federal for security grants and capital projects. • There is a 5% surcharge on the DOT’s services fees that go back into the General Fund. • FTEs: Around 2,700: 247 in Harbors. 1,040 in Airports, and remainder in Highways, 1,413. • Airports Division IT estimated budget: <ul style="list-style-type: none"> ○ FY11 is ~\$17,703,937 ○ FY12 is ~\$18,060,557 • CSS IT estimated budget: <ul style="list-style-type: none"> ○ FY11 \$1,894,000 ○ FY12 \$1,894,000 	<ul style="list-style-type: none"> • 4 separate internal IT offices in DOT: • Computer Systems & Services (CSS) – 18 FTEs • Highways – 11 FTEs, plus each district office has an employee who helps support IT • Airports – 9 FTEs • Harbors – 3 FTEs • CSS – Contractors comprise another 6 FTEs. • Airports use maintenance contractors for real-time systems • ICSD: <ul style="list-style-type: none"> ○ Network support and Internet POP through UH Manoa ○ Video conferencing goes through ICSD bridge for support ○ Support for websites, split on content changes ○ Highways has application servers in the ICSD data center
Departmental Items of Note	
<ul style="list-style-type: none"> • Major Interfaces: <ul style="list-style-type: none"> ○ Federal government agencies include: <ul style="list-style-type: none"> - U.S. Department of Transportation - Federal Highway Administration - National Highway Traffic Safety Administration - Bureau of Transportation Statistics - Turner-Fairbank Highway Research Center - U.S. Army Corps of Engineers - Federal Maritime Commission - U.S. Coast Guard - U.S. Treasury Department - U.S. Department of Agriculture - U.S. Customs and Border Protection - Environmental Protection Agency - Federal Transportation Security Administration - Federal Aviation Administration - Federal Drug Enforcement Agency - Federal Center for Disease Control and Prevention - Air Force (Hickam Air Force Base, Kona) ○ State agencies include: 	

- Department of Land and Natural Resources
- Department of Public Safety
- Department of Agriculture
- Department of Health
- State Civil Defense
- Criminal Justice Data Center
- Department of Business, Economic Development and Tourism
- Department of Human Resources Development
- Department of Accounting and General Services (payroll)
- Department of Budget and Finance
- o All island counties
 - Airlines, concessionaires, airport tenants
 - Hawai'i Visitors Bureau
 - Hawai'i Tourism Authority (HTA)
- The private sector provides shipping services, stevedoring, warehousing, tug services, maintenance, ship chandlery and repair, distribution, and other functions
- The DOT relies heavily on the Lotus Notes system platform with many applications integrated with the names directory to support workflow applications.
- Most applications exist at an office- or divisional-level; hence, there is widespread duplication and siloing. Very few Departmental applications exist.
- Department-wide, the systems supporting each major division do not interact well, specifically regarding projects and real estate.
- Very dispersed: there are significant issues with connectivity at remote locations. In some places, there is no cell phone coverage. Ham radios are being used with success.
- IT staff require more efficient procurement processes and resources to implement initiatives.
- General concern about centralized IT; revenues collected have to stay within Airport systems. Limitations on support services; sensitive to diversion of funds in airports. Federal requirements and guidelines must accommodate all these requirements.
- The existing procurement approach is all paper-based. All RFPs and addendums are paper-based, and bidders must be called to pick them up. Airports posts RFPs for concession contracts on the web.

Key IT Initiatives and Opportunities/Challenges

- Financial management systems need to be upgraded and consolidated. Currently stalled at Harbors; Highways regrouping after major contractor problems. Highways Financial System is Oracle Financials.
- Create an interface to DAGS FAMIS and Fed FMIS to track cash flow and grant money, eliminating the use of spreadsheets. The interface would provide the ability to invoice and appropriate money from funding sources. DOT is working through this, but the approach for handling appropriations in the DAGS system is problematic.
- Automate tracking and reporting of Capital Improvement Program (CIP) projects. Currently delayed (e.g., current status of CIP Strikeforce).
- Collaboration and social networking tools need to be introduced or upgraded. This is currently delayed by changes in budget execution policies and procurement rules.
- Director emphasis: bring Divisions and Offices together to create an electronic sense of place using vehicles such as the intranet or Websphere. Build on the success of Polycom, and add Instant Messaging.
- Equipment in the data center needs to be replaced or upgraded due to age.
- Disaster recovery and business continuity initiatives need to be restarted and implemented. After complications in project funding and personnel issues caused the initial effort to stall in 2006, the Department lacks strategy, policies, and facilities to recover from a disaster.

- Formal project organization with dedicated staff needs to be established Department-wide, along with the necessary changes to corporate culture.
- Need electronic review and approval workflow applications.
- Airport’s improvement initiatives:
 - Work order and trouble call service tracking
 - Expansion of Fuel Dispensing and Fleet Management System
 - Automation of cash receipting at District offices
 - Re-assessment of Automated Vehicle Information System
 - Electronic Way Finding in public spaces
 - Space Inventory and Classification System
- Asset Management System

IT Quick Wins

- Departmental intranet to provide a single electronic place for employees to work together, share information, leverage knowledge gained, and prevent duplication
- Disaster recovery and business continuity.
- Project management system for the Department with summary-level roll-up and dashboards.
- Consolidated reporting on project status.
- Asset management system; real property (need a system to help track).
- Time and attendance and online timecard approval.
- Document management system for electronic routing and workflow of forms and documents. Important things get lost with manual logs used for tracking the location of physical items.
- Proper software versions compatible with outside agencies and funding to replace aging equipment.
- Creation of an enterprise data warehouse to eliminate duplication of data stores and reuse of similar objects.
- Improved collaboration tools including desktop video conferencing, instant messaging, and project collaboration wiki’s.
- Streamlining of procurement: need IT commodity services. Non-standardization is problematic, and the ICSD Form T205 approval process needs to be improved.
- Improved communications with State Civil Defense and possibly the County offices that provide emergency response services.
- Bandwidth between islands is insufficient despite doubling the bandwidth within the past year.

Data Center Findings

Strengths	Weaknesses
<ul style="list-style-type: none"> • Administrators are knowledgeable and have the necessary skills to maintain their infrastructure 	<ul style="list-style-type: none"> • Lack of security awareness training/policies • Uninterruptible Power Supply (UPS) ensures temporary continuity of operations, but no generator to mitigate impact of longer-term crisis situations
Opportunities	Threats
<ul style="list-style-type: none"> • Virtualize to expand server capacity • Use Cloud-based services for storage and applications 	<ul style="list-style-type: none"> • Old equipment failure could bring production applications down • Lack of disaster recovery and continuity of operations plans • Lack of robust security policies regarding computer and network password requirements

DEPARTMENT OF TAXATION (DOTAX)

Director: Frederick Pablo	Deputy Director: Randy Baldemour
CIO/IT Coordinator: Robert Su	
Mission	
The Department of Taxation (DOTAX) administers tax laws for the state of Hawai'i in a consistent, uniform, and fair manner.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Administrative Services Office – facilitates the internal business of DOTAX; e.g., human resources/personnel, procurement, Departmental budget • Information Technology Services Office – provides IT support for the entire Tax organization • Tax Research and Planning Office – performs tax research and provides forecasts • System Administration Office – performs all collections and issues refunds • Rules Office – oversees all tax laws and ensures their implementation within the State and performs enforcement (civil and criminal) activities • External Training and Outreach Office – performs training relative to tax law, etc. • Tax Services & Processing Division – provides document processing, taxpayer services, and revenue accounting • Compliance – oversees collections, audit, field audit, and the oversight of the district offices relative to the tax collection activities 	<ul style="list-style-type: none"> • FAMIS Data Mart • FAMIS • PeopleSoft • ITIMS – Integrated Tax Information Management System • Approximately 20 other internal application elements • WireShark and ZENworks are deployed within the environment
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY 12: ~\$23.6M: <ul style="list-style-type: none"> ○ General Funds: ~\$22.6M ○ Special Funds: ~\$1M 	<ul style="list-style-type: none"> • 373 FTEs plus ~130 temporary staff for the organization; looking to hire 9 new investigators/~19 FTEs for IT. • 8 business analysts support IT business analysis and processes and are attached to System Administration (these are being re-organized into the IT organization). • 5 testers are attached to the Tax Law Change Group. • CGI had approximately 10 staff supporting ITIMS prior to their contract expiration. • Hawai'i Information Consortium (HIC) provides eFiling functionality. • ICSD hosts/houses the DOTAX AIX systems.

Departmental Items of Note
<ul style="list-style-type: none"> • ITIMS was to have over 20 modules implemented under the CGI contract, but only six were deployed; CGI was released in early 2011, and ITIMS maintenance and operations was moved to the internal DOTAX IT organization. • DOTAX has interfaces with Federal agencies including the IRS and FBI as well as other State agencies (specifically, B&F, DAGS, DCCA, DBEDT, AG, and the Legislature). • Additionally, DOTAX interfaces with tax software vendors (e.g., Quicken Books, TurboTax, etc.), tax form preparers, and local financial institutions and citizens. • Approximately ~\$25M in tax revenues is processed daily. • DOTAX has the largest customer base. They process millions of forms and checks each year, collecting over ~\$6 billion in revenue with a budget of only ~\$20 million. • IT staff is organized in three main areas: application infrastructure/user support, networking infrastructure/user support, and database infrastructure/user support. • As DOTAX aggressively assesses the need to for new software, coordination with DAGS/Accounting and B&F regarding a possible ERP solutions is important. • DOTAX continues to be concerned about being able to attract and retain knowledgeable staff and recognizes that the job descriptions for IT staff are completely outdated. • DOTAX has numerous Departmental policies and procedures for information assurance/security. • Main application portfolios are based on PowerBuilder. COBOL and C are still used to a limited degree. • A limited VOIP system is used by Taxpayer Processing and Services. • DOTAX uses the WireShark utility to measure the protocols and applications that flow across the infrastructure.
Key IT Initiatives and Opportunities/Challenges
<ul style="list-style-type: none"> • ICSD told DOTAX that they will have to begin paying directly for the IBM maintenance costs in the coming year. • Launched a Tax Modernization Task Force. • Increased staffing is an opportunity to resolve cases and bring in revenue faster but technology is needed to support investigations. • ITIMS was a failed system for the state of Kansas and is not working for Hawai'i either. • DOTAX is very concerned about the lack of disaster recovery for their primary systems that ICSD houses/hosts.
IT Quick Wins
<ul style="list-style-type: none"> • Increased e-filing • Electronic check acceptance • Improved collections analytics • Tax information system • Improved case management processes • Improved network connectivity to Kona and Molokai

Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Comprehensive documentation of network, servers, and applications • Operating on current versions of Oracle and Windows server 	<ul style="list-style-type: none"> • Data center is retrofitted storage room • Outdated equipment stored in data center awaiting disposal • Single connection to NGN • More robust security policies in the areas of computer and networking
Opportunities	Threats
<ul style="list-style-type: none"> • Expand the use of server virtualization • Investigate Cloud solutions for services and storage • Define a comprehensive disaster recovery and continuity of operations plan for TAX 	<ul style="list-style-type: none"> • TAX systems and database housed on IBM server at ICSD, lack of maintenance contract and local expertise has resulted in extended down time • TAX stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches

HAWAII DEPARTMENT OF AGRICULTURE (HDOA)

Director: Russell S. Kokubun, Chairperson, Board of Agriculture	Deputy Director: James J. Nakatani, Deputy to the Chairperson
CIO/IT Coordinator: Helene M. Okamura, DP Coordinator	
Mission	
The Department of Agriculture mission is to re-establish agriculture as essential to the well-being of our island society by rejuvenating the economy, protecting important resources, and gaining greater self-sufficiency in food production and alternative energy development. The Department works to support, enhance, and promote Hawai'i's agriculture and aquaculture industries. They are responsible for animal quarantine, plant, and pest control, and are a resource for travel and shipping information.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Administrative Services Office (ASO) • Agricultural Loan Division (ALD) • Agricultural Resource Management (ARMD) • Agriculture Development Division (ADD) • Animal Industry Division (AID) • Quality Assurance Divisions (QAD) • Plant Industry Divisions (PID) <p>Attached Agencies</p> <ul style="list-style-type: none"> • Agribusiness Development Corporation (ADC) • Hawai'i Board of Agriculture (BOA) 	<ul style="list-style-type: none"> • ARMIS – Agriculture Resource Management Information System for Irrigation Systems, Agricultural and Non-Agricultural Parks • AAS – Accounting/Requisition/purchase order and petty cash system • Invicta – Plant Quarantine permit and inspection information system • AQSIS – Animal Quarantine Information System. Pet/owner information, animal veterinary qualification, operation and accounting for the Animal Quarantine Station. WinWam/AR – Weights and measures device tracking and accounts receivable system • ColdChain food safety – an RFID pilot system that is currently operational at Armstrong Produce; tracks food temperature • ALA – Agriculture Loan Management System • PESTREG – Pesticides registrations • Hawai'i Agricultural Food and Products Database - Online database of producers and wholesalers of Hawaii's food and products
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$43.5M: <ul style="list-style-type: none"> ○ Federal = ~\$1.9M ○ General = ~\$9.8M ○ Special = ~\$17.8M ○ Trust Fund = ~\$0.8M ○ Interdepartmental = ~\$1.5M ○ Revolving Fund = ~\$11.7M • IT budget: ~\$37K for repair and maintenance only; the remainder of IT support is embedded in the Division's budgets • Budgeting for IT tends to be by program 	<ul style="list-style-type: none"> • Staff counts: Organizational FTEs = 287 budgeted; 218 filled, 69 vacant positions; no subcontracted positions • IT FTEs = One officially performing IT

Departmental Items of Note

- DOA is the only Department performing food security.
- DOA interfaces with Federal government agencies and provides a number of reports to them.
- Responsible for calibration of scales, taxi meters, and gas pumps; RIF's have affected ability to fulfill responsibility.
- Deal with a diversity of people across the state; this may affect how they implement new technologies; for example, dealing with poor farmers may be an issue. Also, internal business functions vary from division to division.
- Private sector/businesses in the industry partner with them to co-develop solutions; DOA relies on the private sector.
- Need more inspection facilities; sometimes producers wait too long to get an inspection.
- The DOA uses ICSD-managed Lotus Notes and relies on ICSD networking staff. ICSD staff is helpful especially with the NGN network and maintaining their firewall.
- The DOA participates in research (pesticides, insect identification, etc.) with the University of Hawai'i.
- The DOA believes that there is too much paper and inefficient use of storage and retrieval in the Department.
- The DOA would like to implement online submittal of forms and payments similar to DCCA. Programs. Areas that would benefit include Animal Quarantine (quarantine fees) and Plant Quarantine (permits and inspections). Currently, only the Animal Quarantine Branch accepts credit card payments.
- The DOA would like OIMT to recommend appropriate numbers for staffing and want to know what industry standards recommend. DOA would also like to know if it is cheaper to automate.
- Since the vision is to lessen HI's dependence on imports, the DOA is looking at ways that they can foster this; but are unsure of the cost. UH/College of Tropical Agriculture and Human Resources (CTAHR) have been tasked with developing a statistical analysis of imports and the economy. People want to buy locally grown produce, but farmers have to make money or it won't work.
- The DOA built their own requisition/purchase order system that includes processing of monthly standing purchase orders, verification of accounting codes processing, and reconciliation of petty cash checks.
- The DOA/IT bought ZENworks for remote management, but they never deployed it (no funding to implement).
- The sole IT staff gets help from ICSD, contractors (under maintenance contracts), and from other IT staff in other Departments based on personal contacts.
- The DOA/IT uses their money judiciously. For example, the DOA provided monies through a Federal grant to hire a contractor to train ICSD personnel to do conversion/upgrade on State's Plone website. When the Chemical Laboratory moved to the DOH's facility on Waimano Home Road, HDOA funds were used to provide fiber to the entire building with coordination of ICSD staff.
- The DOA used to check scanners and scales in stores to see if correct pricing, correct labeling, and product measurements/weights are accurate, but they are not doing this anymore due to the lack of manpower.
- After monthly reconciliation, DOA staff upload pCard information into the pCard database to allow managers and user complete list of charges including vendor and purchase information. The FAMIS Datamart does not provide vendor information.
- Plone is used to manage the State's websites, but it is difficult to use and they get a lot complaints about it.

Key IT Initiatives and Opportunities/Challenges	
<ul style="list-style-type: none"> • Need more public-facing web applications to get information out to the community (e.g. farmers markets, product available, agricultural regulations). • Need more automation to reduce the amount of paper processed in the Department. • The DOA is very interested in adopting a system used in CA because it tracks produce statistically; food safety is Federally mandated so a process must be developed; Invicta is working toward this. • The timecard system needs to be overhauled (they track leave balances in a spreadsheet). 	
IT Quick Wins	
<ul style="list-style-type: none"> • Enable receipt and processing of online payments for existing applications. • Transfer ARMIS accounts to DLNR's SLIMS. HDOA user accounts were setup and training was conducted but work to establish customer accounts was not done. SLIMS is more comprehensive and will improve land management and inventory of State's land. • Need better web management; currently treated like an afterthought. • Training for IT staff (after additional IT staff is hired). • Provide social media policy for using Facebook and Twitter. • Inspectors in the field need PDAs. • Need AutoCad and GIS capability to help improve irrigation, dams, reservoirs, etc. 	
Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Dedicated and resourceful staff member supporting IT for HDOA 	<ul style="list-style-type: none"> • Single connection to NGN • Data center is a retrofitted room with a window-mounted air conditioner for cooling • Single network support person; no backup or contingency
Opportunities	Threats
<ul style="list-style-type: none"> • Migrate DSL connections to fiber on NGN. • Expand the use of server virtualization • Investigate Cloud solutions for some services 	<ul style="list-style-type: none"> • Lack of DR for all critical applications and services • Security policies should be documented and enforced

INFORMATION & COMMUNICATION SERVICES DIVISION (ICSD)

Director: Debra A. Gagne, Administrator	Deputy Director: Todd M. Crosby, Assistant Administrator ICSD
CIO/IT Coordinator: N/A	
Mission	
The Information and Communication Services Division (ICSD) is the IT lead for the Executive Branch. It is responsible for comprehensively managing the information processing and telecommunication systems in order to provide services to all agencies of the State of Hawai'i. ICSD plans, coordinates, organizes, directs, and administers services to ensure the efficient and effective development of systems.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Plan and Project Management Office • Client Services Branch I • Client Services Branch II • System Services • Tech Support Services Branch • Production Services Branch • Administration Management Services <p>Attached Agencies</p> <ul style="list-style-type: none"> • No attached agencies 	<ul style="list-style-type: none"> • Written and maintained for ICSD's use: <ul style="list-style-type: none"> ○ Document Management and Tracking ○ ITRS (IT Request System) ○ TLS (Time Leave System), a Lotus Notes application, borrowed and migrated to other departments • Maintained by ICSD Client Services Branch II for: <ul style="list-style-type: none"> ○ DLIR – Federal Parent Locator ○ B&F – Capital Improvement Projects (CDP) Budget Summary ○ B&F – Bond Allocation Tracking System ○ B&F – Cash Management Improvement System • Maintained by ICSD for DAGS: <ul style="list-style-type: none"> ○ Financial Accounting Management & Information System (FAMIS) ○ Statewide payroll ○ Central Warrant Writer ○ Warrant Reconciliation System ○ Time Accounting and Computer Billing System ○ Bond Fund System • Housed by ICSD for B&F: <ul style="list-style-type: none"> ○ Employees Retirement System ○ Cash Management Improvement System ○ Bond Allocation Tracking System ○ Budget Request System ○ Capital Improvement Projects (CIP) Budget Summary • Housed by ICSD for the AG: <ul style="list-style-type: none"> ○ HCJDC Systems (CJIS-Hawai'i, AFIS, NCIC, Green Box) ○ Child Support Enforcement Agency (KEIKI) ○ State Cash Management System ○ Bond Allocation Tracking System ○ Budget Request System ○ Capital Improvement Projects Request System

	<ul style="list-style-type: none"> • Housed by ICSD for DLIR: <ul style="list-style-type: none"> ○ Unemployment Insurance (UI); prints unemployment checks ○ UI Tax (employer contribution) ○ Interstate Benefit Internet System ○ UI Quarterly Wage ○ Disability Compensation ○ Federal Parent Locator ○ Child Support Intercept • Housed by ICSD for DCCA: <ul style="list-style-type: none"> ○ Professional and Vocational Licensing System ○ Business Registration System (BREGS) • Housed by ICSD for DHS: <ul style="list-style-type: none"> ○ HealthQuest ○ Aid to Families and Dependent Children ○ Food Stamps ○ Adult Services ○ Social Services Payment System ○ Child Welfare ○ Foster Care ○ Child Protective Services ○ Medicaid ○ Hawai'i Housing Authority Accounting System (migration) ○ General Welfare ○ Automated Recovery System ○ Vocational Rehabilitation Information System ○ Adult Abuse and Neglect Registry ○ Electronic Benefit Transfer ○ Medquest • Housed by ICSD for DOE: <ul style="list-style-type: none"> ○ FMS ○ Casual Payroll ○ Vendor Payment • Housed by ICSD for Office of Information Practices: <ul style="list-style-type: none"> ○ RIS (Record Information System)
<p>Budget/Funding</p>	<p>Staff</p>
<ul style="list-style-type: none"> • FY012 Total Budget: ~\$11.9M • IT Payroll: ~\$6.7M • IT Expenditures: ~\$5.2M <p>Note: Given that ICSD is a Division that only provides IT support, their entire budget can be considered as IT spending.</p> <ul style="list-style-type: none"> • Predominant Funding Source - General Fund 	<ul style="list-style-type: none"> • Staff counts: Organizational FTEs = ~110

Departmental Items of Note

- ICSD interfaces with all State departments and is classified a Tier 2 assistance center.
- ICSD provides the State's network (NGN).
- ICSD does not have the capacity to take on new services for State agencies. State agencies approach ICSD, but ICSD is not able to respond, thus driving State agencies to do IT on their own.
- ICSD must print checks on-time; they print payroll and unemployment checks.
- Five out of 23 State agencies comprise 70% of the budget; 66% of the budget goes to telecommunications.
- Fee for service model used only with Federally funded systems.
- ICSD hosts some of the State's web sites; HIC hosts most of the rest.
- ICSD performs video and photo uploads for Departments to the State's web sites upon request.
- ICSD performs data entry for a number of systems such as Time and Attendance, Inventory, and Vital Statistics.
- ICSD assists in securing maintenance contracts by writing the technical specifications for the Departments for which they have MOUs; they negotiate mostly IBM hardware and software contracts; SPO owns the contracts.
- ICSD writes technical specifications for telephone system, long distance, and the telecommunications connectivity for all Departments.
- The historical budget trend has been a decrease of around 70-75% from a few years ago. While staff numbers have been reduced by 75%, due to union seniority, higher-paid individuals have bumped those with lower seniority (who were also lower paid), resulting in decreased budget not equal to staff decreases.
- The provided budget breakdown is by IT functionality and by agency; 70% of the ICSD budgets is taken up by only five of the 23 agencies they provide services to with almost 66% of the provided budget going to telecommunications costs.
- ICSD wants to be the IT service provider for the State of Hawai'i.
- ICSD is overwhelmed with all the upgrades that are needed, not knowing where to start.
- ICSD believes they are doing the best they can with their limited resources and constrained budgets.
- The Tivoli storage system is used to facilitate backups on all non-mainframe systems; each Department that hosts on those systems must purchase a Tivoli client license.
- In 2009, Debra Gagne, along with the Deputy Comptroller, wrote a paper for the Comptroller providing the rationale, return on investment, and funding necessary to move the finance and accounting system off of the mainframe; it did not move forward due to lack of funding.
- The only facility component controlled by ICSD for the data Center is the UPS; they have two: one is at 67% utilization, and the other is at 51% utilization.
- ICSD does not currently have the bandwidth to stream video.
- ICSD has some MOUs with a few Departments, but they would like to have more; there are no service-level agreements.

Key IT Initiatives and Opportunities/Challenges

- Need a defined configuration and data management process supported by configuration management tools.
- Need a defined project management process supported by project management templates and tools (such as estimation tools, scheduling software, action item tracking, risk identification and tracking, standard templates for status and reporting).
- Need a defined data center management process.
- Facility that houses ICSD is reaching capacity in power and AC.

IT Quick Wins	
<ul style="list-style-type: none"> • Consolidate email. • EBT direct deposit (like UI and DHS does now). • Web-enabled data entry; currently running on Unisys system nearing end of life. • Pay vendors electronically. 	
Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Emergency generator is available • NGN has been designed using best-practice network architecture and is supported with robust Cisco infrastructure devices 	<ul style="list-style-type: none"> • The facility has severe cooling issues which are further impacted by equipment layout and under-floor air supply blockages • Hot aisle/cool aisle rack alignment is not followed; many rows exhaust hot air directly into the air intake of neighboring servers
Opportunities	Threats
<ul style="list-style-type: none"> • Equipment should be walled-off from personnel space to aid in cooling equipment • Dispose of decommissioned equipment to reclaim floor space 	<ul style="list-style-type: none"> • Lack of Active Directory for management and control of desktop and server infrastructure results in security vulnerabilities • Ability to support new hardware limited by power and cooling capabilities of data center • No effective DR strategy for critical mainframe and applications

DEPARTMENT OF PUBLIC SAFETY (PSD)	
Director: Jodie Maesaka-Hirata	Deputy Director: Martha T. Torney, Deputy Director for Administration; Joe W. Booker, Jr., Deputy Director for Corrections; Keith Kamita, Deputy Director for Law Enforcement
CIO/IT Coordinator: Mike Mamitsuka, Manager of Internal Management Information Systems (MIS) Office	
Mission	
The Department of Public Safety provides for the safety of the public and state facilities through law enforcement and correctional management.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Administration Division <ul style="list-style-type: none"> ○ Administrative Services Office ○ Fiscal Office ○ Personnel Management Office ○ Training and Staff Development Office • Corrections Division <ul style="list-style-type: none"> ○ Classification Office ○ Program Coordination Office ○ SAVIN Program Office ○ Correctional Industries Division ○ Corrections Programs Services Division ○ Health Care Division ○ Institutions Division ○ Intake Services Center Division ○ Offender Management Office • Law Enforcement Division <ul style="list-style-type: none"> ○ Narcotics Enforcement Division (NED) ○ Sheriff's Division <p>Attached Agencies/Commissions/Offices</p> <ul style="list-style-type: none"> • Hawai'i Paroling Authority • Crime Victim Compensation Commission • Correctional Industries Advisory Committee • Corrections Population Management Commission 	<ul style="list-style-type: none"> • Offendertrak (tracking/classifying inmates and parolees) • Records Management System for Law Enforcement • Statewide Automated Victim Information Notification (SAVIN) • eClinical Works - Electronic Medical Records (near future) • Financial Management System • Hawai'i Paroling Authority Database • Intake Service Centers Database • CJIS-Hawai'i (HCJDC) • Lotus Notes • Correspondence Log

Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12 Total: ~\$238.6M <ul style="list-style-type: none"> ○ Revolving Funds = ~\$10.7M ○ General Funds = \$218.9M ○ Inter-department Transfers = ~\$5.1M ○ Special Funds = ~\$2.6M ○ Federal Funds = ~\$1.1M ○ Trust Fund = ~\$75K ○ County Fund = ~\$210K • IT budget: ~\$230K (included in General Admin line item 900): <ul style="list-style-type: none"> ○ Line cost = ~\$90K ○ Repair and Maintenance = ~\$90K ○ New/Replace Equipment = ~\$50K 	<ul style="list-style-type: none"> • Staff counts: <ul style="list-style-type: none"> ○ Organizational FTEs = 2,473 ○ IT FTEs = 10 allocated/8 staffed (two vacant positions) <ul style="list-style-type: none"> ▪ Administration = 1 plus 1 support staff ▪ Software Development and Maintenance = 4 ▪ Network, Server, and Help Desk = 4
Departmental Items of Note	
<ul style="list-style-type: none"> • PSD interfaces with all State departments and State judicial buildings to provide assistance with necessary security through law enforcement. • PSD also partners with the Federal government: U.S. Probation/Pretrial Services, U.S. Attorney Offices, Immigration and Naturalization. • PSD also partners with various city, county, community, and private agencies through contracts and volunteer services to provide additional services for both staff and inmates. • PSD interfaces and collaborates with HCJDC. • PSD has many positions performing/supporting IT that do not have this in their job description. For example, the wardens know which correctional officers have some IT experience and can get things done. If these people leave, however, they are not replaced with individuals with the same experience because this is not part of their job description. • The IT staff is very knowledgeable; however, they are too few in number and are overwhelmed with requests for technical assistance. They rely on contractors to provide special services to augment the IT staff, but funds are limited. • DAGS assisted PSD with piloting the Kronos system to swipe cards when entering/leaving facility to determine hours worked; problem with no grace period causing erroneous overtime to be automatically generated; need to tie time sheets to authorization for overtime; DAGS had a problem with the vendor and the program was terminated. PSD believes they desperately need a system like this. • Numerous purchasing restrictions over the last eight years have hampered IT. IT purchasing is planned, but the money is used to replace broken/unusable items. • ICSD provides connectivity to Lotus Notes and helps with the network. PSD is responsible for serving Louts Notes clients including ICSD required updates. • All applications are developed in MS Access or Visual Studio. • PSD uses a system that they think is a good example of how systems should be designed for the State, the Statewide Automated Victim Information Notification (SAVIN). It is web-based application that gives victims and the public the ability to register to receive notifications when an inmate is moved or released. It is available 24x7 and notifies subscribers either by phone or email. The system also checks that data is being sent on a timely to ensure the data is current. • The PSD administration building they are in is in decay. It is due to be torn down in 5-8 years. In the third quarter of FY 2012, PSD Administration staff will need to vacate the for 8-10 days for electrical and air conditioning repair. ICSD has agreed to house the PSD network and servers on a permanent basis. The move to ICSD is expected to be completed by 10/31/2011. • Personnel records need to follow a State employee; it causes so many problems when someone 	

transfers between Departments. For example, when an individual transfers they lose all history of leave, only the balance transfers.

- Payroll is a major problem. Personnel is too slow to get records updated; a better system is needed. The State has lost millions in payroll overpayments; PSD was one of the worst offenders. Some individuals that were overpaid are now deceased or have filed bankruptcy; AG decided that for any case over two years old, they would take the loss. Due to a slow process, employees in the corrections facilities are able to take more leave than they have.
- There are two people in the Program Planning and Budget office that are handling procurement. It is difficult to get actuals and they do not indicate commitments. Also, each Division keeps track of their own commitments, but they have no knowledge of time and attendance.
- Hawai'i Justice Information System staff helped PSD, both at the executive and operational level.
- PSD is currently facing a fiscal crisis with shortages of staff creating high cost of overtime, lack of prison bed space (spending millions out of state), reduction in the budget, and the lack of IT support and equipment creates administrative deficiencies.

Key IT Initiatives and Opportunities/Challenges

- The Justice Reinvestment Initiative (JRI) to review Hawai'i's criminal justice system has just begun.
- The Department is trying to solve the problem of a lack of a common system for law enforcement and corrections; some data is being collected by PSD while some is reported by contractors. However, there is central collection of data. A central database is needed. A Data Sharing Focus Group is identifying statute changes to address the blockage of pertinent information which is contributing to the problem.
- PSD systems are antiquated and most of their applications are over 10 years old; they want to learn more from other Departments about modernizing/upgrading; they want more web applications and open source systems.
- An electronic records management system for each branch within the Department would result in savings in paper, time, space, and create overall efficiencies in the work force.
- Need more real-time data in most of their systems, especially Offender Track.
- Need automatic software upgrades across the board.
- Initiate NED's controlled substance prescription monitoring database (Electronic Medical Records) to authorize physicians to have 24/7 access to improve patient treatment and deter attempts to visit multiple physicians to fraudulently obtain controlled substances (to be released soon).
- Need to update their systems so they can status the overall prison population (location, health, prison records, etc.).
- Need better budget and expenditures management.
- Need more information sharing with other agencies and within the Department from medical services to inmate re-entry.

IT Quick Wins

- Need computer equipment and printers that share the same software throughout the Department and that are compatible with other State offices to allow document printing among offices.
- Need sufficient memory to facilitate printing large documents.
- Procurement issues: want to make IT purchases in bulk; need centralized IT procurement.
- Need a good security policy to address cyber security.
- Need remote (VPN) access for IT staff.
- Need more help desk support; current backlog of 60 calls.
- Need a mechanism to facilitate sharing knowledge within the state's IT staff on IT-related issues and resolutions.
- Need a solution to address the sun setting of XP in 2014.
- Need a single sign-on solution.

<ul style="list-style-type: none"> • Need a mechanism to prioritize and escalate the Oceanic or Hawai'i Telecomm request for NGN connection. 	
<p>Data Center Findings</p>	
<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Implemented virtualization to consolidate servers onto blade-based hardware 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Single connection to NGN • Lack of DR for all critical applications and services • Security policies should be documented and enforced
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Expand the use of server virtualization • Investigate Cloud solutions for some services • Work with Hawai'i Broadband Initiative to migrate PSD frame relay sites to high-speed connections 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • PSD building will be shut down later this year for at least eight days; PSD must relocate all servers to ICSD (now in progress) • PSD facility lacks fire suppression and physical security staff

UNIVERSITY OF HAWAI'I (UH)

Director: M.R.C. Greenwood, PhD	Deputy Director: N/A
VP for IT and CIO: David Lassner, PhD Deputy CIO: Steve Smith (recent hire - former CIO of University of Alaska)	
Mission	
The common purpose of the University of Hawai'i (UH) system of institutions is to serve the public by creating, preserving, and transmitting knowledge in a multi-cultural environment.	
Organization (including attached agencies)	Key Applications
<ul style="list-style-type: none"> • Big Island (Hawai'i): <ul style="list-style-type: none"> ○ Hawai'i Community College ○ University of Hawai'i at Hilo ○ UH Center–West Hawai'i ○ North Hawai'i Education and Research Center • Maui, Moloka'i, Lana'i: <ul style="list-style-type: none"> ○ University of Hawai'i Maui College ○ UH Center–Maui ○ Hana Education Center ○ Lana'i Education Center ○ Moloka'i Education Center ○ West Maui Education Center • O'ahu: <ul style="list-style-type: none"> ○ Honolulu Community College ○ Kapi'olani Community College ○ Leeward Community College ○ University of Hawai'i at Manoa ○ University of Hawai'i–West O'ahu ○ Windward Community College ○ Wai'anae Education Center • Kaua'i: <ul style="list-style-type: none"> ○ Kaua'i Community College ○ UH Center–Kaua'i • Other entities associated with UH: <ul style="list-style-type: none"> ○ RCUH ○ UH Foundation 	<ul style="list-style-type: none"> • Houses Hawai'i Open Supercomputing Center /MHPCC • Houses Hawai'i Geospatial Data Repository (stood up by NSF grant). HGDR is a tool for UH scientists and researchers and their collaborators (globally) to improve stewardship and use of UH research data in multiple formats including from Hawai'i and beyond and from UH-managed sensors and networks in Hawai'i and beyond. Some but not all of the application involves traditional GIS. • Manages statewide network that interconnects all campuses and education centers • Uses PeopleSoft HRMS for regular employees
Budget/Funding	Staff
<ul style="list-style-type: none"> • FY12: ~\$913.8M: <ul style="list-style-type: none"> ○ Federal = ~\$11.4M ○ General = ~\$411.8M ○ Special = ~\$384.1M ○ Revolving Fund = ~\$106.4M • Appropriated FY11 funds for system-wide IT support after restrictions were: ~\$9,780,736 • Appropriated FY11 funds for UH-Manoa telecom support after restrictions were: ~\$1,532,317 	<ul style="list-style-type: none"> • Staff counts: ~145 • Minimal interaction with ICSD – interface with them for payroll check printing • UH provides connectivity to internet for all the State (NGN) • With rest of State Departments: <ul style="list-style-type: none"> ○ Criminal Justice Database lookups ○ Accounting – report use of General Funds

Departmental Items of Note
<ul style="list-style-type: none"> • Innovative technologies for teaching and learning (UH focus area). • Uses real-time web conferencing (Adobe Connect Pro); also has conventional H.323 videoconferencing. • Has VoIP (Avaya). • Has WiFi authentication service for laptops, smart phones, PDAs. • Establishing an advanced broadband capability. • ICSD does their payroll and DHRD helps with miscellaneous hiring. • Dr. Greenwood created the President’s Advisory Council on Hawai’i Innovation and Technology Advancement. • Key research university with involvement in High Performance Computing and Internet2. • Dr. Lassner chairs the Business Process Committee (BPC) at UH: <ul style="list-style-type: none"> ○ Meets once a month; canceled if no agenda items. ○ In existence for six years. ○ Members: CFO, Budget, HR, Controller, VP Admin, Disbursing, and IT. ○ Right level of authority and representation to make actionable decisions. ○ http://www.Hawai'i.edu/bpc/. • New building being built for IT organization. • UH has constitutional autonomy.
Key IT Initiatives and Opportunities/Challenges
<ul style="list-style-type: none"> • Cloud: moving to Google for email and calendaring for 70,000-80,000 students, faculty, and staff; working to shut down current email system later this year; students moved to Google mail in February 2011; has independent data marts (Oracle) for Finance, HR, and student information. • Financial system: Java, web-based; switching to new system July 1, 2012; Kuali is the new system which is open source and web-enabled; already used by Michigan St., Cornell, Colorado St., USC, and the University of Arizona. <ul style="list-style-type: none"> ○ Also, the Kuali Research Administration is being implemented. • Web enablement initiatives: get applications off the mainframe including leave accrual; 100% hit rate on grants and delivering on those, especially with broadband; information security. • IT-enablement of research “big data:” high-performance computing; data visualization; analytics; support of economic development; suite of technologies and interactive distance learning.
IT Quick Wins
<ul style="list-style-type: none"> • Desire to collaborate on learning programs. The State could form a partnership to pursue re-education and career training workshops. • No strong investment in mobile technology; need platform-agnostic mobile apps.

Data Center Findings	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Server/network equipment is current and is patched regularly • Proactive network monitoring of infrastructure and services • Use of social media to stay connected with students, alumni, and staff 	<ul style="list-style-type: none"> • Many tools and systems that are used to monitor and support network infrastructure have been developed in-house for ongoing support; UH needs to ensure that application documentation is robust • Configuration Management Database (CMDB) not implemented to track the large number of assets
Opportunities	Threats
<ul style="list-style-type: none"> • UH is building out new data center space to support expansion; there is a potential to locate some State services in the new facility • UH has WiFi services for students; engineering, support, and maintenance models may be re-used statewide • Migrating 70,000-80,000 accounts to Cloud-based email; engineering, support, and maintenance models may be re-used statewide 	<ul style="list-style-type: none"> • Previous password requirements lack robust security policies but a new more secure UH password policy is in place and in the process of being implemented for all users • UH stores and utilizes personally identifiable information (PII) on a daily basis, likelihood of breaches • UH serves as Internet Service Provider for all State departments; if UH fails, it will severely affect the State's ability to communicate and share data

OFFICE OF THE GOVERNOR/LIEUTENANT GOVERNOR

Governor: Neil Abercrombie	Lieutenant Governor: Brian Schatz
IT Director: Lyle Maesaka	
Mission	
<p>The administration's mission as outlined in the "New Day" plan is designed to:</p> <ul style="list-style-type: none"> • Strengthen the state's economy and create good jobs for people • Transform government and provide taxpayers with the best value for their dollar • Secure Hawai'i's future by investing in key areas like early childhood, healthcare technology, food production, natural resources, housing, and other long-term priorities 	
Organization (including attached agencies)	Key Applications
<p>Staff in the Office of the Governor is delineated in the following areas:</p> <ul style="list-style-type: none"> • Executive Administration • Communications • Policy • Constituent Services • Boards and Commissions • Washington Place • Operations • Office of Collective Bargaining • Office Of The Governor - Neighbor Island Offices: <ul style="list-style-type: none"> ○ Governor's Office, East Hawai'i (Hilo) ○ Governor's Office, West Hawai'i (Kona) ○ Governor's Office, Maui ○ Governor's Office, Kaua'i ○ Volunteer Governor's Representative, Moloka'i ○ Volunteer Governor's Representative, Lana'i 	<ul style="list-style-type: none"> • Tracking system for all communications to the Governor • Tracking system for all communications from the Governor
Budget/Funding	Staff
<ul style="list-style-type: none"> • The Office of the Governor is fully funded from the State General Fund. • FY12 budget request is \$1.93 million. 	<ul style="list-style-type: none"> • 35 staff in the Office of the Governor • 12 staff in the Office of the Governor, Neighbor Island Office • 40 staff appointed to the Governor's Cabinet as Directors and Deputy Directors • 1 IT FTE whose time is split between the Office of the Governor and the Lieutenant Governor's office • ICSD provides telecommunications support for land line phones
Departmental Items of Note	
<ul style="list-style-type: none"> • IT is not specifically identified in the budget breakdown and is included as an overhead expense. • The Office of the Governor believes that IT should facilitate the rapid ability to communicate to the citizens of the state of Hawai'i, provide mobility to the work force that allows personnel to perform work outside of the capital building as well as develop the ability to do social networking to enhance transparency to government. • The current IT Director is creating the basic infrastructure needed across all areas of the Office of the 	

<p>Governor and is working to build a network that can then support application needs.</p> <ul style="list-style-type: none">• Neighbor-island support is provided by staff identified by the IT Director; however, these staff have responsibilities other than IT, so it is indirect support.
Key IT Initiatives and Opportunities/Challenges
<ul style="list-style-type: none">• A key initiative is to stand up a wireless network for the Governor's Office. The domain was scheduled to be created by the end of July to early August with operation expected by end of September.• The second key initiative is to solidify storage capability to support the staff and constituents' desire for more video capabilities through the web.• Assessing implementation of Internet Quorum (created by Lockheed Martin to track legislation and policy decisions).• Mobile technology is limited to staff members' individual plans. There is a need for mobile technology and accessibility 24/7 and to support the travel needs of the staff.
IT Quick Wins
<ul style="list-style-type: none">• Need support in the procurement process for hardware and software.• The IT Department needs assistance in understanding how to plan for network/capacity/reliability SLAs and OLAs both internally and with vendors.
Data Center Findings
The Office of the Governor does not have a data center.

APPENDIX A: REFERENCE DOCUMENTS LISTING

Include listing of documents provided that is relevant to this report.

- ⁱ “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
<http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
- ⁱⁱ “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
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- ⁱⁱⁱ “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
<http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
- ^{iv} “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
<http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
- ^v “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
<http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
- ^{vi} “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
<http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
- ^{vii} “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
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- ^{viii} “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11
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- ^{ix} “The 2010 State CIO Survey” 8/25/11 <http://www.nascio.org/publications/documents/NASCIO-2010StateCIOSurvey.pdf>
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- ^{xi} “5 Ways Social Will Change The IT Profession”. 9/9/11
http://www.informationweek.com/thebrainyard/news/social_networking_consumer/231601007/5-ways-social-will-change-the-it-profession
- ^{xii} “2011 State Government Industry Outlook: Mind the Gap.” 8/26/11 http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_state_MindtheGap_Outlook2011_State%20Government_040511.pdf
- ^{xiii} “Capitals in the Cloud”. 8/26/11. http://www.nascio.org/publications/documents/NASCIO-Capitals_in_the_Clouds-June2011.pdf
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<http://www.nasbo.org/LinkClick.aspx?fileticket=yNV8Jv3X7Is%3d&tabid=38>
- ^{xvi} “2011 State Government Industry Outlook: Mind the Gap.” 8/26/11 http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_state_MindtheGap_Outlook2011_State%20Government_040511.pdf
- ^{xvii} “The 2010 State CIO Survey” 8/25/11 <http://www.nascio.org/publications/documents/NASCIO-2010StateCIOSurvey.pdf>
- ^{xviii} “State IT Workforce: Under Pressure” 8/26/11
http://www.nascio.org/publications/documents/NASCIO_ITWorkforce_UnderPressure.pdf
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- ^{xxv} “Michigan Consolidates IT, Pushes Mobile Service Delivery.” 8/30/11 <http://www.govtech.com/pcio/Michigan-Consolidates-IT-Pushes-Mobile-Service.html>
- ^{xxvi} “IT Consolidation Perspectives” 8/31/11 <http://www.mdt.mt.gov/aashto/presentations/it-consolidation-perspectives.pdf>

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- xlii “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11 <http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
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- li <http://thejournal.com/articles/2010/06/03/kentucky-shifts-public-education-system-to-liveatedu.aspx>
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- lvii “State governments at risk A call to secure citizen data and inspire public trust” 9/9/11 <http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>
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<http://www.nascio.org/publications/documents/Deloitte-NASCIOCybersecurityStudy2010.PDF>

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REDACTED

Final Report



Data Center Assessment

Under Contract Number Z991503, Deliverables a.4.1 and a.4.2

September 28, 2011



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1.0 BACKGROUND

Science Applications International Corporation (SAIC) was awarded a contract by the Research Corporation of the University of Hawai'i (RCUH) to perform an information technology (IT) assessment on behalf of the Office of Information Management and Technology (OIMT). This Data Center Assessment Report fulfills deliverable a.4.1 and a.4.2 as defined by the RCUH contract with SAIC. It was prepared based on knowledge gained during SAIC's interview sessions with IT leadership and staff from the State of Hawai'i's Executive Branch Departments, answers to questionnaires, and a physical examination of the Department's data center(s), server rooms, server closets, and/or telecommunications room¹. SAIC also reviewed data collected from any Departmental asset inventory systems and/or SAIC's network scanning tool. The Enterprise Alignment Database (EAD) tool serves as the repository for specific information gathered during the data center assessment activities. Finally, a comprehensive set of IT Infrastructure recommendations for the State of Hawai'i is documented in the "Technology Infrastructure" section of the *Final Report – IT Baseline and Comprehensive View of State Services*.

2.0 STATE OF HAWAII DATA CENTER ASSESSMENT QUESTIONNAIRE AND FINDINGS

The SAIC data center teams visited 26 Departmental data centers, server rooms, server closets, and telecommunications rooms plus two commercial data center facilities, DRFortress and SystemMetrics. During our visits, SAIC asked each Department to complete a 75-question survey regarding their data center security, processes, and controls. SAIC would like to acknowledge and thank all of the State employees that participated in this survey. As experienced during this entire project, the willingness to share information was instrumental in completing this deliverable. Table 1 lists the collective Departmental responses to the data center survey questionnaire. In most cases, SAIC talked through each question with the Departmental contact(s) for the data center, server room, server closet, or telecommunications room.

¹ SAIC used the Federal Data Center Consolidation Initiative (FDCCI) to classify the existing facilities and help develop an overall footprint required for any future consolidation efforts.

Table 1: Collective Departmental Responses to the Survey Questionnaire

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Physical Security - General																				
Are the computer room walls away from outside walls	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are the walls designed as floor-to-ceiling throughout the computer room	Y	N	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Is emergency lighting available in computer room	N	Y	N	Y	N	Y	Y	N	Y	N	N	Y	Y	Y	Y	N	N	Y	Y	Y
Are all wires and cables labeled	N	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N	Y	N	Y
Not readily accessible by general public	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Entrance security devices requiring keys, pass-codes or magnetic badges	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Security system monitored 24/7/365	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Controlled access to computer room during working hours	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Controlled access to computer room during off-shift hours	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Published security policy guidelines/procedures	N	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	Y	Y	Y
Internal staff access controlled in vital/restricted areas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vendor service personnel supervised while on premises	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Collect keys and badges and/or change codes when employees terminate	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Environmental Controls																				
Flammable materials properly stored	Y	N/A	N/A	N/A	Y	Y	N/A	Y	N/A	Y	N/A	Y	N	N/A	Y	Y	Y	Y	Y	Y
A “no eating or drinking” policy near desktop systems or in the equipment room/computer room	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fire Controls																				
Solid walls constructed to extend to the true ceiling of each floor	Y	N	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y
Smoke and heat detectors installed, including above ceiling and below floors	N	Y	Y	N	N	Y	Y	Y	N	N	N	Y	Y	N	Y	N	N	N	Y	Y
Air conditioning facilities automatically deactivated by smoke detectors	N	N	N/A	N	N	Y	Y	N	N	N	N	N	Y	N/A	Y	N	N	N	N	Y
Hand-held carbon dioxide fire extinguishers available in computer room	N	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	N	Y	Y	Y	Y
Fire extinguishers inspected and tested regularly	Y	Y	Y	Y	Y	N/A	N	N/A	Y	N	N	Y	N/A	Y	Y	N	Y	N	N	Y
Established, current, emergency fire procedures and evacuation plan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Alarm pull-boxes installed	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	N	Y	Y	Y	Y
Smoking restricted in the offices and equipment areas/computer room	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Floodwater																				
Steam or water pipes located below computer	N	Y	N/A	N	N	N	N/A	N	N	Y	N	Y	N/A	N	N	N	N/A	N	Y	N
Equipment located away from sprinkler heads	Y	Y	Y	Y	Y	N/A	Y	Y	N/A	Y	N/A	N	N/A	Y	N/A	Y	Y	N	N/A	Y
Computer room located above flood plan	N	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N
Computer room located on 2 nd or 3 rd floor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Electrical Power																				
Reliable electrical power	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Power lines checked with a power line monitor	N	N	N/A	N	N	N	N/A	N	N	Y	N	Y	Y	Y	N	Y	N	N	N	Y
Master power shutdown controls for computer room	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
Backup power available with appropriate size uninterruptible power supply (UPS)	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Climate Control																				
Separate heating, ventilation, and air conditioning (HVAC) system for the computer room	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Controlled humidity	Y	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	N	Y	N	Y
Backup air conditioning facilities available	Y	N	Y	N	N	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	N	Y
Air conditioning filtration and filters cleaned annually	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Preventive maintenance schedule published and observed	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N	Y

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Personnel Considerations																				
Adequate number of personnel to perform job function(s)	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Personnel trained in security awareness and proper computer security practices (backing up data, off-site storage, password changing, keeping magnets away from disks/diskettes, etc.)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Controls established for terminating/transferring employees	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Computer Usage																				
Computing resources are not used for commercial purposes unrelated to the Department mission	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Only authorized users have access to computer systems	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Invalid attempts to access the computer system are:																				
Logged	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitored	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Limited to specific number	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Computer system "idle time" or "time-off" capabilities are implemented for computer systems	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	N	Y	Y	N	Y	N	Y	N	Y

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Hardware Considerations																				
Tapes and disks cleaned at regular intervals	N	Y	Y	Y	Y	Y	Y	Y	N/A	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Equipment/network configurations documented/standardized	Y	Y	Y	Y	N	Y	Y	N	Y	N	Y	Y	Y	N	Y	Y	Y	N	Y	Y
Equipment upgraded as needed, to ensure business functions can be performed	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tape and disk records maintained – what is on what disk and location of backup	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Preventive maintenance schedule observed	Y	Y	Y	Y	Y	N	Y	N	N	N	N/A	Y	Y	Y	Y	Y	Y	Y	N	Y
Software Considerations																				
Software upgraded as needed to ensure business functions can be performed	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y
Software reviewed for utility periodically and marked as obsolete as needed	N/A	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N/A	N	Y	Y
Access to operating software is restricted	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Anti-virus software is installed and continuously enabled on all:																				
Desktop computers	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Laptops	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Networks	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Access/Data/File Controls																				
Software is backed up before system change for:																				
Operating system	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Applications	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
A current inventory of application files is maintained	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Duplicate, rather than the original program file, is used for changes	N	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	Y	N	N	N
Duplicate copies of documentation stored off-site are verified periodically	N	N	N	N	N	Y	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N
Data files are physically controlled by:																				
Computer center personnel	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Application administrator	Y	Y	Y	Y	N/A	Y	Y	Y	Y	N	N	Y	N	Y	N	Y	Y	Y	Y	Y
Is there a documented process for requiring password changes on a regularly scheduled basis	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Does this process to control passwords include minimum length checks and password expirations	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Are computer system and network passwords changed at least every three months and other passwords changed every six months	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Department/Organization	Legal (AG)	CPJAD (AG)	CSEA (AG)	HCJDC (AG)	DBEDT	DCCA	DHHL	DHRD	DHS	DLIR	DLNR	DOD	DOE	DOH	DOT	DOTAX	HDOA	PSD	ICSD Computer	ICSD Network
Communications/Network Considerations																				
Are firewalls installed and implemented	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Are intrusion detection sensors implemented	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Is a Virtual Private Network (VPN) installed and implemented	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Is only email traffic allowed through the firewall	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Are domain name service names public	N	Y	N	N	N	N	N	N	N	Y	N	y	Y	N	N	Y	N/A	N	Y	Y
Vendor lists for trouble calls available	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y
Critical network circuits tagged	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N/A	N	Y	Y	Y	Y	Y	Y	Y	Y
Do you have direct Internet connectivity outside of what the NGN provides	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

2.1 General Findings from Questionnaire and Visits to the Departmental Data Centers²

The following six areas represent the general findings from information gather using the questionnaire and the Departmental site visits.

- 1. Physical Security** – The majority of [REDACTED]
[REDACTED]
[REDACTED] It is a best practice to create policy, review it with internal and external security teams, publish it, and provide training and awareness to all staff.
- 2. Environmental Controls** – In half of the facilities, smoke and heat detectors are not installed. The majority of these sites are in buildings that have no central smoke or fire monitoring systems. It is recommended that, in any facility where a high concentration of servers, storage, or network equipment is located, early-warning smoke and fire detection systems should be installed. Every facility had separate cooling systems installed and, in most cases, backup cooling systems. [REDACTED]
[REDACTED]
- 3. Personnel Considerations** – Nearly all Departments reported lack of personnel as a critical issue. Typically, when personnel are not available to support data center equipment, it leads to missed maintenance cycles and the inability to diagnose and address all but critical alarms.
- 4. Computer Usage** [REDACTED]
[REDACTED]
- 5. Access/Data/File Controls** – A comprehensive plan for storing original software and associated license agreements in a secure location away from the data center was not found for many of the Departments [REDACTED]
[REDACTED]
We would suggest policies to ensure that the State has a valid library of all software and licensing data in a secured offsite location. In case of disaster, these resources may be critical to resume services and communicate with vendors. We also recommend that a guideline is created statewide to define and enforce password strength and frequency of password change for all Departments.
- 6. Communications Network** – Many Departments have internal virtual private network (VPN) access. SAIC recommends a common enterprise VPN solution utilizing the NGN network VPN capability. This will provide a single point of remote access to the network that should be monitored for security, responsiveness, and availability proactively on a 24x7 basis. [REDACTED]
[REDACTED]

² Includes server rooms, server closets, and/or telecommunications rooms.

2.2 General Findings from the Questionnaire and a Site Visit to the Department of Accounting and General Services (DAGS), Information and Communications Services Division (ICSD) Data Center

The following six areas comprise general findings from information captured from the ICSD data center questionnaire and ICSD data center site visit. SAIC is reporting they findings separately because ICSD is the only organization that is recognized as having the mission to provide information processing and telecommunications systems to the Executive Branch Departments.

- 1. Physical Security** – The ICSD data center is located in [REDACTED].
[REDACTED]
- 2. Environmental Controls** – This may be the largest issue facing [REDACTED]. The facility has severe cooling issues which are further impacted by equipment layout and under-floor supply air blockages. If this facility is to remain the central location for State servers, storage, and network devices, the cooling/air-flow issues must be addressed. Hot aisle/cool aisle rack alignment should be followed; many rows exhaust hot air directly into the air intakes of neighboring servers. This will reduce server life and increase power consumption as servers struggle to cool CPUs.
- 3. Personnel Considerations** – The data center is a mixed-use space. Nearly half of the data center space is occupied by workstations, personnel, copier/printers, and storage units. Equipment should be walled off from personnel space to aide in cooling it and providing a comfortable and safe environment for staff.
- 4. Computer Usage** – [REDACTED].
- 5. Access/Data/File Controls** – A comprehensive plan for storing original software and associated license agreements in a secure location away from the data center was not found. [REDACTED].
[REDACTED]. We would also suggest policies to ensure that ICSD has a valid library of all software and license data in a secured offsite location. In case of disaster, these resources may be critical to resume services and communicate with vendors.
- 6. Communications Network** – The NGN is based on solid network architecture and is supported with robust Cisco infrastructure devices. ICSD should be commended for designing and deploying a capable network that serves the Departments with reliable high-speed network connectivity. We understand that ICSD is in the progress of migrating the Departments to layer 3 switching which is required to provide additional services such as intrusion prevention.

3.0 GENERAL CONSIDERATIONS FOR DATA CENTERS

As the State of Hawai'i looks to improve data center capabilities, SAIC has included an overview of what should be considered in the design, planning, and operation of a modern data center. Data centers play a key role in network infrastructure and applications running on the network. Key components such as file servers, application servers, and databases are located in the centers. Data centers should be designed and built to accommodate network infrastructure and applications. They should also be secured against unauthorized access and equipment in the center should be qualified to ensure on-going operations for both normal operations and contingency situations. Table 2 contains a list of the general considerations for data centers.

Table 2: General Data Center Considerations

Element	General Data Center Considerations
Planning	Begin with a plan that includes the role of the data center, the type of equipment it will accommodate, and how the equipment will be to be distributed within the center (floor plan). Plans for equipment should include network components, electrics, air handling, fire suppression, and environmental monitoring systems. There should also be a plan for qualifying security access and power, air handling, fire suppression, and environmental monitoring. The extent of qualification should be based on a documented risk assessment. Qualification may be vendor documentation for low risk applications or additional testing of equipment (e.g., environmental monitoring systems). The plan should include responsibilities, timetables, and deliverables. For existing centers, information (as described above) should be collected and documented.
Location and Construction Features	If possible, data centers should be located on the second or third floor of a building. The first floor is not suitable because it is more vulnerable against theft, and upper floors are not recommended because they are more vulnerable to earthquakes. Temperature, humidity, and other important environmental conditions should be controlled and monitored and alarms activated in case actual values exceed preset values. In addition, there should be a built-in mechanism for fire suppression, and on-going power supply should be ensured through, for example, UPS in case the regular power supply fails.
Geography	Facilities are frequently located in densely populated urban areas. Consequently, risks exist from man-made events including natural gas pipeline or steam line rupture. The latter sometimes results in an airborne asbestos release. Such events could damage a building or harm its occupants; in such an event, evacuation of the building may be necessary to avoid exposure. Natural phenomena also present risks to facilities worldwide. Not surprisingly, the phenomena of concern vary with geographical location. When selecting a data center provider, one of the first things to consider is the geographic location of the data center.
Facility Design	In evaluating facility design, examine single point of failure as well as construction plans with an eye to whether the site can be operated and maintained without an interruption in service.
Tracking	All network equipment placed in the data centers should be tracked. Information to be tracked should include environmental equipment specifications and equipment location. Equipment specifications include temperature, humidity, and power requirements.
Access	Data centers should be physically locked and access controlled through ID cards with personal identification number (PINS) or equivalent mechanisms. In addition, access to the computers in the centers should be controlled through logical security. Procedures should be in place that describe how security is ensured and who has access to the center and to its equipment. Access lists should be approved, regularly reviewed, and updated if necessary. In addition, access by individuals who are not on the access list should be recorded. Examples are third-party service personnel, guests, or auditors.

Element	General Data Center Considerations
Environmental monitoring and security equipment	Equipment used to maintain security and to keep environmental conditions under control should be qualified. This means that the installation should be documented with type of equipment, vendor, who installed it, and installation date. Proper functioning of important alarms and access controls should be verified, and tests should also be documented. Equipment should be maintained and any change to such equipment documented. Any change to software controlling the equipment should also be documented.
Change tracking	Changes to network equipment in the data center should be documented and the impact of the change on its design should be evaluated. For example, more powerful computers may require more power, which can affect UPS requirements. Similarly, changes to environmental specifications may affect the design of the air conditioning system.
Training records	People working in a regulated environment should be qualified for their jobs. Training records and certificates should be included in data center qualification documents. Such certificates should also be available for third-party service providers.
Service-level agreements	Service-level agreements should be available for servicing and maintenance of equipment (both hardware and software) in the data center. These agreements should be documented for both in-house and third-party services. Agreements should include type of service, responses, and requirements for people qualification.
Operating procedures	Standard operating procedures should be available for: <ul style="list-style-type: none"> • security access including tracking • installation of equipment • qualification and maintenance of equipment • change control for equipment • equipment inventory • qualification of support staff (in-house and external)
Logs	Records should be kept for: <ul style="list-style-type: none"> • access lists • access records of people not on the access list • environmental monitoring • access to data center • maintenance records • installation records • training records/certifications

4.0 BASIC DATA CENTER OPERATIONAL CONSIDERATIONS

Table 3 contains a list and descriptions of basic data center facilities and operational considerations.

Table 3: Basic Data Center Operational Considerations

Element	Data Center Operational Considerations
Power	<p>Power infrastructure usually consists of a UPS that conditions the power and can maintain the load for a short period of time, a generator that can replace utility power for extended periods of time, and a distribution system that provides power to individual servers.</p> <p>Typically, the UPS uses batteries to maintain the load while the generator comes online. That process usually takes between 15 seconds and one minute. However, there are systems that use flywheels instead of batteries to perform the same function. While batteries have to be replaced every three to five years, flywheel systems can function indefinitely. Despite the flywheels' lower ongoing cost, battery systems continue to be more prevalent due to their lower capital cost and longer history. While today's UPS are very reliable, redundant UPS should still be used to ensure uptime of the power system. The redundant system is not only used if the primary system fails, it is also used to allow maintenance to be performed on the primary system without taking the load down.</p> <p>The generator consists of an engine to produce power and a generator coil to convert power to electricity. Currently, the most popular engine type is a diesel engine. These are large engines with six to 12 cylinders and two to six turbochargers. Companies, such as Caterpillar, Onan, and Stuart and Stevenson, manufacture large diesel engines. The other option is a turbine engine, which is very similar to that used on an airplane and manufactured by companies such as GE and Rolls Royce. These jet engines usually run on natural gas and/or diesel and produce significantly more power than diesel engines of the same size. However, these engines cost significantly more and are designed to run continuously, so they are not always the best option for emergency power. A provider should carry 12 to 24 hours of fuel at full load on-site with refueling contracts for extended outages.</p> <p>Even the best generator system does not replace a reliable power company. Most power companies must make information on major outages available to their customers. Also, power production differs from state to state. Some states produce excess power that they sell to neighboring states, while others have to purchase power to meet their needs. During power shortages, the states with excess power will obviously fare better, as they can reduce their power exports to meet internal demand. The hosting provider should be familiar with the power structure in the State of Hawai'i location where the data center is located and should provide the State with that information.</p>
HVAC	<p>The HVAC system is another critical part of a reliable infrastructure. As HVAC units operate continuously and require ongoing maintenance, it is critical to have redundant units available in case of failures and during maintenance windows. The provider should also have equivalent HVAC to the power system. For example, if there are 100 kilowatts of power in a data center, simple conservation of energy dictates that the HVAC system should be able to displace 100 kW of heat (equivalent to about 30 tons). Customers should beware of providers who quote more power than HVAC. While the power system may be able to provide that power, the HVAC system will not be able to cool down the data center properly. Liebert is still the premier supplier of data center HVAC systems. However, competitors, such as Data Aire, can provide similar units at lower prices.</p>

Element	Data Center Operational Considerations
IP Network	<p>Another component of a reliable system is the IP network. The network consists of two parts: (1) the provider's equipment including routers and switches, and (2) the transit links that enter the data center.</p> <p>Until two or three years ago, Cisco was the undisputed premier vendor of network equipment. However, with the emergence of several new and nimble players in the field, there are now many other vendors to choose from. One issue to consider in multi-vendor environments, however, is inter-operability. While a switch, for example, may have great performance on its own, it may not be very reliable when working in conjunction with a router from another vendor. Providers should have a lab where their production setups can be duplicated for testing and for planning upgrades and maintenance.</p> <p>Providers should have redundant switches and routers in every layer of the network, and these layers should be meshed so they can withstand several failures without any impact on the customer. The network should withstand at least one failure in each layer and continue to function at full performance. Some providers have backup systems consisting of lower capacity equipment. However, if there is a failure at peak times, that setup will lead to poor performance.</p>
Wide Area Network (WAN)	<p>A WAN connection consists of two different pieces: (1) "transport" and (2) "transit." The "transport" is the circuit that carries the data, while the "transit" is the actual data. Many providers state they have multiple OC-12s or OC-48s. However, they don't mention how much actual transit they have. Empty circuits are useless, so it is important to determine how much actual transit they have and to which providers. Just as empty circuits are useless, having all the transit on a single circuit is very unreliable. That circuit can have many problems, from a physically cut fiber in the street to a wrong configuration at the central office. Therefore, a provider should have multiple fiber providers and multiple transit providers, a minimum of three of each. Any two should be able to handle maximum network traffic. Therefore, two T-1s (at 1.5 Mbits) and one T-3 (at 45 Mbits) are not considered redundant; if the T-3 fails, the provider loses over 90% of its capacity.</p>

Element	Data Center Operational Considerations
Data Center Security	<p>A very critical component of a data center is security. There are significant differences in security needs between a collocation data center and a managed hosting data center. Hundreds, even thousands, of customers pass through a collocation data center every day. It is critical to maintain strict control and monitoring of the people that have access to the data center. Even in the most secure data centers, customers can damage other customers' equipment. However, in a secure, managed, hosting data center, only key employees have access to the data center, as customers do not access the equipment. How many people have access to the data center? Usually, it is not necessary to have more than 20 to 30 people that have unescorted access in a 10,000 square foot data center. That is a question that the State should ask their hosting provider. Most reputable providers will use a biometric system to control access to key areas. The advantage of these systems is that the activity is logged and any employees who are no longer eligible to enter the data center can be immediately removed. Also, there is no danger of lost keys or pass cards.</p> <p>Despite the importance of physical security, keep in mind that it is significantly easier to compromise a server through the network than by trying to gain physical access to it. Therefore, it is critical for the hosting provider to maintain an up-to-date image of the operating system that is installed on the server. It is usually not practical for a hosting provider to update the operating system proactively once the server is in production, as the update may cause problems with applications that the customer has loaded. However, the image deployed when a server is initially loaded with the operating system should have the latest patches applied. Note that as patches are released daily, providers should have experts available to keep the image updated. When reviewing the security of the data center itself, begin examination of the outside before examining the inside.</p>

Element	Data Center Operational Considerations
Fire and Explosion Scenarios	<p>A data center often has characteristics that present a fire hazard. Typically, numerous pieces of computer equipment are situated on raised floors. Ordinary combustibles are generally limited to stacks of paper or boxes. Underneath the raised floor, there is often extensive cabling, with PVC insulation representing more mass than vacant space. Fixed fire protection may include piping systems tripped by cross-zoned smoke detection, with no protection provided under the raised floor. Mobile fire protection may be limited to hand-held fire extinguishers, with the principal agent being carbon dioxide.</p> <p>Fires in data center areas can arise from problems with the wiring, electrical distributions' system components, and electronic equipment (computer hardware, power switchgear, over current protection devices, etc). The extensive cabling, particularly below raised floors, enhances the fire risk. Based on historical accident data, in combination with site-specific data, such as mass and arrangement of cabling, the probability of a fire occurring in the data center area is usually estimated to be "somewhat likely" (0.0001 - 0.01/yr). A fire in such a data center, particularly under the raised floor, could result in significant downtime, in excess of a week or more. This would typically be attributed to the mass of cabling in many areas and the toxic and corrosive combustion products resulting from a PVC fire.</p> <p>In considering risk control options, alternatives include pre-action sprinkler systems, which could reduce the risk of water damage from a failed head. These systems can often use the smoke detection system from the original halon system to reduce costs. Beneath a raised floor, an obvious but generally difficult, and probably impractical, risk control option is to remove obsolete cabling. A lower cost alternative is to install a "very early smoke detection system" in which smoke induction associated with such a unit reduces activation time. Other options include a carbon dioxide system or a similar environmentally friendly gaseous extinguishing system, improved fire detection (e.g., line detectors), and /or improved passive fire protection.</p>
Operations	<p>In terms of operations, look for any single point of failure and don't overlook things that seem small or insignificant. An overlooked detail, such as a poorly designed fluorescent lighting circuit, can cause a power panel to trip leaving an entire facility without electricity. Insufficient maintenance of the facility's power generators or air-conditioning units might cause downtime too. The risk of failure rises as data centers attempt to save money by trimming maintenance schedules.</p>

5.0 RECOMMENDATIONS FOR IMPROVING THE STATE'S DATA CENTER MANAGEMENT AND TECHNOLOGY

When viewed across all Departments, the current data center environment is extremely decentralized with the majority of Departmental applications and servers being housed within Departmental server rooms. ICSD continues to be constrained by power, cooling, and staff levels. This results in an inadequate hosting environment to serve the expanding needs of the Departments [REDACTED]

[REDACTED] A comprehensive set of IT Infrastructure recommendations for the State of Hawai'i is documented in the "Technology Infrastructure" section of the *Final Report – IT Baseline and Comprehensive View of State Services*. The recommendations below relate to the current data center infrastructure and include recommended actions, which the State should begin immediately.

Recommendation 1: Determine Primary Data Center and DR strategy

As identified in a 2009 audit, the State continues to operate without a DR facility to support critical operations [REDACTED]. To further complicate matters, per the May 2010 *IBM Data Center Efficiency Assessment*, [REDACTED] has severe cooling issues, air supply blockages of up to 90%, and air restrictions of 80%. Years of poor cabling practices have led to under floor cabling issues that defeat efforts to improve air flow in the facility. It is critical that decisions be made and an architecture be developed that include a robust primary data center with native DR capabilities included.

Actions:

1. Quickly create a cross-functional team chartered to determine where the primary data center should reside.
2. Develop an overall DR approach.
3. Perform a high-level cost analysis of bringing State facilities up to an acceptable level of performance versus cost of hosting services with an accredited and certified third-party facility.

Based on SAIC's assessment of existing data centers within the State and third-party facilities (DRFortress and SystemMetrics), we have drafted some options that the State and the cross-functional team may want to consider:

- Remain [REDACTED] – would require substantial expenditure to address cooling, airflow, structural inefficiencies, power distribution, and UPS requirements. To alleviate flooding concerns, the data center should be relocated on the second or third floor to reduce the threat of flood water entering the basement, where the data center currently resides.
- Utilize third-party facilities as a primary/DR data center configuration. This would leverage a third-party facility as a co-location site for servers, storage, and network equipment. The State would still retain management, configuration, and deployment for servers and applications. The State would be provided with a data center facility certified in environmental controls, power, 24x7 services, and physical security. SAIC puts forth DRFortress and SystemMetrics as options; both providers have solutions that meet the State's near-term and long-term needs.
- Blended solution between a third party and State facilities. The State may opt to utilize a third-party location as the primary data center while retaining an existing or new State facility for DR needs.

Recommendation 2: Data Center Consolidation

The State of Hawai'i should develop a plan to consolidate services, hardware, and physical data centers. To assist the State, SAIC used the Federal Data Center Consolidation Initiative (FDCCI) to classify the existing facilities and help develop an overall footprint required for any future consolidation efforts. The FDCCI definition of computing space is: "any room that is devoted to data processing servers, i.e., including server closets (typically < 200 square feet) and server rooms (typically < 500 square feet) within a conventional building, just like larger floor spaces or entire buildings dedicated to housing servers, storage devices, and network equipment are defined as data centers (typically >500 square feet)."

Table 4: Server Closets, Server Rooms, and Data Centers by Department

Departments	Server Closet (<200 sq. ft.)	Server Room (< 500 sq. ft.)	Data Center (> 500 sq. ft.)
Legal (AG)		X	
CPJAD (AG)		X	
CSEA (AG)		X	
HCJDC (AG)		X	
B&F	X		
DAGS (non-ICSD)	X		
DBEDT	X		
DCCA		X	
DHHL		X	
DHRD		X	
DHS		X	
DLIR		X	
DLNR		X	
DOD		X	
DOE			X
DOH		X	
DOT		X	
DOTAX		X	
HDOA	X		
PSD		X	
UH			X
ICSD			X
GOV/LT GOV	X		

As shown in Table 4, many computing centers within the Departments are of a size that encourages consolidation through technologies such as virtualization and Cloud computing. The benefits that the State will receive from a consolidation approach include:

- Promote the use of Green IT by reducing overall energy and the real estate footprint of the data centers
- Reduce the cost of data center hardware, software, and operations
- Increase the overall IT security posture of the State
- Increase the use of more efficient computing platforms and technologies.